

Developing legacy in project management: a study of construction and infrastructure projects in the north east of Scotland.

DAVIES, R.

2024

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DEVELOPING LEGACY IN PROJECT MANAGEMENT:
A STUDY OF CONSTRUCTION AND
INFRASTRUCTURE PROJECTS IN THE NORTH EAST
OF SCOTLAND

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STUDY OF CONSTRUCTION AND INFRASTRUCTURE
PROJECTS IN THE NORTH EAST OF SCOTLAND

RAYMOND DAVIES

A thesis submitted in partial fulfilment of the requirements of Robert
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Abstract

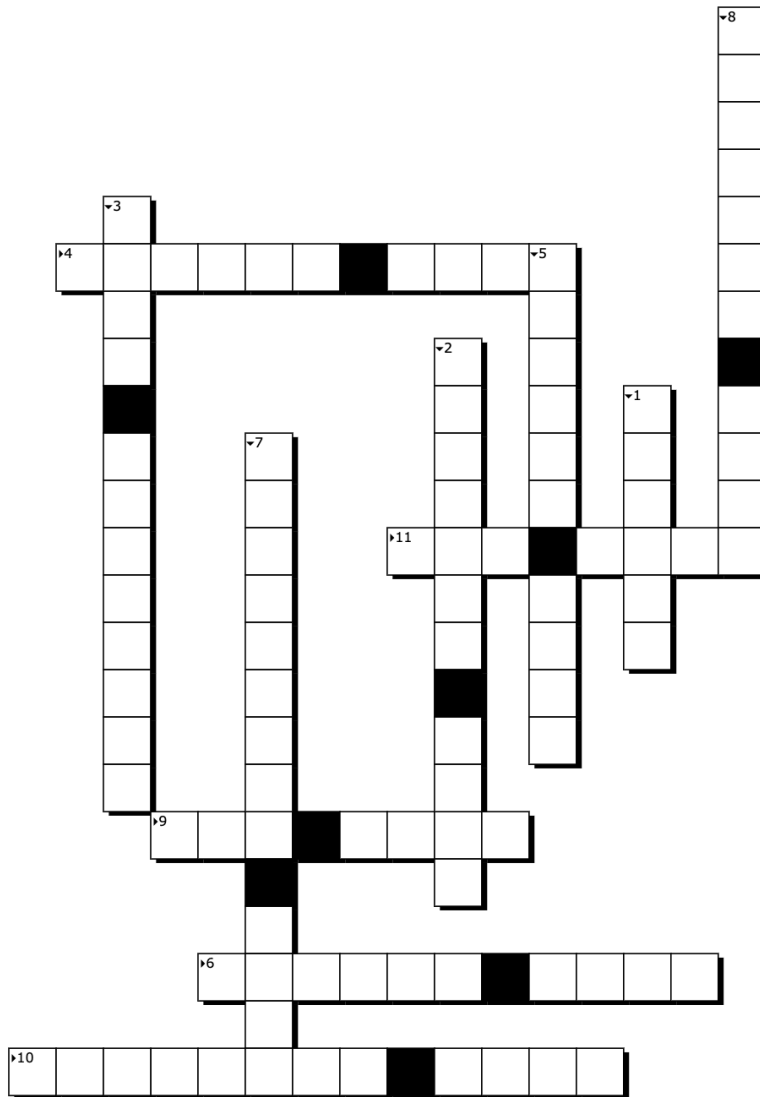
Legacy is a research topic previously developed and established within an events management context, as in, for example, explorations of the long-term plans and impact of FIFA World Cups and Olympic Games on host regions and their people. Legacy is the vision and process of attempting to create positive outcomes and generational benefits that outlast the period of the hosted event. The concept, terminology, and methods used for creating a 'legacy' have started to be considered in other areas. In project management, legacy claims for specific projects have become more common with legacy plans, charters, and visions now often incorporated into project approaches. This is despite project management being a discipline where future-orientated legacy development is not being addressed by its governance bodies and their guidance documentation. Legacy is a research theme that currently lacks collective agreement on how it is defined, understood, and practised. It is a research area that is primarily conceptual, untested, and can differ in each context in which it is sought.

This thesis addresses the research gap of legacy within project management. Findings include, how project decision-makers understand, define, and apply legacy to a range of Aberdeen City and Aberdeenshire projects. The research investigates the substance of legacy claims being made in public communications for these projects. It provides an understanding of the key factors for creating legacy by project leaders. A theoretical framework was developed to guide this research. A phenomenological methodological approach was adopted, and multiple methods were applied (document analysis and semi-structured interviews with project decision-makers). 14 construction and infrastructure projects were identified as key resources for achieving a future regional legacy from the local council authorities' strategic vision and transformation plan publications. Investigating the narrative of these projects, the document analysis process identified 704 appropriate documents from project stakeholders, with 58 specific claims for creating a legacy determined. Within these documents, a thematic coding approach returned 47 legacy characteristic groupings, with 8061 individual factors coded for these projects. These were explored further and tested through the application of semi-structured interviews with the stakeholders who designed or implemented each of these projects. The qualitative return from the interviews revealed eight key recurring legacy themes, which were compiled into a conceptual model to show how legacy was understood and applied within this regional project context.

The research reveals that legacy development within projects often goes against established project management fundamentals as its incorporation adds additional complexity, time, and costs. It changes project expectations for quality, community engagement, environmental management, and sustainability integration. Project purposes are fundamentally targeted towards an agreed collective regional vision. The project management approach should incorporate a plan to provide generational benefits which are monitored over a period of at least 25 years, extending the traditional project lifecycle. This thesis includes guidance on effective practices for project professionals to better incorporate legacy and provides recommendations for future research and development on this topic.

Keywords: Legacy, Project Management, Sustainability, Diversification, Regional Identity, Aberdeen, Aberdeenshire, Construction and Infrastructure, Environmental Management, Project Governance.

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Clues:

1 Down: A rock of encouragement, loved and long-suffering wife who has had to share a third of our marriage with the writing of this PhD, (first name).

2 Down: Professor who single-handily steered the PhD titanic away from the icebergs and the bottom of the seabed, forever indebted. (last name).

3 Down: Arriving just in time for the PhD finale, absolute whizz at editing, first name, which is also part of Beatles song involving a 'meter maid'.

My beloved children, who grew in inches, and stature while these PhD years rolled on (first names)

4 Across: Initials MAD, eldest.

5 Down: Aka 'Evie'.

6 Across: Aka 'the boy', aka 'Eli'.

7 Down: Highstreet coffee chain, thanks to all the staff who were not bothered that I made a single hot chocolate last multiple hours on 821 occasions writing this (according to their helpful app). Other notable 'third spaces' to work on the PhD include Costa Westhill, Altens, Peerie Café Lerwick, and Qapco Club Mesaieed.

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10 Across: The region (city and shire), where this research is based, thanks go to its people, its projects, the councils, and all the participants who gave so freely of their knowledge and incredibly limited and covid impacted time.

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Abbreviations

ACC - Aberdeen City Council
AECC - Aberdeen Exhibition and Conference Centre
AFC – Aberdeen Football Club
APA – Aberdeen Performing Arts
APM – Association for Project Management
ARI – Aberdeen Royal Infirmary
AWPR - Aberdeen Western Peripheral Route
BDP – Building Design Partnership
BIOHUB – Bio-Therapeutic Hub for Innovation
BOK - The APM Body of Knowledge
BP - British Petroleum
BREEAM - Building Research Establishment Environmental Assessment Method
CCS - Considerate Constructors Scheme
CJV – Construction Joint Venture
CLAN - Cancer Link Aberdeen & North
COP - Conference of the Parties
COVID-19 - Coronavirus Disease 2019
CSR - Corporate Social Responsibility
DBFN - Design, Build, Finance, Maintain
FIFA - Fédération Internationale de Football Association
GDP - Gross Domestic Product
GW - Gigawatt
HBD - Henry Boot Developments
HS2 – High Speed Rail 2
IOC - International Olympic Committee
ISO - International Organization for Standardization
ISO 26000 - International Organization for Standardization on Social Responsibility
ISO 14001 - International Organization for Standardization on Environmental Management
ISO 21500 - International Organization for Standardization on Project Management
KPI - Key Performance Indicator
LED – Light Emitting Diode
MW – Megawatt
NESTRANS - North-East Scotland Transport Partnership
NHS – National Health Service
OGGI - Olympic Games Global Impact Project
ONE – Opportunity North East
PERT - Program Evaluation and Review Technique
PM2.5 - Particulate Matter 2.5
PMBOK – A Guide to the Project Management Body of Knowledge
PMI – Project Management Institute
PRINCE2 - Projects IN Controlled Environments, Managing Successful Projects with PRINCE2
RICS - Royal Institution of Chartered Surveyors
SDG - United Nations Sustainable Development Goals
SEPA - Scottish Environment Protection Agency
SME - Small and Medium Sized Enterprises
SNP - Scottish National Party
SSCI - Scottish Sustainable Communities Initiative
SUDS - Sustainable Urban Drainage Systems
TECA - The Event Complex Aberdeen (also rebranded as P&J Live Arena since May 2019)

UNFCCC - United Nations Framework Convention on Climate Change
UTG – Union Terrace Gardens
V&A – Victoria and Albert Museum

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Chapter One: Introduction

1.0 Purpose of the Chapter

This doctoral research aims to critically explore the project management methods and rationale for implementing 'legacy' to a range of Aberdeen and Aberdeenshire-based construction and infrastructure projects. These projects have been selected explicitly as solutions for future regional development and meeting societal needs. This chapter outlines the problematic nature of legacy understanding within the academic literature. It highlights legacy's current limited research scope, which has traditionally been restricted to focus on events management. It outlines legacy's conceptual challenges with traditional project management principles and practices. The chapter provides the thesis research questions and their associated aim and objectives. It introduces areas of contribution to the academic knowledge base, and the structure of the thesis concludes the chapter.

1.1 Background to the Research Topic

In today's global society, projects are the driving force for investment and implementation of new products, infrastructures, and markets (Hurt & Thomas, 2009; Project Management Institute, 2021). Moehler et al. (2018, p.2) note that projects are so important within an economic context that they are "*the means through which our future is created*". The scale of project management's economic and societal impact is highlighted by Eskerod & Huemann (2013, p.44), who note that "*one-third of the worldwide gross domestic product (GDP) in society is initiated by projects*". Project management is often referred to as the facilitator of change for our international communities and infrastructure (Adelman & Taylor, 2003; Drouin et al., 2022). It is the widespread process used for creating the cities and products that surround us and shape our environments (Fernandes et al., 2015; Kwak & Anbari, 2009; Mavi et al., 2021).

However, despite the integral role of projects in shaping the communities and infrastructure of the future (Bon-Gang, 2018), there are still some fundamental challenges within the discipline of project management, particularly regarding sustainability and monitoring long-term project outputs. Alzahrani (2015, p.15) states that "*there is no 'natural' connection between the process of sustainable development and projects*". This is because, at its core, project management promotes a short-term, temporary, and output-orientated approach with limited protocols for how a project may impact the environment it is created for (Dalcher, 2022; de Carvalho et al., 2015). There is, meanwhile, increasing societal pressure for a more responsible approach to planning, building, using resources, and managing their impact on communities and the environment (de Magalhães et al., 2019). The project lifecycle should consider its future impact more, especially the long-term needs of those stakeholders who did not commission the project but are or will be impacted by it (Catarina et al., 2021; Kerzner et al., 2022).

In response to this issue, project management is a discipline evolving towards a more 'sustainable path' for its outputs and how it does things, especially within the construction industry (Saad et al., 2019). Several theorists have identified the issue as one that demands attention from researchers. Toljaga-Nikolić et al. (2020), for example, highlight this as a current trend and "*one of the key areas of project management development*" (p.2). Chakravarthy et al. (2022) note that conventional project management construction practices may not be suitable for future-orientated, green developments. Stanislas et al., (2021), summed up the situation by stating, "*project management must make greater efforts to address sustainability issues into each project and assure a sustainable way of life for future*

generations. To achieve this, project management must change into a wider and well-rounded view of the project's impact and value" (p.3).

This development is happening amidst a context of the international business community increasingly embracing and engaging with national environmental and societal accords, particularly the United Nations Sustainable Development Goals (Gaffney, 2014; Nicholson et al., 2021). To comply with these accords' ambitions, project management has noticeable 'gaps' in their approved methods to provide long-horizon outputs (Eid, 2009; Silvius et al., 2012). However, project approaches still at their foundation frequently have a short-term vision with a restricted project lifecycle (Ershadi et al., 2021). They seek to minimise costs and speed up the 'close-out' of the project when set deliverables are met (Labuschagne & Brent, 2006; Shamim, 2022). Martens & Carvalho (2013, p.1) note that "*much more research is needed to develop tools, techniques and methodologies*" that would consider, enable, and monitor future-orientated projects. These barriers, however, have not stopped the broader implementation of sustainability within projects (Moehler et al., 2018). Project organisations have en masse designed custom approaches to include sustainability innovations within the planning phase of the project lifecycle (Aaltonen & Kujala, 2010; Eid, 2009; Kolltveit & Grønhaug, 2004; Mavi et al., 2021). There is an increased willingness within organisations and their associated projects to adopt and fulfil their customer's accelerating environmental and societal expectations (Poon & Silvius, 2019). Project decision-making now incorporates more responsible and accountable methods for selecting materials, resources, and procedures (Lima et al., 2021; Singh et al., 2009; Wu & Pagell, 2011). In the project execution phase of the lifecycle, methods such as waste reduction and recycling practices, carbon footprint offsetting, and reducing environmental impacts have become common practice (de Silva & Paris, 2015; Marcelino-Sádaba et al., 2015; Martens & Carvalho, 2013; Zhabrinna & Pratama, 2018).

The broader interconnectivity and growth in sustainable integration are evident through the increasing adoption of green supply chains and ethically or locally sourced materials and resources (Bhatia & Gangwani, 2021; Gimenez et al., 2012). Consideration is also given to negative impacts on various communities and stakeholders and the project's future economic viability and usefulness (Chawla et al., 2018). While these practices go against some core project management fundamentals, for example, expanding project cost, complexity, and duration, they prove that project and stakeholder considerations can go beyond exclusive economic drivers and fulfil a more expansive impact-aware functionality in their delivery.

An interesting by-product of the influence of sustainability advancements within project management is the associated perceptions, terminology, and claims applied by key project stakeholders. In the current project environment, there are increasing claims for projects having or creating the rather unique concept of a project 'legacy' as part of their outputs (Epstein et al., 2011; Kietlinski, 2021). This legacy terminology and ambitions were previously the domain and focus of sporting mega-event literature but are now also being applied within a project management context (de Silva & Paris, 2015). The desire to achieve a project legacy is becoming prevalent in wider business and infrastructure projects.

In the UK, the construction projects with the highest grossing project expenditure over the last 20 years have all adopted legacy as a core value for their project approach (Coelho et al., 2014; Cottam, 2015; Loftus & March, 2017; Zerjav et al., 2018). Throughout global projects, 'legacy' is a persistent 'buzz word' that politicians, project managers, and project stakeholders of all levels utter as the repeated rationale for their project's existence and approach, in claiming that the project will leave a 'legacy' for future generations (Girginov,

2011; Scott, 2020; Stevens, 2011). There is limited professional or academic guidance for specifically understanding legacy in a project management context. This lack of clarity in its narrative has allowed the legacy concept to be exploited and has impacted its perception and robustness as a research theme. Much like the concept of 'greenwashing' in sustainability, we see the formation of potential 'legacywashing' as unsubstantiated business 'legacy' claims are made to generate perception benefits and justify spending on projects or events (Pinto & Santos, 2022; Smith, 2014). The lack of specific research and monitoring on legacy claims within project management means determining whether legacy actually occurs is complex to discover (Cashman, 2006; Kietlinski, 2021). This makes it difficult to effectively research project legacy practically or to bring together a widespread knowledge pool for how it is understood or applied.

Legacy is a research theme that has been based on and developed primarily around sporting mega-events such as Olympic Games and FIFA World Cups (Ermolaeva & Lind, 2021; Teetzel & Dichter, 2021). In sporting events, legacy research efforts have often been driven in response to historical instances where specific sporting competitions have left their host cities with 'negative legacies' (Kassens-Noor et al., 2018; Leopkey & Parent, 2012). This has included host cities being saddled with long-term financial burdens (Ribeiro & Almeida, 2021), social displacement to make way for event infrastructure (Graeff et al., 2020; Pereira, 2018), and environmental damage (Gaffney, 2016; Kietlinski, 2021).

While mega-events have the ambition to bring nations and cultures together (Girginov & Preuss, 2022), critics of how they are planned and managed have stated that they are often political vanity exercises resulting in stadiums and infrastructure that will have limited use post-games (Ribeiro & Almeida, 2021). These infrastructural 'white elephants' are the anthesis of the environmentally-conscious age they are designed to be part of and something that governance bodies for sporting mega-events wish to eradicate (Hawamdeh, 2019). To reverse and reduce this damaging public perception and negative impact, groups such as the International Olympic Committee (IOC) and Fédération Internationale de Football Association (FIFA) have adopted legacy as a core value for their operations (Byun & Leopkey, 2022). Any potential host nation looking to be involved with their events must prepare and execute a long-term 'legacy plan', that any infrastructure development or spending will positively impact local people, communities, and the environment (Gold & Gold, 2021; Scheu et al., 2021).

The ambition is that the emphasis and legacy of what is built will be for at least a 'generation' later and not just for the period of the sporting event itself—that a legacy for that region will be identified, planned, and executed to enhance the life and environment of those that live there for the long term (Ribeiro et al., 2020; Wang & Jiang, 2021). This is the starting point and platform for advancing legacy research, aiming to develop and obtain methods for achieving positive generational benefits for event-hosting projects (MacAloon, 2008).

Legacy is a complex phenomenon to define and comprehend for both the researcher and the practitioner (Girginov & Preuss, 2022; Silva, 2016). Legacy as a concept has been underdeveloped (Preuss, 2015), under-explored (Griffiths & Armour, 2013), exploited (Graeff et al., 2020; Kennelly & Watt, 2011), and frequently misunderstood (Chappelet, 2012; Scheu et al., 2021). Ferrari & Guala (2017, p.121) highlight just how little consensus agreement there is even within an events management context, claiming that "*there is not a single definition of 'legacy', and the word lacks clear conceptualisation*". The most common descriptions for the characteristics of legacy are that it creates something of substance (Ritchie, 2000; Talbot, 2021), facilitates improvement or provides benefits (Hiller, 2000;

Zawadzki, 2022). Others argue that its nature is multifaceted (Chalip, 2003; Harris & Dowling, 2021), future-oriented and past-oriented (Barney, 2003; Roche, 2003). Legacy can be planned and unplanned, positive and negative or intangible and tangible (Gold & Gold, 2021; Preuss, 2007) while producing solutions that live beyond the life of the project or event (Beghetto, 2017).

While these descriptions provide insight into its character, they lack a specific understanding for its application and context, which results in it being interpreted or practised in numerous disparate ways. While there is no consensus on how legacy can be defined, the most common description applied within the literature is from Gratton & Preuss (2008, p.1924), who state that “*Legacy is planned and unplanned, positive and negative, intangible and tangible structures created through a sport event that remain after the event*”. This definition is both broad and specific to the context of events management. Further understanding of how legacy is perceived and developed in other contexts is a crucial factor for comprehending legacy and identifying its future potential (Thomson et al., 2013). This is because efforts to agree and develop a ‘top-down’ understanding of what legacy is and how it is applied have largely failed (Harris & Dowling, 2021; MacAloon, 2008). In 2002 the IOC brought together mega-event stakeholders and researchers by hosting an international symposium to collectively develop, clarify and agree on how legacy can be defined and applied (Borysova & Krasilshchikov, 2021; Gratton & Preuss, 2008). This ultimately was not achieved and has not since, but these efforts have fostered and advanced research interest in the area of event legacy.

A key output of this research is a growing recognition that to understand legacy, we need to explore the concept from the ‘bottom up’ to make sense of it (Preuss, 2015). Given that legacy is intended for a specific environment, location, and stakeholders, those individual contexts are where the focus of research can be applied to build a wider understanding of the theme (Preuss & Hong, 2021). Legacy researchers have noted that legacy cannot be developed and achieved in isolation, and it is dependent on the specific environments for which it is intended (Cornelissen et al., 2011; Zawadzki, 2022).

While legacy research in an events management context continues, the findings are often inconclusive, and other contexts still need to be explored or addressed in terms of legacy investigation and potential application. This is particularly true for the discipline of project management (Silva, 2015). The context of project management and legacy is relatively unexplored. The connection between projects which shape the future and the concepts of generational legacies outlined in event management still needs to be expanded beyond Olympic or World Cup infrastructure. Investigating what legacy means and how it is applied to areas and projects not associated with mega-events is still a research theme that has limited previous conceptual or practical development.

Silva (2015, p.3) notes, “*the definition on what constitutes a project legacy has been scarcely explored in the literature*”. In addition, the fundamentals for how project management functions in its aims and methods seem to oppose legacy rudiments and ambitions. In traditional project management, the approved approach is to reduce project constraints, specifically time, cost, and scope and minimise complexity (Daneshpour, 2015; Igberaese, 2022). This is at odds with the long-term, multi-generational, impact-aware focus of legacy creation. The potential inclusion of legacy to project management methods will increase complexity as it will require additional expense, planning, time, and expertise (Visser, 2002). It seems that the main characteristics of legacy conflict with the elemental principles of project management. This may explain why research in this area is so

restricted, with so many unknowns and discordant principles to overcome in integrating the two themes.

This issue is only confounded further by the professional bodies providing governance and training for project management practitioners. In their documentation guiding how to run and manage projects (the Body of Knowledge publications), there is no reference to 'legacy', nor is it a concept addressed within its guidelines. The discipline's project governance has been criticised in the past for its lack of progress in reacting and integrating more environmentally conscious processes, such as sustainability into its formal methodologies (Brones et al., 2014; Silvius & Schipper, 2014). Conceptually sustainability and legacy have many similarities and are "intrinsically linked" (Silva, 2015). Both strive for a long-term focus, facilitate change, and their efforts seek to go beyond the influence of the organisation itself to the impact on the environment (Cooper et al., 2003; Ermolaeva & Lind, 2021; Labuschagne et al., 2005). The difference between the two is around how legacy strives to design generational benefits to a community while sustainability is developed through themes of maintaining operations, endurance, and meeting current needs without negatively impacting future needs (Cornelissen et al., 2011; Elkington, 1997; Lienhard & Preuss, 2014; Wang & Jiang, 2021).

For the discipline of project management, sustainability is a widespread theme that is progressing in terms of being implemented within its practices (Stanitsas et al., 2021). The application of legacy, however, is more restricted, its existence in project management is relatively unexplored, but its presence is evident.

The 2012 London Olympic Games were known as the 'Legacy Games' (Poynter et al., 2015). This recognition resulted from the event being one of the first to extensively apply legacy as a core value, having legacy objectives, both tangible and intangible, as the key drivers and rationale for its being hosted (Gold & Gold, 2021). The Games were planned to transform a deprived area of the East End of London and regenerate it for future generations (Davis, 2014; Watt, 2021). The approach to achieve this was carefully planned with respect given to existing communities, the local environment, and its wildlife. To accommodate this, project decision-makers and project managers developed custom approaches to plan, manage, and execute projects within these Olympic developments. All key stakeholders directed their efforts around legacy objectives, adopting innovative sustainability focussed project methods that, along with being more environmentally responsible, would also facilitate long-term benefits for the community for which it was intended (Evans, 2014; Poynter et al., 2015).

These initiatives and approaches were noted to contribute towards the development of legacy (Austin et al., 2021; Grix & Phillpots, 2013). To facilitate intended 'generational' benefits, the UK Government agreed that the outputs and legacy objectives of these Olympic projects would be monitored within a legacy plan to better ensure that intended benefits would materialise and be evident long after the Olympics had been completed (Scheu et al., 2021). This impacted the understanding of the traditional project lifecycle, which is typically 'closed out' when a project output is signed off for use (Harris & Dowling, 2021; Igberaese, 2022).

This was an example of a theme that is finding traction in project management research, that of an extended project lifecycle (Aarseth et al., 2017; Goel et al., 2020; Silvius & Schipper, 2014), although not one that is embraced by project management's governance bodies (Mauro Luiz Martens & Carvalho, 2016; Sazvar et al., 2017). This example of the London Olympic development in 2012 was one of the first to adopt the influence and principles of

legacy from event management and incorporate them into project management practices. Some of those same companies and project management professionals involved in those Olympic development efforts then went on to be commissioned on other mega projects such as Crossrail and High-Speed Rail 2 (Cornet et al., 2018; Williams & Black, 2018). These projects adopted legacy as one of their core objectives, much like the London Olympic development. Each of these projects had a legacy plan, a legacy portal, and measures were identified for how it would create generational benefits for the communities and environment it would impact (Tucker, 2017).

Alongside this sat an awareness of the importance of the public communication of ‘creating a legacy’ through these projects, as well as an increase in project ‘legacy claims’. However, there remains a gap in the research exploring the depth of substance behind these claims. It is not known how prevalent legacy is within project management beyond an events management context. Associated with this is the lack of knowledge for how legacy is understood by project professionals or what project methods are applied to implement legacy objectives. To complicate matters, one of the fundamental principles of project management is that projects are unique endeavours (Kerzner et al., 2022). This means that each context explored could produce different findings. However, as already mentioned, the research area requires some bottom-up ‘starting points’ to explore legacy from a broader perspective than its event management core. To determine what is possible for the theme of legacy development and to discover its potential, value, and understanding, there needs to be specific focus and reviews of the varied contexts in which it is being applied (Thomson et al., 2013).

Trying to understand legacy as a generic ‘fit all’ concept has largely failed, with no widely accepted parameters for how it is understood (Chappelet, 2012). An approach for reviewing its application within specific individual contexts, such as projects, can provide insightful ‘bottom-up’ practical knowledge for enabling a wider understanding of legacy (Harris & Dowling, 2021; Preuss, 2007). This is particularly needed in the relatively untouched empirical research context of project management, where there is a requirement for greater investigation into focused project legacy development (Matheson, 2010; Silva, 2015) and to ascertain how projects can provide an “*opportunity for greater understanding of the complexities and challenges of securing legacies*” (Reis et al., 2017, p.143).

Developing a better understanding of this theme of legacy in a project context could provide significant positive change for societies and the environment. In an age of shrinking resources and expanding needs (Gimenez et al., 2012), the potential inclusion for designing beneficial generational legacies through projects could provide increased awareness and responsibility for the long-term impact of project outputs and lifecycle. This could potentially reduce waste, ineffectiveness, and better consider a project being fit for purpose with a better long-term focus on who would benefit from it and what impact it will have on the environment for which it was intended.

1.1.1 Area of Applicability and Scope of the Research

Project management is applied globally, so selecting a focus and appropriate scope is essential in designing a research project exploring the effective handling of legacy in a project context (Gareis et al., 2013). Projects are linked to their environments through the supply of materials and resources which support their creation (Goel et al., 2020). Not only that, but their final project outputs will have significant environmental impacts, whether on a regional, national, or international level (Chawla et al., 2018; Rogerson, 2016). These considerations mean that project location is a critical factor in determining possibilities for

research scope (Edum-Fotwe & Price, 2009). With broader holistic legacy understanding still limited, an exploration within a regional context, such as the current study of projects in Aberdeen and Aberdeenshire, will provide a practical starting point to build up that 'bottom-up' knowledge for specific applicability (Preuss, 2015).

An investigation of legacy within Aberdeen and Aberdeenshire-based projects has been selected for the research scope. There are several factors in terms of justification for this approach. It is a regional environment and remote location that is significantly distant from the major industry and population centres of the United Kingdom. This provides a distinct host area for analysis with specific needs and one that is more removed from the tacit influence of London-based legacy developments which is predominant in the current literature (Gold & Gold, 2009; Pelton et al., 2017; Raco, 2013). This regional remoteness is highlighted by one of the most significant national 'legacy focussed' projects, High Speed Rail 2, having within its most ambitious project proposals terminating in Edinburgh. This outcome will leave Aberdeen as the most negatively affected city in the UK (Hall, 2020). A Government-commissioned report noted that this project would leave Aberdeen's regional economy £220 million financially worse off. In response, local stakeholders and business leaders are aware of the need to create their own sustainable legacy in the threat of increasing national isolation regarding its infrastructure and resources (House of Lords Economic Affairs Committee, 2015; O'Donoghue, 2020). Elliott (2021, p.2) writes that "*change is coming to Aberdeen (and it) is trying to avoid becoming the city of stranded assets*".

Aberdeen and its surrounding area is a location where the future identity and legacy are in question as a result of the recognition that the oil and gas industry, which has dominated its economy, is going into a slow and terminal decline. Frantzeskaki & Tefrati (2016, p.51) state that the city is currently in a 'critical phase' for "*the process of participatory vision building and its outcomes in Aberdeen*". The city's established recent profile over the past 60 years as a European oil and gas capital needs transformation. The resources that have shaped this development, North Sea hydrocarbon extraction, are becoming exhausted or unprofitable (Roorda & Wittmayer, 2014). Taylor (2022, p.8) sums up that the city is currently "*focusing...energy on securing the region's future...looking into how the local economy can both diversify away from oil and gas and harness the legacy it will leave*".

With this background, Aberdeen City Council publishes a periodic 'Legacy Plan' and 'Legacy Report' for the region, influencing acceptance for infrastructure and planning developments (Aberdeen City Council, 2017). These publications promote a range of local projects, which are currently in initiation or have recently been completed. The communication to the local community is that these projects are important for future needs and that they will provide a legacy for the region (Main, 2019; Transport Scotland, 2015). These claims by project stakeholders, however, have not been investigated for how these legacies will be created, what they specifically are, who they are for, and for how long they will last. Specific legacy understanding has yet to be determined or researched in this regional context. From the perspective of the wider legacy literature, Aberdeen is an appropriate location to investigate non-event legacy developments. The region has not hosted any mega-event in its history, not having the resources or population to facilitate this, and so the investigation will not be biased by any previous project developments that have been the traditional driver for legacy advancements.

1.1.2 Project Type

One of the foundational principles of project management is that its processes and methods can have transferrable applicability to all project types (Kerzner, 2017). Parameters for determining an appropriate legacy study should ensure that the characteristics of legacy are represented within the projects selected and explicitly explored. With this in mind, the project 'type' should be able to demonstrate that its output will have a lasting time-based impact (Ritchie, 2000; Wang & Jiang, 2021). It should provide 'tangible' or 'intangible' benefits for various stakeholders or a combination of both (Gratton & Preuss, 2008; Harris & Dowling, 2021). These legacy values have been instrumental in the development of legacy understanding. Because of this, legacy research exploration has often been based on physical infrastructure and construction projects which fulfil these criteria (Pereira, 2018; Preuss, 2007). Much of what we currently understand in terms of legacy has been based upon these 'tangible' legacies from Olympic city and stadium developments or large-scale construction mega projects (Bama & Tichaawa, 2020; Hiller, 2000; Lienhard & Preuss, 2014).

Construction and infrastructure projects provide outputs of substance that will be in use for their intended purpose many years beyond their initial development (Hawamdeh, 2019). It is something that stakeholders who may not be directly involved with the project can see, feel, experience, and make determinations (often intangible ones) for whether the project has provided positive or negative legacies (whether socially, economically, or environmentally) to that region (Chappelet, 2012; Leopkey & Parent, 2012; Whannel, 2021).

Having projects of this type, as the focus of the research study, where there is considerable expense, planning, and multiple affected stakeholders, ensures extensive consideration is given to project impact and purpose. This provides a practical context for understanding regional development and exploring future legacy potential. These structures frequently determine the future capacity and capabilities of a location and influence the region's business community and wider economic success. Their construction shape landscapes, facilitate human interactions, connectivity, and fulfils regional visions and ambitions (Silvestre, 2009). The project stakeholders who approve and design these developments conceptually engage with local legacy creation through their project's rationale, planning, delivery, and outputs, whether knowingly or not.

Taking this perspective enables a specific scope for the current research to explore further understanding for meaning and methods for legacy creation. With the majority of legacy research being theoretical and untested (Tsaour et al., 2017), extracting empirical qualitative data from Aberdeen-based construction and infrastructure projects will enable new insight into legacy applicability and the ability to compare against established concepts in other fields (Li & McCabe, 2013; Scheu et al., 2021). The current research, therefore, will provide a bottom-up starting point for how project practitioners understand and apply legacy within a range of regional construction and infrastructure projects.

1.2 Research Questions

This research sought to answer a number of research questions as set out below:

1. How is legacy understood by project practitioners, and what are its key characteristics within a project context?
2. What are the motivators for including legacy within a project?
3. What are the challenges of incorporating legacy initiatives in projects?
4. How and where within a project's lifecycle can legacy be effectively implemented?

1.3 Aim of Study

To explore the motivators for, and challenges of incorporating legacy in construction and infrastructure projects, and the implications legacy incorporation has for project management approaches.

1.4 Research Objectives

The research objectives of this study are:

- To examine how the concept of legacy has been described, defined, and understood by project professionals.
- To explore the approaches and rationale adopted for the development and inclusion of legacy characteristics within Aberdeen-based projects.
- To assess critically from the perceptions of project stakeholders if the pursuit of legacy requires alterations to established project management practices and to the understanding of the project lifecycle more generally.
- To provide recommendations for effective practice in incorporating legacy within projects.

1.5 Approach, Initial Methodology and Overview of the Thesis

The first chapter of the thesis outlines the research area, rationale, and objectives of the study. In relation to this, a literature review was then conducted exploring both the developments and understanding of legacy within its events management origins and the applicability of legacy within project management. The literature review investigated current practice, the characteristics of legacy, how it is defined and applied and its challenges and limitations. The literature review chapter analyses existing practice, the theoretical efforts, and the development of frameworks to combine project management processes and legacy. It also identified gaps in existing knowledge and led to a specific focus on factors to address with primary investigation. To ensure the literature review was conducted with appropriate scope and applicability to the objectives of this study, the literature review structure and content were mapped against the research questions of this work (Gough et al., 2017). The process of developing the literature review was conducted over a period of 5 years to ensure an adequate depth of study, to enable the researcher to gain an awareness of trends and maturity for research themes and a knowledge of the research field to direct focus appropriately (Saunders et al., 2018). The outputs of the literature review, in conjunction with the study's objectives, led to the development of the theoretical framework, which guides the research exploration and informs the principles underpinning it. This was important as legacy is a theme developed in one research area (events management) but is still limited in terms of its consideration in a project management context and not referenced within the discipline's governance and wider literature.

It was also important to establish and underpin that it was explicitly legacy and its relevant characteristics being explored in this project context. The theoretical framework which was developed and will guide this research has two layers. The first layer incorporates Preuss' (2007) 'legacy cube', the most widely cited and influential work for revealing and testing the nature of legacy (Manzenreiter, 2014). The second layer applies the structure of Silva's (2015) 'legacy lifecycle' model. This explores legacy directly around project management processes and the design of projects to achieve legacy and their effect on the project lifecycle. The combination of both theoretical constructs within this new framework (see

Figure 14) ensure that the core elements of the research objectives will be met, and that the research process was focused on them. This enabled the primary investigation to be linked with existing legacy models to facilitate relevant comparisons, context, and analysis. This study is the first research to combine these models and apply them to project analysis.

The fourth chapter of this thesis outlines the methodological approach adopted for this research and introduces the associated elements of design, theory, strategies, and methods which guided it. Amidst a context of a research field with limited empirical exploration (Scheu et al., 2021), the author sought an established, tested, and widely applied structure for the research approach. Crotty's (1998) four-element structure fulfilled these criteria (Al-Ababneh, 2020), being an influential method for connecting elements of research design and creating research outcomes which enable constructed realities which are local and specific (Blaikie, 2007). Within this framework, the approach adopted for the epistemological context was constructivism, the theoretical paradigm underpinning it interpretivism, and the methodological approach was phenomenological research. This resulted in adopting multiple methods to facilitate the research through document analysis and semi-structured interviews. This enabled a more robust and reliable collection and analysis of data for qualitative investigations (Silverman, 2020). When considering the validity of the research design selected for this work, the approach adopted was considered against the broader methodology literature to ensure it could produce credible research outputs. Rabetino et al. (2020) concluded in their research that the paradigm combination used in this research, interpretive, constructionist and phenomenological, is appropriately aligned for organisational inquiry and is widely applied.

Steps were taken to select appropriate projects for investigation. To ensure a specific range and sample of construction/infrastructure project types were selected, consideration was given to Koenigstorfer et al.'s (2019) mapping and review of existing literature for event management legacy research. In this context for development, there are five prominent categories for construction and infrastructure projects (Regeneration Structures, Stadium and Event Construction, Transport Infrastructure, Commercial, and Residential). Projects were selected from each of these categories included in the regional authorities (Aberdeen City and Aberdeenshire Councils) long-term strategic vision and transformation plan publications. These documents outlined the future (2040) regional needs for Aberdeen and Aberdeenshire (Aberdeen City Council et al., 2020). The projects identified were those that will enable the region to meet its 'legacy' objectives for the future, so were relevant and selected for investigation.

This process produced a list of 14 projects whose purpose was to meet future regional needs and enable a transition of identity and function, from an 'oil and gas capital' to a modern green energy hub. To investigate the legacy narrative of these projects, the first step of the data collection was to conduct document analysis of public communications from project stakeholders. Identifying any legacy claims made and analysing the specific background and project approach to reveal what characteristics of project legacy were (or were not) being communicated to the public for the Aberdeen region. This resulted in 704 documents being identified, with 58 specific claims for creating a legacy (including all 14 projects). A thematic coding approach revealed 47 codes of specific legacy characteristics for which the qualitative data returned 8061 factors coded in total. These were analysed to understand the narrative of regional project legacy and then explored and tested through semi-structured interviews with the stakeholders who designed or implemented each project. The participants for the interviews were those project decision-makers who, through their respective project, had a formal position to create the vision, plan the project approach, or manage the process for developing what the final project should represent and its intended

legacy. These stakeholders (project sponsor, project manager, project architect) are quite limited in number, but a project decision maker from one of these roles was sought to be interviewed from all 14 projects, as were representatives of the Aberdeen City and Aberdeenshire councils whose jurisdiction and planning consent is required for projects to proceed.

Chapter Five presents the analysis and discussion of the regional legacy narrative for the selected 14 projects. The data sets created by the document analysis and semi-structured interviews were analysed to reveal eight key themes of legacy in this regional project context, which are then discussed in the context of the wider literature. The chapter explores how legacy is defined in this regional project context and the substance and rationale behind claims of legacy made. It outlines the specific characteristics of legacy, for how project professionals have understood the concept, and how they have designed, planned, and created legacy within their projects. It explores the key elements (the eight themes) with appropriate quotations to illustrate qualitative narratives. It identifies specific project management techniques and methods to differentiate a 'legacy' project from traditional project management approaches and principles. This chapter culminates in a conceptual model being created to illustrate how legacy is understood and applied in this Aberdeen and Aberdeenshire context.

The final chapter of the thesis (Chapter Six) provides a range of conclusions and recommendations. It reflects on the original objectives of the study and how they have been responded to. It provides comparisons for 'what legacy is' in this regional context to that of established event literature. It highlights the potential influence and impact this legacy understanding can have on project management governance, practice, and its traditionally understood lifecycle. This chapter also provides some guidance and recommendations for effective practice for project professionals to better incorporate legacy and makes recommendations for future research and development. The limitations of the research are identified, and the specific contributions to knowledge that this research has provided concludes the chapter.

1.5.1 Structure of the Thesis

Chapter One: Introduction, Aims and Objectives.

Chapter Two: Literature Review.

Chapter Three: Theoretical Framework.

Chapter Four: Methodology Section.

Chapter Five: Data Findings and Analysis.

Chapter Six: Conclusions and Recommendations.

1.6 Positioning of the Researcher

Legacy is a theme that lacks extensive research application in the field of project management (Silva, 2015). It is not a traditional project management topic area, having not been mentioned in any edition or variation of the published body of knowledge governance documents of the discipline (this is investigated in section 2.3.6 of the thesis). Legacy as a research topic is most established in the field of sports management, where it is a core value and consideration for organising and delivering mega sporting events such as the Olympic Games and FIFA World Cups (Leopkey & Parent, 2012; Scheu et al., 2021). In terms of academic positioning, project management is a field that sits educationally within operations programmes or management departments, typically within a business school in an educational institution (Berggren & Söderlund, 2008). In contrast, sports management tends

to be situated in health sciences programmes, and legacy within this is a niche theme, typically included as part of a discussion around wider Olympic or World Cup curriculum or research (Byers et al., 2020; Holt, 2017). Since these two fields are inclined to sit in separate schools or educational governance structures, this limits the extent of organic cross-disciplinary research or collaboration, with researchers in one field not tending to have the expertise or broader awareness of the other.

In qualitative research requiring the perspectives of people, methodological issues arise concerning the position and influence of the researcher (Råheim et al., 2016). Louis & Barton (2002) highlight the importance of clear positionality within research and describe this as 'setting the stage', that life experiences are important to acknowledge as these shape the research and how themes are selected and analysed. In this thesis, the knowledge and awareness of legacy within a project management context have been influenced by the researcher's background and previous experience. Understanding the details of this enables a reader to understand better the relationship and usage of research themes, subjectiveness, and narrative developed around the research (Saldanã, 2021).

The researcher has worked as a lecturer at a UK business school and teaching and research experience has primarily been based within the discipline of project management. This has provided awareness and training on project management practices and fundamentals. This includes understanding the approaches and requirements of the leading governance bodies of the discipline, such as the Project Management Institute (PMI) and the Association for Project Management (APM). The researcher has also had numerous consultancy roles to assist global organisations in developing their operations and management practices. One of these roles took the researcher to work for periods in the State of Qatar from 2018, where concurrently, the nation was planning on hosting the 2022 FIFA World Cup. The State of Qatar has spent an estimated US\$200.5 billion since 2011 on construction and infrastructure projects related to the FIFA World Cup (Quamar et al., 2023). These projects all fed into Qatar's national 'legacy objectives' (Kaplanidou et al., 2016; Scharfenort, 2012). While being exposed to the infrastructure planning and development for this sporting event, the researcher published a journal article on the specific legacy practices of the 2022 Qatar World Cup (Davies, 2021).

Having noticed the extent of 'legacy' applied within project management approaches for this sporting event, the researcher was interested in seeing how widely project legacy was applied to other contexts. An initial literature review was conducted, and the author realised that there was a significant research 'gap' when it came to exploring project management factors and the development of legacy (Silva, 2015). This interest in legacy extended then to the PhD thesis, which up until a point had been based on a similar theme around project management sustainability factors. The researcher's PhD focus changed to London-based infrastructure megaprojects such as the Crossrail Railway Link, High-Speed Rail 2, and the Thames Tideway Tunnel Project, where each of these projects had specific legacy plans, charters, and visions embedded into the project management approach (Cornet et al., 2018; Roukouni & Medda, 2012). The researcher, at this point, having a background in both project management and sporting event management legacy, was able to identify themes that were consistent and practised in both fields. However, it proved difficult to research this London-orientated context because the megaprojects which were being explored had many of the same companies and stakeholders involved in the development and planning of projects for the 2012 London Olympic Games (Horne & Houlihan, 2014; Pinto & Santos, 2022). The researcher noted this link and the tacit influence of Olympic planning and values on the London-based megaprojects and wanted to investigate if legacy could or does exist within a context out with the influence of any mega sporting event. This led the focus of the

PhD thesis topic to investigate projects located within Aberdeen and Aberdeenshire, a region with no history or involvement with sporting mega-events. A more in-depth justification of the rationale and the selection of the research location and projects can be found in section 4.4.1 of this thesis. The position of the researcher and how this impacts the methodological approach and design of the research is also explored in sections 4.1 and 4.2.

1.7 Cultural Overview of Aberdeen City and Aberdeenshire

The North East of Scotland is a landscape that hundreds of generations of people have shaped with the earliest flint tools discovered in the region dating back to around 13,000 BC and permanent human settlement from around 6000 BC (Aberdeenshire Council, 2023). Aberdeenshire and Aberdeen are council regions to the East of the Grampian Mountains and were previously part of a collective Grampian local authority, but both areas are distinct and independent in character (Shepherd, 1996). The region has a current combined population of 487,900 inhabitants (Scotland's Census, 2022). Aberdeenshire has rich traditions and associations with its environment, with a significant part of its land use applied to arable and pastoral farming (Sutherland et al., 2012). A source that has inspired local literature and art and seen the regional 'Doric' dialogue still being widely spoken (McClure, 2002). The region's development was influenced by its natural resources, with traditional industries established in forestry and granite quarrying and its coastal communities built around fishing (Mackie, 2001). The scenic mountainous and river landscape is popular today for recreational activities (Gordon & Williams, 2021). It is a region where royal and landed gentry have previously controlled large estates, providing a range of distinctive Renaissance castles and mansions that today act as a driver for tourism (Robertson, 2022; Shepherd 2024).

The more urban Aberdeen City and its surrounding region were established on industries such as textiles, paper, and leather (Mitchell, 2020). The city's 900-year-old operating harbour has seen trade develop in fishing, whaling, shipbuilding, and, latterly, oil and gas since its discovery in the late 1960's (Armstrong & Maclaren, 2017). The oil and gas industry developed in the region quickly and significantly diversified the local population and its prosperity by establishing wider international links (Adams & Mueller-Hirth, 2021). Regional oil and gas production brought wealth to the area, enabling a population with some of the largest levels of economically active adults, the lowest rates of unemployment, and the highest average GDP contributions to the UK outside of London (Tiesdell & Allmendinger, 2004). This situation was consistent until the peak of North Sea oil and gas extraction levels in 1999 (McIntyre & Roy, 2022). The region was significantly impacted by an industry decline in 2014 when oil and gas professionals and companies left Aberdeen as core extraction operations became unprofitable (Shapovalova et al., 2023). This was a key factor in driving regional stakeholders to explore 'what's next' for how to plan better for its future (Moore, 2019; Roorda & Wittmayer, 2014). Aberdeen City is the North East of Scotland's administrative centre and has a current population estimate of 227,430 (National Records of Scotland, 2022). The city hosts many of the region's cultural venues and artefacts, emphasises education with two successful universities, and is home to many of the region's offices and business administration assets (Charles & Nicoll, 2022). While many within the region work within the city boundaries, most predominantly live in the city's rural outskirts or in Aberdeenshire commuter communities (Ge & Polhill, 2017).

The mix of urban and rural working communities within the North East of Scotland has produced a challenging environment for regional development and its political make-up. Some of the region's most high-profile proposed project developments have stalled or had

their anticipated specifications and scale significantly 'compromised' due to disagreements between local stakeholders (Gossip, 2021; Moore, 2019). Local people, politicians and organisations are often locked in disputes over construction and infrastructure advancements. Some traditionalists wish to minimise change and retain the local character (Morgan, 2015; Styles, 2019), while modernists feel that the region is becoming a 'backwater' not fitting for a location referred to as the oil and gas capital of Europe (Fisher, 2009). These opposite perspectives have led to a mixed political identity. Since its creation, Aberdeenshire Council has been under no overall control from any political party with broad and diverse political representation within its districts (Local Government Information Unit, 2023). This has been mirrored in the region's First Past the Post UK Parliamentary constituencies. There have been many boundary changes since the 1970s, but Aberdeenshire's political allegiances have consistently switched between the Scottish National Party (SNP), the Liberal Democrats, and the Conservative party for the West Aberdeenshire and Kincardine, Gordon, and Banff and Buchan parliamentary seats (Davidson, 2021; Harvey, 2017; Kelly, 2019). These seats overlap boundaries with the Aberdeenshire Council district.

Since its alignment in 1975 to become the City of Aberdeen District Council and then Aberdeen City Council in 1996, Aberdeen City is also an area that has consistently switched political representation (Tiesdell & Allmendinger, 2004). The city council has relied upon a range of political coalitions for regional governance, with no one party having overall council control since Labour in 2002 (Ballot Box Scotland, 2022). The combination of coalitions has included the Liberal Democrats and Conservatives (2003-7), the SNP and Liberal Democrats (2007-12, and 2022-), and Labour and Conservatives (2012-22), (Gossip, 2022; Scott, 2002, Shannon, 2017). The regional representatives of the UK Parliament (Aberdeen North and South) have changed between Labour, SNP, and the Conservative parties (McKay & Barbour, 2015). This has made it quite a unique political set-up in comparison to other regions in Scotland and even the UK as a whole (Taylor, 2017). This context has led to challenges for project developers who often complain that regional stakeholders are 'notoriously difficult to deal with' (Crombie, 2021), or 'incredibly indecisive' (Hopkirk, 2023). It is commonplace that commitments and plans for approved projects repeatedly become unsettled with the constant changing of differing political party governance, representing most parts of the political spectrum (Gibb et al., 2017; Thompson, 2019). Local commentators have noted that the only thing that these diverse political combinations agree on, is that the era of oil and gas is at an end, and that a future regional legacy needs to be developed to ensure economic and cultural viability continues (Aberdeen City Council, 2020; Potts & Stuart, 2022).

1.8 Areas of Contribution

The purpose of academic research is to explore and discover new knowledge to enhance societal development (Birley & Moreland, 2014). This research supports this ambition through specific and unique contributions in several areas. The research provides insight into Aberdeen and Aberdeenshire regional development and how its approach to project infrastructure is linked to long-term ambitions and related to legacy concepts. It explored the extent within a regional area that legacy claims are being made within public communications from project stakeholders and investigated the rationale and substance behind them.

This thesis reviews the influence and inclusion of legacy characteristics in specific regional projects and compares this against established project management theories and practices.

It also explored emerging themes within project management, such as the length and nature of the project lifecycle and sustainability implementation (Stanitsas et al., 2021).

The research provides an understanding of what project management principles and techniques are applied for incorporating legacy and the rationale for their adoption towards a specific selection of projects. It provides the narrative from project decision-makers about conceptual legacy characteristics within a region where there has been limited previous legacy development and no previous mega events held. It provides insight into how legacy in this regional context compares with established event management legacy principles.

The research summarises and provides a contemporary Aberdeen/shire based understanding for defining legacy from the key stakeholders who have or will plan and build the future-orientated infrastructure projects of the region. This research study, while looking at the specific regional implementation of legacy within projects, provides insights into how the lessons gained from these projects can inform and enhance project management more widely, being an area with limited existing guidance from governance bodies, synthesising these lessons with those evolved in an event management context.

2.0 Literature Review.

This literature review investigates the development of legacy and its relationship with project management. Knowledge of the existing research and key literature is crucial to understanding the parameters and development areas of a research topic (Martins & Theophilo, 2009; Paul & Criado, 2020). This literature review explores current practices related to the research objectives, identifies knowledge gaps, and leads to areas of focus to address within the primary research.

2.1 Literature Review Mapping

The development of this literature review follows the advice of Jankowicz (2005), who expressed that the exploration of secondary sources is important for achieving a specific focus and alignment with the objectives of a research. Boote & Beile (2005) note that an appropriately designed literature review *“is the foundation and inspiration for substantial, useful research”* (p.3). With this in mind, efforts were made to ensure that the structure of the literature review was based on the specific research questions of this thesis. Figure 1 highlights how the headings of this chapter align with the research question themes. This ensures that the review process is efficient, effective, and within the scope of the research parameters. The mapping and design provides what Creswell (1994) denotes as the three key functions of a literature review, that it will provide background to previous subject studies, the current knowledge situation, and a framework for enabling the researcher to conduct comparative analysis. This chapter critically considers these elements, discussing core questions surrounding the nature, development and existing understanding of legacy and its potential investigation within a project management context. It explores the theoretical contributions as well as the practical context with case studies of ‘evidences’ for current and past legacy developments. The literature investigation is underpinned by an extensive selection of peer-reviewed academic journals and texts to provide an appropriate quality of sources for the research (Thomas, 2022). The nature of the research theme did impact the literature review approach because an investigation of legacy within projects is a relatively recent topic, with limited exploration and often lacking practical consideration (Thomson et al., 2019). To ensure robustness, the literature review incorporated relevant industry and government studies, reports, legislative documents, and white papers to contextualise the narrative of academic sources better. The literature review process was also conducted over five years to ensure an adequate depth of understanding, an awareness of changing trends, and the maturity of the research theme. This has enabled the researcher to determine knowledge gaps and be considered an expert in their field (Saunders et al., 2018), and the core themes of the objectives to be appropriately justified or potentially refocused. The literature review structure and mapping are illustrated in Figure 1 on the following page.

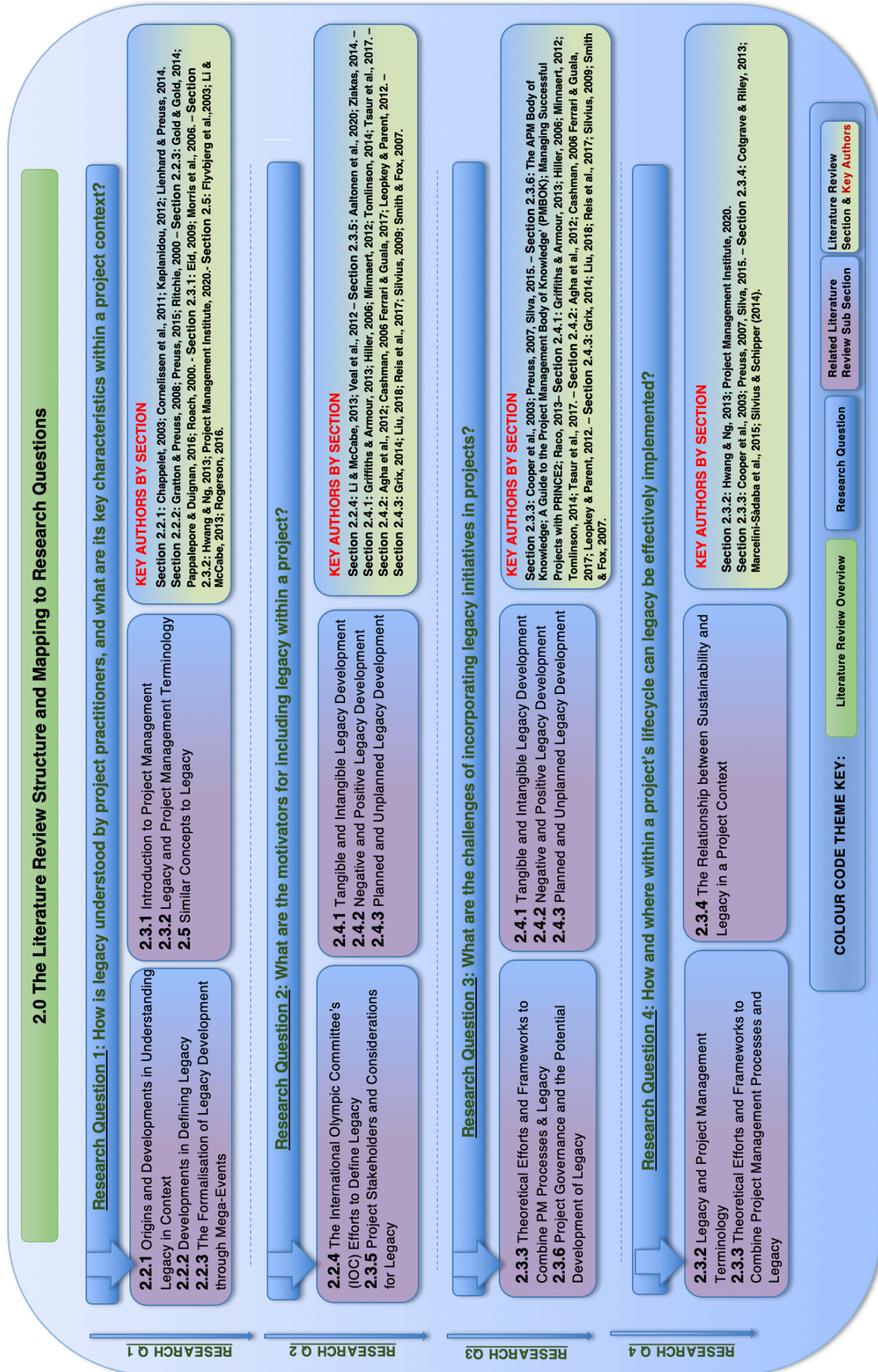


Figure 1: Literature Review Structure and Mapping (Source: Author)

2.2 Defining and Understanding Legacy

This section analyses the literature on the development of legacy as a concept and the efforts to define and understand it. It reviews the background to the topic of legacy, how it has been applied in context, and the efforts to formalise its characteristics.

2.2.1 Origins and Developments in Understanding Legacy in Context

The traditional understanding of the term legacy was developed from legal frameworks and bequests, characterised as “*property left by a will*” (Harper, 2001; Jones, 2020). While this meaning still applies today, the notion of legacy has expanded to other contexts. The concept of bequeathing a tangible or intangible asset beyond one’s life, has started to be linked to other contexts, such as perception, knowledge and culture (Ferrari & Guala, 2017; Kaplanidou & Karadakis, 2010; Leopkey & Parent, 2012). The development of legacy understanding has often been based around the fact that human behaviour is intertwined with the notion and desire for ‘creating legacies’ (Franklin & Cheung, 2017). Savishinsky's (2007) anthropological fieldwork finds evidence that “*a common feature in peoples search for meaning was their effort to create a legacy*” (p.75). If it is the nature of the human psyche to create legacy, then it would seem logical that the outputs and activities of humans would strive to achieve the same. This consideration is evidenced in the development and application of legacy concepts within business practices. After the initial integration of technology systems within business procedures, thoughts then turned to what happens next to outdated or irrelevant systems and products (Alqoud et al., 2022; Thiran et al., 2006). This, in turn, led to deliberations for what is understood for the lifecycle of a product or system post applicability (Alderson & Shah, 1999; Ali et al., 2020). Within Information Technology (IT) and Information Systems (IS), the terminology of legacy means “*any information system that significantly resists modification and evolution*” (Bisbal et al., 1999, p. 103) that subsequent systems result in the previous system becoming outdated or obsolete (Brodie & Stonebraker, 1995). The usage and understanding of this are widespread. By the late 1990’s “*Legacy applications dominate IS resources, represent trillions of dollars investment*”, and procedures such as legacy management, legacy maintenance and legacy investments are commonplace (Slee & Slovin, 1997, p. 12). While legacy terminology is being applied in an IT context, wider application and understanding of the term remained underdeveloped and more limited as a research theme (Cornelissen et al., 2011; Kyriaki Kaplanidou, 2012; Knott & Tinaz, 2022). This is surprising as legacy is not static but a multi-dimensional and evolving concept (Grix & Phillpots, 2013; Preuss & Hong, 2021).

In-depth scholarly analysis into legacy development as a research theme is still in its infancy (Allen et al., 2021; Liu, 2014). Most serious investigations for its potential expansion within other business contexts became prevalent only post-2005 (Lienhard & Preuss, 2014; Thomson et al., 2019). While specific research has been limited, there have been efforts to consider new legacy ‘typologies’ within academic publications (see Figure 2).

	Thorpe (2002)	Hiller (2003)	Cashman (2005)	Chappelet & Junod (2006)	House of Commons (2007)	Preuss (2007a)	Taylor & Idmondson (2007)	IOC (2009)	Cornelissen, Bo & Swart (2011)	Mayor of London (2013)	Minnaert (2012)	Veal, Toolhey & Frawley (2012)	Gratton, Preuss & Liu (2014)	Sum
Economic	X	X	X	X	X	X	X	X	X	X	X	X		9
Infrastructure	X	X	X	X	X			X				X	X	8
Social, public live	X	X	X				X	X	X	X		X		8
Sport			X	X	X		X	X	X	X		X		8
Culture			X		X	X	X	X				X	X	7
Urban				X	X		X			X				4
Communities		X			X					X				3
Image, Branding					X	X			X		X			4
Information, Knowledge			X			X						X	X	4
Political							X	X	X			X	X	5
Psychological, Emotions		X				X					X		X	4
Environment							X	X	X					3
Networks						X					X		X	3
Trust Fund	X				X									2
Education, skills			X								X			2
Symbols, memory, history			X									X		2
Tourism					X									1
Health											X	X		2

Figure 2: Typologies of Legacies (Source: Lienhard & Preuss, 2014)

Lienhard & Preuss' (2014) cataloguing of the literature highlights numerous examples of legacy applying to different situations. Figure 2 shows the development of factors being explored by researchers. Most literature on the topic relates to areas of economic impact, event management or infrastructure development (Silvestre, 2009; Zawadzki, 2022). It is noticeable that themes are broad rather than specific and often overlap. For example, Cashman's (2005) paper reviews legacy in relation to the Sydney Olympic Games (sport), the financial implications of hosting the event (economics), the physical developments to facilitate it (infrastructure), and the social impact it had (social, culture, emotional, symbolism, education). This shows how the theme of legacy is multifaceted and has applicability in numerous areas (Nedvetskaya, 2022). Lienhard & Preuss's (2014) study into legacy literature provides similar results to other researchers' attempts to 'categorise' the possible types of legacy, examples of these have been collated in Figure 3.

Author(s) and Number of Legacy 'Types'.	Identified Legacy Types
(Cashman, 2003) - 6	1. Economic 2. Physical Infrastructure 3. Education 4. Public Life, Politics and Culture, 5. Sport 6. Symbols, Memory and History.
(Chappelet, 2003) - 5	1. Tourism and Economy 2. Infrastructure 3. Sport Facilities 4. Urban and Natural Environment 5. Socio-Cultural.
(Hiller, 2003) - 4	1. Built Environment 2. Economic Development 3. Memories 4. Communities
(Gratton & Preuss, 2008) - 6	1. Infrastructure 2. Knowledge, Skills Development & Education 3. Image 4. Emotions 5. Networks 6. Culture
(The IOC, 2009) -5	1. Social 2. Sporting 3. Cultural & Political 4. Environmental 5. Economic and Urban

Figure 3: Identified Types of Legacy (Sources: Cashman, 2003, Chappelet 2003, 2012, Hiller 2003, Gratton & Preuss 2008, The IOC, 2009).

Chappelet (2012) believes that an exercise to categorise possible legacy types could go on almost 'ad infinitum', and because of that, "*continuing to propose typologies of legacies would seem futile*" (p.78). This, however, does suggest that legacy development as a concept, is expansive in scope and encroaches over a variety of different areas (Agha et al., 2012), and supports the notion that it is multi-dimensional (Chalip, 2003; McCloy, 2003). The multi-applicable nature of the research topic may also suggest that it could be complex to analyse specific aspects of legacy in isolation (such as the project management context of this research). Li & McCabe (2013), in their interdisciplinary research, reviewed the existing legacy literature and noted that individual factors of legacy could be investigated and measured. The basis for achieving this was to outline a specific contextual scope and to measure set parameters from relevant stakeholders. This has been replicated by several other authors, such as Preuss (2015), Liu (2014) and Reis et al. (2017).

The legacy literature provides investigations for where legacy could be applied or categorised, but a limitation of the research theme is that the overwhelming majority of legacy research is conceptual and untested (Tsaour et al., 2017). This has been attributed to the long-term nature of the topic and that there is often not enough quantitative and qualitative data available to test concepts (Li & McCabe, 2013). It is also a concept that Girginov (2011) notes "*has been couched in past tense language*" (p.543), although Leopkey & Parent (2012) state this is changing and "*legacy is increasingly being presented as a prospective concept rather than a retrospective one*" (p.439). With this background, it is not surprising that the research outputs for legacy development are varied and unclear. This may always be the case for legacy research when fundamentally there is little consensus for 'what it is' and 'how it can be applied' (Gratton & Preuss, 2008; Zawadzki, 2022). Rectifying this limitation has been identified as a significant need within legacy research, and essential for its progression and further development (Griffiths & Armour, 2013; Thomson et al., 2019).

2.2.2 Developments in Defining Legacy

The lack of clarity and consensus for understanding legacy has been summed up by Chappelet (2012), who reports that "*the concept of legacy is vast and above all somewhat unclear*" (p.77). Lienhard & Preuss (2014) have noted that this confusion is further confounded by a lack of an agreed legacy definition, saying that "*the scientific community has failed to produce a clear and commonly accepted and used definition of legacy*" (p.11). Preuss (2015) responded to this issue by developing a framework that investigated the potential for identifying what legacies are. This was built around four questions:

- *What constitutes a legacy?* The detection of legacy.
- *Who is affected?* The perspectives of different stakeholders.
- *How stakeholders are affected.* A judgement on whether the effect is positive or negative.
- *When does a legacy begin and how long does it last?* The time factor of legacy.

The limitation of Preuss' work is that this investigation for understanding 'what legacy is', is solely based on Olympic Games analysis and how legacy is applied to Olympic host cities. It is still unclear how and if this framework has wider application. With little previous critical discussion in the literature, there is certainly value in the four questions posed. However, with no empirical analysis, does it represent the views of wider stakeholders who could apply legacy? Are these questions sufficient or are there other questions that could be asked for a more complete definition? For example, there are no considerations given for sustainability factors, which numerous authors have identified as being core to achieving legacy (Frey et

al., 2008; Minnaert, 2012; Mol, 2010; Talavera et al., 2019). This leaves the research field with no agreed definition of legacy. While academic authors in this research field are relatively prolific in discussing characteristics and features of legacy, they are often reluctant to define legacy specifically in their own terms, relying instead on previously published definitions. These definitions are, however, rather high-level, conceptual, and often designed as a 'catch all' for exploring many legacy factors. This is evidenced by the most widely referenced definition of legacy, which is from Gratton & Preuss (2008), who state *“Legacy is planned and unplanned, positive and negative, intangible and tangible structures created through a sport event that remain after the event”* (p.1924). This definition also highlights another feature of the current legacy literature, that its most researched context is by far based on sporting mega events (Grix & Phillpots, 2013; Scheu et al., 2021). This is in part driven by groups such as the International Olympic Committee (IOC) and Fédération Internationale de Football Association (FIFA) who use legacy as a core value for their events and thus have provided a platform (and in numerous cases funding) for advancing legacy research for host city environments (MacAloon, 2008; Raco, 2013). This is discussed in more detail in section 2.2.4.

A range of authors have made attempts to define legacy. A review of the literature's legacy definitions was compiled into Table 1. The criteria for selection was that specifically 'legacy' was discussed and that the context of its inclusion was around the implementation for projects of any variety or scale (e.g. events, products, infrastructure). The focus of these definitions can, at times, be exclusive rather than inclusive because many of these definitions are for the context of a sporting event, but the definitions reveal common parameters for what legacy consists of.

Table 1: Legacy Definitions in Academic Literature

Author(s)	Definition / Description
Ritchie (2000)	<i>“legacy creation is that it represents something of substance that will enhance the long-term well-being or lifestyle of destination residents in a very substantial manner—preferably in a way that reflects the values of the local population”</i> (p.156).
Hiller (2000)	<i>“Permanent improvements to the built environment. Social improvements, of course, may benefit some people more than others”</i> (p.195).
Chalip (2003)	<i>“is multifaceted and widely based. Its effects are both short term and long lasting”</i> (p.204).
Roche (2003)	<i>“Future-oriented as well as past-oriented, and which attempts to recognize the adaptive potential as well as the traditional-conserving potential”</i> (p.302).
Barney (2003)	<i>“Something received from the past, most often of value to the present, and, indeed, most certainly to the future”</i> (p.43).
IOC (2003)	<i>Legacy includes ‘many aspects and dimensions, ranging from the more commonly recognised aspects – architecture, urban planning, city marketing, sports infrastructures, economic and tourist development – to others....that are less well recognised...the so called intangible legacies, such as production of ideas and cultural values, intercultural and non-exclusionary experiences...popular memory, education, archives, collective effort and voluntarism, new sports practitioners...experience and know-how’</i> (p.494).
Kidd (2003)	<i>“A lasting legacy of new opportunities for participation, and stirring examples of human achievement, inspiring wider and wider circles of men, women and children”</i> (p.135).

Preuss (2007)	<i>“Irrespective of the time of production and space, legacy is all planned and unplanned, positive and negative, tangible and intangible structures created for and by a sport event that remain longer than the event itself” (p.211).</i>
Gratton & Preuss (2008)	<i>‘Legacy is planned and unplanned, positive and negative, intangible and tangible structures created through a sport event that remain after the event’ (p.1924).</i>
Silva (2015)	<i>“legacy is represented by a distinctive positive impact one leaves behind and can be handed to others, that is, what one learned for the past and built for others to use and to benefit from in the future” (p.3).</i>
Beghetto (2017)	<i>“collaborate with external partners and produce solutions that live beyond the life of the project” (p.188).</i>
Franklin & Cheung (2017)	<i>“Legacy is defined as a set of past glories and memories passed on to future generations for appreciating a person’s or group of people’s genetics and values” (p.1840).</i>
Ma & Kaplanidou (2017)	<i>“can trigger a wide variety of short- and long-term, positive and negative impacts, and lead to expected and unexpected outcomes. If sustained, these outcomes become legacies and if planned properly some of these legacies can improve... opportunities” (p.423).</i>

Source: Author

An interesting factor in these definitions is how they evolve in relation to the developments within the research field. These legacy definitions show that this is a modern research theme with core definitions beginning in the 21st century and often driven by external or commercial needs. The IOC held an Olympic symposium in 2002 to determine if a consensus legacy definition was possible. The labour of this event led to a spike in the number of academic definitions for legacy and then a lull in interest (MacAloon, 2008; Scheu et al., 2021). Reis et al., (2017) note that *“legacy literature prior to this was ‘elusive’ until the “IOC promoted legacy talk” (p.141).* Thomson et al., (2013) note that in their search for academic articles through the period of 2008-2013, *“articles with legacy definitions were not evident in academic writing (p.112)”*.

In breaking down the terminology for defining legacy used in the identified literature. There were three reoccurring categories which were presented, these being:

1. The nature of the legacy,
2. The effect of time to legacy and
3. The impact that is anticipated / non-anticipated.

When analysed into themes to define legacy, the literature produced a wide variety of characteristics that contributed to the building of legacy definitions (See Figure 4). The three categories provided more specific subgroup mentions that display some patterns in the definitions.

	Ritchie (2000)	Hiller (2000)	Chalip (2003)	Roche (2003)	Barney (2003)	IOC (2003)	Kidd (2003)	Gratton & Preuss (2008)	Preuss (2007)	Silva (2015)	Beghetto (2017)	Franklin & Cheung (2017)	Ma & Kaplanidou (2017)	Sum
1. Legacy Type / Nature														
Tangible / Permanent / Infrastructure	X	X				X		X	X					5
Intangible / Social / Human	X	X				X	X	X	X	X		X		8
Multifaceted / Complex			X			X					X			3
2. Time Based														
Long Term	X		X				X						X	4
Short Term			X										X	2
Past Orientated				X	X					X		X		4
Future Orientated				X	X			X	X	X	X	X		7
3. Impact & Improvement														
Improve / Enhance / Benefit	X	X	X		X					X	X		X	7
Generic Impact	X	X											X	3
Positive Impact								X	X	X			X	4
Negative Impact								X	X				X	3
Potential / Opportunity				X			X						X	3
Planned / Expected Outcomes								X	X				X	3
Unplanned / Unexpected Outcomes								X	X				X	3
Sustained													X	1

Figure 4: Legacy Definition Characteristics (Source: Author)

Early legacy definitions prior to 2003 focused heavily on the nature of legacy and highlighted unspecified benefits to be obtained as a result of it (Hiller, 2000; Ritchie, 2000). The mid-2000s gave greater attention to the impact of time (past, present and future considerations), and a series of authors emphasised the concept of legacy not only providing a positive impact, but that negative consequences are a significant and a stubborn part of its profile. This supports the thought that the widely applied Gratton & Preuss (2008) definition is the most appropriate as it considers positive and negative measures in both impact and planning. This aligns with Cashman's (2006) research, which stated that the “*word legacy, however, is elusive, problematic and even a dangerous word for a number of reasons*” (p.15). The research output of this period highlights some key challenges for planning and developing legacy from stakeholders. It notes that often too many assumptions are made that legacies will be positive, and that the anticipated benefits to the environment/community of a project sometimes don't materialise (Agha et al., 2012).

Later legacy definitions within the literature seem to be more varied in context. Some definitions are short and specific (Beghetto, 2017; Franklin & Cheung, 2017) or mix a wide range of factors together (Ma & Kaplanidou, 2017). This last article is the only one to add a new emphasis (sustained) to the already established terminology. When summing up what is most frequently considered in these more modern definitions, there is a significant emphasis on social factors. The themes of intangible, social, and human legacy factors have eight mentions, the most of any one legacy theme. It could be considered surprising that social factors were emphasised in defining legacy because this is underdeveloped in the research field compared to tangible or infrastructure factors (Minnaert, 2012; Smith, 2009). Dickson et al. (2011) confirm this in their research into legacy frameworks, stating that “*research into other areas, such as social legacies...has largely been ignored*” (p.285).

The definition review highlights that legacy can mean different things in different contexts, although Grix & Phillpots (2013) have noted that this fluidity of legacy definition should not be surprising as this is one of legacy's core characteristics. Ritchie (2000) notes, "*It should be emphasised at this point that these legacies can take many different forms. They may be economic, social, physical, cultural, technical, or psychological in nature*" (p.156). This provides some justification that there should be specific legacy research conducted in each discipline (Reis et al., 2017). This learning can assist in a bottom-up approach for a wider understanding (Girginov, 2011). This is particularly of interest in the under-considered context of project management (Silva, 2015). It is yet to be reviewed whether these identified definitions apply to this discipline or how project stakeholders understand and define legacy. What is clear is that the terminology of this research is specific and clear in its usage of the word 'legacy' rather than any alternative words such as output, outcome, impact etc. The importance of defining legacy is further complicated when considering the language barrier for the term. The French translation of legacy is '*heritage*', and the German '*inheritance*' (Cashman, 2003). These convey different meanings from each other in the English language. This seems to support Preuss (2007) and the need for more universally understood legacy terminology.

2.2.3 The Formalisation of Legacy Development through Mega-Events

To understand the potential applicability of legacy concepts within a project management context, there is a need to first understand where the theme has been most widely researched and developed, namely in the context of sporting mega-events (Ermolaeva & Lind, 2021; Girginov, 2011). Mega-events are an established part of our global calendar of sporting occasions but even in this context, legacy as a research theme still requires additional clarity and further development (Kaplanidou et al., 2019). Pappalepore & Duignan (2016) state that "*In spite of its central role in mega-event policy and academic literature, the concept of 'legacy' still remains largely unexplored and fraught with ambiguity*" (p.345). Getz (1991) did some research into what factors are required to be awarded the 'mega' prefix for an event. He indicated financial factors such as the economic impact, the hosting cost, and the effort involved for planning and delivering the event. In addition to this, it was felt that mega-events are separated from other event types because of intangible factors. These factors included the scale of established reputation but, most importantly, the 'significance' of the event itself. Dimanche (1996) built upon this to add that mega-events should focus on short and long-term benefits, a theme which has, in part, started the conversation for legacy development in this field. The 'mega-event' is often described as a complex, city/nation hosted, multi-billion dollar, large-scale project to facilitate a cultural or sporting games (Gold & Gold, 2014). Roche (2000) describes mega-events as "*large scale cultural events of mass popular appeal and international importance that are typically stage-managed by a combination of national governmental and international non-governmental actors*" (p.1). The mega event is an exclusive category of event that only a handful of occasions are awarded this description. The largest and most complex of these is the Summer and Winter Olympic / Paralympic Games (Horne & Manzenreiter, 2006). In addition, the FIFA World Cup and the World Exhibitions (Hall, 1992; Rahmann et al., 1998). These events are unique due to their aspirational nature, worldwide prominence, specific size, resources required to host, and their universal significance with an established global identity (Ermolaeva & Lind, 2021; Getz, 1997; Silvestre, 2009).

Mega-events have specific relevance to the objectives of this research as they have been classified as being within the 'project family' (Igberaese, 2022; Raco, 2013). A mega-event is a project, it is planned, managed, and executed using project management methods with project management professionals involved (Kerzner, 2017; Roggema & Roggema, 2020).

Cornelissen et al. (2011), note that these projects have project management fundamentals at their core. They focus on short and long-term impacts and manage expected and unexpected outcomes with efforts to control positive and negative measures (Dalcher, 2022). This is a process which Ma & Kaplanidou (2017) state, “*If sustained, these outcomes become legacies*” (p.423). Minnaert (2012) notes that mega-events are a perfect platform to inspire project professionals to enhance their discipline further. Working on a mega-event brings international stakeholders together, enhancing cultural practices (Ermolaeva & Lind, 2021). They are a type of project with the scale and ability to inspire nations and develop further what is possible for the boundaries of sustainability and legacy (Gold & Gold, 2013; Hannan & Sutherland, 2015). This is the type of project that LERI (2007) states provides “*opportunities to catalyst large scale transformation*” (p.16). Kassens-Noor et al's. (2015) research states that involvement in mega-events brings a change mindset that is ‘ever more urgent’ for today’s business environment. These events need to get the attention and investment of policymakers and business decision-makers to “*prioritise legacy projects*”. The organisers of these mega-events realised their prominent position to influence positive long-term change and that they could take a leading role in advancing how legacy is characterised, perceived and defined (Grix, 2014).

2.2.4 The International Olympic Committee’s (IOC) Efforts to Define Legacy

In terms of ‘formalising’ legacy understanding, the International Olympic Committee (IOC) was one of the first to provide governance guidelines and open legacy discussions for how it can be applied within their standards and operations (Leopkey & Parent, 2012; Scheu et al., 2021). This was attempted against rising prominence for organisational corporate social responsibility (CSR) efforts and initiatives. The CSR movement is often characterised as a business response to combat capitalist exploitations of resources and taking increased responsibility for their impact on the environment field (Carroll & Shabana, 2010; Wieser, 2005). Traditional unrestricted and unethical business operations proved highly unpopular with consumers, often creating reputational damage that influenced their long-term economic sustainability (Loew et al., 2004). When public finance is involved (which is the case for Olympic mega-events), public perception and outrage become tangible when looking for a more ethical return on investment (Leopkey & Parent, 2012). This is especially riling when there are claims of ‘legacy’, a charge traditionally labelled against the Olympic movement in particular (Pinto & Santos, 2022; Veal et al., 2012). Several authors have questioned the ‘legacy claims’ of these Olympic mega-events. Past Games have a history littered with evidence that ‘epitomises unsustainable development’, and a track record of one-off political elite vanity monuments such as Montreal’s 1976 Olympic Games (Smith, 2012), which took the city 30 years to pay off a \$1 billion debt (Chappelet, 2012). Essex and Chalkley (1998, p. 191) note that Olympic mega-events often are ‘*a self-serving commercial circus*’ of companies who reap benefits initially destined for local communities. Tufts (2004) has categorised the mega-event as a form of ‘urban boosterism’ run by and for commercial elites and international media. The Olympic governing body (IOC) has responded to this criticism and accusations of bloated ‘gigantism’ (DaCosta, 2002) by putting a sustainable legacy high on their governance criteria (Byun & Leopkey, 2022). Legacy is now considered a key factor in the selection process for potential host cities/nations and central to the Olympic movements philosophy (Gold & Gold, 2021; Tomlinson, 2014). This has been adopted to the extent that alongside the defining pillars of sports and culture, ‘sustainable development’ was added to the Olympic movement’s charter in 1996 and ‘legacy’ in 2003 (Gold & Gold, 2014). This formalisation of legacy was triggered during a period when legacy understanding and research on the topic were in its infancy (Brown & Massey, 2001; Frey et al., 2008).

At this point in time, however, there were no common structures or supporting frameworks, so any legacy claims made during this period were relatively hollow (Pappalepore & Duignan, 2016). Dimanche (1996) states, “*the impossibility to elaborate about the legacy of events is due to the lack of a standard method of impact measurement*” (p.51). With this background, in 2002, the IOC held an international symposium to try to bring together legacy stakeholders and researchers and agree a clarification for how it could be correctly applied (Gratton & Preuss, 2008). While there were advancements in recognising the significance of legacies during the symposium, ultimately, researchers were unable to fully define the general concept (MacAloon, 2008). This was attributed to it being “*multidisciplinary and dynamic....changing over time ...and [is] affected by a variety of local and global factors*” (Li & McCabe, 2013, p. 390).

While a wider understanding of legacy definition wasn't achieved, the IOC were able to define its own Olympic project legacy. They described legacy for their own operations as:

“many aspects and dimensions, ranging from the more commonly recognised aspects – architecture, urban planning, city marketing, sports infrastructures, economic and tourist development – to others...that are less well recognised...the so called intangible legacies, such as production of ideas and cultural values, intercultural and non-exclusionary experiences...popular memory, education, archives, collective effort and voluntarism, new sports practitioners...experience and know-how” (IOC Olympic Studies Centre, 2003, p. 2).

This is one of the first attempts to organisationally develop the parameters for what is understood by legacy. Veal et al. (2012) acknowledge that despite the issues with the output, it was an effort to move away from “*rhetorical commitment[s]...[to a] formal requirement*” (p.176). It is also an adequate basis for further research to be conducted. Li & McCabe (2013) stress, “*there is therefore a need to develop indicators that can be tested to ensure the effectiveness of policy for the future and to address the lack of systematic research on legacies of large-scale events*” (p389). While the additional research need is there, it should be approached with consideration and caution. This is because developments in this field have been impacted by the influence of commissioning groups and their funding, which has fueled interest and directed the post-2005 research (Gratton & Preuss, 2008). Raco (2013) highlights that this boom in legacy research development has not uncoincidentally coincided with the IOC's efforts to define and explore legacy for their operations. With this in mind, there is the suggestion that future research should be independently conducted to limit bias and limit the potential for conflicts of interest with external body agendas (MacAloon, 2008). The fact that organisations have funded legacy research (and would benefit from positive developments) highlights a potential self-interest influence. What has not been explored is whether this has impacted objectivity in the research field. It would prove problematic if some of the identified foundations of legacy research were built around skewed contexts. Exploring legacy principles out with the needs of established event bodies (IOC, FIFA) and towards specific projects would enable an interesting comparison of understanding and principles. What is clear is that there is yet to be a generally accepted or widely used broad definition of legacy and that additional research, in all contexts, is still required to assist in this effort (Lienhard & Preuss, 2014; Scheu et al., 2021). The lack of a clear definition is, however, not always perceived as a negative and can be used to the advantage of some projects. The legacy report for the London 2012 Olympic Games stated, “*Legacy is a word that is used very often, in many different contexts. There is a benefit in having a broad definition, because it allows a degree of creativity and innovation*” (LOCOG, 2013, p. 18).

Despite most legacy research being generally confined to mega-event themes (Grix, 2014; Koenigstorfer et al., 2019). It is research that provides a valuable starting point for further investigation of how legacy could be applied in different spheres and, in particular, an untested wider project management context (Silvius et al., 2012). Legacy is a research theme that is currently limited because the overwhelming majority of existing research is theoretical and not supported through empirical testing (Chen & Henry, 2019; Li & McCabe, 2013; Tsaur et al., 2017). Extracting empirical qualitative data from Aberdeen-based construction and infrastructure projects will enable new insight into legacy applicability and the ability to compare against established concepts in other fields (Li & McCabe, 2013). The aim of this research is to provide that additional primary investigation into how legacy is understood and applied within a project management context. This will enable new insight into legacy applicability and how it compares against established mega-event concepts (Scheu et al., 2021).

2.3 Legacy in a Project Management Context

The Association for Project Management (2019) has described projects '*as the catalyst for transformational change*'. This links quite succinctly to a primary motivator for legacy creation, which seeks to provide a controlled, lasting benefit through a change process (Dickson et al., 2011; Sant & Mason, 2015). While individual projects, particularly events-related projects, have contributed to legacy claims, this has been done with little connection or consideration for the processes and approaches of the discipline of project management (Kaplanidou et al., 2016). Research has focused on the conceptual understanding of what legacy 'is' and 'what' can be achieved by it rather than how it impacts and influences the approaches to implement it (the role of project management). It is still the situation that within project management, there is very little understanding of how a project legacy can be widely applied or achieved (Silva, 2015). The governance documentation for running and managing projects (the professional associations' Body of Knowledge publications) provides no reference to legacy and is not a concept addressed within its guidelines. This severely limits opportunities for understanding how it can be achieved; It also means that support to project practitioners in this area is minimal. With this gap, it has been left to academic researchers to make conceptual links for potential opportunities and development within this field (Gold & Gold, 2014). The literature investigating legacy from a project management perspective is sparse (Silva, 2015). There are only a few articles specifically addressing the link between project management and legacy development. The following section will explore those limited links and analyse the appropriateness and effectiveness of legacy principles integrated within a project management context.

2.3.1 Introduction to Project Management

The concept of fulfilment management and the organisation of 'projects' has been applied since early human civilization. Some early examples of a systematic process for developing construction projects can still be evidenced today with structures such as Stonehenge, Mesopotamian cities, and the Egyptian Pyramids (Uchitpe et al., 2016). Project management, as we understand it today through its tools, techniques, and technical language, began to be formalised in the 1950s (Morris, 2012; Picciotto, 2020). Oisen (1971) defined project management as the "*application of a collection of tools and techniques to direct the use of diverse resources toward the accomplishment of a unique, complex, one-*

time task within time, cost and quality constraints" (p.14). The first mention of project management appeared in 1953 in the documentation for developing US government post-war defense programs (Johnson, 2002). Following this, a range of US 1950s government programmes created many of today's core project management practices. These include techniques such as the program evaluation review technique (PERT), the critical path, Work Breakdown Structures (WBS) and the first developments for the Project Management Organization and the usage of a 'project manager' (Geraldi & Morris, 2011; Hornstein, 2015; Johnson, 1997). From these origins, project management quickly expanded to broader business practices as organisations realised that project approaches positively impacted improving and controlling their initiatives (Nickels et al., 2010; Weaver, 2007). By the late 1960s/ early 1970s, in an effort to expand the articulation of professional practice (Eraut, 1994), project management professional associations were established (Morris et al., 2006). The most significant of these was the US-based Project Management Institute (PMI) and the equivalent British body, the Association for Project Management (APM), (Crawford, 2004). One of the most important actions of these new organisations was to collate its foundational knowledge base or 'intellectual scope' to develop and publish bodies of knowledge (Hodgson et al., 2015). These publications contained the ontology of the profession and would define for hundreds of thousands of project practitioners the definitive 'how to' for the discipline (Guanci & Bjork, 2019; Wideman, 1995). It is also the source where professional project management certifications are tested and the basis for its governance (Morris et al., 2006; Tereso et al., 2019).

Academically, Turner (1990) played a significant role in defining the nature of project management which is the formation of a temporary organisation over a set period to provide unique benefits. At its core, project management is built around several 'processes' to manage and implement within an individual project (Association of Project Management, 2006). A project is defined as "*a temporary endeavour undertaken to create a unique product, service or result*" (Project Management Institute, 2017, p. 542). A project's processes, or steps, are grouped within phases of its lifecycle (Initiating, Planning, Executing, Controlling, and Closing). This allows a controlled and staged approach to meet project objectives better, optimise results and manage complexity more efficiently (Kerzner, 2017; Sahlin-Andersson & Soderholm, 2002). Thousands of projects are happening at any one time, and these individual projects are collectively viewed as the vehicle for change in our society (Huemann & Silvius, 2017).

Over the last 30 years, there has been significant development, growth and importance for the discipline of project management (Fernandes et al., 2015; Kwak & Anbari, 2009). Business processes are increasingly becoming 'project-based' (Martinsuo et al., 2006). This follows a prescribed methodology or framework to increase project success. This widespread change from 'business as usual' operations to temporary projects is known as the 'projectification' of business (Lundin et al., 2015). This has seen projects becoming the driving force for investment and the approach to developing new products, infrastructures and markets (Hurt & Thomas, 2009; Picciotto, 2020). Moehler et al. (2018) note that projects are so important within an economic context that it is "*the means through which our future is created*" (Bredillet, 2014). Witt (1988) highlights that projects and project management assist in successfully enabling organisations to meet objectives and achieve desired benefits. These objectives and benefits are currently limited for integrating sustainability principles and, by extension, any future legacy (Eid, 2009).

2.3.2 Legacy and Project Management Terminology

In existing legacy literature, one of its core failures is the lack of consideration and inclusion for the programme of management that delivers legacy (Kearney, 2005). This leaves significant unknowns for how and where project management can assist and contribute to legacy development and how project professionals can input towards it (Cooper et al., 2003). The success of any project, including those with legacy ambitions, will be ultimately dictated by the delivery and management of the project manager who directs that project (Silvius & Schipper, 2014; Stanitsas et al., 2021). There is currently little knowledge about what project managers specifically understand about legacy, because legacy research mainly focuses on conceptual rather than practical legacy factors (Chen & Henry, 2019; Hwang & Ng, 2013; Tsaur et al., 2017). Project managers should, however, have some familiarity with the term 'legacy'. This is because it is used when considering 'legacy processes' for maintaining older systems or processes requiring support for new standards to follow (Thiran et al., 2006). However, this understanding is based more on an IT background of legacy than legacy as outlined in event management literature. This may negatively skew the context and understanding of project stakeholders for what legacy could represent, with multiple terminologies for the term being applied in numerous contexts.

There is also other terminology commonplace in legacy literature found within project management. Preuss (2015) notes regularly applied project management vocabularies such as opportunities, impact, and value to characterise what a legacy may represent. *"Only when these opportunities are used (value in use) is a new impact triggered, and then we can talk of a legacy"* (p.644). This suggests some favourable interchangeable applicability for project management and legacy principles. The challenge is, however, that *"the definition on what constitutes a project legacy has been scarcely explored in the literature"* (Silva, 2015, p. 3).

Cooper et al. (2003) made an attempt to introduce a description of project management legacy as *"not just the design products and leftover parts, but new processes, relationships, technology, skills, planning data, and performance metrics"* (p.1). This description, however, emphasises a technical IT understanding of legacy and lacks consideration for wider applicability and an awareness of recent developments in the research field. With a gap in understanding of what defines project legacy, there needs to be further exploration of its characteristics in a project context. As a starting point, comparison analysis can be conducted for terminology applied within projects and how this relates to legacy. Having already compiled background information into how legacy is defined (Section 2.2.2), this can be the basis for reviewing similarities in how a project is defined. The Project Management Institute (2020) definition of a project is *"A project is temporary in that it has a defined beginning and end in time, and therefore defined scope and resources. And a project is unique in that it is not a routine operation, but a specific set of operations designed to accomplish a singular goal"*. This definition was chosen because of its comprehensiveness and recentness, and it is widely visible and promoted to project management professionals within the leading professional body (PMI) website. The definition highlights the characteristics of a project, and these compare quite favourably with how academics have described the characteristics of legacy. The correlations between this project definition and applicability towards legacy concepts can be seen in Table 2.

Table 2: Comparison of Project and Legacy Characteristics

Project Definition:		
A project is temporary in that it has a defined beginning and end in time, and therefore defined scope and resources . And a project is unique in that it is not a routine operation, but a specific set of operations designed to accomplish a singular goal . (Project Management Institute, 2020)		
Project Characteristic	Applicable in Legacy?	Evidence
Temporary (with beginning and end).	Yes	One of the core characteristics of legacy is its considerations of lifecycle and a defined period of time (Stewart, 2014). This is similar to projects, although legacy periods are more extended (often generations) rather than the short-term focus of traditional projects (Ritchie, 2000).
Defined Scope.	Yes	A common reoccurrence in the attempts to define legacy was that for effective legacy obtainment, planning was a central requirement (Liu, 2018). Likewise, in projects a clearly defined and planned scope of work is a core project activity (Davidson & McNeill, 2012).
Defined Resources.	Yes	To achieve legacy, there is the requirement of ‘buy-in’ from a variety of stakeholders and tangible commitments to support legacy development (Pappalepore & Duignan, 2016). These resources (either tangible or intangible) are similarly required for completing projects effectively (Chappelet & Junod, 2006).
Unique (not routine).	Yes	To achieve a desired legacy, is not a ‘business as usual’ activity (Cooper et al., 2003). It will require one off planning as legacy development will encounter unique contexts, stakeholders, objectives, and approaches (Manzenreiter, 2014). This is mirrored strongly with project management approaches towards a project. These same parameters have to be uniquely considered, as each project will be different or new (Kerzner, 2017).
Operations are Designed.	Yes	Linked to the legacy having a unique approach, to achieve it, a methodology has to be adopted that highlights the approach, management, and measurement of processes to accomplish objectives (Liu, 2014). Likewise, projects are defined by their designed and defined structure. Having step-by-step process management over the lifecycle of the project (Morris et al., 2006).
To Accomplish a Singular Goal.	Potentially	Both projects and legacy are united in that; ultimately, they strive to reach a desired goal. While projects have a more focused goal outlined (which often dictates whether a project is a success or failure), legacy is often more complex and multifaceted to be restricted to singular goal (Chalip, 2003; Chappelet, 2012). This is, however, based on mega event/project research, which is vast in scale and yet unknown for how smaller-scale projects can apply the singular goal principle.

Source: Author

The breakdown in Table 2 shows that there is consistent and repeated cross over of both project and legacy characteristics. There is a similar structure and approach adopted for both areas. The only uncertainty is the untested context of achieving a singular goal emphasis; this research gap will be incorporated and further explored in the primary investigations of this research. Overall, this similarity in project and legacy ambitions

suggests that there is already much correlation between existing aims/processes of a project and that for achieving legacy. This reinforces that projects are the catalyst for developing future-orientated ambitions and are central to legacy development (Gold & Gold, 2014; Liu, 2018). It also highlights that additional study in this research field would be justified, especially for exploring factors beyond conceptual alignments and for how it is understood by project professionals and potentially applied in practice.

2.3.3 Theoretical Efforts and Frameworks to Combine PM Processes & Legacy

Very few articles specifically relate to the conceptual development of integrating legacy concepts within the discipline of project management. This is surprising as within the context of projects, conceptually, they create a unique output, product or service (Witt, 1988; Zerjav et al., 2018). As a result, each project's impact could be considered to carry an element of legacy (Silva, 2015). It is projects which produce benefits and thus enable the organisation's long-term sustainability (Hannan & Sutherland, 2015). With this background, it could be anticipated that legacy and future environmental impact would be further explored. This was not evident within the review of the existing academic literature. Finding relevant literature was attempted using an expansive selection of applicable keywords related to themes combining legacy and project management. These were entered into various appropriate databases and search engines and included multiple saved search alerts that were active for over five years that would flag new research outputs. This process provided a lack of articles that addressed the conceptual link between project management and the concept of legacy. A few have theoretically explored the concept at a high level or indirectly (Cooper et al., 2003; Preuss, 2007, 2015; Silva, 2015). All references cited in their work were additionally reviewed to have a wider understanding and background to their development. This found that their topic discussion linking project management principles to legacy to be niche and rare. These articles are exploratory in nature, untested, and an acknowledged starting point for the research field. This research also comes as an extension to either sustainability research in project management (Silva, 2015) or as a project-related side aspect in Olympic legacy research (Preuss, 2015). Cooper et al.'s (2003) research could be considered the most relevant for the topic as it hails from a specific project management focus and asks questions about what legacy is in this context. Cooper et al.'s (2003) research, however, explores legacy with the focus of understanding 'knowledge' for the intangibles that could be learnt and potentially applied again for future projects. This is quite a restrictive and limited consideration of scope for what legacy has already defined as quite an expansive and multifaceted concept (Agha et al., 2012; Chappelet, 2012).

Overall specific literature is limited to a handful of journal articles. Preuss (2007) notes that the limited volume of current applicable literature provides a challenge for understanding legacy more broadly than its event management core. In a business management context, their metrics for downloads and citations are relatively minimal. This leaves the research field with opportunities to explore and, conceptually, a relatively blank canvas as a starting point. One of the challenges for this lack of development is that legacy research is primarily based within the context of sporting events (Silvestre, 2009; Zawadzki, 2022). This is quite a different research field to project management's process-driven and technical discipline. It is interesting to note that all the authors identified as having written specific articles linking project management to legacy. This is a combination identified in the objectives of this research as being important, so it will expand upon instances and highlight the main themes found within the literature.

Brady and Davies (2004) developed a model for 'project capability-building', which consisted of two learning levels that went through a series of project phases to analyse resources

alongside strategic decisions. This process enabled estimations for potential capabilities for future predictable projects. While this model had several limitations, such as being restricted to 'learning' and only reviewing 'high-value capital goods industries', it is an example of trying to think beyond the traditional boundaries of project management and its understood lifecycle. Despite this being the case, its focus was aligned with social sustainability and did not consider or use the term 'legacy', leaving limited relevant applicability for development in the field.

Cooper et al.'s (2003) research presents a more specific link to project legacy. It is one of the first to consider legacy in project management as something that extends beyond the IT understanding of the term. Although its findings are not entirely aligned with other authors who define legacy concepts as multifaceted (Manzenreiter, 2014), planned/unplanned (Chappelet & Junod, 2006) or providing both tangible and intangible benefits (Gratton & Preuss, 2008). Their research identifies a process highlighting organisational learning and how it can be applied to create a future knowledge legacy. In addition to the narrow focus of this work, which only considered intangible benefits, its scope was also restricted to research and development (R&D) and new product development projects. However, it identified some unique understanding of what legacy could be within a project context. These include a trilateral area of applicability (Figure 5). This consists of a product legacy (benefits to a project), a process legacy (the organisation's ability to be sustainable) and a people legacy (benefits to the individual).

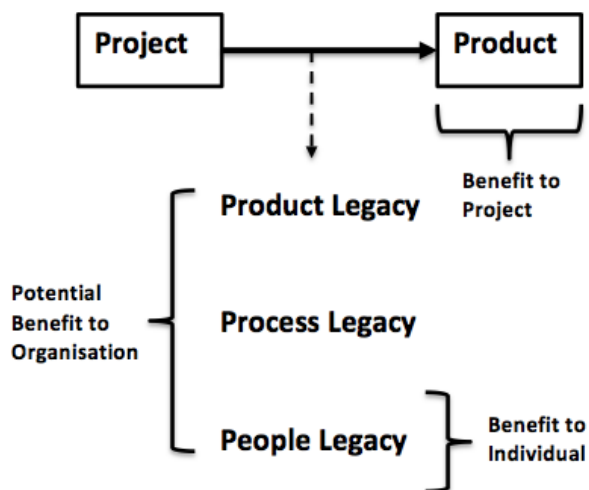


Figure 5: Project Legacy (Cooper et al., 2003)

Cooper et al. (2003) identify 'three primary players in a legacy process' (p.4). These are the current project in development where legacy considerations are first applied, the organisation that controls the process, and the potential capacity for future projects. The interplay of these factors can create a learning legacy that goes beyond the lifecycle of a traditional project (Cornelissen et al., 2011). In this case, the created legacy is referred to as the project 'afterlife'. One of this research's key findings is that there must be an alignment of the organisation's needs, resources, and capabilities with its legacy strategy and appetite. EdComs (2007) states that "*legacy strategies will need to be embedded in existing programmes and policy areas to achieve success in the long term and real benefits to participation provided*" (p.9). This highlights that project management, already extensively applied within organisations, has excellent potential for further developing legacy understanding. It also suggests that legacy attainment can be achieved through existing project management methods and practices.

Smith & Fox (2007) note that organisational structure and strategy play a core role in developing legacy. This includes consideration for understanding the skills and competencies of stakeholders who facilitate legacy. This is an interesting take as the current recommended approach for skills competencies in project management is to obtain qualifications and training from one of the accredited professional bodies (Morris et al., 2006; Project Management Institute, 2021). None of the leading professional bodies provides any relevant assistance or provision for legacy development in their Body of Knowledge guidelines. This leaves project competency development in legacy solely the responsibility of the organisation. This is, however, something that needs to be more researched and reported on. There needs to be more knowledge regarding how legacy is adopted within organisational project management practices or if it is even happening.

A significant limitation of legacy and project management integration is that the current understanding is based on a narrow theoretical starting point. Cooper et al. (2003) acknowledges that *“this approach has not been applied in practice, so there are no findings relative to the impact on actual project performance”* (p.7). Silva (2015) also has provided some conceptual understanding linking legacy with project management. Her insight is unique as the core for achieving legacy is a project context that requires the presence of sustainability. *“Given the fact that projects are conducted with the aim to achieve a desired future (the legacy to-be), and that sustainability has at its core a forward-looking orientation, it is thus of interest to analyse the links between these concepts, and what role do projects and the discipline of Project Management play towards a more sustainable world”* (p.5). Silva (2015), just like Cooper et al. (2003), identifies that a critical factor for obtaining legacy is the extension of the project lifecycle for efforts to sustain a desired legacy. This concept builds upon Silvius' (2009) theory that sustainable project management success (and in addition, legacy) can only be achieved with multigenerational project lifecycle measurement.

Silva (2015) developed a legacy lifecycle model showing that legacy obtainment required a ‘sustaining’ period that went beyond a traditional project management lifecycle (Figure 6). This period of sustaining legacy ambitions is referred to as the ‘after project life’. That the physical development of a project may be completed, and the project may be in active use, but its legacy objectives still require to be monitored and responded to.

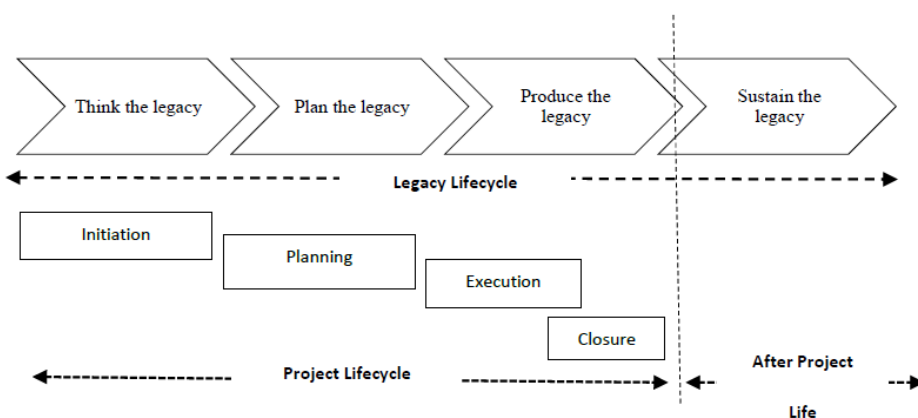


Figure 6: Relationship between the legacy lifecycle and the project lifecycle (Silva, 2015)

The traditional project management phases of work are Initiation, Planning, Execution and Closure (Buttrick, 2013; Igberaese, 2022). In Silva’s (2015) research, these phases allow project professionals to ask certain legacy questions and considerations for their project as it progresses (See Table 3).

Table 3: The Legacy Lifecycle

Stages	Activities	Key Questions
<i>Think the legacy</i>	<ul style="list-style-type: none"> Develop the legacy vision for the project 	<ul style="list-style-type: none"> Which legacy do we want this project to leave, in regards to people, the planet, and profit? How better will the world be with this project?
<i>Plan the legacy</i>	<ul style="list-style-type: none"> Collect and document requirements for sustainability Develop a sustainability plan for the legacy Test the legacy vision and sustainability plan through scenario planning implementation 	<ul style="list-style-type: none"> Which sustainability requirements do we need to meet to achieve our legacy vision? Which activities and resources will be required? Which are the driving forces and critical uncertainties that could affect the project legacy? How will the world look like after this project is delivered? Will the legacy still be relevant in 10, 20, 50 years' time?
<i>Produce the legacy</i>	<ul style="list-style-type: none"> Deliver the project's product Capture, document, and disseminate the project knowledge 	<ul style="list-style-type: none"> Does the project meet the requirements and defined acceptance criteria for it to be sustainable? Is knowledge being effectively captured, documented, and disseminated within the organization?
		<ul style="list-style-type: none"> Is this knowledge available to be re-used?
<i>Sustain the legacy</i>	<ul style="list-style-type: none"> Manage the legacy of the project Review, monitor and control the application of the sustainability plan 	<ul style="list-style-type: none"> Are we continuing to build on the project legacy? Is the sustainability plan being effectively delivered? Do current/future projects support (and are being supported by) our legacy?

Source: Silva, 2015

The benefits of Silva's (2015) theoretical research is that it is structured within a phased approach. This is a common component of project management practices and is likely to be understood widely by project stakeholders (Labuschagne et al., 2005). It asks practical questions and requires actions common in project processes (Lester, 2014). This rare project-specific legacy research is one of the few to outline the potential and opportunities for 'how' legacy can be accomplished within a project management context. The major limitation is that it is another piece of theoretical research with no empirical testing or practical understanding for relevance in an industry context (Chen & Henry, 2019; Li & McCabe, 2013). It does provide some valuable considerations worth testing and comparing within the primary research of this thesis. It is unknown if the theoretical legacy project structure and questions posed by Silva are evident or have been adopted by stakeholders in active projects.

2.3.4 The Relationship between Sustainability and Legacy in a Project Context

The previous section highlighted that the development of a specific legacy within a project management context originated in sustainability advancement. This section will introduce sustainability and explore the relationship between sustainability and legacy within projects.

A broad and generally accepted definition of sustainability was given by the World Commission on Environment and Development (1987), which declared sustainability as *‘forms of progress that meet the needs of the present without compromising the ability of future generations to meet their needs’* (p.27). This is the basis that most academic literature on the theme has been structured (Aarseth et al., 2017; Chawla et al., 2018). Since then, the global call to apply, adhere to, and accept this principle within business operations has steadily increased (Silvius & Schipper, 2014), and its adoption is one of the trends of our time (Kietlinski, 2021; Marcelino-Sádaba et al., 2015). Policies at the local, regional, and national level, as well as regulations (including ISO standards), have introduced sustainability compliance measures to meet the growing societal and business expectations (Brandoni & Polinara, 2012; Sazvar et al., 2017).

There is increasing pressure to develop further from the traditional global performance models with an economic focus driven for shareholders, to one that also includes sustainability performance for all stakeholders (Porter & Kramer, 2011; Stanitsas et al., 2021; Visser, 2002). Gimenez et al. (2012) emphasised a balance of social, environmental and economic pillars, with organisations and operations responding appropriately towards each of the factors of the sustainable triple bottom line of people, planet and profit. Savitz (2006) proclaimed this triple-bottom-line notion as the essence of sustainability.

The most persistent noted barrier to achieving this is the additional cost and expertise needed to achieve such aims (Najam et al., 2007). Blackburn (2007) highlights that many organisations feel there is often a limited business case for integrating sustainability but weigh this against the significant public support and expectations for practising sustainability (Lamm et al., 2015; Martinsuo & Killen, 2014). However, on application, authors have argued that far from being a financial burden to incorporate, results can indicate beneficial economic output when equal considerations are given to the conservation of the environment and the welfare of global populations (Ekins & Zenghelis, 2021; Fiksel et al., 1999; Schwarz et al., 2002). The debate around the ‘proper’ adoption of sustainability practices has led to these principles being financially ‘exploited’ or instances of ‘greenwashing’, which is to use the perception of sustainability acceptance as a justification to enable additional economic and reputational advantages (Parguel et al., 2011; Szabo & Webster, 2021).

Sustainability as an idea is often credited with its development by the late 1960s and early 70’s publications around the future of society, the environment and identifying the limits to growth (Meadows et al., 1972; Turner, 2008). Daneshpour & Takala (2017) reflect on that time and a new concept which was *“that the solution to the over-use of the environmental problems on earth requires societal contributions as well”* (p.14). Public awareness for sustainability is often derived from the association of various environmental preservation agreements such as the Brundtland report (World Commission on Environment and Development, 1987), Kyoto (1997) to more recent advancements such as the United Nations SDG programme and COP agreements for conventions on climate change (Depledge et al., 2022). This background has in some cases eschewed confusion as to what sustainability actually is and has provided greater awareness among stakeholders to focus on environmental factors to the detriment of social and economic issues (Glavić & Lukman, 2007). For sustainability development to be successful, an equal balance of the triple bottom line needs to be achieved (Bryde, 2013; Elkington, 1997; Moehler et al., 2018). Dyllick & Hockerts (2002) go further with the triple-bottom-line concept of sustainability to suggest that this also should have a requirement to consider both the short and long-term aspects of work performed. Lozano et al. (2014) and Labuschagne & Brent (2006) build on

this to suggest that 'time' should be incorporated as the fourth dimension as sustainability, by its nature, has a longer lifecycle to consider effects. This is a theme which links essentially with legacy, as legacy is also based around an extended timeline (Franklin & Cheung, 2017).

Similarly to legacy, there is a lack of sustainability literature highlighting practical developments within the discipline of project management (Marcelino-Sádaba et al., 2015; Stanitsas et al., 2021). Silva (2015) reflects on the need for more sustainability studies, which is a key aspect of achieving project legacies. *"Project Management and sustainability are intrinsically linked, as projects are essential to build a more sustainable world, and sustainable practices are essential to deliver better project legacies"* (p.6). Ritchie (2000), notes that while legacy creation is to create something of substance that causes long-term enhancement, it should also be done *"preferably in a way that reflects the values of the local population"* (p.156). This emphasises that there should be consideration between the project and its environment. This reinforces the concept that sustainability and legacy are intertwined. Gold & Gold (2014) state that *"legacy overlaps with sustainability as the two concepts that act as filters for visions"* (p.28). This is reflected in their similar characteristics in focusing on the long-term future (Cornelissen et al., 2011; Talavera et al., 2019). Legacy, at its core, is about generational benefits over an extended project lifecycle (Preuss, 2015). Similarly to that, Dobrovolskienė et al. (2017) state, *"the lifecycle is the focus paradigm for business and projects based on sustainability criteria. Nearly all sustainability elements identified across the projects, take the lifecycle focus"* (p.480).

The notion that sustainability in its nature is heavily characterised by its need for an extended lifecycle is also a view supported by Labuschagne & Brent (2006), Marcelino-Sádaba et al. (2015), and Silvius & Schipper (2014). Other similar characteristics are that both legacy and sustainability initiatives seek to provide benefits for multiple groups of stakeholders (Liu, 2018; Wang & Jiang, 2021). These are achieved through the critical activity of project planning (Gareis et al., 2013). Stakeholder management and engagement are important elements for supporting the application of both sustainability and legacy (Eskerod & Huemann, 2013). Chawla et al. (2018) discuss the required approach for achieving their long-term aims that *"project management companies should be open and proactive in the communication with all stakeholders and should also include affects on nature, society in short as well as in long-term horizon"* (p.159). An approach identified within the literature as being effective in both sustainability literature (Khalfan, 2006; Taylor, 2010) and legacy literature (Aaltonen & Kujala, 2010; Agha et al., 2012). While recognised as an important practice for both, it is currently unsupported by established project procedures where project managers are only required to provide "only the required information" to other stakeholders for the impact of their projects within an environment (Project Management Institute, 2017). This approach results in a lack of shared communication in practice (Silvius & Schipper, 2014) and thus negatively impacts the development of sustainability and legacy objectives within projects.

Within sustainability-focused projects, there is a core element to manage uncertainty as project events, initiatives, and outcomes cannot be predicted and thus can influence project objectives and success (Kerzner, 2017; Turner, 2016). This same approach has been extensively discussed within legacy literature to the extent that 'planned / unplanned' is a characteristic that defines it (Byers et al., 2020; Chappelet, 2012; Gratton & Preuss, 2008). There is a requirement to ensure that uncertainty factors within the project should be identified and appropriately addressed to assist in meeting their original objectives (Winnall, 2013). In terms of outputs produced, both sustainability and legacy are methods of transformation, with consideration and focus given towards the environments that they are to

impact (Davidson & McNeill, 2012; Stanitsas et al., 2021). Legacy goes beyond the boundaries of the organization, and its internal environment (Cooper et al., 2003), and sustainability efforts likewise will have a similar impact (Labuschagne et al., 2005). Sustainability and legacy project influence can be defined and planned for either regional, national or global levels, which is a characteristic of its nature (Gareis et al., 2011). The parameters for development are similar in that both types of projects will be conducted within the confines of global economies and subject to international legislation, stakeholders, supply chains and customers (Cleland & Gareis, 2006).

The nature of projects is that they achieve goals in an efficient and organised way (Kerzner, 2017). Silva (2015) notes that *“projects are a way of bringing a vision of the future into reality, and sustainability has at its core an orientation towards the future”* (p.1). By their very existence, by default, they are creating an impact (Ibbs & Kwak, 2000), which could be argued or interpreted that it is a negative (Ribeiro & Almeida, 2021; Tomlinson, 2014) or a positive (Byers et al., 2021; Dickson et al., 2011) legacy. The expansion of project methodologies to include sustainability in their goals, processes, and outputs could have a significant impact on the future development of legacy. This is a concept that Silva considered (2015), who states, *“The attentiveness to the future of a project legacy calls for a new paradigm in the discipline of project management, where legacy is orientated towards sustainability – Sustainable Project Management”* (p.4). Bryde (2013) highlights the challenge of sustainable project management, that it *“is thinking into the future and considering the impact of the project after it has been formally closed”* (p.235). While the literature highlights the overlap in nature and output for both sustainability and legacy, it does not explicitly articulate or discuss whether the presence of sustainability contributes to the development of legacy. It is a link, however, that authors have speculated on. Rogerson (2016) states, *“in searching for new ways to ensure positive social, economic, environmental and political outcomes, the idea of legacy frameworks has also become part of this discourse”* (p.499).

The advancement of sustainability initiatives and new ways of achieving sustainability potentially allows for formal ways to identify and categorise legacy, as the two are interrelated. Silvius & Schipper (2014) have developed some core principles defining sustainability within a project management context. Using this as a starting point, this was compared to the review of the literature on legacy characteristics to explore how the two themes are related. The principles of sustainability within project management have been considered alongside the definitions and concepts of legacy identified within this thesis (see Table 4).

Table 4: Principles of Sustainability in Comparison to Legacy Development

Principles of Sustainability in Project Management (Silvius & Schipper, 2014)	Applicability and Context to Legacy Development
1. Sustainability is about Balancing or Harmonising the Social, Environmental and Economical Interests.	There is some consideration given that the three pillars of sustainability and achieving legacy are interlinked. That an organisations response to these impact the potential for legacy obtainment (Labuschagne et al., 2005).
2. Sustainability Is About Both Short-Term and Long-Term Orientation.	This aligns well with legacy as numerous studies on legacy identify that one of its core characteristics is 'generational benefits'. (Silvius, 2009). There is consideration in the immediate about vision and setting goals (Grix, 2014; Ritchie, 2000) and also about achieving those over the long term and post traditional project lifecycles (Chappelet, 2012; Shenhar & Dvir, 2007).
3. Sustainability Is About Local and Global Orientation.	Most discussion surrounding legacy looks at the development and impact within the environment that it operates. Considerations can be made for the context at the local, regional, national, and international levels (Preuss, 2012).
4. Sustainability Is About Consuming Income, Not Capital.	Environmental impact and resource usage is a key consideration (Gratton & Preuss, 2008). Legacy, especially within events and construction assets consider the long-term usage, and avoidance of white elephants when considering developments (Chalip, 2014; Sant & Mason, 2015).
5. Sustainability Is About Transparency and Accountability.	Legacy is linked with factors such as organisational governance, policies and objective setting (Girginov, 2011). Authors have identified that 'positive' and 'negative' legacies are often dependent on how stakeholders are impacted (Smith, 2012).
6. Sustainability Is Also About Personal Values and Ethics.	This is evident in legacy development with most advancements based around values and ethics being adopted within charters (e.g. Olympic Committee, FIFA). That ethical responses to previous sustainability failures have resulted in the desire for a defined legacy (Veal et al., 2012).

Source: Author

Table 4 shows a clear correlation in the literature between the themes of sustainability and the development of legacy principles, with concepts overlapping but with a different emphasis in approach. This aligns well with how Gold & Gold (2014) describe the relationship. These two themes are developing but with challenges in “*the evolution of the dynamic, continually-evolving but uneasy relationship between sustainability and the alternative concept of legacy*” (p23).

This interlinked theme (or not) of sustainability and legacy will be further explored within this research from the perspective of project stakeholders. These project professionals may have developed projects using sustainability techniques and be able to provide context for how this potentially influences or supports legacy development. Sustainability integration within projects is a current theme in industry. However, it is still not fully clear within project governance for standard implementation approaches as sustainability initiatives are varied and diverse (Hodgson et al., 2015; Stanitsas et al., 2021). This potential variety is further confounded by the unique and individual nature which characterises every project (Kerzner, 2017). With project management, there are numerous sustainability activities in the form of strategy or specific initiatives that can be applied throughout the lifecycle of a project. Cotgrave & Riley (2013) highlight the most reoccurring sustainability activities within projects in Table 5.

Table 5: Project Sustainability Strategies and Initiatives

Order in frequency of mentions	Sustainability strategies adopted within projects	Project initiatives for sustainability incorporated in:
1	<ul style="list-style-type: none"> • Procuring from sustainable sources 	<ul style="list-style-type: none"> • Specifications
2	<ul style="list-style-type: none"> • Complying with statutory standards 	<ul style="list-style-type: none"> • Proposals / tender submissions
3	<ul style="list-style-type: none"> • Raising sustainability awareness 	<ul style="list-style-type: none"> • Briefs / statements of requirement
4	<ul style="list-style-type: none"> • Avoiding waste 	<ul style="list-style-type: none"> • Measurement targets / Standards
5	<ul style="list-style-type: none"> • Making best use of talent and resources 	<ul style="list-style-type: none"> • Corporate social responsibility (CSR)
6	<ul style="list-style-type: none"> • Introducing recycling schemes 	<ul style="list-style-type: none"> • Vision statements
7	<ul style="list-style-type: none"> • Avoiding non-renewable resources 	<ul style="list-style-type: none"> • Project handbooks / standard processes
8	<ul style="list-style-type: none"> • Reducing carbon dioxide emissions 	<ul style="list-style-type: none"> • Mission statements
9	-	<ul style="list-style-type: none"> • Values
10	-	<ul style="list-style-type: none"> • Benchmark Comparisons

Source: Adapted from Cotgrave & Riley, 2013, pp. 227-228.

While numerous sustainability initiatives have been identified, there needs to be more known which of these (if any) provide contribution or scope for better understanding or impacting the concept of legacy. Bell & Bradley (2012) identify that it is important to understand what project stakeholders should plan for when considering legacy. They outline “*by specifying what is needed in advance, what outcomes will look like, who will do what and when and then, in applying formidable measurement processes for project management*” (p.66). These factors could be explored for how relevant project stakeholders believe sustainability's impact (if any) allows for developing legacy within projects. While there is conceptual overlap, there is limited practical studies exploring this link, which this research can address.

2.3.5 Project Stakeholders and Considerations for Legacy

Project stakeholders are “*significantly placed to make contributions to sustainable management practices*” (Association for Project Management, 2006, p. 1). One of the key aspects of the management of projects is that they have a controlled approach to engaging with stakeholders (Kerzner, 2017). In legacy literature, there are numerous mentions of stakeholders' critical impact on legacy development (Pappalepore & Duignan, 2016; Ziakas, 2014). Certain stakeholders, such as project decision-makers or sponsors, are key to driving a project forward and towards the goal of identifying and obtaining legacy (Preuss, 2015). While the vision of legacy needs to be imagined (Girginov & Preuss, 2022; De Liu, 2018), so does it need to be implemented through to the conclusion. Silva (2017), highlights the role of a critical project stakeholder to achieve a desired vision, that of the project manager. In their role, they should question whether they are driving legacy or not. “*You are a professional project manager and you have a responsibility to build the legacy you want to leave behind. Your projects are your legacy*” (Silva, 2017, p. 1). Schieg's (2009) research agrees that to impact change, this is primarily the project manager's responsibility. The nature of projects

dictates that they will have the most influential role in affecting meaningful change.

According to Frank (2002), the influence and performance of a project manager accounts for 34-47% of a project's actual success. While the importance of the role is not disputed, little is known about the attitudes and perspectives of most project stakeholders (Silvius & Schipper, 2014). In particular, the stakeholder leading the legacy project development from initiation to close out, the project manager (Bal et al., 2014). This extends to the themes of this research such as attitudes, understanding, and behaviours towards legacy concepts.

Little is known whether existing project management training and education have effectively prepared or shaped project managers to engage with legacy initiatives. It is the case that an empirical understanding of legacy themes is still required for research on project managers (Hwang & Ng, 2013). Likewise, understanding is required for the impact legacy initiatives can have on other stakeholder groups (Manzenreiter, 2014). One aspect that makes legacy development complex and difficult to measure is that it can have either a positive or negative impact on different groups (Knott & Tinaz, 2022; Tsaour et al., 2017). When considering the possibility of a legacy project, all stakeholders that are to be impacted should be considered (Byun & Leopkey, 2022; Pappalepore & Duignan, 2016). Gursoy & Kendall (2006) state that wider community engagement incorporating stakeholders beyond the immediate legacy project positively impacts the perception of those projects. While their research was restricted to Winter Olympic Games, it suggests that it is key for legacy project success to identify a variety of stakeholders and engage them effectively within the legacy objectives.

Existing project management approaches have the advantage that they are process driven and integrate techniques that consider the importance of all stakeholders who will impact or be impacted by a project (Aaltonen et al., 2020). One widely adopted technique is the project management process to conduct a stakeholders analysis (de Oliveira & Rabechini, 2019). This is a project exercise to identify who will be impacted by a potential project and what influence they have to affect its success (Vuorinen & Martinsuo, 2019). If legacy success is impacted by understanding stakeholder influence and impact (Shipway et al., 2019), then this seems to be a very appropriate model to achieve that. This would enable additional planning and control for determining whether a positive output is achieved rather than a negative one (Kirkup & Major, 2006). Stakeholders analysis is also widely practiced by project professionals (Kerzner, 2017). This would ensure that project professionals who design and run projects understand the legacy impact on a range of people and resources who may be affected. There are limitations to conducting a stakeholder analysis in that they are often subjective (Wang & Aenis, 2019), and lack criticality (Jepsen & Eskerod, 2009). They enable an analysis of the external environment of a project, so they may be considered a potential 'legacy tool'. The fact that it is also 'time-based' also meets with legacy principles (Stewart, 2014). However, this will require the project's life cycle to be extended for a longer period for any potential legacy consideration (Gold & Gold, 2014).

Within the literature, there is awareness of the importance of engaging stakeholders and potential project management tools to support this goal. However, many unknowns exist about linking project stakeholders to the wider concept of legacy. Further research should be given on the understanding and attitudes of core stakeholders (such as project managers and project sponsors) and other affected project stakeholders regarding how they view and consider legacy, as this is currently unknown out with an events management context.

2.3.6 Project Governance and the Potential Development of Legacy


Project governance has been slow to react and integrate more environmentally conscious processes in its formal methodologies (Marcelino-Sádaba et al., 2015; Stanitsas et al., 2021). The governing resources project professionals turn to for ‘how to do things’ have made limited progress in incorporating new techniques and concepts such as legacy and the expansion of the project lifecycle. This is evidenced by their lack of inclusion within the most widely applicable governance guides. These are ‘A Guide to the Project Management Body of Knowledge’ (PMBOK), ‘The APM Body of Knowledge’ and ‘Managing Successful Projects with PRINCE2’. This international knowledge group has 18 editions, tens of thousands of pages of instruction for project management processes, and over 25 years’ worth of updates.

Due to there being no academic literature on the theme of legacy within project management governance materials, the author went through every edition of the governance guides and reviewed them for any future-orientated mentions, specifically mentions of the term’s sustainability and legacy.

What was noticeable was that the word ‘legacy’ was not used in any variation or edition of the project management governance materials. This highlights the current position of legacy within projects and provides additional justification for the need for this research. There is currently a lack of guidance available to project professionals for how legacy should and could be applied into project management practices.

As outlined previously in this chapter, the integration of sustainability has been a significant challenge within the discipline of project management (Marcelino-Sádaba et al., 2015). The author searched through each of these governance documents, and in total, 21 mentions of sustainability were made in this collection. Tables 6-8 show the results of the author's investigation in this area, highlighting the number of mentions and the context around this discussion.


Table 6: Sustainability Inclusion within Editions of Association for Project Managers Body of Knowledge, 1991-2012.

 Association for Project Managers Body of Knowledge (1991-2012)			
Edition of BoK	No. of Sus Ref's	Reference Detail	Context / Enable PM to Implement Sustainability Initiatives?
APM Body of Knowledge (1st Edition) 1991.	0	N/A	N/A
APM Body of Knowledge (2nd Edition) 1994.	0	N/A	N/A
APM Body of Knowledge (3rd Edition) 1998.	0	N/A	N/A
APM Body of Knowledge (4th Edition) 2000.	0	N/A	N/A
APM Body of Knowledge (5th Edition) 2006.	2 Refe		A note to remember compliance with regulations when you work within a project. Limited to Environmental

		1. Environmental legislation is subject specific. Requirements for noise, dust, protection of flora and fauna, water and sustainability” (p.30).	legislation rather than the wider 3 pillar meaning of sustainability. Enable: No
APM Body of Knowledge (6 th Edition) 2012.	9 References to Sustainability	2. “Ethical procurement is important. A project needs to be able to demonstrate that its procurement practices are ethical and transparent and that good governance, corporate accountability and probity are being observed, for example sustainability and employment practice” (p.75).	While introduces the concept of sustainability to project professionals. Only does so for procurement which is only a small aspect of project management. Enable: Minimal
		1. “Benefit reviews within a programme must focus on sustainability of the changes implemented to ensure that long-term goals in the business case are achieved” (p.138).	Discussing long term goals in the business case rather than sustainability. Enable: No
		2. “Sustainability describes an environmental, social and economically integrated approach to development that meets present needs without compromising the environment for future generations” (p.230).	Provides a definition on what sustainability is. Useful for educating project professionals but no details for how to achieve in a project. Enable: No
		3. “The ability of P3 managers to influence the sustainability of their work may be constrained by the host or client organisation” (p230).	Discusses constraints rather than opportunities. Lacks instruction. Enable: No
		4. “The three strands that need to be considered in any sustainability assessment relate to the environmental, economic and social dimensions of any work” (p230).	Educational. Providing characteristics of sustainability but limited again to a definition. Enable: No
		5. “All members of the P3 team can have an influence, however small, on sustainability and should think creatively about how they can act responsibly in their day-to-day work” (p230).	Good understanding that PM’s should be responsible. Limited instruction for how. Enable: Minimal
		6. “They can create an environment where sustainability is a factor in planning and implementing work” (p230).	Discusses that sustainability may be considered at the planning phase. Limited instruction for how. Enable: Minimal
		7. “They will have influence with clients and sponsors and, from the concept phase, can challenge aspects of sustainability” (p230)	Project Managers can have influence. Sustainability context and specifics unclear. Enable: Minimal
		8. “Sustainability should be considered in many different core areas of project, programme and portfolio management” (p230).	Brings awareness but no consideration or details for how. Enable: No
9. “managers need to play a part in analysing and selecting projects to meet sustainability objectives where possible” (p.230).	Provides some guidance of a PMs sustainability responsibility. Limited instruction for how. Enable: Minimal		

Source: Author


Table 7: Sustainability Inclusion within Editions of A Guide to the Project Management Body of Knowledge (PMBOK®), 1996-2017.

 Project Management Institute Body of Knowledge (1996-2017)			
Edition of A Guide to the Project Management Body of Knowledge (PMBOK®)	No. of Sus Ref's	Reference Detail	Context / Enable PM to Implement Sustainability Initiatives?
PMBOK® (1 st Edition) 1996.	0	N/A	N/A
PMBOK® (2 nd Edition) 2000.	1 Reference to Sustainability	1. "Social-Economic-Environmental Sustainability. Virtually all projects are planned and implemented in a social, economic, and environmental context, and have intended and unintended positive and/or negative impacts. Organizations are increasingly accountable for impacts resulting from a project, as well as for the effects of a project on people, the economy, and the environment long after it has been completed" (p.27).	Introduces the importance of sustainability and places emphasis on organisational responsibility and awareness for project impact. Limited details for how sustainability can be implemented within a project. The discussion on sustainability contexts is related heavily to legacy definitions and descriptions. Enable: Minimal
PMBOK® (3 rd Edition) 2004.		0	N/A
PMBOK® (4 th Edition) 2008.	0	N/A	N/A
PMBOK® (5 th Edition) 2013.	2 References to Sustainability	1. "If an organization has adopted policies in support of sustainability practices and the project involves construction of a new office building, the project manager should be aware of sustainability requirements related to building construction.) (p. 15).	Information relating to having an awareness of an organisations governance policies. There are no details for incorporating sustainability into a project just to have an awareness. Enable: No
		2. "The enterprise environmental factors that can influence the Develop Project Management Plan process include...Organizational structure, culture, management practices, and sustainability" (p.74).	Limited mention. Based on awareness rather than specific supporting actions for sustainability. Enable: No
PMBOK® (6 th Edition) 2013.	4 References to Sustainability	3. "The project manager stays informed about current industry trends. The project manager takes this information and sees how it may impact or apply to the current projects. These trends include but are not limited to: • Process improvement and sustainability strategies" (p.55).	Discusses the PMs responsibility for being up to date with industry trends (including sustainability). No details for how they can be applied in a project context. Enable: Minimal
		4. "The enterprise environmental factors that can influence the Develop Project Management Plan process include but are not limited to: • Organizational structure, culture, management practices, and sustainability" (p.84).	List of factors that can influence planning within a project but no information for how. Enable: No
		5. "The enterprise environmental factors that can influence the Direct and Manage Project Work process include but are not limited to: • Organizational structure, culture, management practices, and sustainability" (p.93).	Another list of factors that can influence project work but again but no information for how to implement or react to this. Enable: No

		6. "Data analysis techniques that can be used for this process include but are not limited to: <ul style="list-style-type: none"> Legal rights, such as occupational health and safety, may be defined in the legislation framework of a country. Moral rights may involve concepts of protection of historical sites or environmental sustainability" (p.512). 	Specific mention to environmental sustainability and not applicable for the wider understanding of it. Enable: No
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Source: Author

Table 8: Sustainability Inclusion within Editions of Managing Successful Projects with PRINCE2, 1996-2017.

 PRINCE2® Managing Successful Projects with PRINCE2 (1996-2017)			
Edition of Managing Successful Projects with PRINCE2	No. of Sus Ref's	Reference Detail	Context / Enable PM to Implement Sustainability Initiatives?
Managing Successful Projects with PRINCE2 (1 st Edition), 1996.	0	N/A	N/A
Managing Successful Projects with PRINCE2 (2 nd Edition), 1998.	0	N/A	N/A
Managing Successful Projects with PRINCE2 (3 rd Edition), 2002.	0	N/A	N/A
Managing Successful Projects with PRINCE2 (4 th Edition), 2005.	0	N/A	N/A
Managing Successful Projects with PRINCE2 (5 th Edition), 2009.	0	N/A	N/A
Managing Successful Projects with PRINCE2 (6 th Edition), 2017.	3 References to Sustainability	1. "The project processes and procedures should, when necessary, draw on the organization's own internal policies, processes, methods, standards and practices. This may include...External methods, standards and practices; legal, regulatory, health and safety, sustainability and environmental frameworks" (p.33).	List of factors when managing a project to have an awareness for each organisations policies (including potentially sustainability). No information for how to implement. Enable: No
		2. "Tailoring may need to take into account standards, policies, laws or regulations from outside the organization, including those relating to health, safety, sustainability and environment. In some regulated industries, such as rail or aerospace, mandatory certification points may determine the most appropriate project lifecycle and management stages to use" (p.34).	PM should have awareness of certain external regulations when managing a project (which may include sustainability factors). No specific guidance for application in practice. Enable: No
		3. An organization's project management method should form a seamless part of the organization's overall governance and management system. This includes... External methods, standards and practices; legal, regulatory, health and safety, sustainability and environmental frameworks" (p.38).	Project methods to include organisational requirements on certain policies (which may include sustainability). Inclusion in governance but not articulated further. Enable: Minimal

Source: Author

Tables 6-8 show that sustainability methods being applied to project management governance have taken some time to be realised, but as each edition is released, sustainability is a topic which is becoming more prevalent. The level of integration of sustainability practices into project management practices is still relatively limited. There are 21 references to sustainability in all the editions of the governance materials, and only 3 of these have the applicability to support a project professional in incorporating this into their practice. The level of this integration is still regarded as minimal. This highlights that much more is required from the project management governance bodies and their outputs when it comes to supporting future orientated practices in project management.

This can be viewed as surprising because some of the most high-profile and expensive global mega-projects recently undertaken having been based on 'legacy objectives' (de Silva & Paris, 2015). Some researchers reason this is often because of the conceptual clashes of traditional project management principles with new thinking and approaches (Boswell et al., 2005; Martens & Carvalho, 2013; 2016). While there is certainly a 'need' for new approaches (Ershadi et al., 2021; Thompson et al., 2011), there has also to be a realisation that there are some differences in the scope of a 'legacy' project and that of a traditional individual project (Cooper et al., 2003). Individual projects are more nuanced and less aspirational (Lester, 2014). They are more internally focused and have a more limited group of stakeholders, resulting in less public awareness and visibility (Liu, 2018). At the same time, this makes them less likely to be able to achieve some of the legacy project potential for being able to transform a city, community, country, or culture (Ermolaeva & Lind, 2021; Ritchie, 2000). However, it makes individual projects easier to manage and control, making it straightforward for project professionals what their roles and requirements are in a project's development (Kerzner, 2017).

The lack of inclusion for legacy within project governance documentation and methodologies limits potential development and broader awareness and application of the theme. The governance documentations provide the ability to manage projects in a more effective and organised manner, providing more chance to realise and achieve anticipated benefits (Da Silva Gomes, 2013; Derakhshan et al., 2019; McHugh & Hogan, 2011). While this is the case, these processes could be more efficient for considering long-term value (such as legacy) and benefits beyond the close out of the individual project (Cooper et al., 2003). This suggests that for project organisations to achieve legacy factors within their operations and outputs, it will have to be accomplished by developing their own custom project approaches. This is, however, limited as these governance documents are also the essential educational tools for the discipline of project management (De Rezende et al., 2018). This asks serious questions about how legacy can be accomplished with what is currently being educationally taught to project professionals. Especially in the context that "*sustaining legacy benefits over the long term can be associated with the need for legacy governance*" (Leopkey & Parent, 2012, p. 438). It also highlights that the responsibility of legacy development is being pushed by the organisation rather than the profession. This, however, may be a good fit, as Hopen (2009) notes, "*it's clear that good governance is a by product of the values or principles an organization adopts, the strategies it puts in place to set direction, the policies it creates to establish boundaries, and the processes it applies to conduct operations*" (p.22).

There is a long history of 'institutionalisation' within the business environment where established organisational processes and standards advance social drivers and behaviour for others to follow (Berger & Luckmann, 1971; Spieth et al., 2019; Washington & Patterson, 2011). A review of the literature also highlights the appropriateness of the organisation as a key legacy driver. There is a strong link between the rationale for developing sustainability, legacy, and the vision and values of an organisation (Girginov & Preuss, 2022; Gold & Gold,

2013; Pentifallo & Van Wynsberghe, 2014). Organisations have established practices for implementing widespread CSR methods and other aspects of ethical responsibility for outputs (Latapí Agudelo et al., 2020; Loew et al., 2004). The organisation is more likely to incorporate ethical frameworks such as ISO 26000 or the United Nations sustainability (SDG) initiatives (Bell & Bradley, 2012; ElAlfy et al., 2020). In today's business environment, we see the transformation towards a more transparent ethical window for the organisation. That more harmonious environmental practices are increasingly visible to attract a more ethical-conscious consumer (Wieser, 2005).

It is not through project management governing bodies but rather through individual, organisational governance that legacy can be facilitated (Ershadi et al., 2021; Girginov, 2011). Within the London Olympic 2012 project, policymakers and stakeholders delivering the games looked to include a new custom-developed governance model for the management of projects which took into consideration legacy goals. Raco (2013) states this was important as *"the emphasis of this legacy thinking is focused explicitly on processes of delivery and the ways in which planning systems and governance arrangements can be used to enable experts to get on with the task of getting things done"* (p.172). This allowed project stakeholders, particularly the project manager, to ensure that their decisions and processes can be supported to include sustainability processes and thus influence the achievement of legacy goals. This custom working method allowed project managers the practical experience of creating legacy processes and values but without *"dealing with abstract concerns with legacies and impacts"* (Raco, 2013, p. 172).

There are numerous examples of custom-based approaches to legacy management where governance in projects display evidence that legacy was a key organisational objective within the planning and initiation phase of the project. These included recent projects such as the London 2012 Olympic Project (Horne & Houlihan, 2014; Pinto & Santos, 2022), the Thames Tideway Tunnel Project (Halliday, 2013), the Crossrail Railway Link Project (Roukouni & Medda, 2012) and High-Speed Rail 2 (Cornet et al., 2018). These projects were developed so that the governance approach strived to keep politics out of the business of the project delivery. This is ironic, given that they are some of their era's most politically charged projects. However, they provide some themes for further research around organisational legacy goals, the related attitudes and approaches of stakeholders charged with their project delivery, and the influence of associated political factors. There is limited primary research in this field, and will be something that the investigations of this research will expand upon. Silva (2016) *"calls for practitioners and decision-makers working on projects to claim an active role towards the future by expanding their horizons in terms of reach, time and possibilities"* (p.10)". This research will explore attitudes from project decision-makers regarding how working within these parameters has influenced their understanding, perspective, and future applicability around legacy goals.

2.4 Analysing the Challenges and Benefits of Legacy Characteristics

The literature has identified that legacy development is a business 'need' (Knott & Tinaz, 2022; Leopkey & Parent, 2012) but also revealed that it is a highly complex and challenging area of analysis (Rogerson, 2016). This theme requires a more critical evaluation beyond trying to define what legacy 'is' and 'can be' (Thomson et al., 2013). In this section (2.4), the factors which limit or motivate the development of legacy projects are reviewed.

Griffiths and Armour (2013) report that legacy claims are analysed in three ways (theoretically, practically and pragmatically), the literature is often biased towards theoretical underpinnings with limited application for empirical studies (Chen & Henry, 2019; Li & McCabe, 2013; Tsaur et al., 2017). The multifaceted nature of legacy studies determines that there are opposites in terms of the legacy effect (Agha et al., 2012). To ensure that a more expansive and critical approach (considering both positive and negative impact) is conducted. The literature review of this section will include all the factors which Preuss (2007) considers key for legacy development within his 'legacy cube' (Figure 7).

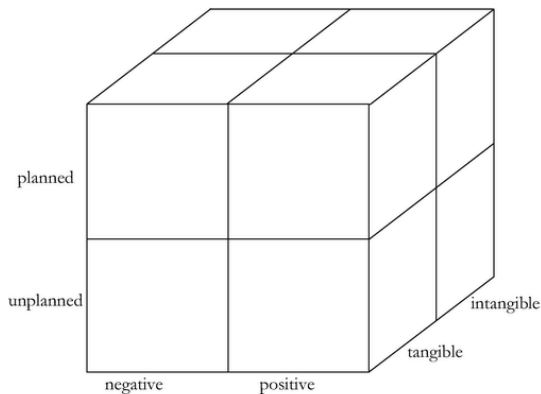


Figure 7: Legacy Cube (Preuss, 2007).

The core legacy dimensions identified within the cube are factors that legacy researchers have built theories around for understanding legacy (Dawson & Jöns, 2018; Dickson et al., 2011; Duignan, 2019; Kaplanidou & Karadakis, 2010; Veitch, 2013). Applying the Preuss legacy cube model to an investigation of legacy requires a targeted exploration of six dimensions or themes of legacy (Preuss, 2007). This provides a more balanced perspective of legacy, which includes the opposite considerations of these identified themes (Manzenreiter, 2014).

The first set of dimensions for understanding legacy is planned and unplanned. This part of the model explores factors around the desired legacy and whether this was planned and controlled as intended (Nedvetskaya, 2022). In addition to this planned exploration of legacy, the investigation using the model should also consider what changed or what unanticipated features developed that were unplanned (Cashman & Horne, 2013). This provides a fuller and less biased picture of what legacy is, and not one based on just the vision of the stakeholder who intended it (Thomson et al., 2019). Planned and unplanned legacy literature are explored in more depth in section 2.4.3 of this thesis.

The second grouping of themes is the consideration of tangible and intangible factors. Legacy can consist of both tangible and intangible outputs and benefits (Byers et al., 2020; Ferrari & Guala, 2017). This model ensures that there is consideration of both the physical and visible structures of a desired legacy along with those which are often unseen and difficult to quantify, such as reputational, emotional, or social factors (Dawson & Jöns, 2018; Dickson et al., 2011). The legacy literature around tangible and intangible factors is reviewed in more depth in section 2.4.1.

The last grouping of themes is considering whether there are negative and positive factors around the development of a legacy. There will be an exploration of what factors constitute or contribute to a beneficial legacy for stakeholders (Adams & Piekarz, 2015). This will be done in conjunction with identifying factors which disadvantage stakeholders or cause long-term damage. It would explore if the desired legacy had substance, was exaggerated, or was even possible to achieve (Duignan, 2019; Vanwysberghe, 2015). Negative and positive legacy factors in the literature are reviewed in section 2.4.2. All six legacy themes from the legacy cube model are discussed in section 3.1.2 for how they contribute to the theoretical framework that underpins this research. The legacy cube is widely applied in developing legacy, so its dimensions will be used as a structure in this section of the literature review evaluation.

2.4.1 Tangible and Intangible Legacy Development

Legacy can consist of both tangible and intangible outputs; this has been a core principle in obtaining potential benefits but also a challenge in furthering legacy development. This theme has been widely explored in legacy literature (Byers et al., 2020; Dansero & Puttilli, 2010; Ferrari & Guala, 2017; Minnaert, 2012). This same concept has also been used under different terminology, including 'hard' or 'soft' legacy (Preuss, 2007), 'visible' or 'invisible' (Poynter, 2004) or 'economic impact; or 'retention of knowledge' (Ferrari & Adamo, 2006; Muñoz, 2006).

It is challenging to develop a legacy within projects when the type of project to be implemented differs. One of the core values of project management is that its processes and methods should apply to all types of projects (Kerzner, 2017). A 'legacy' project is just one 'type'; it is a type not officially recognised as such, but a project with characteristics which are expansive in nature (Tsaur et al., 2017). The most apparent factor in identifying what a project's legacy will be is to consider firstly whether the project will have 'tangible' or 'intangible' benefits (or a combination of both). It is the tangible project type that has dominated legacy research. Lienhard & Preuss (2014) highlight that physical infrastructure is often the exclusive focus of legacy development studies. Much of the legacy literature focuses on construction and infrastructure projects (Gratton & Preuss, 2008; Zawadzki, 2022), or the economic impact of developing this tangible legacy (Orr & Inoue, 2019; Silvestre, 2009).

Much of what we understand in terms of legacy development has been based upon these 'tangible' legacies such as Olympic city developments or large-scale construction mega projects (Hiller, 2006; Preuss, 2019). There is the issue that despite this being only one facet of the nature of legacy, it is the one that dominates with the most visibility, funded research, and influence (Tomlinson, 2014; Wang & Jiang, 2021). This poses questions about the integrity of legacy research and whether its development has been biased based on the influence and ambition of the groups commissioning studies. This is particularly evident in the widely researched field of event management legacy studies (e.g. Olympic Games) where the event organisers have power and influence for the direction of the study (Gold & Gold, 2020). Kasimati (2003) conducted some investigative analysis into Olympic Games research literature and their impact on studies from 1984 to 2003. It was found that every paper analysed over that period contained no primary data. In addition, every paper's 'legacy' analysis (post games impact) was conducted prior to the games happening and commissioned by Olympic proponents. This renders the studies ineffective, biased, and having limited non-discriminatory value as they are considering a future potential that has not even happened. This is disturbing that the foundation of a lot of legacy research is built

around these eschewed contexts. It supports the need for additional unbiased understanding of legacy development where neutral, unbiased research is conducted to understand the benefits and challenges without external influence.

Tangible legacy research, however, is more visible in terms of highlighting legacy and is still a theme requiring an expanded research focus (Hoff & Leopkey, 2021; Leopkey & Parent, 2012). A tangible legacy project can promote more widespread understanding and awareness as it is something stakeholders can see, feel and experience (Chappelet, 2012; Preuss, 2019). It makes the concept of legacy easier to digest and visualise. If legacy goals bring generational improvement, these tangible outputs are repeatedly witnessed as people see and use the physical infrastructure developed. Structures such as new buildings and transport networks are apparent in how they benefit a person and the environment they were designed for. This permanent output is often a more obvious signpost that there is a certain legacy for a project or event (Smith, 2013b).

While there is visibility for legacy development, this is often hampered by the difficulty in determining the value of a legacy (Chen & Henry, 2019; Preuss, 2015). This is especially true of sought legacies that are positioned with intangible benefits; these can be very difficult to measure for impact, particularly when considering an accurate financial figure or return on investment (Pena et al., 2019; Ritchie, 2000). However, this same charge has been labelled at tangible legacy projects too. A lack of clarity and accountability for legacy claims has led to numerous cases where benefits were exaggerated or unfulfilled despite the heavy financial investment (Davis & Groves, 2019; Santos Neto, 2019).

A drawback of some tangible legacy projects has been that the overall focus is on hosting an event or constructing a building within a certain timeframe and the subsequent lack of consideration for whether they are 'fit for purpose' or appropriate post-build (Orr & Inoue, 2019; Silvestre, 2009). This results in a short-term legacy, which in reality, is not a legacy, but more the completion of a project under traditional project management methods (Roche, 2000). That the project was built or happened does not make it a legacy project if it ignores designing into the project 'multigenerational' benefits (Tomlinson, 2014). Often these generational benefits have been claimed for projects, but there is little evidence of monitoring these claims.

A major limitation of legacy projects (both tangible and intangible) has been the lack of coordination, consideration, and resources allocated to the actual monitoring of long-term legacy targets (Gratton & Preuss, 2008). Authors such as Smith & Fox (2007); Tsaour et al (2017) have considered monitoring of a planned legacy vital for any tangible legacy project, but there seems little evidence for actual long-term monitoring of projects where legacy claims have been made (Chappelet, 2019; Owen, 2005). While there is limited data for why this may be, high-level factors often seem obvious, such as the continuously changing nature of organisations (Barley et al., 2017). This would see key stakeholders change over time that was not involved in the initial project and thus not invested in its long-term monitoring. Also, long-term legacy monitoring may be seen as an additional expense or unneeded, especially if, in the eyes of many, the project has been completed (under traditional project management terms).

It may also be that the project organisation does not see it as their responsibility. Their role was to create the outputs of legacy and not monitor them post-delivery. This attitude opens up the potential risk that government or regulatory bodies will step in and make project organisations more accountable for their legacy claims (Byun & Leopkey, 2022; Chalip, 2003). This is particularly apt when many legacy projects that promised to positively

transform their environment for the better have created a negative output for many public stakeholders (Death, 2011; Duignan, 2019; Raco, 2013). There is a growing political and public interest in holding organisations more accountable for the outputs of their operations (Matheson, 2010). This extends to their product's lifecycle and the product's 'afterlife' once exhausted from their initial purpose (Ciambone, 2018). Some recent examples of this have been the pressure applied on high-street coffee chains, and their use of non-recyclable cups, and the potential for a landfill levy to be applied (Von Geibler et al., 2016). Some political discussions have seen large drink manufacturers being considered for ways to make them more financially responsible for waste disposal and ocean clean-up for disregarded plastics (ten Brink et al., 2018). Conversely, in this context and evaluating these issues, they are at the same time also conceptually considering the legacy of their products. Making understanding for solutions a greater need in this climate and this topic more vital. This is where sustainability and greater environmental concerns could impact legacy development, as these factors ask questions about whether something is suitable and appropriate (Pentifallo & Van Wynsberghe, 2014). This can be particularly challenging within a tangible project output, but we can see real benefits for achieving a meaningful legacy when implemented.

An example of a legacy-focused tangible project development was the FIFA Qatar World Cup hosted in 2022. Sustainability is one of the core values of the Qatar national vision and is thus expected to be adopted within Qatari business practices (Seed, 2015). When planning the nation's biggest project event in its history, the approach was to build around sustainability principles (Brannagan & Giulianotti, 2015; Talavera et al., 2019). Traditional project approaches would consider the tangible benefits of the event (new stadiums, new transport networks, new infrastructure) and possibly some intangible benefits (reputation, cultural integration).

The Qatar World Cup project ensured the governance approach was to focus on sustainability for all aspects of the project delivery and to ensure that the tangible legacy outputs have long-term value and are fit for purpose for multiple stakeholders (Zeyad Hayajneh et al., 2017). When it comes to stadium construction for major legacy events, there has long been a history of ill-conceived 'white elephants' (Chappelet, 2012; Mussi et al., 2020). From Olympic stadiums in Toronto, Barcelona, and Athens (Davidson & McNeill, 2012) to World Cups in Japan, South Korea, and South Africa (Cornelissen et al., 2011; Grix, 2014). Where huge publicly funded stadiums are constructed that will have little appropriate use post-event. The public outrage for this has been a key driver in legacy development (Leopkey & Parent, 2012; Pinto & Santos, 2022). However, at the same time, when it occurs, it actually suffocates legacy development potential because of the repetitional damage white elephants inflict (Lienhard & Preuss, 2014).

The Qatar World Cup project looked into whether the traditional expected tangible benefits would be benefits at all (Kaplanidou et al., 2016). There was a question asked about Qatar's very low population and the need to build stadiums to fulfil the criteria to host. With stadiums required that have a capacity larger than even the local area population, the potential for unused or underused infrastructure was high, and the potential for a negative legacy (Brannagan & Giulianotti, 2015; Talavera et al., 2019). The project, however, adopted an approach to consider the sustainability and the long-term legacy based on the needs of many stakeholders. The project sponsors introduced far-reaching new sustainability initiatives for their Ras Abu Aboud stadium (Stadium 974). This included using untraditional, reusable, and recycled materials in the form of shipping containers to create the stadium structure. When the tournament concludes, the structure will be dismantled in sections. These materials will create a new sporting venue thousands of miles away in Africa where it

will have a genuine and required need and thus a positive tangible legacy (Scharfenort, 2012).

The commitment to this level of sustainability comes at a tremendous financial cost and goes against many project management principles to keep expenses to an acceptable minimum (Willumsen et al., 2019). It does provide some excellent potential for what can be achieved when considering legacy within projects and having a commitment towards sustainability measures. The traditional millstone for legacy perception, the tangible underused vanity stadium, has, through a long-term legacy vision, found in this instance, a uniquely sustainable solution to this problem. It should also motivate others when considering their project management outputs. It shows that projects can be conceived and planned to overcome great complexity and challenges of scale, even cross-national boundaries and political lines. If this can be achieved, it allows us to think of other possibilities for advancing legacy practice. Specific locations will have their own challenges and ambitions for the legacy they want to achieve. However, this topic is in its infancy and one that is constantly developing (Talavera et al., 2019). An awareness of legacy advancements can influence others to what they consider possible for projects on different scales and contexts. Projects are unique endeavours, designed for and also constrained by the environment for which they are intended (Lock, 2020). Each environment has different parameters, needs and resources (Lauer, 2021). What current project stakeholders understand about the legacy potential in their own area and context will be explored in the primary studies of this research.

While there is increased visibility and more developed consideration for tangible legacies, intangible project benefits can also have lasting multigenerational benefits (Kaplanidou et al., 2019). With financial factors predominantly the key driver for initiating projects, intangible factors are often an 'afterthought' or a by-product of projects (Persson et al., 1998; Picciotto, 2020). Research and the study of practice in this area is more limited with the argument that often intangible benefits are 'subjective' and challenging to quantify effectively (Preuss, 2019). The social aspects of legacy studies, particularly, are lacking in critical study (Girginov & Preuss, 2022; Minnaert, 2012; Smith, 2012). Chappellet (2012) states that social legacies are 'more important' as they provide large-scale emotional benefits. Ritchie (2000) believes that intangible project outputs such as international awareness, reputation enhancements and strengthening social structures within communities are '*perhaps the most valuable*' when compared against their tangible infrastructure and economic opposites (p.156). This leads to a constant criticism within legacy literature that there is a lack of balance for research focus, with economic factors overwhelmingly viewed as the most important (Dolan et al., 2019).

Legacy projects are an effective measure for providing awareness of social causes (Preuss, 2007). The nature of legacy projects makes social and environmental issues more visible. In event legacy literature, it is 'aspirational' projects or events which cross national boundaries and in the process, can positively influence political change or even human rights improvements as part of the stakeholder collaboration process (Preuss, 2015; Spalding, 2022). Through this process, intangible project benefits can be generated and influence positive legacies for various contexts. These can include establishing community identity, togetherness, and pride, improving confidence and self-perception, inspiring generations of people to a cause (in particular children, and disadvantaged groups), and striving for a more effective lifestyle and working attitudes (Bailey et al., 2009; Griffiths & Armour, 2013; Misener & Mason, 2006; Smith & Fox, 2007). Not only do these legacy projects aim to produce social and 'cultural' benefits they can also lead to positively impacted community development and the local economy (LERI, 2007). This is because each project will be

developed in and for a different environment. Hence, social factors have to be considered and planned into a project to extract focused benefits (Brownill & Darke, 1998; Garland & Morey, 2022).

Kemp (2002) notes how planned social responsibility measures enabled socially excluded groups to be involved in volunteering within Olympic projects. This group, in turn provided a significant positive contribution to their societies with new skill competencies and additional employment roles and opportunities (Vigor et al., 2004). Critics have, however, derogatorily labelled such efforts as ‘feel-good factors’ (Smith, 2009), and short-term ‘highly exploitative labour pools’ (Rutheiser, 1996). Some have questioned if social sustainability should even be a part of an organisations jurisdiction being so far away from its primary remit (Lenskyj, 2008). While various claims have been made for positive social legacy benefits, there is still very little evidence to justify these claims with the existing studies often based on ‘potential’ and ‘forecasting’ (Atkinson et al., 2008). They are also heavily dependent on exclusive qualitative measurement and analysis (Seippel, 2006), and Smith (2012) notes that the social impact of these effects is ‘debatable’.

2.4.2 Negative and Positive Legacy Development

Another critical factor in understanding legacy projects is that they can have both negative and positive impacts or a combination of both. While positive project benefits are planned and anticipated by an organisation (Holmes et al., 2015; Ribeiro et al., 2022), what constitutes a positive legacy may vary depending on the degree of risk, commitment, and project success. This process has been analysed within the literature for defining impact, links to strategy, the varying contexts it could be applied and other factors for a more comprehensive understanding (Dickson et al., 2011; Ferrari & Guala, 2017; Getz, 2007, 2012; Gold & Gold, 2008; Hiller, 2006; Kaplanidou & Karadakis, 2010; Moss et al., 2019; Roche, 2000; Veitch, 2013).

Ziakas (2014) discusses the importance of achieving a ‘positive’ legacy and how this is often the key driver for legacy, that not only does a project leave an impact but does so providing long-term benefits or economic rewards. With few empirical studies on the theme, what motivates an organisation to seek a positive legacy is hard to ascertain. Aside from the obvious potential financial incentives, there could be the argument that this is an extension of CSR ambitions (Fordham et al., 2017) or just good ethics (Bowie, 2017).

Gratton & Preuss (2008) highlight that positive legacy projects provide organisational advantages such as reputational improvements (and reducing criticism towards them), justifying public expenditure for project spending and motivating other stakeholders to have future collaboration in these types of projects (Chalip, 2014). The aspirational nature of attempting to achieve a ‘positive’ legacy for a project has several supporters (Deng et al., 2020; Panagiotopoulou, 2012; Ritchie, 2000), who have identified that it pushes the boundaries of what an organisation can aspire to. It can make an organisational strategy or vision ‘meaningful’ when considering long-term benefits (Girginov & Preuss, 2022; Vadiati, 2020). It extends what is possible when it comes to lasting improvement (Kaplanidou et al., 2016). An attempt to achieve a positive legacy shapes the future project impact, and the process provides an attempt to shape the narrative of impact (that is unavoidable), to one that is positive and beneficial rather than left to chance or for things to happen organically or uncontrolled. There is evidence within industry that legacy projects are increasing and given a more important consideration within practice (Leopkey & Parent, 2012).

A host of high-profile 'legacy' mega projects have been amongst the highest in European project spending over the past five years (Evans, 2016; Gil et al., 2017). Not only that, but these legacy projects make claims of learning from previous project mistakes and being more effective, measured, and sustainability-focused in their development (Bell & Bradley, 2012; Cornelissen et al., 2011). They have applied new techniques, approaches, and processes (Hayes & Horne, 2011; Whyte, 2019) to highlight potential positive future legacies. This is contrasted by studies that dictate that often multi-generational project benefits are exaggerated, a marketing ploy, or ambiguous as to whether a legacy was achieved or even possible to achieve in the first place (Stevenson, 2012). Often, the difference between rhetoric and reality causes a placebo rather than a genuine benefit from a project (Rojek, 2014). The most glaring example is the many project 'white elephants' where physical outputs are created under much hype and promises, and then subsequently left underused or ignored (Davis, 2020; Kissoudi, 2013).

Other types of legacy benefits have been 'denbunked'. In legacy literature, there is skepticism for community development claims (Kennelly & Watt, 2011), physical infrastructure and regeneration improvements (Duignan, 2019; Slater, 2009), health legacy claims (McCartney et al., 2010), the inclusion of disadvantaged social groups (Hiller, 2000; Vadiati, 2020), additional participation and engagement from event inspiration (Reis et al., 2017; Veal et al., 2012) and long term employment benefits (Roche, 2000). These outputs have shown that where 'positive' legacies have been promoted, it has, in some cases, caused negative legacies for some stakeholders (Cashman, 2006; Spalding, 2022). The fact that project legacies can be positive or negative makes research in this area challenging as, at times, they can be both or change over a duration (Matheson, 2010). This makes legacy hard to measure effectively.

It has been identified that the nature of legacy projects is that they impact transformational change for the long term but also involve many different stakeholders (Ermolaeva & Lind, 2021; Girginov & Hills, 2008). While Chappelet (2012) prioritised three stakeholders who can shape a legacy project (economic/political leaders, local population and the owner of project/event), there are many varied and widely affected stakeholders (Pappalepore & Duignan, 2016). These different stakeholders need to be considered for how the project individually impacts them. Often projects can think inwardly and exclusively towards their own objectives and values and not consider those whose outputs may impact negatively (Vigor, Mean, & Tims, 2004). In this scenario, even though the organisation that manages the project may meet their objectives and declare it a success (and ultimately a positive legacy). This is based on their own perspective and does not track any potential negative project impacts that other external stakeholders may experience.

Stakeholders will be many and vary; their perspectives will differ (Leopkey & Parent, 2012). Some will be impacted positively and others negatively, which is why it can be difficult to classify legacies for a wider application (Preuss, 2015). Ma & Kaplanidou (2017) note that when considering stakeholders, "*All...legacies should increase in residents' quality of life*" (p.423). This is not always the case, and the existence of 'negative' legacies is a common feature which is often the unexpected output of the project itself (Pinto & Santos, 2022; Rogerson, 2016).

Legacy decisions are usually top-down in their conceptualisation, development, and delivery. This process often disregards input from public participation, which will often be the most impacted stakeholder (Silvestre, 2009). Law (2002) specifically identifies a very undiverse group of a "*small cabal of local politicians and business people*" (p.148) who control legacy strategy and often at the disregard of unconsidered stakeholders. These decision-makers

are too often absorbed in self-vested interests to consider other stakeholders or social considerations (Waite, 1999).

Chalip (2003) argues that for better project development, greater community approval and engagement needs to be incorporated. However, even in some of the most high-profile public legacy projects that have integrated core organisational legacy values and governance measures to guard against negative public impacts, they are not immune to creating negative legacies. Newman's (1999) research into the post-event impact of the Atlanta Olympic Games highlighted that this was the 'enabler' for Atlanta government officials to reshape the city under a positive legacy guise. This was in contrast to the reality for many impacted stakeholders for whom this city reshape negatively impacted (Bragg, 1997; Hoff & Leopkey, 2021). This was particularly evident in poorer communities resulting in a "legacy of distrust" and exposing 'the dark side' of legacies (Smith, 2012). The transformational legacy promises made for these communities resulted in residential displacement rather than regeneration; the social aspect of sustainability, which was supposed to be a key driver for legacy, was achieving the opposite (Harris & Dowling, 2021; Watt, 2013). This evidences that intended positive legacies can morph without effective planning, measurement, or strong will to stick to the project scope. Without effective project management of the process, even well intentioned ambitions can quickly turn negative (Salisbury, 2017). That post-project tangible outputs "*may be an asset to the stakeholders, or they may be a burden*" (Preuss, 2015, p. 643).

While legacy projects are usually well-intentioned to seek positive legacies (Scheu et al., 2021). There have been cries of project governance exploitation which has resulted in the misuse of the term legacy, with organisations justifying investment and project spending with minimal measurement for the 'lasting benefits' and promises made (Chalip, 2014; Sant & Mason, 2015). Legacy projects have been intentionally planned to exploit, take advantage, or push negative legacies onto other stakeholders while they benefit or profit in some manner (Duignan, 2019). This takes legacy development into a potential new area. The concept of greenwashing has been widely discussed in academic literature, using sustainability as a cosmetic marketing tool (VanWynsberghe et al., 2021). However, there is also the potential of legacy washing which has yet to be explored. The primary research of this thesis will follow up on this theme and try to gauge stakeholder attitudes towards ethical governance and the rationale behind the management and approach of projects.

2.4.3 Planned and Unplanned Legacy Development

A repeated theme of the legacy is that it has an extended lifecycle and is developed in conjunction with an organisations strategy. Legacy has been categorised as being complex and difficult to achieve (Stewart, 2014). It is a theme that has been explored within the literature with an emphasis on what a legacy 'ends up being' (Preuss & Hong, 2021). There are questions about whether the desired legacy does achieve what was required or morphs away from what was anticipated (Cashman & Horne, 2013). The factors surrounding this has been described as planned and unplanned legacy considerations and features often in specific legacy literature (Gold & Gold, 2013; Hiller, 2000; Orr & Inoue, 2019; Preuss, 2007). This same theme has also been applied under different terminology, including 'expected and unexpected outcomes' (Cornelissen et al., 2011), 'Intended or unintended' (Chappelet, 2012; Chappelet & Junod, 2006) and 'directed or indirect' (Ferrari & Guala, 2017).

Planning within a legacy project is essential to its success and existence (Brown, 2020; Holmes et al., 2015). The planning process needs to be done before the project/event is

completed for any concept of legacy to be implemented (Ritchie, 2000). Maunsell (2004) states that “*commitment and funding for legacy need to be in place*” at the planning stage of a project. Any development of a framework for measuring legacy requires that planning is built into it (Smith & Fox, 2007). Planning should exist alongside and be an integral part of the project management process, as the scheduled delivery of the project is critical to its success (Girginov, 2013; Harrin, 2022). There are some requirements to get the balance for planning correct. Liu (2018), states that there has been a tendency to focus the planning efforts on completing a project or event with minimal considerations for continuing post-delivery. Reis et al. (2017) state, “*legacies are only as good as the strategic planning implemented to support them* (p.141)”. This supports the notion that legacy vision and objectives are critical pre-project completion, as any post-project revelations would be unplanned. The unexpected consequences are ones that would not have been managed effectively and result in a negative legacy (Rogerson, 2016). Lienhard & Preuss' (2014) research sought to understand how to improve approaches for achieving legacy for events. It found that specific aspects that needed to be planned into the project were critical (e.g., sustainability) and influenced the management and overall success of the project. They also concluded that governance was an essential factor for pushing forward legacy development.

Left to organisations alone, there are not enough aligned goals that would benefit the environment and green economy (Preuss et al., 2019). This emphasises that there is a correlation between the desire to ‘achieve’ a legacy and that it is built on a foundation of specific plans and set goals (Kirkup & Major, 2006). Silva (2015) notes that achieving legacy to support these sustainability goals start with planning. The specific factors that are required for planning a legacy are still undetermined. Every project is unique in scale, complexity, and nature and so it is difficult to accurately suggest uniform measures that will definitively impact project success (Garland & Morey, 2022).

Lienhard & Preuss (2014) advocate the planning and implementation of sustainability measures as an approach for achieving legacy. Silva (2015) agrees and notes that achieving legacy to support these sustainability goals starts with planning. While this strategy has other supporters (Kirkup & Major, 2006; Liu, 2018) it is often difficult to effectively apply through a lack of understanding for this theme with no structured project management governance to educate and inefficient methods to monitor implementation (Davidson & McNeill, 2012; Owen, 2005).

Traditional sustainability monitoring is varied, uncoordinated between organisations and often built around self-serving internal organisational needs, leading to greenwashing criticisms (Tomlinson, 2014). Several organisational processes enable monitoring of sustainability through KPI's and linking to organisational strategy (Lam, 2022), ISO 14001 compliance and custom-based auditing (Boiral et al., 2017). These have been determined to be relatively ineffective, and initiatives like the United Nations Sustainable Development Goals (SDG) provide a more unified and wide-ranging umbrella for improved measurement to engage businesses (Villeneuve et al., 2017). The United Nations SDGs, however, have also been categorised as being ineffective because their scope is too expansive. Specific sustainability requirements have morphed into 17 ‘universal’ themes and have 169 target goals, and 230 indicators, making it complex and unfocussed for assisting organisations in their sustainability monitoring (Allen et al., 2016; Hák et al., 2016). These processes do not make claims to support a ‘legacy’ but are methods that allow for the long-term measurement of defined factors (in this case, sustainability factors). It does suggest, however, that potential legacy monitoring could be planned to use already existing methods and that for these methods, there is enthusiasm and support for future development in this area.

Another core planning principle that defines a legacy project is the consideration of an extended lifecycle (Cooper et al., 2003). It is in the post-event / project completion, which will impact many years beyond that initial point; this is where the legacy concept formulates (Hiller, 2000). Gratton & Preuss' (2008) event legacy research highlight that *“the measurement of a legacy should start with the changes events create”* (p.1925). This is, however, quite alien to traditional methods for managing projects in which they have a very much defined close-out (see Figure 8).

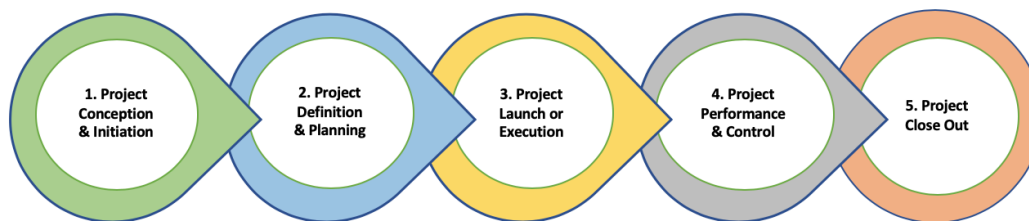


Figure 8: Phases of Project Management (Nedzelsky, 2016)

The close-out phase of a project contains certain processes which are initiated; these can include, for example, auditing, lessons learnt, archiving documentation, and project sign-off (Kerzner, 2017). It formalises the process that the project is completed and finished (Heagney, 2016). This poses an important question: How in project management can a project go beyond the close-out phase without being stuck permanently in an unclosed/incomplete state? The integration of sustainability within project management offers a solution as this goal has a crucial requirement towards integrating monitoring goals post-project completion (Cornelissen et al., 2011; Labuschagne et al., 2005). If this factor is adopted, it could keep traditional project management close-out operations, but at this point, introduce sustainability measures to track and provide evidence that long-term legacy objectives are being met (Harrin, 2022). Silvius (2009) developed a model for identifying project success that is built around the concept of sustainability integrated into project management; this is based on an extension of the traditional project lifecycle (see Figure 9)

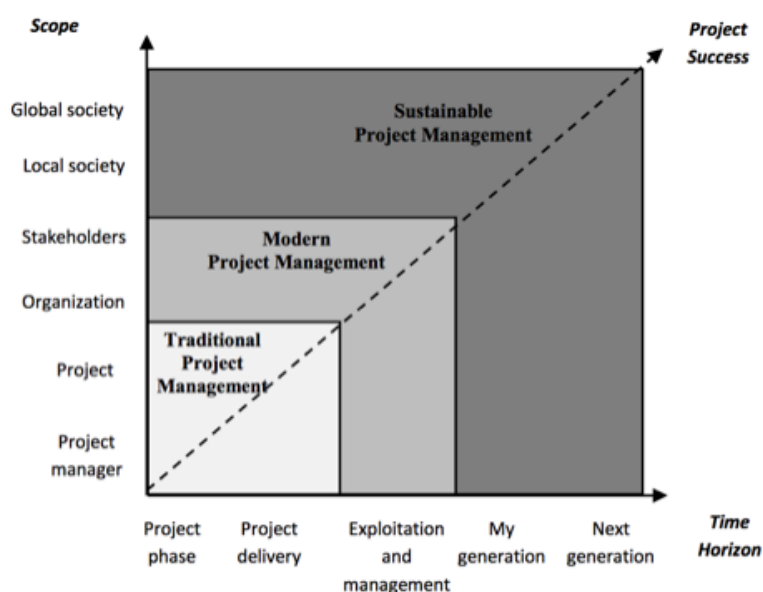


Figure 9: Project Success Timeframe (Silvius, 2009)

This model links project management practices to generational benefits, a core feature from the definitions of legacy outlined in section 2.2. Like that legacy literature, it also argues that sustainability-focused project factors extend the lifecycle of a project. After the initial project objectives have been completed or occurred, the project moves into a measurement phase to review multi-generational impact. This concept suggests that the decision of this research to focus on the understanding of stakeholders who have managed projects, including adopting sustainability initiatives, can accurately provide insight into the potential for developing and understanding legacy better.

The inclusion of an extended project lifecycle in other contexts is a positive development for project management (Armenia et al., 2019; Stewart, 2014), and provides more substance for considering legacy development. There are still a number of time-based issues when analysing legacy. Considerations in legacy development include ‘when do legacies occur?’ (Thomson et al., 2019), and ‘how long do legacies last?’ (Preuss, 2007) With the varied nature of legacy research, responses to these questions are subjective and difficult to answer conclusively without focusing on a specific planned project or event (Chappelet, 2012). Preuss (2015) notes that the design of a project or event brings opportunities and that legacy is only activated when certain circumstances occur. Barget & Gouguet (2007) build on this theme with the concept of ‘latent legacy’. That until the point an opportunity is exercised, the development of legacy will remain latent. Both Hiller (2000) and Gratton & Preuss (2008) have indicated that legacy begins when a project/event is complete, and then legacy monitoring starts at that point.

While there is no universally agreed point of legacy, it raises the importance of defining these parameters within the project's planning. Preuss (2015) even labels this concept as the ‘pregnancy effect’ where there is preparation for a project event/ time during the planning and the legacy effect only being felt post this event/point. One characteristic of projects is that they are unique endeavours that are ‘time-based’ (Kerzner, 2017). Likewise, the nature of project legacies is heavily defined by their lifecycle duration (Preuss, 2007). The literature is vague when articulating the length of legacies (Matheson, 2010). Common terminology such as ‘multi-generational’, ‘long term’, or ‘lasting benefits’ provide characteristics about legacy’s nature but not specifically quantifiable data to clarify duration parameters.

Only Gratton & Preuss (2008) have recommended a time frame of 15 to 20 years, although this has yet to be tested or alternative periods suggested. This has been contested by Chappelet (2012), who has gone as far as to say that “*legacy is arguably never something that is achieved to a definitive degree*” (p.80). Thus, a set time cannot be effectively attributed. Legacies can, however, be grouped into time phases based on their nature (Chappelet, 2012). Some project legacies can be short-lived and often, these can be reputation-based factors or provide intangible benefits (Dolan et al., 2019; Girginov & Preuss, 2022). Others can be more long-term; this is particularly evident in buildings and infrastructure where a ‘tangible’ legacy is left within a community or environment (Davis, 2020).

Preuss (2015) notes that when considering the duration of a legacy, there should be an awareness that a positive legacy may transition into a negative one and vice versa over the course of its lifecycle. This leads to the consideration of when legacies expire. Another time-based concept when considering legacy planning is the concept often referred to as ‘retro legacy’ (Grix, 2014). This is where an established ‘legacy’ has declined or expired over time, and a new effort is made to restore it to previous glories. This adds even more complexity to the potential understanding of legacy. Not only can it change from variations of positive and negative impacts but also that it could be stop/start in nature.

A recent example is the Thames Tideway Tunnel mega project (2016-2023) to update the London sewer system (Honeyman, 2006). Within this project, there is a particular focus on its objectives in recapturing the original 'Victorian legacy' (Thames Estuary Partnership, 2016). This is formalised in that the redevelopment planning for the project should achieve some of the legacy factors from the original infrastructure development. This includes a quality of output that exceeds normal expectations, engineering excellence, innovation in techniques used, and a final output that will result in infrastructure that will last way beyond comparative systems from other large cities (Thomas & Crawford, 2011). The additional cost, complexity and justification for these goals are derived from a planned vision to achieve this legacy (Tideway, 2018). This was based on public expectations, which were raised because of the legacy achievements of the original Victorian-era project. This project provides rare evidence of multi-generational impact for a project and how this influences legacy opinions and approaches within the management of projects.

When considering effective planning, it has to be done with a changing and unpredictable future in mind (Harrin, 2022; Taylor & Edmondson, 2007). For any potential legacy, risk analysis must be conducted in conjunction with it (Harris & Dowling, 2021). The multifaceted and multidimensional nature of legacy can change through its lifecycle (Grix & Phillpots, 2013). This needs to be considered and accounted for rather than 'hoping' for a positive outcome (Spalding, 2022). In academic literature, the unplanned legacy is rarely discussed except to acknowledge that it exists (Davis & Groves, 2019; Reis et al., 2017). Chalip (2004) instructs on the need for not neglecting this, stating, "*in the hope that desired outcomes will be achieved; it is necessary to form and implement strategies and tactics that capitalise fully on the opportunities*" (p.245). Project management need is based on the fact that most projects fail to meet their anticipated objectives (Hillson & Murray-Webster, 2017; Lock, 2020). The management processes help to mitigate that risk and influence project success (Kerzner, 2017). There is no evidence to suggest that legacy projects have a higher success rate than other project types, although there is a lack of data to make claims either way.

Cooper et al.'s. (2003) research identifies core factors required to successfully manage a 'project afterlife'. These include:

- That sustainability is linked with a legacy output.
- That appropriate and sufficient resources from the organisation are provided (including specific funding for post project legacy activities).
- The organisation must resume responsibility for legacy efforts.
- Provide an effective organisational structure.
- That there is realistic costing and commitment long term to funding.
- That there is an element of monitoring to ensure compliance and bench marking of expectations.
- Effective use of time and scheduling.

While there is limited relative literature on this theme, the primary data elements of this research will be interesting to compare against Cooper et al. (2003). It will explore factors around a project afterlife and monitoring from the opinions and attitudes of industry stakeholders. This will allow some additional 'practical' understanding of what constitutes legacy and how it can be applied and achieved over a time period.

2.5 Similar Concepts to Legacy

An important aspect of this literature (and this thesis), is that it specifically focuses on legacy. A challenge for developing this research theme is that other concepts often get mistaken for, or their relationships are misunderstood with legacy because of the similarities and overlaps in their similar functions. There have been some developments in similar time-based concepts within project management. This has included sustainability foresight, the analysis of project uncertainties and potential future realities from authors such as Flyvbjerg et al. (2003); Pich et al. (2002); Taleb (2010); Taylor (1993). Sustainability foresight is a method of distinguishing different perspectives of the future but not specifically in developing specific legacy outcomes. Silva (2016) does note that “*it is the legacy of a project which can make the most relevant use of foresight*” (p.8), which suggests that if further developments are made in project legacy, it can also benefit other research spheres.

Legacy is sometimes discussed amidst impact studies (Preuss, 2015). There can be misunderstandings about identifying the difference between the two concepts, which Li & McCabe (2013) attribute to the newness of the legacy concept. Impact, is described as the change in the contextual or environmental parameters as a result of a specific activity (IOC, 2009). Several ‘impact’ studies have been commissioned for projects, and confusingly this is often done by legacy organisations (Gold & Gold, 2013). These studies analyse the activity ‘impact’ or ‘change’ compared to what the anticipated consequences would have been had the activity not occurred (Chen & Henry, 2019; Preuss, 2007). The IOC has developed a project entitled ‘Olympic Games Global Impact’ (OGGI). Within this, it provides an impact analysis of the games’ effect on a host city and its respective stakeholders (Bauman et al., 2021). This is much like legacy planning, as it has similar features like identifying legacy goals in the initiation of the project and monitoring and measuring post the project completion (Gold & Gold, 2013). In this context, however, the project covers a period of eleven years, from the initial bid until two years post-event. This is not adequate monitoring time to make a claim for achieving a legacy (Cornelissen et al., 2011). Interestingly within the OGGI project, there are three indicator categories for measuring the effects of creating legacy; these are social, economic, and environmental (the three pillars of sustainability). Once again reinforcing the theory that there might be a potential link between achieving legacy/generational impact through sustainability measures.

Leveraging is another concept often confused with legacy (Preuss, 2015). Leveraging means adopting measures to enhance a desired outcome (Chalip, 2004; Scheu et al., 2021). A project will generate outcomes that would not have occurred had it not existed (Rogerson, 2016). While this is similar to legacy, leveraging has limitations in that its focus proposes measures intended to maximise a positive impact (O’Brien, 2006). Legacy, in contrast is more expansive, providing potentially both positive and negative legacies (Ferrari & Guala, 2017) as well as intangible or tangible impacts (Hiller, 2006). Legacy research focuses heavily on ex post factors based on the reality of the project afterlife (Reis et al., 2017). This is in contrast to the ex ante focus of leveraging studies which O’Brien & Chalip (2007) notes limits understanding for “*why or how particular impacts occur or are absent*” (p.322). Theories linking leveraging to legacy have often concluded that there is a lack of evidence to make claims for their mutual adoption (Rogerson, 2016; Smith, 2014; Ziakas, 2014). There are limited articles exploring the differences between concepts similar to legacy. The primary research efforts of this research to explore what legacy is in specific contexts will allow a greater understanding of the differences and fit with other concepts similar to legacy discussed in this section.

2.6 Literature Review Conclusions

This literature review explored themes that were mapped out as being specifically relevant to the research questions and the aim of this research. It provided the background to legacy development and its core conceptual elements and introduced models and approaches for understanding and applying it. The literature review provided background and context to the theme's numerous and varied benefits and challenges and revealed a field requiring wider understanding and insight. The literature highlighted that legacy has some limitations in that its exploration primarily focused on an events management context. Legacy has no definitive 'agreed' definition, or 'top-down' parameters of understanding, lacking official governance to guide practitioners in the field. It found that the majority of the research conducted was conceptual in nature. There was particular emphasis and importance placed on advancing the topic with additional practically applied and empirical research. Numerous authors acknowledged the current literature situation as a 'starting point for the research field', which left gaps in the existing knowledge base. The gaps identified by the author within the review of the literature consist of the following:

- Whether legacy characteristics and established theoretical developments (such as the Preuss legacy cube) from an events management context are consistent or applicable with other areas where legacy is being claimed.
- The exploration around specific project management legacy is limited, with little empirical understanding of what it consists of, how it is defined, applied, and developed, and the drivers and challenges for incorporating legacy in a practical context.
- There is a need for 'bottom-up' legacy studies that are selective in scope and scale with a requirement for more diversity in project 'types' and exploring 'groups' of projects instead of being exclusively individual and high-level focused.
- There is a need for locational legacy studies away from the influence of host cities of mega sporting events and conducted by researchers with no bias or affiliation to events organisations promoting or funding legacy.
- What the understanding and stakeholder attitudes are within project decision makers for legacy vision, definition, and creation, and how this affects project management governance and practices.
- Whether there is a link between sustainability and legacy within a project context.
- There is a need to explore legacy 'claims' made within project management and if the concept of 'legacy washing' applies to them.

These identified factors will be incorporated and influence the methodological design and approach for the primary research of this work. The next stage of the research will be to develop a theoretical framework that ensures that the literature review findings are applied to allow further and specific investigation into the theme of project management legacy, which can be applied to an Aberdeen region-based context.

3.0 Theoretical Framework Chapter

In the literature review (Chapter 2), it was established that the majority of legacy development has been multifaceted in nature (Chappelet, 2019; Manzenreiter, 2014), and that most of the literature is theoretical rather than empirical (Moss et al., 2019; Scheu et al., 2021). This is a research area where some key conceptual perspectives have shaped the understanding of legacy and how it has been investigated and advanced (Leopkey & Parent, 2012; Thomson et al., 2013). Meyer & Ward (2014) have outlined that theorisation is an appropriate way for researchers to develop and explore knowledge within one context to another, which is the ambition of this research thesis.

This third chapter, therefore, outlines a theoretical framework developed by the researcher and will present its purpose, relevance, construction, and application. It was important to take this approach for this thesis as a theoretical framework provides a clear explanation of a research investigation and bases it on theoretical constructs (Varpio et al., 2020). It makes research meaningful, as it is developed and based on the existing literature and enables the generalisability of findings (Muthukrishna & Henrich, 2019). Applying a theoretical framework guides a researcher to an appropriate focus and enables it to be underpinned and developed from existing and accepted theories (Pierce & Osei-Kojo, 2022). This assists in a more robust thesis, thereby enabling the production of a scholarly and academic contribution (Healy, 2022). The application of a theoretical framework is particularly important within legacy research, as there is currently a research and literature gap. Thomson et al. (2019), in their extensive systematic review of legacy literature, noted that over 70% of legacy-related articles in publication do not apply any theoretical frameworks and instead rely on discussing previous literature as a basis to inform and structure their articles.

3.1 Theoretical Framework for This Research

The development of a theoretical framework enables the researcher to connect theoretical perspectives with the aims and objectives of the study in a focused manner (Leshem & Trafford, 2007). The developed framework provides a relevant foundation for the study, which Maxwell (1996) states builds “*the system of concepts, assumptions, expectations, beliefs, and theories that supports and informs research*” (p.25). Grant & Osanloo (2014) liken a theoretical framework to a ‘blueprint’ for developing research, and the foundation for effective structure, using established literature to influence approaches in philosophy, methodology and anticipated outputs.

In this thesis, the objectives and research questions identified in chapter one were mapped and investigated within the context of the academic literature (chapter two). This process is important in developing a theoretical framework, as it identifies solutions and current understanding from formal theories, which will then appropriately influence a researcher’s future methods and approach (Ravitch & Carl, 2019). The literature review identified a legacy research context where it was established in events management (Vadiati, 2020; Zawadzki, 2022) but limited from the perspective of project management (Silva, 2016). Both areas, however, provided existing theoretical underpinnings to explain legacy characteristics.

Adopting or adapting a relevant theory or theories is, therefore, an important step for driving the study (Healy, 2022). In a PhD thesis, this must be outlined for the factors that underpin it and what the theoretical constructs are (Grant & Osanloo, 2014). This research has two underpinning theories that are used in the formulation of its theoretical framework. These will be introduced in the following two sections, the first highlighting the most widely applied

legacy principles within event management (section 3.1.1), and the second specifically examines theoretical constructs for legacy in a project management context (section 3.1.2). The theoretical framework is subsequently summarised, illustrated, and its application described (sections 3.2 and 3.3)

3.1.1 The Inclusion of Legacy Principles within the Framework

The selection of a theory to be included within a theoretical framework must be relevant to the problem area of the study (Tan, 2022). This research aims to critically explore the project management methods and rationale for implementing 'legacy' to a range of Aberdeen and Aberdeenshire-based construction and infrastructure projects. To achieve this, the framework to guide the study must be firmly based on foundational legacy principles. In the literature review (section 2.2), there was a breakdown of the origins of legacy as a research theme noting its advances and characteristics of how it's perceived.

A range of theoretical contributions were identified for establishing and achieving legacy (Byun & Leopkey, 2022; Chen & Henry, 2019; Deng et al., 2020). While there were several perspectives, the Preuss Legacy Cube (2007) was the most widely cited, applied, and influential on how legacy was understood (Ferrari, 2022; Thomson et al., 2019). The Preuss Legacy Cube's attributes have been lauded for revealing a more multifaceted and balanced perspective of what legacy is (Dawson & Jöns, 2018; Manzenreiter, 2014), and it is inclusive in considering all impacted stakeholders (Dickson et al., 2011). The dimensions of Preuss' (2007) 'legacy cube' framework is so important within the literature that it was critiqued in section 2.4 of the literature review and used to structure the discussion around what legacy is, and how theorists and academic authors have applied these concepts. It was felt that this model was the most appropriate for inclusion within the current theoretical framework to ensure that the research was anchored to specific and established legacy principles.

Grant & Osanloo (2014) suggest that when considering sources for a theoretical framework, emphasis should be given to popularity and influence amongst researchers. Preuss' contribution to legacy research is significant, having also provided the most frequently used definition of legacy within the literature; '*Legacy is planned and unplanned, positive and negative, intangible and tangible structures created through a sport event that remain after the event*' (Gratton & Preuss, 2008, p. 1924). This definition is the foundation for understanding a lot of conceptual legacy development (Ma & Kaplanidou, 2017), and the terminology of this definition is the dimensions of the cube framework itself. Vanwynsberghe (2015, p. 15), highlights the appropriateness of using the legacy cube, noting that researchers seeking a balanced and comprehensive perspective of legacy development, their "*future efforts should also include Preuss' framework (2007)*". From the perspective of the current research, the legacy cube is viewed as a robust measure for characterising legacy (Dawson & Jöns, 2018).

This is because Preuss highlights the multifaceted nature of legacy (Agha et al., 2012). Early legacy development research focussed on the role and benefits of legacy for specific event stakeholders or host locations (Lienhard & Preuss, 2014). This often failed to provide a more balanced critique or consider negative effects or negatively affected stakeholders (Chappelet, 2012; Leopkey & Parent, 2012). Preuss' (2007) legacy cube overcomes this by presenting a more holistic perspective reflecting legacy's complexity and multidimensionality. The cube contains the core characteristics of legacy in six dimensions or 'structures' with opposing perspectives. These factors are planned/unplanned, positive/negative, and tangible/intangible (Figure 10).

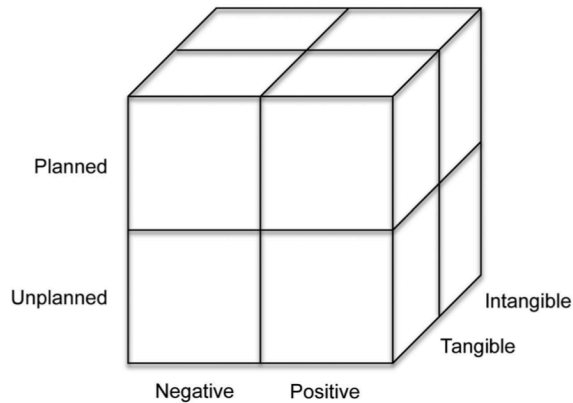


Figure 10: Legacy Cube (Source: Preuss 2007, p.211)

3.1.2 Application of Preuss' Legacy Principles within the Framework

Preuss's (2007) legacy cube is the first of two parts of this theoretical framework. The specific purpose of its inclusion is to ensure that investigation within the current research will include a 'critical balance' of legacy factors. This can be achieved by ensuring the primary research explores all six factors of the legacy cube (Dawson & Jöns, 2018). For example, the benefits (positive factors) should be investigated alongside the disadvantages (negative factors). The design and approach for legacy creation (planned) should also consider unanticipated (unplanned) factors. It should also be based on physical attributes (tangible) and explore the social and non-physical impacts (intangible). One of the benefits of Preuss' legacy cube is that it is focused at a relatively high level, so it can incorporate a significant range of information within each category. This allows a researcher to explore the legacy context and identify and categorise factors within each of the six elements to build a more comprehensive understanding of what constitutes a specific legacy. This, alongside its established place within legacy development, allows it to be an effective framework for exploring legacy in a different context, which this study aims to achieve.

A limitation of Preuss' legacy cube is the lack of empirical testing and the exploration of this framework beyond the sporting mega-event context from which it originated (Knott & Tinaz, 2022). In response to this, this research will adopt the Preuss legacy cube through use of the theoretical framework. It will use it to investigate legacy within its primary research in a project management specific and non-event context. It will explore the narrative from interviews with project stakeholders, and the qualitative returns will ensure that all six legacy themes are represented in the design of the methodology and the discussion of findings and conclusions. This will enable the project analysis to be based on established legacy understanding and not on an alternative or similar concept. With the integration of legacy within project management practices and processes being minimal (Kearney, 2005), it was thought that knowledge of Preuss' Legacy Cube amongst project practitioners would be limited or unlikely. This will provide project practitioners with an unbiased and non-predetermined perspective on their legacy practices that could subsequently be compared to Preuss' framework for conceptualising and analysing legacy. The usage of Preuss' legacy cube provides robustness in terms of the research approach and design and is a valuable contribution to the broader literature (Dawson & Jöns, 2018). The legacy cube adoption will enable empirical data to be available for legacy learning and allow potential comparisons with other sectors and contexts and influence the further investigation of legacy in different environments.

3.1.3 The Inclusion of Project Management Legacy Principles within the Framework

The second part of this theoretical framework will incorporate theoretical elements of legacy within a project management context. While event management legacy has generated an extensive volume of established theoretical discussion (Tsaour et al., 2017), this is significantly more limited in a project management context. The theoretical frameworks identified in the literature review for a specific project legacy context were confined. These were Cooper et al.'s (2003) Project Legacy Model and Silva's (2015) Legacy Lifecycle Framework. Current project management literature and its governance documentation do not, as yet, incorporate legacy into existing processes. This means that these academic frameworks are exploratory, challenging existing project parameters and will have limitations such as no empirical testing. The central theoretical concept that makes these the identified frameworks differ from traditional project management frameworks is the inclusion of an extended project lifecycle and the advancement and further development of sustainability principles.

Grant & Osanloo (2014) state that to make an appropriate selection within the development of a theoretical framework, the researcher must clarify what the guiding principles underpinning it are. Whereas Preuss' (2007) legacy cube was more established and applied successfully in other research (Nedvetskaya, 2022; Thomson et al., 2019), this is not true of either Cooper et al.'s (2003) Project Legacy Model or Silva's (2015) Legacy Lifecycle Framework. Neither of these frameworks links to Preuss' (2007) legacy cube, and both have limited use in other research publications, being one of the few specific legacy project management frameworks to exist. The following section will provide some additional background to the main theoretical elements of both models and discuss the rationale for selecting Silva's (2015) Legacy Lifecycle Framework, which was ultimately incorporated.

3.1.3.1 Sustainability and Project 'Afterlife' and the Development of Project Legacy Frameworks

One of the theoretical challenges within project management and applying legacy principles to it are based on time and its established project management lifecycle (Mavi et al., 2021; Thompson et al., 2011). Silvius et al. (2012) have noted that the principles of sustainable development and project management are at odds with each other, and often their essential principles contrast (Figure 11).

Sustainable Development	Project Management
Long Term + short term oriented	Short term oriented
Considers the interest of this generation and future generations	In the interest of Sponsor / Stakeholders
Life-cycle oriented	Deliverable/result oriented
People, Planet, Profit	Scope, Time, Budget
Increasing complexity	Reduced complexity

Figure 11: The Contrast Between the Concepts of Sustainable Development and Projects (Source: Silvius et al., 2012)

The literature review identified that a legacy project had characteristics such as being long-term orientated, often referred to as having generational benefits (Lienhard & Preuss, 2014; Watt, 2013), over a more extended lifecycle (Scheu et al., 2021), with consideration given to sustainability measures (Borysova & Krasilshchikov, 2021; Liu, 2018). The essence of project management is to reduce complexity and manage a project to completion as efficiently as possible for an identified stakeholder (Dalcher, 2022; Lock, 2020). It has been challenging for project management academics to address the conflict between their two natures. Project management and sustainability are often viewed as being mutually opposed and contentious perspectives which it has been hard for researchers and practitioners to bridge (Marcelino-Sádaba et al., 2015; Saad et al., 2019).

Some researchers have attributed the limited advancements in the combined development of sustainability and project management to a lack of knowledge, or that both disciplines are relatively new and emerging (Moehler et al., 2018). Boswell et al. (2005) note that sustainable development within project management is “*difficult to achieve and even more difficult to demonstrate*” (p.13). Martens & Carvalho (2013) present reasons citing “*the lack of a common structure and language for analyzing and assessing sustainability means the lack of a method that is useful and applicable to projects*” (p.3). With the many processes and variables within project management part of its nature, there is much to investigate and develop conceptually in this area (Cole, 2005; Thompson et al., 2011). It is a research area where most agree that further development of a combined theory uniting sustainability and project management concepts is of great importance and a required development for the discipline (Bocchini et al., 2014; Gareis et al., 2009; Singh et al., 2012).

A key driver for project management implementation is its conceptual frameworks and standards, when these are applied, a project is more likely to achieve its success criteria (Kerzner, 2017). Xue et al. (2018) note that “*there is strong need to formulate proper project strategies to guarantee the best implementation and performance*” (p.3). Existing frameworks and standards have been created and governed by project management professional associations. Greenwood et al. (2002) highlight the impact these professional bodies can have in developing change and progress within project management practices noting that they are “*critically important in the theorization process because they enable the*

*formation and reproduction of shared meanings and understandings” (p.61). One of the first things considered in developing this framework was to apply a framework issued by one of the governance bodies of project management. This was, however, not possible as most widely applied frameworks and standards for governing project management (such as PMBoK, Prince2, ISO 21500) do not specifically consider sustainability or long-term project development (Brones et al., 2014; Marcelino-Sádaba et al., 2015), and legacy is not a recognised factor within them (see Tables 6-8). Daneshpour (2015) advocates for revising these standards, which “*have failed to respond to the need of sustainability and environmental management suitably*”. The most widely accepted standard is the ‘Guide to the Project Management Body of Knowledge (PMBoK)’. The committee for the PMBoK has faced significant pressure from project practitioners for greater sustainability inclusion but has been reluctant to include it within its governance publications (Martens & Carvalho, 2016). Sazvar et al. (2017) lamented this lost opportunity stating “*one of the criticisms presented in the recently published PMBoK guide (v.5) for the project management knowledge is that the relation between sustainable development and project management has failed to be properly investigated*” (p.341).*

This has left academic authors to fill the gap left by the governing body to create project techniques and frameworks that provide sustainable and extended lifecycle project development. Labuschagne & Brent (2006) published some of the first analysis linking project management and sustainability. Their findings concluded that any project output should be considered for its entire lifecycle (conception to disposal) rather than the traditional project lifecycle, which covers initiation to handover. This changes the focus within project management to one that considers more than the project’s initial success. There is now the responsibility to account for the ‘results’ the project produces, which may include “*a change in assets, systems, behavior*” after the project has traditionally finished (Silvius & van den Brink, 2011, p. 9). The terminology of ‘results’ is very similar conceptually to that of ‘legacy’, although this was not explicitly explored within the Silvius & van den Brink research.

Silvius et al. (2012) expand upon Labuschagne and Brent’s (2006) theoretical work with their visualisation (Figure 12) of three life cycles (project life cycle, asset life cycle, and product life cycle) and how their relationship can create sustainability and additional timeline considerations at certain points within the project lifecycle (Daneshpour, 2015). This framework enables some integration of sustainability principles within traditional project management. It is, however, limited in that its design and research are solely based on manufacturing projects. A fundamental principle of project management is that it should be applicable to all projects regardless of nature or scale (Project Management Institute, 2017).

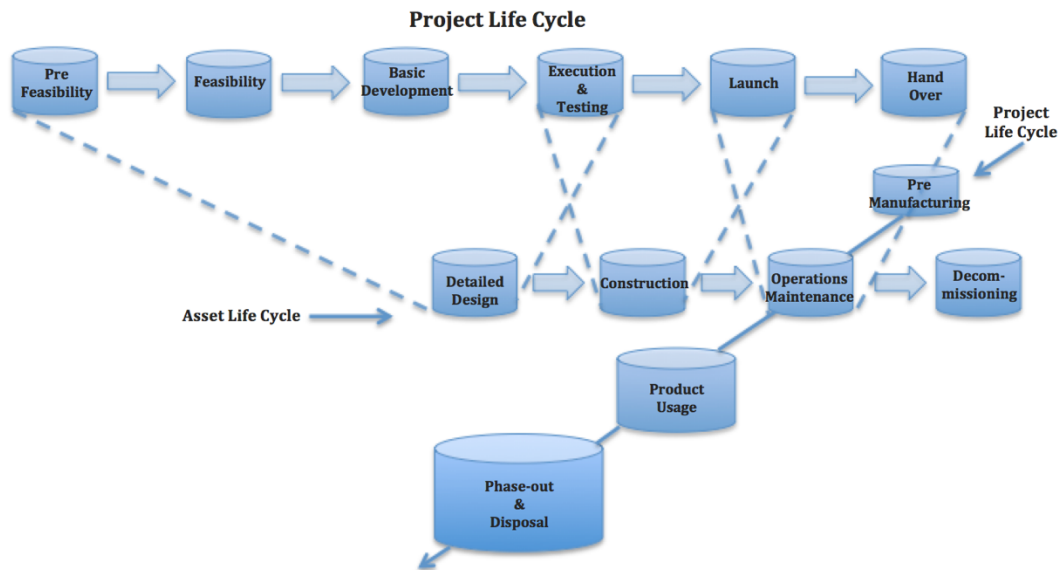


Figure 12: Interrelating Life-cycles (Silvius et al., 2012 based on Labuschagne and Brent, 2006)

There have been several academic efforts to develop long-term sustainability principles into project management frameworks (Eid, 2009; Gareis et al., 2013). These efforts have addressed the contrasting natures of both themes, and in the process, inspired legacy researchers who understood that their work could be built upon further. Silva (2015) highlights the influence of sustainability developments on her legacy development framework within project management, “as projects are essential to build a more sustainable world, and sustainable practices are essential to deliver better project legacies” (p.6). While there have been many overlapping themes between legacy and sustainability in the approaches discussed in this section, the mention of legacy was not specifically applied. As noted earlier, there are few specific project management legacy frameworks, but those that do exist (Cooper et al., 2003; Silva, 2015), show significant similarities to the sustainability-led project management initiatives and recent research in this field. The development of an extended lifecycle or multiple project lifecycles is evident in Cooper et al.'s (2003) Project Legacy theoretical perspective, which includes the identification of three types of project legacy:

- Product legacy (benefits to a project – the output of the project)
- Process legacy (the organisation’s ability to be sustainable – the method)
- People legacy (benefits to stakeholders).

This concept has been expanded further within a project management specific legacy context. Silva (2015) has produced the legacy lifecycle Framework (Figure 13).

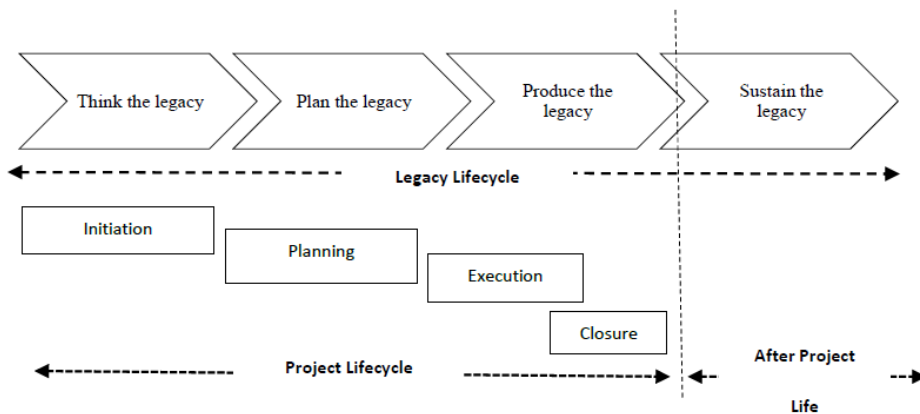


Figure 13: Legacy Lifecycle Framework (Source: Silva, 2015)

Silva's Framework links together the phases of a project, and the lifecycle of a project, while introducing considerations for the project's legacy lifecycle in parallel to this. This framework highlights that project decisions can create and influence legacy and that legacy can be designed and managed at certain points of a project.

Critically it also includes a 'project afterlife'; this goes beyond the point of traditional project management phases where the project concludes and is signed off as having met its objectives or not (Ershadi et al., 2021). An additional phase is identified where the legacy is 'sustained' and monitored to see if it will develop or be fulfilled as intended. Silva (2015) writes that the aim of her framework is *"to start a conversation' in an area (project management) that has scarcely been explored for legacy"* (p.12).

Silva's Legacy Lifecycle Framework (2015) is appropriate for inclusion within the theoretical framework of this research as it aligns with the requirements of the objectives of this research. It is also constructed at a level consistent with Preuss' legacy cube, which has already been identified for inclusion.

The adoption of Silva's Legacy Lifecycle within the framework of this research will provide the currently lacking empirical investigation into the debate that she hoped to start. Silva's Framework is based on established project management fundamentals. It allows a researcher to explore the 'how' and 'where' for developing legacy over a phased timeline of a project (initiation, planning, execution, closure, afterlife). Silva's approach permits a researcher to explore legacy aims and the rationale (think the legacy) of a project. It also investigates the anticipated benefits and what a planned legacy will look like (plan the legacy). In addition to this, it also highlights the project management methods and approaches to achieve it (produce the legacy), which leads to the theme of an extended lifecycle and how any potential claim of legacy be monitored and developed beyond traditional project management closure efforts (sustain the project). All these factors are themes of the objectives of this study and areas for further exploration identified within the literature review. A restriction of Silva's framework is that legacy has been identified as challenging to define and characterise (Grix & Phillipots, 2013). The combination of this framework along with Preuss' Legacy Cube will provide a multi-faceted approach to understanding legacy and enable a more comprehensive and robust investigation for developing legacy within a project context, ensuring that established legacy concepts are evident and tested.

3.2 Application of the Theoretical Framework

The theoretical framework that will guide this research has two layers. It incorporates the theoretical frameworks of Preuss' (2007) 'legacy cube' and Silva's (2015) 'legacy lifecycle'. The first (the outer layer) explores the nature of legacy and its key characteristics in a project context. The second (the inner layer) focuses on the project management processes and the design of projects to achieve legacy and their effect on the project lifecycle. The author created a theoretical framework that combines these factors, which can be found in Figure 14.

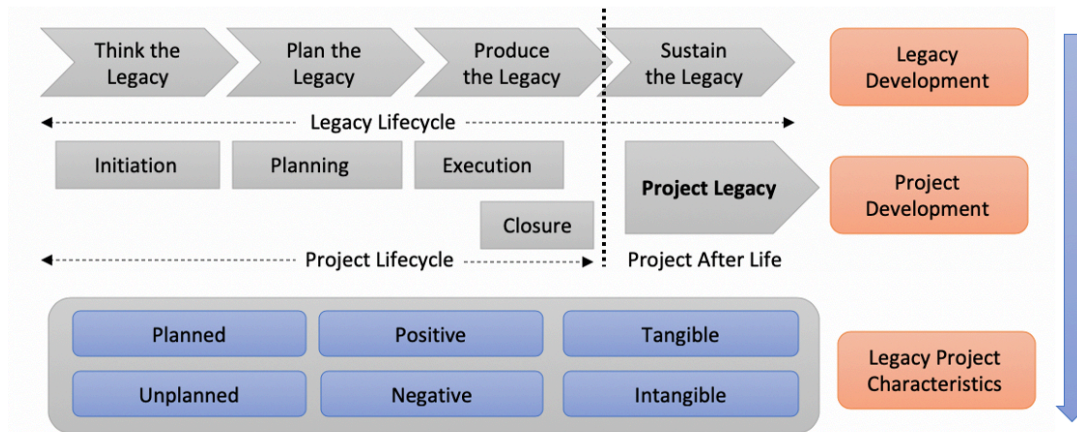


Figure 14: Project Legacy Framework (Source: Author, adapted from Preuss 2007 & Silva 2015)

This research aims to understand the legacy narrative within a range of Aberdeen and Aberdeenshire-based construction and infrastructure projects. This framework will allow the research to explore this within a structure specifically designed to gather and analyse data to explore the established understanding of legacy and project management factors. Varpio et al. (2020) have noted that the design of a research study will be impacted by the development and inclusion of a theoretical framework, which influences the scope of the objectives, literature, methods, and findings. While the theoretical framework of this research (Figure 14) has been shaped by the research objectives and the literature review, it will also impact the methodology and the findings of this work. The next stage of applying this framework is to develop a research methodology which incorporates all the factors identified within the framework and addresses these through primary research. This will provide relevant findings to central study themes, which can then be compared and analysed with existing literature (Tan, 2022).

The research methodology will be outlined in detail in the next chapter of this thesis. To summarise at a high level how the theoretical framework will be applied, the structure of the approach to the methods will incorporate a qualitative exploration of three themes identified as important within the literature, legacy development, project development, and the specific characteristics that make up a project legacy. Silva's (2015) element will require primary investigation from appropriate project stakeholders to identify how a legacy is developed within each project reviewed (Figure 15).

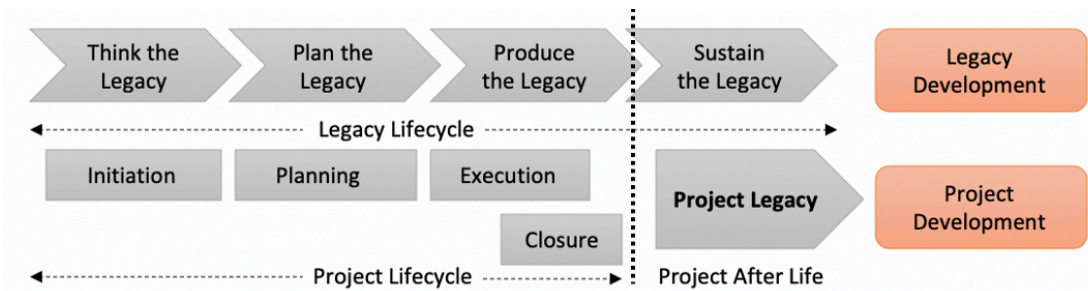


Figure 15: Inner Layer of Project Legacy Framework (Source: Author, adapted from Silva 2015)

Consideration will be given in the primary investigation to explore if stakeholders conceptualised a potential legacy (think the legacy), how it was planned (plan the legacy), the approach to executing the project (produce the legacy), and methods to monitor a desired legacy (sustain the legacy). This will be considered against the project lifecycle and the specific project phases for each factor to understand legacy development from a project-specific context. Having developed a better understanding of the motives and expectations of legacy from project stakeholders, the next stage of the framework will explore Preuss' (2007) six legacy characteristics (Figure 16).

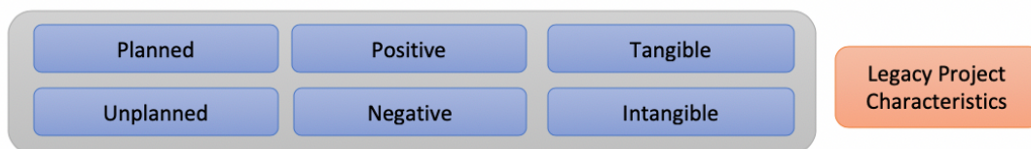


Figure 16: Outer Layer of Project Legacy Framework (Source: Author, adapted from Preuss 2007)

In analysing the qualitative data, the researcher will look to establish the legacy narrative of the project sample through the theoretical lens developed above. This exploration will be inductive to allow project stakeholders to outline their thoughts on legacy without initial prompts. However, it will also be deductive to explore if the data provided aligns with Preuss' legacy cube factors and to what extent. Primary data will be coded to the six Preuss factors (planned/unplanned, positive/negative, and tangible/intangible). This will provide a narrative based on established legacy understanding of what project management methods were applied to develop a potential legacy project.

3.3 Theoretical Framework Summary

This chapter has introduced the theoretical framework that will direct this thesis. Thomson et al. (2019) have made the point in their review of legacy literature that there is a need for this within the legacy research field as there is limited engagement with theoretical frameworks, and "*it was rare for theoretical frameworks to be dealt with more than one at a time*" (p.308), with less than 4% of the existing literature citing or using multiple frameworks in their research. The application of this framework within the current research process provides a needed depth of consideration, linking primary investigation to existing legacy structures to enable relevant comparison in analysis and context. It is the first research to combine these models and apply them to project analysis.

The finalised theoretical framework developed (Figure 14) supports the objectives outlined in this research. It is considered to be a contribution to theoretical development in project management research. With legacy viewed in numerate disparate perspectives

(Manzenreiter, 2014), providing a practical framework became important to ensure that the research is explicit in focus and selective in understanding meaning of a theme (Grant & Osanloo, 2014; Robson, 1993). Using this framework will ensure that any project legacy investigation is focused on what academic practitioners expressly understand by this concept.

While legacy exploration is common in the mega event literature (Tsaur et al., 2017; Wang & Jiang, 2021), this is not the case for project management more generally (Silva, 2016). The application of this model constructively enables a user to consider legacy within any project management context. It ensures that core legacy principles are incorporated when considering how a project can create and develop legacy within its phased lifecycle, enabling a review where project initiatives are considered in terms of how, when, and why they may create or develop legacy, a need identified from the literature review (Byers et al., 2021; Ribeiro et al., 2022).

The outputs of applying the current framework will aid further development and understanding of legacy. It will meet the requirements outlined by Thomson et al. (2019), who noted that for legacy advancement, "*there is a responsibility by this academic community to develop knowledge which provides practical insights and guidance as to how this planning might best be designed and implemented*" (p.308). This is especially required from a project management perspective (Garland & Morey, 2022; Silvius et al., 2012). Legacy is absent from the governance of the discipline, and yet it is an area of academic research that is expanding in-depth and scope (Silvius & Schipper, 2014). The current framework will provide a robust analytical tool for understanding legacy and prevents generic legacy claims (legacy washing) for projects in data received, instead seeking specific project methods to evidence legacy development. The next chapter will discuss in more depth some of the ways this theoretical framework has been applied, considering the specific details of the research philosophy and the methods that direct the primary research execution.

4.0 Methodology Chapter Introduction

This chapter outlines the approach taken for the methodology adopted in this research. The rationale and purpose were presented in the first chapter. It aimed to explore the motivators and challenges of incorporating legacy in construction and infrastructure projects, and the implications legacy incorporation has for project management approaches. The literature review (chapter 2) then explored the key characteristics of legacy and its relevance towards the research objectives. This led to the development of a theoretical framework (chapter 3) that will guide the research investigation and ensure it is based on robust and established legacy and project management principles. The purpose of this chapter will be to outline the interrelated elements of research design, theory, and the development of appropriate methods and strategies to guide the primary investigation (Robson, 2016). This was done using the four-element structure of Crotty (1998), as highlighted in Figure 17, which goes through a series of stages to develop an effective research process. Within the academic literature on methodology, perspectives are varied and expansive, with differing viewpoints and different terminology expressed (Silverman, 2020). With so much diversified opinion, a robust, established structure was sought for this research that is still widely applied in today's research environment. Crotty's four-element structure fulfils those criteria (Al-Ababneh, 2020). It is "*a model that is influential in the field*" for understanding and applying the connecting elements of research design (Cowling, 2016, p. 47). It considers the ontological stance for what can be researched, the epistemological position for what we know, the research paradigms which theoretically underpin it and the methodological approaches to facilitate it (Grix, 2002).

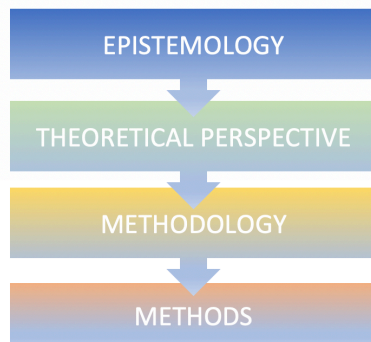


Figure 17: Four-Element Research Process (Source: Crotty, 1998)

Using Crotty's (1998) research process, the path chartered in this research is highlighted in red in Figure 18. Sections 4.1 to 4.4 will highlight the rationale and justifications for following this research approach.

<i>Epistemology</i>	Theoretical Perspectives / Research Paradigm	Methodology	Methods / Data Collection Method
<i>What and how can I know reality / knowledge?</i>	What approach can we use to get knowledge?	What procedure can we use to acquire knowledge?	What tools can we use to acquire knowledge?
<ul style="list-style-type: none"> • Objectivism • <u>Constructivism</u> • Subjectivism 	<ul style="list-style-type: none"> • Positivism (and Post Positivism) • <u>Interpretivism</u> • Critical Enquiry • Feminism • Post Modernism 	<ul style="list-style-type: none"> • Experimental Research • Survey Research • Ethnography • <u>Phenomenological research</u> • Grounded Theory • Heuristic Inquiry • Action Research • Discourse Analysis • Feminist standpoint research etc. 	<ul style="list-style-type: none"> • Sampling Measurement and Scaling • Questionnaire • Observation (participant and non-participant) • <u>Interview</u> • Focus Group • Case Study • Life History • Narrative • Visual Ethnographic methods • Statistical Analysis • Data Reduction • Theme Identification • Comparative Analysis • Cognitive Mapping • Interpretative Methods • <u>Document Analysis</u> • Content Analysis • Conversation Analysis

Figure 18: Research Process (Source: Crotty, 1998)

4.1 Ontological and Epistemology Considerations in the Research Design

This section will introduce the work's philosophical assumptions, which should be the starting point for an appropriate methodology (Krauss, 2005). This research is based within the discipline of management. This type of research differs from other social science fields as concepts, processes, and outputs are often anticipated to lead to organisational-level action, understanding, or change (Easterby-Smith et al., 2012). However, these organisational investigations are still understood through a social science lens and are subject to philosophical positioning (Bryman & Bell, 2015).

The labelling of ontological, epistemological, and methodological assumptions have significant variations of opinions and usage within the academic community (Punch & Oancea, 2014). Crotty's (1998) model states that from a conceptual perspective, ontological and epistemological stances are linked and should not be looked at as separate approaches, as this can result in indifferent combinations and contexts being applied (Blaikie, 2007). Delanty & Strydom (2003) note that ontological assumptions are based on the nature of social reality. This should be the starting point of research when considering legacy, as it considers "*the way we think the world is*" (Fleetwood, 2005, p. 197). It asks, 'does social reality exist?' and 'is reality knowable?' (Della Porta & Keating, 2008). This connects with epistemology which searches the "*nature of knowledge, its possibility, scope and general basis*" (Crotty, 1998, p. 8).

In research applying Crotty's (1998) four-element research process, epistemology considerations will be a significant part of that process. However, the importance of ontology should also be recognised. Ontological perspectives within social science provide context for viewing social reality (Bracken, 2010). Anderson & Bennett (2003) note that it enables a

researcher to “*understand the social reality as different people see it and to demonstrate how their views shape the action which they take within that reality*” (p.153). This is appropriate in the discipline of project management as, by the very nature of a project, it involves ontological development over time (Gauthier & Ika, 2012). A project will develop and change from conception and initiation to its maturity and potential legacy (Silva, 2015). From an ontology perspective, this will include factors such as the development and complexity of human understanding, as over time, stakeholders become more sophisticated and nuanced around their perceptions (Beale & Tryfonas, 2018). This will also include a shift in perspective and worldview as they have project experiences and interactions (Cicmil et al., 2006). These will all be experienced through the lens of cultural and contextual frameworks (Silverman, 2020). All these factors ensure that it is important to incorporate perspectives which consider the growth of knowledge and can reflect upon how the reality of understanding is contextualised; this is where appropriate considerations of epistemology can frame research design (Sullivan & Forrester, 2019).

Multiple variations of epistemologies exist, so these must be considered carefully for application in the research design of this work, or this can impact the effectiveness and validity of the research (Easterby-Smith et al., 2012). It is important for this research to have a clear philosophical position and to consider whether social entities are an external objective reality (Bryman, 2008). In the context of legacy, it should be contemplated if social constructions are developed from the perceptions and behaviours of social actors. That consideration founds the principles of the objectivist and constructivist viewpoints (Barbehön, 2020). The objectivist view is built around an external perspective and would view legacy as a real ‘objective’ phenomenon, a truth apart from consciousness (Crotty, 1998; Symon & Cassell, 2012). This research rejects this, as legacy literature repeatedly highlights multiple constructions of reality and a lack of applicable universal parameters or even an agreed definition of the term (Chappelet, 2012; Ferrari & Guala, 2017). Instead, this research supports the alternative constructivist perspective. Bryman (2008, p. 19) explains that “*constructionism is an ontological position, that asserts that social phenomena and their meanings are continually being accomplished by social actors*”. The conceptual foundation of legacy is multifaceted (Chalip, 2003), planned and unplanned, positive and negative, intangible and tangible (Preuss, 2007). Legacy research is based on specific stakeholders’ perceptions, understanding, and creation efforts. This aligns with constructionism which Crotty (1998, p. 9) explains is based on the principle that “*there is no meaning without a mind*”. This approach is consistent with the literature review findings and the legacy and project management themes of the theoretical framework developed for this work. It was also why a subjective approach was rejected, as subjectivism generates no meaning from the interplay of subject and object (Crotty, 1998).

The constructionist paradigm enables multiple perspectives of the same phenomenon, as stakeholder views are influenced by individual beliefs and interpretation (Saunders et al., 2018). This is relevant to the objectives of this research, where a regional focus (Aberdeen/Aberdeenshire), project type (infrastructure and construction), and stakeholders (project decision-makers) can give unique insight and specific context for legacy understanding. Constructionism is associated with applying qualitative methods identified in mainly an ‘inductive’ way (Benton & Craib, 2011; Bryman, 2008), which is the approach required in this research to understand the narrative of legacy, and so a constructionist paradigm will be followed.

4.2 Theoretical Perspectives

The next element of Crotty’s model is identifying the theoretical perspectives of the research and highlighting what approach will be used to gain the knowledge required (Crotty, 1998).

Positivist and post-positivist paradigms typically produce research with characteristics that are logical and deductive in nature (Creswell, 2007; Lincoln & Guba, 2000). Positivist and post-positivist paradigms are incompatible with the objectives of this research, which seek to investigate areas of legacy inductively. This is required because there is limited current agreement for how legacy is understood, defined, and formed, and so the theme is not in a position to be extensively tested through deductive methods. A criticism of the positivist approach is that its ontological positions do not effectively consider the perspectives of people (Seymour et al., 1997). People are essential for understanding legacy; the views of specific stakeholders and how they plan and develop legacy are core factors for how it is viewed and applied (Lienhard & Preuss, 2014). The need for a human perspective towards legacy is already established in the research objectives and the theoretical framework, and is important to explore through primary investigation.

While Crotty's (1998) model does not include it, many researchers apply within the context of theoretical perspectives, critical realism, a "*belief that there is a world existing independently of our knowledge of it*" (Fleetwood, 2005, p. 198) and this sits between positivism and interpretivism (Byers, 2013). It combines a realist ontology along with a relativist epistemology that provides both perspectives for questioning 'how' (interpretivist paradigm) and 'why' (positivist paradigm) within a research theme (Carolan, 2005). The researcher initially considered this approach as various authors have found the critical realist approach appropriate in studying environmental and sustainability themes incorporating society and nature into the analysis (Bryman & Bell, 2015; Robson, 2002). In a legacy context, this creates issues as much of legacy meaning is derived from human perceptions around physical development and infrastructure, which this relativist ontological view would perceive as socially constructed and, thus, not real (Carolan, 2005). Instead, an approach that recognises the material world's existence as a starting point for further societal investigation was sought. This led to the adoption of interpretivism. This focuses on meaning derived from individuals' experiences or behaviour (O'Donoghue, 2007). The reviewed literature (chapter 2) has repeatedly identified that stakeholders construct realities of legacy. In these constructions, organisations (social actors) communicate this narrative by discussing legacy or by publishing written accounts through project documentation and press releases.

This research will follow an interpretivist approach and seek to explore qualitative perspectives from relevant people who can create a new and richer understanding of legacy in projects. Legacy perspectives will be explored and revealed through the specific understanding of the stakeholders who designed and developed Aberdeen-based construction and infrastructure projects. It will also investigate the project documentation and public communication for these projects and what characteristics of legacy are noted within them. This will allow for a more comprehensive picture of the legacy narrative and provide the basis for critical comparisons.

4.3 Methodological Procedures - Phenomenological Research

This section addresses the methodological perspectives of the research and the underlying logic, as it presents a 'chart to navigate the social world' (Castles, 2012). It has been previously identified in the literature review (Chapter 2) that legacy as a research theme is complex and that positivist research approaches seeking universal agreed parameters for how it is defined and understood have failed (Chappelet, 2012; Gratton & Preuss, 2008). In response, this research is conducted through an interpretivist lens of investigation and will explore the specific legacy narrative for regional Aberdeen-based projects. With this context, various methodological procedures using Crotty's model were explored for applicability to this research. This approach is summarised in Table 9. After exploring the relevance of each

methodological procedure in the order outlined by Crotty (1998), phenomenological research was deemed the most effective to adopt in this research.

Table 9: Methodological Procedure Review

Approach	Purpose	Illustrative Outcome	Applicability to Research Theme
Grounded Theory	To develop theories grounded in the study data.	Results would build a theoretical model describing how individual, contextual and project professional factors impacting legacy preferences.	This research is already underpinned by a theoretical framework (chapter 3). The legacy literature has limited exploration in a project context, so it is still exploratory to understand the narrative of legacy rather than to develop theories.
Ethnography	To develop an in-depth understanding of the culture of a context from the point of view of the study subjects through immersion in that setting over an extended period of time.	Results would contribute to our understanding for developing legacy over a defined period, as project professionals execute project activities which could be monitored for impact and effectiveness.	The applicability of this approach is limited for achieving the required sample of projects. The immersion approach would not be possible within the researchers schedule. The ongoing effects of Covid-19 also restricts the potential for project operations (extensive furlough, project cancellations, social distancing requirements etc) and the ability to study subjects using ethnographic methods.
Phenomenology	To describe the essence of a phenomenon by exploring it from the perspective of those who experienced it so as to understand the meaning participants ascribe to that phenomenon.	Results would contribute to our understanding of the phenomenon of legacy in a specific project management context. Interviews would be used to understand how stakeholders experienced and applied their legacy understanding.	The parameters of phenomenology match well with the objectives of the research. It enables the researcher to understand specific narratives in the context required of this research, so it is appropriate and valid.
Discourse Analysis	To examine the way knowledge is produced within different discourses and the performances, linguistic styles and rhetorical devices used in particular accounts.	Results would provide linguistic meaning to legacy terms and understanding for project stakeholders.	There would be some value in this approach for providing understanding in legacy terminology and perceptions. It would be more restrictive however for some of the other objectives of this research such as how legacy is practically developed through project management approaches and the effects to the project lifecycle.
Action Research	Practitioners conduct systematic enquiries in a process (often a spiral of self-reflective cycles) to assist improvement and change within specific	Results would enable legacy reflections based on interpretations made by project participants. It could enable the development and testing of a hypothesis over a	The objectives of the research are exploratory in nature for understanding 'what' and 'how' rather than seeking to identify and reflect upon change and improvement. Action research is participative and collaborative with stakeholders over an extended

	contexts.	time frame in a collaborative manner.	time period. This would provide practically challenging for the number of projects sought to investigate and that Covid-19 restrictions and government guidelines would discourage this.
Heuristic Inquiry	A research process which explores and interprets experience in a context where the researcher becomes the focus of the research.	Results would provide legacy knowledge derived from self-inquiry, stakeholder experience and tacit understanding.	The background to the research problem highlights specific stakeholders that have made decisions/actions around project legacy. The researcher is not the key figure in achieving this and a more inductive process that enables open ended qualitative exploration from relevant stakeholders is more appropriate.
Experimental Research – Survey Research – Feminist Standpoint Research			
<p>Note. Experimental Research was deemed not appropriate for the usage of quantitative measures for outcomes. Analytical survey was not pursued as the theoretical framework adopted in this research provides guidance for the identification and sample of the research population. Feminist standpoint research wasn't explored as this should be practiced from the perspective of woman or specific groups of women and this research is focused on projects and the stakeholders that designed them. This level has yet to be investigated but potential future research can focus on individual groups perspectives.</p>			

Source: Crotty (1998) Descriptions adapted from (Bryman & Bell, 2015; Ritchie & Lewis, 2003; Silverman, 2020; Teherani et al., 2015)

Phenomenology is a philosophy around understanding how individuals make sense of the world around them, to grasp meaning of a person's behaviour, and to see things from that person's point of view (Bogdan & Taylor, 1975; Bryman, 2016). Social phenomenology and some of its foundations can be attributed to the work of Alfred Schütz, whose publications in the early to mid-20th century focused on an investigation of 'the nature of action' for understanding meaning in everyday life (Norlyk & Harder, 2010). Schütz noted that quantitative researchers were unable to distinguish individuals and social institutions and that 'molecules, atoms, and electrons', the objects of natural science, do not have the capacity for self-reflection (Schütz, 1962).

Schütz's work provided significant phenomenological contributions to social science. It built upon the 'philosophy of science' studies of Edmund Hesserl (Embree, 2008), and also Max Weber's developments in interpretive sociology (Colins et al., 2008). Weber believed that subjective meaning of the everyday subject through their own behaviour can explain social phenomena, that interpretive sociology can "understand" (verstehen) through studying behaviours, beliefs, values, actions, as well as social relationships with people and institutions (Tucker, 1965). Schütz agreed with Weber's main tenets but thought that his approach was too focused on societal structures and institutions. Instead, his approach was focused more on subjective experiences and interpretations of people within the structures (Hindess, 1972). He sought the philosophical framework of Edmund Hesserl, one of the founding pioneers of phenomenology, and being based in his 'life-world', the subjective world of individual common experiences (Eberle, 2012). Through this, he applied the technique of bracketing, which in phenomenology is based on suspending preconceived beliefs and assumptions (Edwards, 2003) while acknowledging individual subjectivity and recognising that experiences can be shared and intersubjective (Kleiman, 2004). This can

have disadvantages; a common criticism of phenomenology is this subjectivity and participants' experiences differing or being subject to bias (Cibangu & Hepworth, 2016).

Another challenge is in the application of phenomenology, which will explore a theme in significant depth and detail, but this can limit generalisation for wider populations at times (Pula, 2021). Phenomenological is an approach that can produce a large volume of data and be time-consuming and complex to establish themes and meaning (Ataro, 2020). This was something that was considered for this research, and it was felt that because legacy in project management is relatively unknown and at a starting point in academic research (Silva, 2015), it needed an investigation which was explored to a suitable depth. To get meaning and to identify the nature and factors around legacy will require a lot of data, a phenomenological approach would provide an extensive range of qualitative data, the first in a project management context from project stakeholders on their experiences, perspectives, and understanding of legacy. This can enable the formation of meaning for the theme and the data useful in exploring this same theme in other locations and contexts.

The conceptual approach of phenomenological research focuses on getting '*back to the things themselves*' (Willis, 2001). In a legacy context, this is done by individuals putting aside prevailing expectations of it (including legacy washing), and instead reviewing their own personal experiences. Doing so makes extracting new meanings or enhancements to alternative or past meanings possible.

In this research, this approach will enable informative data to be returned on project legacy development. Data will be extracted through personal experience and interpretation, highlighting stakeholders' motivations and actions (Williams, 2021), for developing legacy. This process would enable the fulfilment of the overall aim of this research in a meaningful way, which is;

“To explore the motivators for, and challenges of incorporating legacy in construction and infrastructure projects, and the implications legacy incorporation has for project management approaches”.

In phenomenological research, we see a significant relationship between the subject (project professionals) and object (legacy). This is key to the approach and why Crotty (1998, p. 12) notes that “*constructionism and phenomenology are so intertwined*”. This adds an interpretive dimension to phenomenological research, “*enabling it to be used as the basis for practical theory, allows it to inform, support or challenge policy and action*” (Lester, 1999, p. 1). It is with this approach that the qualitative narrative provided by project professionals can effectively answer the third research objective of this study;

“To assess critically from the perceptions of project stakeholders if the pursuit of legacy requires alterations to established project management practices and to the understanding of the project lifecycle more generally”.

The returned qualitative narrative of legacy within Aberdeen-based projects would highlight whether current project management governance and guiding principles (as outlined in the professional bodies of knowledge) are appropriate or need specific customisation. This method would allow an unbiased investigation of what timeline parameters a potential legacy would involve for their designed project outputs. Phenomenology research provides insight into the 'primordial phenomena', the current or immediate experience of delivering and developing legacy (Steinbock, 2017). This would contribute to the value of this research as returned data will be on what the understanding is in the context of right now, and to the specific location it is conducted. This will allow for 'bottom-up' legacy investigation, which

legacy researchers have seen as critical for wider legacy understanding (Girginov, 2011). It will tell the story of Aberdeen's legacy development experiences, which will be separate from more established legacy research areas that focus on events management (Grix, 2014; Pappalepore & Duignan, 2016; Reis et al., 2017). This approach will enable this research to provide a localised project perspective that tells its own story and understanding of what legacy is and is not. The analysis chapter of this research will compare these findings to the wider legacy context outlined in the literature review.

When considering the validity of the research design selected for this work, the researcher compared this approach to the wider methodology literature to ensure it could produce credible research outputs. Rabetino et al. (2020) conclude in their research for approaches to social inquiry that the paradigm combination used in this research (interpretive, constructionist, phenomenological) is appropriately aligned for organisational inquiry and is widely applied. The anticipated outcome of this research approach is that it enables constructed realities which are local and specific (Blaikie, 2007), which is core to the objectives of this research.

4.4 Methods / Data Collection

The previous sections in this chapter have highlighted the philosophical positioning and approach to be taken for understanding the nature of reality for Aberdeen-based project legacy development. Characteristics of this approach are that it will be exploratory and so inductive, moving from initial questions to data collection which will enable interpretation and understanding (Robson & McCartan, 2016).

It was determined that the most valid source for discovering this reality is the project stakeholders who have designed and delivered Aberdeen-based projects. These legacy narratives are to be obtained through a qualitative research strategy, an approach "*to see through the eyes of the people studied*" (Bryman, 2008, p. 385). In phenomenological research, participation selection is an important element as participants of a study need to have experience in the topic of investigation and be able to share their thoughts and narratives of this in some depth (Gray, 2022). This influenced the data collection approach as an appropriate choice of methods to facilitate understanding of legacy from relevant stakeholders was investigated. The methods outlined by Crotty (1998) in Figure 18 were reviewed for their applicability to this research. A summary of this process is outlined in Table 10 on the following page.

Table 10: Methods and Data Collection Review

Method	Purpose	Illustrative Outcome	Applicability to Research Theme
Sampling Measurement and Scaling	To develop a criterion that sampling measures would identify, obtain and estimate data which can generalise findings within a targeted population.	Results would provide a generalised opinion of Aberdeen based legacy development within its population of projects.	The sample selection for Aberdeen based projects is an important element of the research investigation. This method however, lacks the depth of exploration to provide detailed qualitative narratives that respond to the legacy features identified within the theoretical framework developed in chapter 3.
Questionnaire	Survey methods are widely applied to provide a cost-effective method of collecting large amounts of data about behaviors or attributes that are representative of populations of interest.	Results returned would reveal the perspectives of a wide range of project stakeholders. It can be exploratory through open ended questions to meet the philosophy of this research.	While the application of a questionnaire could provide some appropriate data, it is not as effective as other methods. The sample of stakeholders to participate in this research is specific and targeted. It is not about getting breadth of perspective (which questionnaires provide) but rather depth of consideration and response for understanding legacy. This would require additional control on behalf of the researcher to ensure enough time is given by the research subject. There is also control required to guide participants to ensure that the challenging concept of legacy is effectively understood and discussed as contextually intended. These factors suggest a more suitable method be adopted.
Observation	Research observation methods enable a researcher to understand the relationships and behaviours of a subject as they are occurring in context.	Results would evidence stakeholder actions for understanding what specific efforts were applied to develop and advance legacy within the project observed.	This approach would be difficult in practice. The focus of the investigation is retrospective (investigating how project stakeholders designed and developed legacy into specific projects). The timeframe for some projects ran into years making observation unfeasible and would limited the scale of investigation possible to the researcher. The observation requirements would be difficult (and often breach government regulations) within the environment of Covid-19 restrictions.
Interview	Interview approaches provide qualitative conversations with selected subjects. It is directed by the researcher and questions posed elicit information from the respondents.	Results would provide individual perspectives on stakeholder efforts to understand, design and create legacy.	This approach could achieve the requirements set out in the research objectives. It can provide the narrative of localised legacy and its development. To be able to achieve this, relevant stakeholders are required to be selected and safeguards adopted for the confidentiality of data collected. Interview participants need to speak honestly and explicitly and the researcher needs to minimise potential for any harmful repercussions.
Focus Group	Focus groups are collective conversations that enable group	Results would provide group feedback of legacy	One of the themes of this research is legacy washing and efforts to pitch 'positive' perspectives of the conceptual development of legacy. There may be hesitancy to speak

	interactions to stimulate thoughts and perceptions that might not be elicited in an individual interview.	experiences or opinions.	openly or critically within a group dynamic and a more honest exploration will be needed through anonymous methods. There are only a limited number of stakeholders who develop and plan legacy within a project, so often there wouldn't be numbers to facilitate a group investigation.
Case Study	Case study research allows researchers to understand complex conditions and contextual factors often using multiple sources of data to aid understanding.	Results would return data which creates a picture of the legacy context within a project setting. It could highlight legacy processes and how they change over time and affect organisational practices.	There is some potential in this approach based on its exploration of specific projects which could be a basis for adopting case studies. The case study approach can be applied for multiple studies although would be difficult to achieve the depth of understanding required to identify a narrative on a regional scale as highlighted in the objectives. Case study research typically takes information from stakeholders throughout the organisation and has a focus for practices that affect the organisation. The research approach required in this study is to get data from only the stakeholders who develop and design legacy within projects.
Life History	A life history approach involves configurations of a personal narrative for a person's experiences. It facilitates understanding of the social structures for a person's life experience.	Results would provide insight into the lived realities of project professionals and their legacy developments. These stories would provide a context for understanding a wider social history of a theme.	This method does have value in that it is action based and seeks to tell a narrative based on experience. This method considers an emphasis on the values and beliefs that guide thinking, to analyse a particular life experience for some specific purpose. This research requires analysis more on multiple stakeholders and practical project decisions about legacy understanding and creation so would not be fully in alignment with the research objectives.
Narrative	Narrative methods explore participants' stories, history, and lived experiences. The approach navigates how culture, society, and institutions shape those experiences.	Results would provide a 'storytelling' of Aberdeen based projects from which the researcher can extract context and legacy perceptions within project management process.	There is potential with this method as a narrative of legacy is desired. The limitations of this approach (in the context of the research objectives) are the extent that the researcher needs to engage in the process. Being required to be an active participant in extracting and developing meaning. This research seeks to be more exploratory into project practices without the researcher setting up initial contexts, so this limits the applicability of this approach.
Document Analysis	Document analysis is a qualitative research method that interprets documents to provide narrative	Results would provide insight for reoccurring instances of legacy and related terms used within Aberdeen based	The analysis of documents (including online communications) related to Aberdeen based projects would enable understanding to see if the legacy characteristics identified in the theoretical framework are present within project communication to stakeholders. This would also provide grounding for potential

	and meaning around a theme.	project documents and communication.	triangulation, and a basis for combing other primary data collection methods to compare narratives.
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Visual Ethnographic Methods - Statistical Analysis – Data Reduction – Theme Identification - Cognitive Mapping - Interpretative Methods - Content Analysis - Conversation Analysis

Note. Visual ethnographic methods were not deemed appropriate based on the visual nature being in conflict of investigating legacy process and narratives and also the limitations of observation opportunities because of Covid-19 restrictions. Visual limitations also resulted in cognitive mapping not being considered as legacy is something that the required stakeholders of this research will have the ability to confidently communicate verbally (having applied it or not). Other potential methods within Crotty’s structure that were given limited consideration were statistical analysis, and data reduction. Both these methods rely on statistical numerical analysis and thus not in line with the qualitative objectives of this research. Theme identification and comparison analysis were not appropriate having already developed a theoretical framework to guide the approach. In terms of interpretative methods this is now thought to be more a category for approach (post 1998), rather than a specific method. The timeline of methodology advancement since 1998 also considers aspects of document analysis, content analysis, and conversation analysis as more interchangeable and having overlap rather than separate individual methods.

Source: Crotty 1998, (with additional description information adapted from Bryman & Bell, 2015; Green et al., 2015)

Table 10 summarises that a multiple-methods approach should be deployed for this research, as two methods were identified as appropriate to provide data related to the objectives of this study. This includes semi-structured interviews and document analysis, with both these methods providing qualitative legacy narratives for the selected projects which will be investigated. A common concern within qualitative research methods is the reliability and validity of data compared to quantitative methods, which offer more replicability (Silverman, 2020). Triangulation is a technique that responds to this and increases robustness in qualitative research, as it uses multiple methods to collect data (Al-Ababneh, 2020). Adopting interviews and document analysis as research methods will provide additional confidence in results and a more comprehensive range of data to analyse (Saunders et al., 2018). These methods will be explained in more detail for how they will be applied in the research in subsequent sub-sections of this chapter. This next section will outline the project selection criteria and the specific projects on which the document analysis will be conducted.

4.4.1 Project Selection Criteria

This section outlines two important aspects of the research approach, the location choice and which projects will be selected for legacy investigation.

4.4.1.1 Justification for Aberdeen/shire Based Research

The regional focus of this research is projects based within Aberdeen and Aberdeenshire. As a choice of study location, it has numerous advantages to justify its selection. Aberdeen/shire based projects provide a research context that is not driven by a time-based event driver (such as an Olympic Games or FIFA World Cup), so it will provide a more organic project development perspective. In addition to this, no international bodies promote legacy as a guiding principle involved in Aberdeen/shire projects (such as the IOC, FIFA, and HS2). This makes the location free from the direct influence of established legacy narratives. It is a remote location hundreds of miles apart from a city of the same size or larger. This means it is not encroached on by other areas or part of overlapping communities and is a distinct region with its own specific identity (Chapman et al., 2004). These factors provide a location that fulfils the bottom-up legacy investigation that the literature review

revealed was the most appropriate way of understanding legacy, in individual contexts (Girginov, 2011).

Aberdeen/shire is a region where there is a changing industry dynamic. For the last 50 years, this region has been a hub for the North Sea oil and gas industry, which has shaped its identity and local industry (Adams & Mueller-Hirth, 2021). As local natural resources (hydrocarbons) become exhausted, this region finds itself in the process of developing a vision for the future and shaping what it wants to become (Roorda & Wittmayer, 2014). This is a transformation process that the region has experienced before. The area's history has seen it progress through numerous predominant industry cycles. This identity transition includes changing industry trends, spanning traditional farming/agriculture, to fishing/shipbuilding, to an established oil and gas hub.

At each stage of this change process, the key regional policymakers and stakeholders supported this transformation with coordinated efforts to provide resources for construction and infrastructure to support the fulfilment of these planned visions (Aberdeen City Council, 2020; Wilson et al., 2014). The regional policymakers and local governance of Aberdeen/shire are doing the same today. Two regional councils direct public administration, Aberdeen City Council and Aberdeenshire Council, and both create and publish a periodic 'Legacy Plan' and 'Legacy Report'. Aberdeen City and Aberdeenshire Councils drive regional development in construction and infrastructure by issuing five-year development plans and performance frameworks highlighting their visions for the future (Aberdeen City Council, 2017; Aberdeenshire Council, 2018). Contractors respond to these council-set ambitions through project proposals, and there are increasing mentions of claims for creating legacies as they set out their project vision and approach. An example is the Aberdeen Western Periphery Route (AWPR), the largest project in the region where the sponsor, Transport Scotland, stated, "*The project, which is progressing well, will have a long-lasting legacy for the whole of the North East*" (Transport Scotland, 2015). Project public utterances such as this have not been investigated to identify how, why, or what is meant in terms of developing this project legacy. Aberdeen and Aberdeenshire is not a location previously explored for regional project legacy, so this study will provide some unique and specific data to add to the overall knowledge for developing legacy. The following section will highlight the specific projects which will be analysed within the region.

4.4.1.2 Selection of Projects for Analysis

The objectives of this research noted that the specific project type to be investigated were construction or infrastructure projects. This was because in legacy literature, these were projects with a long life span and thus enables a legacy to develop, and will impact many stakeholders in their interactions with them (Kaplanidou et al., 2019). These types of projects are seen as providing long lasting benefits, are transformational for their intended environment, and are visible to many stakeholders because of their scale and presence (Gold & Gold, 2013).

To ensure a specific range and sample of construction/infrastructure project types are selected, consideration was given to Koenigstorfer et al.'s (2019) mapping and review of existing literature on legacy research for mega sporting events. They found five prominent categories of project for construction and infrastructure within the academic literature to develop legacies in an urban development. These five project types are described in Table 11 with supporting links to the literature research evaluating their legacy characteristics.

Table 11: Prominent Urban Factors in Sporting Legacy Research

Prominent Urban Factors in Sporting Legacy Research		
Project Type	Description of Project Type	Related Legacy Literature Research
Regeneration Structures	A project that is designed to reverse the decline in a location, to provide renewal of an existing space or facility.	(Davis & Groves, 2019; Gold & Gold, 2008; Matheson, 2010; Smith, 2012; Smith & Fox, 2007)
Stadium and Event Construction	A project that provides facilities for events or a communal stadium.	(Alm et al., 2016; Bama & Tichaawa, 2020; Hannan & Sutherland, 2015; Tomlinson, 2014; Zeyad Hayajneh et al., 2017)
Transport Infrastructure	A project that develops the framework that supports a transport system. This can include road, rail, ports and airports.	(Cornet et al., 2018; Death, 2011; Parkes et al., 2016; Roukouni & Medda, 2012; Scharfenort, 2012)
Commercial	A project that's output is designed for engaging in commerce or mercantile activities.	(Grix, 2014; Hiller, 2000; Loftus & March, 2017; Muñoz, 2006)
Residential	A project that creates a structure or structures intended to be used in whole or in part, as a dwelling.	(Agha et al., 2012; Newman, 1999; Scheu et al., 2021; Watt, 2013)

Source: Koenigstorfer et al. 2019, adapted by author to include supporting literature.

The exploration of legacy in these five different project types enables the potential for comparison in how a legacy narrative is communicated and understood in each. This will be applied to Aberdeen/shire based projects, and the research will seek relevant projects for each project type. In terms of selecting projects for investigation within these categories, a rationale for selection was required as many Aberdeen-based projects were potentially applicable. The research objectives were designed to seek an understanding of legacy in the formation, management, and processes of regional projects. This rules out approaches such as snowball or opportunistic sampling (Patton, 2002), as projects sought have to contribute to 'creating a legacy', so more control for quality assurance would be required.

A criterion sampling approach was adopted to ensure that projects selected for investigation had relevance to the future development of the Aberdeen region and part of its future vision (Palinkas et al., 2015). The selected projects were all part of the regional authorities' (Aberdeen City and Aberdeenshire Councils) long-term vision and transformation plans. Both councils provide regional infrastructure masterplans/ development plans, which are reviewed periodically. These are future-orientated documents which identify projects that the council believes are of strategic importance to the development and identity of the region. In August 2020, both Aberdeen City and Aberdeenshire councils produced an agreed roadmap for achieving the strategic vision for the region until 2040 in the publication Strategic Development Plan (Aberdeen City Council et al., 2020). This document outlines the region's needs and how project development can fulfil the requirements for meeting those needs. This builds upon previous future-orientated publications and plans from both councils, which have highlighted specific projects as being of strategic importance for the future of the region. The documents highlighting the region's future vision are highlighted in Table 12, and the projects highlighted within them informed the project selection of this research.

Table 12: Aberdeen Region Strategic Documentation

Document	Author	Date first Published
Aberdeen City and Shire Strategic Development Plan	Aberdeen City Council & Aberdeenshire Council	2020
Aberdeen City Region Deal Annual Report 2019/20	Aberdeen City Council, Aberdeenshire Council, Scottish Government, UK Government, Opportunity North East.	2020
Regional Economic Strategy: 2018-2023 Action Plan	Aberdeen City Council, Aberdeenshire Council, Opportunity North East.	2018
Regional Economic Strategy: A 20-year vision for the well-being of the place and our people.	Aberdeen City Council, Aberdeenshire Council, Opportunity North East.	2015
Aberdeen Local Development Plan 2022: Development Plan Scheme	Aberdeen City Council	2019
Aberdeen Local Development Plan	Aberdeen City Council	2017
Aberdeen City Centre Masterplan and Delivery Programme	Aberdeen City Council	2015
Economic Development Annual Review (2018 to 2019)	Aberdeenshire Council	2019
Planning Performance Framework 7 2017/18	Aberdeenshire Council	2018
Economic Development Annual Review (April 2017 to March 2018)	Aberdeenshire Council	2018
Aberdeenshire Council Plan 2017-2022	Aberdeenshire Council	2017
Report to Infrastructure Services Committee	Aberdeenshire Council	2017
Report to Infrastructure Services Committee - Economic Development Priorities 2017-2021	Aberdeenshire Council	2017
Economic Development Annual Review (2016 to 2017)	Aberdeenshire Council	2017
Aberdeenshire Local Development Plan 2017 (Pts 1 & 2)	Aberdeenshire Council	2017
Table Colour Key:		
Combined City/Shire Publication	Aberdeenshire Publication	Aberdeen City Publication

Source: Author

Projects that fall into Koenigstorfer et al's. (2019) five categories were included to investigate for how they contribute to legacy. Projects of this scale, however, will often take years to complete and will be in various stages of completion. Consideration was given to projects that were active during the PhD research period of the researcher. For this reason, some projects which will significantly impact the region, like the development of Aberdeen Market and the Peterhead to Drax HvdC Link, were not finalised when the research was being conducted and so out with the timeline for inclusion.

The recency of these projects will provide a legacy snapshot for current understanding and also not rely on sources that are dated and thus fragmented (Essex & Chalkley, 1998). These projects will range in the state of completion, with some still in the planning phase, while others in progress, or fully complete. All, however, would have progressed with a design and plan for their impact on the environment and the region's stakeholders. When considering the timeline of these projects, it must be noted that the effects of Covid-19 significantly impacted the anticipated project completion progress. Many of these projects were put on hold, and their stakeholders were put on 'furlough' for significant periods of this research. This impacted the researcher's potential access for primary investigation as project conditions and timescales were consistently changing and unpredictable. This

highlighted the importance of applying multiple methods for investigating legacy narratives within this research. One in which the existing project communication can be analysed for legacy characteristic references through document analysis and then followed up with semi-structured interviews when project stakeholders become available.

A list and summary of the projects selected for analysis in this research can be found in Table 13. In total, 14 Aberdeen/shire based projects were mentioned in the region's future development documents that fell within Koenigstorfer et al.'s. (2019) five legacy project themes. When considering the projects for selection in this research, a number of regional projects had similar objectives; for example, the Chapelton of Elswick housing development had many similarities in project scope with the Grandhome development. However, only projects specifically mentioned in the future-oriented documents in Table 13 fell within the scope of selection.

Table 13: Research Project List

Transport Infrastructure Projects (City & Shire)				
Project	Description	Timescale	Originally Anticipated Cost	Location
Aberdeen Western Peripheral Route (AWPR)	Transport infrastructure development to complete a city bypass including road network, bridges and environmental landscaping.	Completed 2019	£745 Million (£809 m including cost overruns)	Various Aberdeen and Aberdeenshire locations.
Aberdeen Harbour South Development and Expansion at Nigg Bay	Expansion of harbour including dredging within Nigg Bay to construct two breakwaters and develop a quayside on the north and west sides of the bay.	Construction started May 2017 and in progressing although Covid impacted original schedule of Mid 2020	£350 Million	Aberdeen City
Expansion of Aberdeen International Airport	Increase of 50% of terminal space. Includes a new security search area, new retail facilities, new baggage reclaims, two new business lounges and new immigration and arrivals facilities.	Completed end of 2019	£20 Million	Dyce, Aberdeen
Stadium and Event Construction Projects (City & Shire)				
Project	Description	Timescale	Cost	Location
The Event Complex Aberdeen (TECA) – Locally known as P&J Live.	Exhibition and conference centre and energy centre.	Completed 2019	£333 Million	Dyce, Aberdeen
Cormack Park & Aberdeen Football Club Stadium Development	Sports community campus includes a training pavilion, three professional training pitches, two floodlit 3G pitches and two grass pitches and eventually a 20,000-seater community stadium.	Phase 1 (Cormack Park): Completed Oct 2019 Phase 2 (2016-present): In Progress but still	£62Million	Phase 1: Kingsford, Aberdeen Phase 2: TBC. Permission granted for Kingsford, Aberdeen but also Beach front

		at the panning & development stage.		development is being explored.
Regeneration Structure Projects (City & Shire)				
Project	Description	Timescale	Cost	Location
Inverurie Health Hub	New health centre to replace the existing one which has maxed capacity and lifecycle.	Completed July 2018	£14.7 Million	Inverurie, Aberdeenshire
Refurbishment of Aberdeen Art Gallery and Memorial Court	Refurbishment and expansion of art gallery and Cowdray Hall. This included additional gallery spaces and community activity spaces.	Completed in 2017	£34.6 Million	Aberdeen City
Union Terrace Gardens	Transformation and refurbishment of the city centre's main green space resource.	Ongoing Construction started September 2019	£25.7 Million	Aberdeen City
Aberdeen Music Hall	Restoration and renovation of Aberdeen Music Hall auditorium and creation of a new studio, creative learning space and box office	Completed Dec 2018	£9 Million	Aberdeen City
Commercial Projects (City & Shire)				
Project	Description	Timescale	Cost	Location
Prime 4 Business Park	Business park community of offices and leisure facilities. With additional 63 hectares of commercial purpose land to be developed by 2026.	Phases 1-3 complete. Additional projects in development	Current Prime Four costs exceed £275m and will rise to £600m when the commercial park is developed	Kingswells, Aberdeenshire
Bio-Therapeutic Hub for Innovation (BioHub)	Construction of a BioHub centre to be a Life Sciences resource at the Foresterhill medical site.	Ongoing: Scheduled to be complete end 2021	£40 Million	Foresterhill Campus, Aberdeen
Hywind Offshore Windfarm	A floating offshore windfarm, comprising five 6MW Siemens turbines for a total of 30MW output.	Completed 2017	£264 Million	16 miles off the East Aberdeenshire coast
Residential Projects (City & Shire)				
Project	Description	Timescale	Cost	Location
Grandhome Development	Development of 7000 homes	In progress: 2,600 homes before 2016. 2100 built from 2017 – 2026, and 2300 homes within 2027 – 2035	£1 billion in homes and infrastructure over the next 40 years	Grandhome, Aberdeen
Aberdeen Queen's Square Redevelopment	The pedestrianisation of Queens Square and redevelopment to a residential area including	Ongoing. Original completion date 2026 although	£150 Million	Aberdeen City

	300 new homes.	impacted and delayed by Covid.		
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Source: Author

4.4.2 Document Analysis

The first method to be used in this research is document analysis. There has been some contemplation in social sciences around what constitutes a document (Gray, 2022). Scott (1990) has provided a commonly applied definition for a document, ‘*an artefact which has as its central feature an inscribed text*’ (p. 5). Others have incorporated the recent developments in multimedia and noted that audio-visual sources can constitute a document (Karppinen & Moe, 2012). Fundamentally, in the research literature, a document is often considered a source or record which has been developed without the intervention of a researcher (Bowen, 2009). Documentary analysis itself is more than the ‘recording of facts’ (Ahmed, 2010); it is a reflexive process of social inquiry in which the researcher must engage sources and frame them in order to facilitate understanding (Coles, 1997).

Reviewing publicly available documents is a common qualitative approach (Ritchie & Lewis, 2003). It provides several benefits, being a stable method that can cover a wide range of themes, can be applied repeatedly, and is useful to collaborate data with other sources (Yin, 2009). Bryman (2008), notes that there needs to be caution when considering the document source, and to consider potential biases within it. A theme expressed in the literature review highlighted that often within construction/infrastructure projects, there is a tendency to communicate long-term benefits (or other legacy characteristics), but not disclose potential negative aspects of the project (Essex & Chalkley, 1998; Zawadzki, 2022).

It is important within document analysis that consideration is applied to the quality of the sources to be used in a study (Prior, 2008). There is a need to question the authenticity and credibility of each source and consider how representative of the theme the source is (Karppinen & Moe, 2019). The type of documents to be analysed will ensure a wider and more critical discussion of each project’s story to be used in this research. To ensure that credible and appropriate documents are selected in this research, Scott’s (1990) four criteria for assessing quality within sources were considered: authenticity, credibility, representation, and meaning. Morgan (2022) illustrates Scott’s criteria in relation to quality control when using documents for analysis (Figure 19). The following paragraphs will outline this research’s approach to ensuring the application of each of the four criteria.

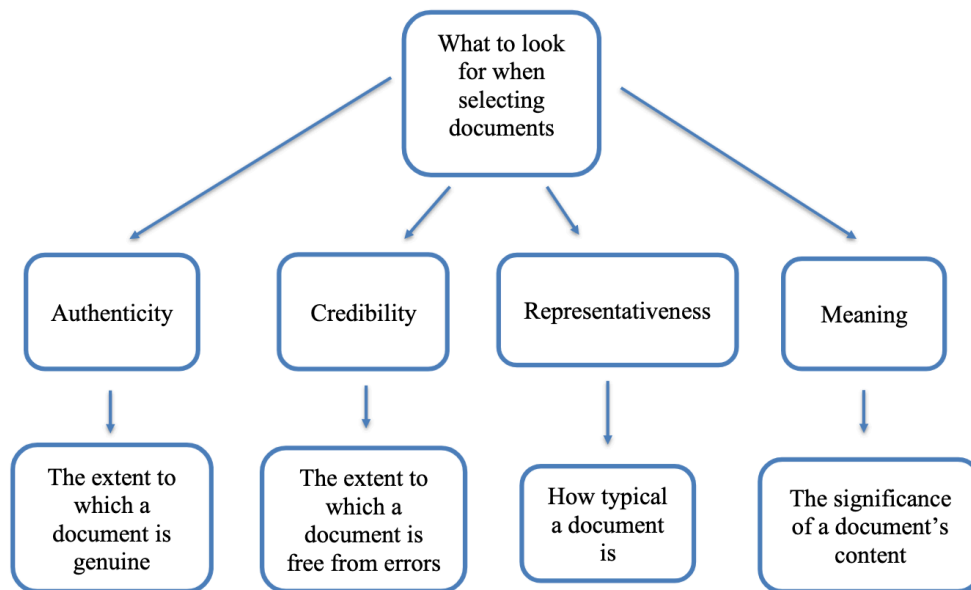


Figure 19: Factors to Use for Selecting Documents (Morgan, 2022, adapted from Kridel, 2015)

The authenticity of a document is a foundational element of the document analysis process (Mogalakwe, 2009). This will involve investigating a source to determine that it is not forged and that the document is what it claims to be (Merriam & Tisdell, 2016). The integrity of a document is important, and those that are selected should avoid being taken from unreliable or suspicious secondary sources (Creswell, 2016). Considerations should be given to its intentions so that it is not positioned or altered by anyone with a vested interest (Braun & Clarke, 2012). In this research, care is given to ensure that original sources are used; that way, there will be less chance that content could have been omitted or has been misinterpreted by a secondary source (Flick, 2018). The author will go through a process of validating the source for reliability, and record the date, author, and publication information (see Section 4.4.2.1 for a detailed breakdown and Figure 20 for an example of this process). This will ensure that each document used in this research has had its authenticity reviewed, with a record for each source created that can be tracked and reviewed again to ensure consistency in the quality of sources applied.

The next consideration for the quality of the document is credibility. Ahmed (2010) provided a definition, noting that “*Credibility refers to the objective and subjective components of the believability of a source or message, whether the evidence is free from error and distortion*” (p.4). Some documents will be more credible than others. However, a starting point for a researcher should be to consider the motive or position of the author of the source and to ascertain if there was anything but a desire to represent an honest explanation of a theme (Kridel, 2015).

Scott (1990) notes that when considering credibility, it should include the extent to which an author is sincere and accurate in their point of view on a position taken. This research considered the trustworthiness and expertise of authors and selected documents free from distortion, using materials taken from established and reputable sources. The documents selected will not focus on architectural or technical project plans (as these are construction blueprints). Instead, the document analysis will focus on the public communications from stakeholders and the descriptions and claims made concerning their projects. These are often referred to as ‘public utterances’, the narrative communicated to the public about the

project and the response in the media to it (Bryman, 2008). This included regional, national, and international news media and their reporting on aspects of the projects selected. It also included industry-specific reporting and project stakeholder communications to the public; this ensured a range of perspectives taken from direct sources reporting on a project. These sources had different positions around project themes but were not distorted, and care and attention were given to their accuracy and account. The discussion around Table 16 on page 105 provides more details on the selection process and a breakdown of sources for documents used.

The third element of Scott's (1990) criteria is representativeness. This is a theme around how 'typical' or not a document is to a certain topic (Ritchie & Lewis, 2003). For this aspect, the researcher needs to consider the content material and understand if it is based on individual or idiosyncratic features lacking wider context or content representing more of the theme's collective narrative (Barbour, 2014). Common issues around representativeness are the age of the source being used and assessing its validity at a point in time (Dunne et al., 2016). This is not so much of a challenge in the instance of this research, where documents are sought on projects with a specific timeline. Sources selected cover all aspects and narratives of the project from initiation to completion/usage stages, so 'historical' or outdated documents wouldn't be part of the scope of this research. Sections 4.4.2.1 to 4.4.2.3 outline the process of how each document is analysed and codifies text into categories that ensure appropriate representativeness of content themes.

The final factor to consider in document quality control is 'meaning'. In the context of Scott's (1990) criteria, meaning refers to whether the source has clarity in the significance of what it contains (Ahmed, 2010). Scott also highlights that a document can have 'literal' and 'interpretative' meanings, and a researcher should conclude which inference to make concerning the source's assertions that are not based on factual statements (Corrigan, 2018). This can often be challenging for a researcher, and often, within qualitative studies, a researcher may seek to augment documentary information with in-depth interviews with stakeholders who are knowledgeable about the social phenomenon (Lotz, 2007). This research adopts that process, and section 4.4.3 discusses the rationale and approach of the semi-structured interviews with those project stakeholders who design and implement legacy within their practice. The collation of data within these documents provides the researcher with a narrative of project legacy from reliable and credible sources with clarity in their meaning and purpose. This approach enabled the author to identify the themes and characteristics related to legacy that are communicated to the public for each selected project.

4.4.2.1 Document Analysis Presentation of Sources

In document analysis it is important to highlight the process for selecting data and being transparent for the approach applied (Patten, 2002). The process of searching for appropriate documentation can be challenging (Bryman, 2008). This was evident in this research. Within the UK, there are projects that have legacy designed as a guiding principle, such as High-Speed Rail 2, Crossrail, and the 2012 London Olympic Games infrastructure. The scale, visibility, and prominence of these projects ensure an abundance of available project material, documentation and public commentary from various sources such as project contractors, national media, academic literature and Government bodies (Cottam, 2015; Preuss, 2015). The selected Aberdeen-based projects, in comparison, have less public discussion and less documentation available as they have more local rather than national interest. The benefit of this is that it will enable the researcher to capture the majority of relevant project communication rather than a selective sample of documents. This will provide a more comprehensive sample within the scope and timeline of this

research (Saldanā, 2021). In addition to this, this method also offers some good commercial value, with this being the first regional study into the approaches and rationale of these projects. The literature review of this thesis noted that Aberdeen and Aberdeenshire are geographical areas with limited specific project management investigation. The creation of a database that can track and compare multiple project factors has value in providing insight into performance and impact on future developments (Kerzner, 2017). The document analysis process in this research will create an exclusive database which will record and code relevant legacy themes. In an academic context, this will provide an understanding of how legacy is understood and applied. In a commercial context, this will also provide relevant data for organisations or consultants to consider for what factors could be effective or replicated in other contexts.

To ensure an effective range of sources was applied for the document analysis, a search process was adopted, which included using online search engines to identify national and regional newspapers, business and local government publications, and searching construction and industry-specific news and reporting.

Appropriate project keyword terms were applied and searched for at a high level to take in a wide range of sources and data. Search results were reviewed, looking for data where the project narrative was communicated, and through this process, appropriate documents were identified with efforts to ensure that duplications of the same story were removed. Each article identified was copied and pasted into a word document and then categorised and recorded to include tracking information such as project information, source type, and author details (an example is given in Figure 20). This was to aid the researcher in better cataloguing documents for reference and use later with computer software.

<p>Project: Inverurie Health Hub Category: Regeneration Structure Projects Title: Construction starts at multimillion-pound north-east health centres Source: Joanne Warnock, Press and Journal Date: 8th December 2016 Link to Source: https://www.pressandjournal.co.uk/fp/news/aberdeen/1107531/construction-starts-at-new-health-centres/</p>
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Figure 20: Source Categorisation Structure (Source: Author)

The number of appropriate sources identified for the 14 projects totalled 704. The date range of these sources varies by project. These projects are often impacted by many years of pre-planning, development, and obtaining permission before commencement, but sources were sought from all stages of the project lifecycle (including pre and post-execution). The scale of the project was identified by cost. The total budget of these combined projects was £3.387 billion to the region, emphasising the significant impact on its transformation ambitions. Appropriate document sources were broken down by project as per Table 14.

Table 14: Sources by Project

Transport Infrastructure Projects (City & Shire)			
Project	Timescale	Estimated Cost at Project Start	Sources
Aberdeen Western Peripheral Route	Completed 2019	£809 Million	102
Aberdeen Harbour Expansion	May 2017 - Ongoing	£350 Million	55
Expansion of Aberdeen Airport	Completed 2019	£20 Million	58
Stadium and Event Construction Projects (City & Shire)			
Project	Timescale	Cost	Sources
The Event Complex Aberdeen (TECA)	Completed 2019	£333 Million	62
Aberdeen Football Club Stadium / Cormack Park	Stage 1: Completed Oct 2019 Stage 2: In Progress	£62 Million	44
Regeneration Structure Projects (City & Shire)			
Project	Timescale	Cost	Sources
Inverurie Health Hub	Completed 2018	£14.7 Million	41
Refurbishment of Aberdeen Art Gallery	Completed in 2017	£34.6 Million	54
Union Terrace Gardens	Sept 2019 - Ongoing	£25.7 Million	51
Aberdeen Music Hall	Completed 2018	£9 Million	34
Commercial Projects (City & Shire)			
Project	Timescale	Cost	Sources
Prime 4 Business Park	Phases 1-3 Completed 2017 - Ongoing	£275 Million	41
Bio-Therapeutic Hub for Innovation	Ongoing	£40 Million	41
Hywind Offshore Windfarm	Completed 2017	£264 Million	44
Residential Projects (City & Shire)			
Project	Timescale	Cost	Sources
Grandhome Housing Development	Phase 1 Completed 2017 – Phase 2 Ongoing	£1 Billion	45
Aberdeen Queen’s Square Redevelopment	Ongoing	£150 Million	32
TOTAL			704

Source: Author.

To ensure a balance of perspectives, it was important to include various sources (Saldanā, 2021). The sources of information desired were project public communications; the most appropriate of those were grouped into categories and applied using the following key (Table 15).

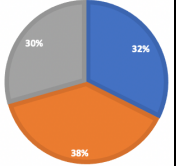
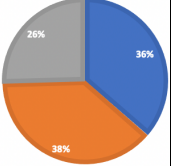


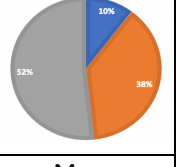

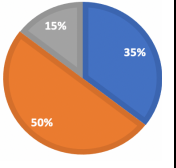
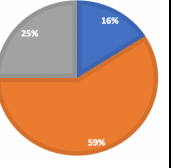


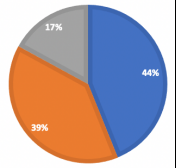
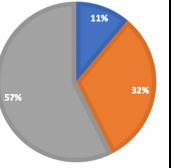


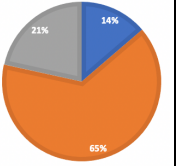
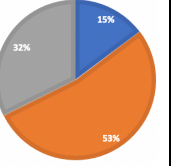


Table 15: Project Source Groups

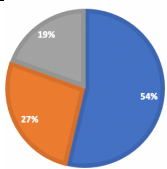

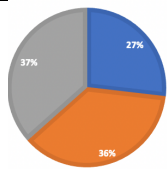

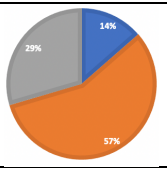

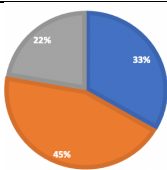

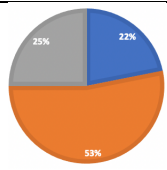

Source	Description	Code
Direct Stakeholder Communication	Includes stakeholder website, reports, social media and video or broadcast communications.	STK
News and Print Media	Regional, national, and international levels considered. Includes online editions, video or broadcast communications.	NEWS
Industry Specific Reporting	Includes construction and infrastructure industry specific sources including articles, reports or online sources.	IND

Source: Author

Each project has its own background and management approach, and the data collected was for what was publicly available and communicated to the public. Despite an approach to take in all relevant data, there were efforts to ensure each category was included. The volume of data available meant this was achieved, the balance, however, varied by project. The breakdown of source type for each project is displayed in Table 16.

Table 16: Source Breakdown of Project Types

Transport Infrastructure Projects (City & Shire)			
AWPR (102 Total)		Aberdeen Harbour Expansion (55)	
■ STK	33	■ STK	20
■ NEWS	39	■ NEWS	21
■ IND	30	■ IND	24
			
			
Source Date Range: May 2004-Aug 2020		Source Date Range: Oct 2015-July 2021	
Expansion of Aberdeen Airport (58)			
■ STK	06		
■ NEWS	22		
■ IND	30		
			
			
Source Date Range: Mar 2009-Apr 2021			
Stadium and Event Construction Projects (City & Shire)			
TECA (62 Total)		AFC Stadium / Cormack Park (44)	
■ STK	22	■ STK	07
■ NEWS	31	■ NEWS	26
■ IND	09	■ IND	11
			
			
Source Date Range: Jan 2015-Mar 2021		Source Date Range: Dec 2007-May 2021	
Regeneration Structure Projects (City & Shire)			
Inverurie Health Hub (41 Total)		Aberdeen Art Gallery Refurbishment (54)	
■ STK	18	■ STK	06
■ NEWS	16	■ NEWS	17
■ IND	07	■ IND	31
			
			
Source Date Range: Dec 2011-Oct 2019		Source Date Range: Nov 2009-Mar 2021	
Union Terrace Gardens (51)		Aberdeen Music Hall (34)	
■ STK	07	■ STK	05
■ NEWS	33	■ NEWS	18
■ IND	11	■ IND	11
			
			
Source Date Range: Jun 2012-Jun 2021		Source Date Range: Apr 2013-Jul 2020	

Commercial Projects (City & Shire)			
Prime 4 Business Park (41 Total)		Bio Hub (41)	
■ STK	22	■ STK	11
■ NEWS	11	■ NEWS	15
■ IND	08	■ IND	15
			
Source Date Range: Feb 2012-Jun 2020		Image Source: Prime Four	
Source Date Range: Nov 2018-Jun 2021		Image Source: NLA London	
Hywind Offshore Windfarm (44)			
■ STK	06	■ STK	14
■ NEWS	25	■ NEWS	57
■ IND	13	■ IND	29
			
Source Date Range: May 2014-Nov 2021		Image Source: Equinor	
Residential Projects (City & Shire)			
Grandhome Housing Development (45)		Aberdeen Queen's Square Redevelopment (32)	
■ STK	15	■ STK	07
■ NEWS	20	■ NEWS	18
■ IND	10	■ IND	08
			
Source Date Range: Mar 2010-May 2021		Image Source: AJC Homes	
Source Date Range: Mar 2015-May 2021		Image Source: Scottish Construction	

Source: Author

de Freitas Netto et al. (2020), in their research, note that document analysis has been a method that has been effective in reviewing corporate greenwashing and investigating the nature of sustainability claims. The use of this method in this research will provide specific background to reveal what characteristics of project legacy are (or are not) being communicated to the public in the Aberdeen region. These characteristics can then be investigated further in the semi-structured interviews with project stakeholders for validity and accuracy and to review if 'legacy washing' is evident in these public utterances.

4.4.2.2 Content Analysis on Project Documents

Content analysis is the process of codifying text into categories underpinned by a defined criterion or strategy (Vaismoradi et al., 2013). The purpose of this process is to gain an understanding of a document's attributes, revealing what was said, who stated this, and to what effect (Bloor & Wood, 2006). This is especially effective for exploratory research where little is known on a subject theme as it can provide a description of how things are (Silverman, 2020). This is the case for this research and the unexplored narrative of legacy in specific Aberdeen and Aberdeenshire based projects.

The coding approach adopted in the document analysis has both inductive and deductive elements. It will be inductive in that it will collect information to identify a general picture of what is being done in regional projects. It will capture elements of uniqueness and importance, building up a story of efforts and outputs. This will provide background information to be followed up with semi-structured interviews to determine how this legacy

narrative matches key stakeholders' experiences and perspectives and further explore the similarities and differences.

Content analysis is also an excellent method to highlight if the presence of legacy is being communicated within these projects. This was not limited to whether simply the word 'legacy' was used but rather if the characteristics of legacy (as defined in the literature) were present in project communication. To enable this, an element of deductive analysis was undertaken.

As outlined in chapter 3, a theoretical framework was developed for this research, incorporating aspects of legacy and project management found in existing literature (Figure 14). The documents from the selected Aberdeen-based projects were explored for the existence of these factors and to what extent.

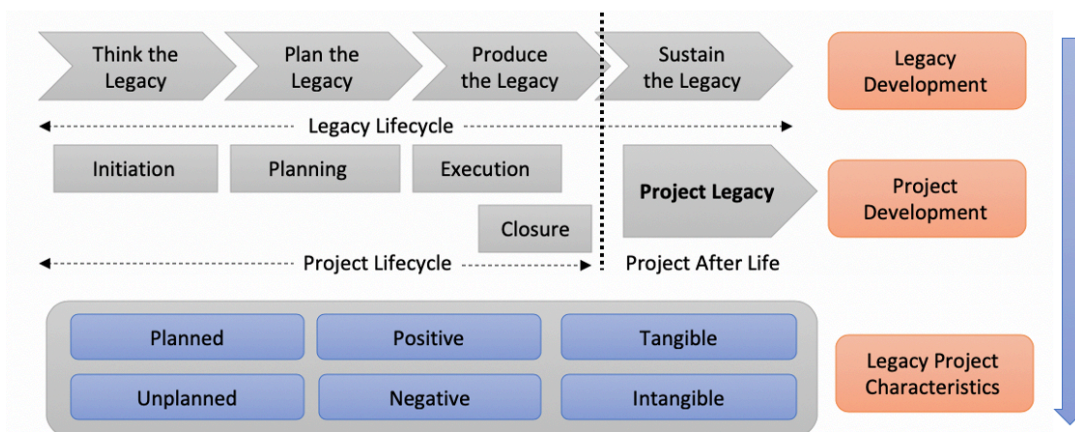


Figure 14: Project Legacy Framework (Source: Author, adapted from Preuss 2007 & Silva 2015)

The content analysis process was conducted using the software programme NVivo which is an effective and often used tool for this purpose (Sullivan & Forrester, 2019). NVivo allows for the creation of codes which can group data together and assign specific descriptions of the text to them. The NVivo category codes of this research are based on the theoretical framework and include the six legacy themes (Preuss section), and the project techniques to develop legacy (Silva section). This allowed information to be captured related to specific mentions of what aspects of legacy were present and what project methods were used to develop this. This coding structure is outlined in Table 17, and data from the documents were filtered and assigned to a category if it matched a description outlined in this table.

Table 17: Content Analysis Code Structure

Legacy Theme	Description
Unplanned Legacy	Factors out with the control of the project that will impact legacy development.
Planned Legacy	Factors that mention efforts to plan or design legacy.
Positive Legacy	Factors that highlight positive effects of the project or its output when discussing legacy.
Negative Legacy	Factors that highlight negative effects of the project or its output when discussing legacy.
Tangible Legacy	Factors emphasising tangible project outputs (i.e., construction, infrastructure) when considering legacy.
Intangible Legacy	Factors emphasising intangible project outputs (i.e., learning, awareness, social benefits) when considering legacy.
Specific Project Techniques and Sustaining Legacy	Factors considering the long-term monitoring or continuous operations to develop legacy after project completion. This includes project management techniques, processes or outcomes for the project.

(Source: Author)

This process created a databank of factors that revealed the legacy characteristics within each project, and also revealed the extent of legacy communication within them. It revealed the narrative of the projects by providing the types of legacy being communicated, the frequency, and the specific terminology being applied within the documents. As it is exploratory, there was consideration given for additional coding to be applied if there were aspects of legacy (as previously outlined within the literature review) that do not fall within the categories of the framework. This was not anticipated and did not occur as these framework categories are quite high level, proven in other research conducted, and can capture an extensive variety of contexts within them (Gratton & Preuss, 2008).

4.4.2.3 Coding Analysis (Process and Breakdown)

The coding process was undertaken over a period of seven months and was applied through the document data being transcribed into the programme NVivo. The analysis of the collected public utterances involved a combination of both inductive and deductive approaches for generating codes (Braun & Clarke, 2012). Through a process of refinement, where data returns were considered for validity and consistency, a series of 47 sub-codes were identified (Figure 21), as being the themes of legacy in these Aberdeen-based projects. These sub-codes identified reoccurring legacy factors being developed within the projects and were collated into a coding structure based on the theoretical framework identified in chapter three of this thesis. Figure 21 highlights the top-level coding structure (positive, negative, tangible, intangible, planned, unplanned and project management methods related to legacy), which was outlined in Table 17, and shows where each of the 47 sub-codes have been categorised.

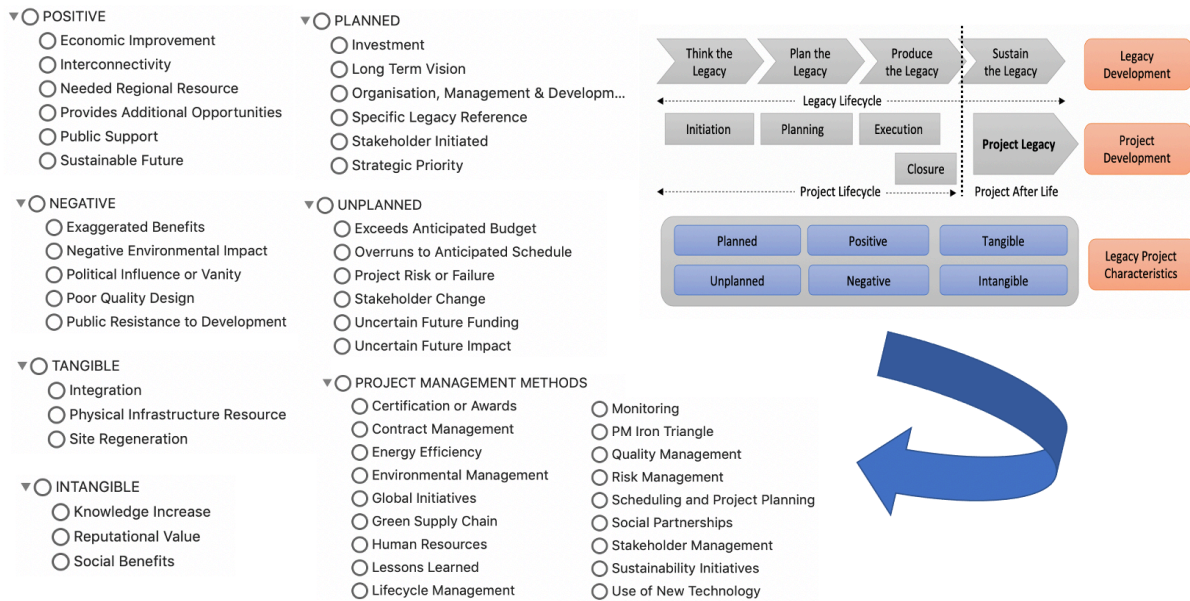


Figure 21: Inductive and Deductive Codes: The Factors of Aberdeen Project Legacy (Source: Author)

Each of the 47 codes had rules written for describing the parameters for their inclusion within the content analysis. This enabled the construction and connection of codes, with factors being grouped in relation to the theoretical framework parameters (Braun & Clarke, 2012). The specific code breakdown applied from the content analysis process is highlighted in Table 18. This shows the 47 codes identified and their description for which the coding was based.

Table 18: Development of NVivo Legacy Codes

Codes	Description
+ PLANNED (Colour: Aqua)	
- Investment	The project has brought in or will provide additional funding or investment into the region.
- Long Term Vision	The project has been identified as being part of a long-term vision for the region
- Organisation, Management & Development	That there has been specific focus given for the organisation, management or developing specific plans for the project.
- Specific Legacy Reference	That the term legacy has been specifically applied in the discussion of the project.
- Stakeholder Initiated	The project was approved or initiated by a stakeholder as part of a wider plan.
- Strategic Priority	The project has been identified as being a strategic priority or contributing to the future development of the region.
+ UNPLANNED (Code Colour: Yellow)	
- Exceeds Anticipated Budget	The project has exceeded its original planned budget resulting in a revision of scope or the modification of expected plans.
- Overruns to Anticipated Schedule	The project has exceeded its original planned schedule or development timetable resulting in a revision of scope or the modification of expected plans.
- Project Risk or Failure	The project has significant risk associated with it, has had unanticipated risks materialise which has the potential or did lead to failure or modification of original plans.
- Stakeholder Change	The original project plans have been impacted as core stakeholders to facilitate it have had to be replaced.

- Uncertain Future Funding	The project may have plans but funding for its development is still uncertain and may impact project outcomes or scope of work.
- Uncertain Future Impact	The project impact for the future is still relatively undetermined, changeable or unknown.
+ TANGIBLE (Code Colour: Brown)	
- Integration	The projects physical infrastructure will provide increased integration and links for developing or supporting other regional sites or infrastructure.
- Physical Infrastructure Resource	The project provides a physical infrastructure resource for the region.
- Site Regeneration	The project provides a regeneration of a previous site/location/industry.
+ INTANGIBLE (Code Colour: Clear)	
- Knowledge Increase	The project or its output will provide additional knowledge or specialist skills to the region, people or industry.
- Reputational Value	The project will have an impact towards the region's reputation, may add prestige to the perception of the region.
- Social Benefits	That the project will provide or facilitate some social benefits to the regions people.
+ POSITIVE (Code Colour: Green)	
- Economic Improvement	The project or the projects output will provide additional financial benefits to the region.
- Interconnectivity	The project design or output is aimed at attracting a wider external audience to engage or travel to the Aberdeen region.
- Needed Regional Resource	The project will contribute to providing resources that are currently lacking or insufficient in comparison to other regions.
- Provides Additional Opportunities	The project or the project output will produce additional opportunities for people or industry in the region that didn't exist previously.
- Public Support	That the project has been identified as being popular with the population of the region and supportive of its development.
- Sustainable Future	That the project or its output will contribute towards a more sustainable future for the region.
+ NEGATIVE (Code Colour: Red)	
- Exaggerated Benefits	That it has been identified or claimed that the project benefits have been exaggerated or unproven.
- Negative Environmental Impact	That there are potential negative or harmful consequences to the environment from the project's development or output.
- Political Influence or Vanity	That the project development has been influenced by political factors or individual / organisational vanity rather than being based on needs or merit.
- Poor Quality Design	That the project is not of acceptable quality or fit for purpose.
- Public Resistance to Development	That the project is unpopular with the people or businesses of the region and there is resistance for its development.
+ PROJECT MANAGEMENT METHODS (Code Colour: Purple)	
- Certification or Awards	Emphasis for seeking specific certification for achieving best practice. Awards provided in recognition either internally or externally for project performance.
- Contract Management	Development for the clauses and content of the contract for the project.
- Energy Efficiency	Project design methods that look to implement energy efficiency or waste reduction for outputs.
- Environmental Management	Project design or alterations to ensure no negative environmental impact. Working with nature/ natural resources or consideration for biodiversity of project area.
- Global Initiatives	That the project approach incorporates a response to contribute towards wider national or international initiatives such as UN's SDG's, Net Zero, Governmental Energy Targets etc.
- Green Supply Chain	Consideration for the environment, fair labour practices, and minimising logistic resources to use locally or ethically procured materials and services.
- Human Resources	That specific criteria or efforts were applied for developing project teams, groups or the selection of contractors on the project.

- Lessons Learned	Learning has been identified for project performance and implementing future improvement or enhancements.
- Lifecycle Management	The project development has emphasised completion of the project in reviewed stages, structured methodology or has a clearly identified lifecycle.
- Monitoring	That there will be monitoring of project performance or impact.
- PM Iron Triangle	Emphasis to ensure effective project management leadership is applied to ensure a priority to retain/regain the anticipated project schedule, budget or quality.
- Quality Management	Adherence for implementing quality management standards or quality planning.
- Risk Management	That emphasis and analysis for project risk was conducted and adhered too.
- Scheduling and Project Planning	Significant effort was spent creating a well-defined, appropriate or realistic project plan and associated schedule.
- Social Partnerships	That the project developers have partnered with other regional groups or individuals to provide social benefits, awareness, educational or training opportunities.
- Stakeholder Management	That there were specific efforts and focus to manage and work in collaboration with project stakeholders. This may include a stakeholder or communication plan.
- Sustainability Initiatives	Specific implementation or consideration of sustainability for the project or that project sustainability initiatives were a key driver for approach or project priority.
- Use of New Technology	Implementation or experimenting with new or advanced technology within the project.

Source: Author

Applying the coding structure to the 704 sources identified, there was extensive qualitative data returned highlighting relevant legacy factors; in total 8061 legacy factors were coded. This varied by project, but the volume of codes returned for all the 14 projects analysed was significant and numerous, providing a good background for understanding legacy practices. The code breakdown by volume for all projects is presented in Table 19 and shows the extent of the database created.

Table 19: Content Analysis Code Breakdown by Project

	AWPR	Harbour	Airport	TECA	AFC Stadium	Inv Health	Art Gallery	U T Gardens	Music Hall	Prime 4	Bio-Hub	Hywind	Grandhome	Queens Square	TOTAL
Codes	Ref	Ref	Ref	Ref	Ref	Ref	Ref	Ref	Ref	Ref	Ref	Ref	Ref	Ref	
INTANGIBLE	76	24	45	110	70	82	51	47	54	44	84	49	61	60	857
Knowledge Increase	10	2	0	15	3	8	2	1	1	3	31	15	1	0	92
Reputational Value	21	19	27	65	18	42	30	20	20	20	20	26	14	16	358
Social Benefits	45	3	18	30	49	32	19	26	33	21	33	8	46	44	407
NEGATIVE	112	39	32	34	19	26	23	124	3	26	4	14	4	24	484
Exaggerated Benefits	12	3	2	11	0	2	2	14	1	4	0	2	0	3	56
Negative Environmental Impact	22	23	16	3	4	4	3	23	0	5	0	2	3	10	118
Political Influence or Vanity	35	5	5	12	3	17	10	51	1	5	4	3	0	8	159
Poor Quality Design	19	0	3	7	0	2	5	11	1	1	0	1	1	3	54
Public Resistance to Development	24	8	6	1	12	1	3	25	0	11	0	6	0	0	97
PLANNED	144	64	101	320	86	173	89	110	58	50	167	53	117	90	1622
Investment	32	19	55	59	15	60	42	17	31	17	33	11	21	13	425
Long Term Vision	36	19	18	71	20	15	7	35	5	14	37	16	39	30	362
Organisation, Man & Development	11	3	10	36	8	33	7	13	6	3	21	6	19	13	189
Specific Legacy Reference	9	6	3	6	13	1	2	3	2	2	2	3	2	4	58
Stakeholder Initiated	29	5	6	80	15	44	20	12	4	2	37	2	13	9	278
Strategic Priority	27	12	9	68	15	20	11	30	10	12	37	15	23	21	310
POSITIVE	217	119	131	249	67	172	86	101	77	62	183	74	66	59	1663
Economic Improvement	34	18	19	51	8	2	3	7	0	20	20	9	6	14	211
Interconnectivity	45	19	30	77	3	8	25	11	11	9	28	4	3	3	276
Needed Regional Resource	39	12	31	35	28	80	14	17	16	5	31	9	15	11	343
Provides Additional Opportunities	49	45	36	23	12	34	29	28	24	12	59	25	14	17	407
Public Support	16	1	5	23	5	14	10	12	12	1	1	2	2	1	105
Sustainable Future	34	24	10	40	11	34	5	26	14	15	44	25	26	13	321

PROJECT MANAGEMENT METHODS	241	138	119	497	102	206	68	109	47	74	91	182	127	53	2054
Certification or Awards	0	0	4	26	0	3	9	1	2	2	0	0	7	0	54
Contract Management	23	15	1	5	2	0	3	11	2	6	1	8	3	0	80
Energy Efficiency	0	2	0	53	0	0	1	0	0	0	0	13	0	0	69
Environmental Management	31	9	9	28	2	2	2	9	0	8	0	12	18	2	132
Global Initiatives	1	2	0	8	0	0	0	0	0	0	0	13	0	0	24
Green Supply Chain	2	2	0	5	1	1	2	3	1	0	2	3	0	0	22
Human Resources	12	1	0	13	1	4	1	0	0	0	0	0	0	0	32
Lessons Learned	16	0	1	3	1	1	1	5	6	0	0	10	4	2	50
Lifecycle Management	28	16	34	17	12	26	5	9	4	18	15	5	18	8	215
Monitoring	6	2	1	3	1	1	1	2	0	0	3	5	0	2	27
PM Iron Triangle	5	6	7	21	1	5	2	7	1	0	1	0	2	1	59
Quality Management	7	3	8	16	7	9	5	5	8	2	2	3	10	3	88
Risk Management	22	4	5	28	14	17	3	6	6	2	5	5	0	3	120
Scheduling and Project Planning	7	14	18	51	20	65	0	14	3	8	10	7	18	12	247
Social Partnerships	35	10	5	50	11	4	3	6	6	9	1	5	6	1	152
Stakeholder Management	38	32	17	63	28	67	21	30	6	16	46	28	31	19	442
Sustainability Initiatives	6	15	3	62	1	1	6	1	0	3	4	34	9	0	145
Use of New Technology	2	5	6	45	0	0	3	0	2	0	1	31	1	0	96
TANGIBLE	44	37	84	82	23	69	41	58	38	17	28	6	18	40	585
Integration	30	17	41	17	9	7	13	13	7	10	11	6	9	22	212
Physical Infrastructure Resource	11	15	32	57	10	44	5	13	2	7	13	0	9	5	223
Site Regeneration	3	5	11	8	4	18	23	32	29	0	4	0	0	13	150
UNPLANNED	201	93	58	88	64	24	46	93	21	34	31	9	3	31	796
Exceeds Anticipated Budget	27	4	0	6	4	0	8	9	2	0	1	0	0	2	63
Overruns to Anticipated Schedule	38	12	3	3	8	1	13	8	8	0	5	0	0	2	101
Project Risk or Failure	47	25	16	35	23	10	5	33	7	14	8	2	0	7	232
Stakeholder Change	31	16	8	3	0	1	0	2	0	0	1	0	0	0	62
Uncertain Future Funding	38	19	16	28	18	5	19	20	3	9	13	5	1	12	206
Uncertain Future Impact	20	17	15	13	11	7	1	21	1	11	3	2	2	8	132
															8061

Source: Author

The use of NVivo in this process helped the researcher take large sections of raw data and explore this in a systematic manner (Silverman, 2020). It allowed the categorisation of data into appropriate themes, built upon hierarchies and allowed specific legacy factors to be identified and attributed within this structure. This allowed for clear visualisation of the frequency of specific themes appearing, their applied context, and for trends to be discovered (Punch & Oancea, 2014). This enabled the creation of a database which is able to contextualise legacy themes. This is valuable in understanding and providing meaning in relation to the objectives of this study. It also provides a resource with commercial potential to highlight how legacy can be best applied and considered in other project contexts.

The benefits of the approach adopted is that it has a defined structure, so it is repeatable and allows for replication studies (Kumar, 2011). The analysis is based on existing material in the public domain, and so is an observation method that is not obtrusive or influencing the narrative (Symon & Cassell, 2012). The literature revealed that for the advancement of legacy research, it should be explored in individual contexts and locations to build up an understanding (Girginov, 2011; Reis et al., 2017). This method allows for further exploration of project communications in other locations using the same theoretical framework and code structure, potentially providing useful comparisons with this research. The content analysis applied to these documents will provide a basis for understanding between the academic perspectives outlined in the literature and the 'realities' of practice. The academic literature revealed that there was currently no agreed understanding or definition of legacy (Ferrari & Guala, 2017). The content analysis approach adopted in this research adds some details in the development for moving forward from what legacy 'should' or 'could' look like to something that project stakeholders actually convey. The analysis (which will be presented in the next chapter), allows the discovery of the extent to which these legacy narratives are

consistent or contradictory, and provides insight into where they may converge or diverge. Further exploration with project stakeholders in the semi-structured interviews provides more of the reasoning, and the 'why' behind the narrative explored in the document analysis.

4.4.3 Semi-Structured Interviews

Qualitative data was gathered through a process of non-standardised interviews based within a semi-structured process (Jarratt, 1996). Using interviews as a research method often returns rich descriptive data, an effective method for understanding narratives within a subject (Ghauri et al., 2020). Semi-structured interviews allow information to be obtained, such as experiences and intentions that had not been documented in the published project materials reviewed (Patton, 2002; Saunders et al., 2018). Interviews can have issues such as misinterpretation of cultural understanding, context, or behavioural meaning (Wisker, 2008). The semi-structured method enables the interview to better achieve its desired aims (Mack et al., 2005). In this research, this was enabled by the development of an interview guide which included questions directly related to the aims and objectives of this research and included all factors required from the theoretical framework. The interview structure also benefited from data from the content analysis, which provided some pre-existing background to explore and investigate. The semi-structured approach provided flexibility in questioning to identify new knowledge, especially the order of questions and the fluidity in responding to unanticipated responses (Bryman & Bell, 2015). This enabled increased control of the discussion topic, ensured it remained focused on the research objectives, and influenced timing and engagement (Seaman, 1999).

The interview approach was compliant with the university's ethics committee guidelines. While face-to-face interviews would have been sought if possible, this was not done because of government guidelines around social distancing in response to the risk of Covid-19. All interviews conducted were done by video conference on Microsoft Teams. All participants had the experience of using this extensively, and this format allowed visual indicators to be picked up by the researcher during the interview process. Each interview conducted was recorded and then later transcribed.

4.4.3.1 Semi-Structured Interview Sample

The identified research design is based on an interpretative approach to extract qualitative data (Easterby-Smith et al., 2012). Within this, it is important to obtain data from suitable sources to be relevant to the requirements of the research (Barbour, 2014). As a research subject, projects can be challenging to investigate as they are unique, and the resources required for facilitating them are always different (Dobrovolskienė et al., 2017). All projects are collaborative and include a range of stakeholders (Lock, 2020). When considering potential interview participants, the parameters for identifying relevant stakeholders who can provide appropriate data must clearly be defined (Sullivan & Forrester, 2019). In the context of this research, those individuals who, through their role in their particular project, were in a position to understand the design, ambitions, and influenced the process of developing it, having contributed to what the final project should represent. They would be aware of any narrative of legacy and be an effective participant to interview and learn how legacy is understood and applied. These stakeholders, known as project decision makers, are quite limited in number, meaning other popular project stakeholders, such as end users, consultants, contractors, suppliers, financiers, senior executives, etc., are not considered interview subjects. These other roles have not been involved in developing the vision or design of the project, and thus, are not directly involved in shaping legacy. These stakeholders may have an opinion or attitude towards the legacy of the project. However,

they have not influenced the project approach to facilitate its development and are not considered a suitable source to tell the narrative of it.

Within projects, there are specific project roles that would meet the scope of the research participant requirements. There were three identified; the project sponsor, the project manager, and the project architect. An explanation of each of these roles and their contribution to the design of a project are outlined in Table 20 below.

Table 20: Relevant Project Roles

Traditional Project Roles		
Project Stakeholders:	Description of Role	Contribution to Project Design
Project Sponsor	The project sponsor (person or group) conceives and advocates for a potential project. They don't manage project operations, but they are above the project manager in terms of project hierarchy.	The project sponsor develops the business case for the project. They provide resources, support and decision making around project vision, governance and benefits realisation.
Project Manager	The project manager is the person responsible for day-to-day operations and management to fulfil project requirements.	The project manager executes and makes project vision a reality. This involves planning, scheduling, managing risk, realising and implementing changes, controlling budgets, quality and resources.
Project Architect	The project architect coordinates the design and development of a given construction project.	It is only in certain projects that specific architects are used as stakeholders and at times they can be intertwined with the project manager role for planning. They will produce planning documentation and oversee the development of the design of a project.

Source: Author

Within each project being investigated in this research, an individual in one of these decision-making roles was sought for an interview anticipated to be around 45 minutes to an hour in length based on the questions developed within the semi-structured method. As identified before, the requirements and resources of each project will be different, which may impact which of these roles are available or applicable for interview. Guest et al. (2006) propose 6-12 participant interviews as a sufficient volume to identify a single research theme of investigation; participants in this research will be represented over every project identified (14). Also, a representative from Aberdeen and Aberdeenshire council (2) was sought as they had to sign off on each project because they were all projects formulated from their regional masterplan. This will provide depth and expand upon the data collected through the document analysis.

The legacy narrative should be similar for whatever stakeholder is selected. Each identified stakeholder will have the background of what happened on the project and why. This, to a degree, should be recorded in the internal project documentation, and so they should have some uniformity of approach. The information sought is not personal opinion from these stakeholders, but instead informed opinions, the additional narrative of the project towards

legacy and the methods employed to facilitate it. This will focus on 'what' was done and 'how' it was implemented. This approach will also reduce potential biases and maintain a greater level of objectivity from participants (Barbour, 2014). To achieve this, at least one interview from every project was sought to relay this information and compare it with the findings of the document analysis.

It was anticipated that getting access to these stakeholders would be challenging, a common issue in interview-based research (Grix, 2010). The Project Management Institute (PMI) in 2015 wanted to review and take opinions for sustainability development within project management from project decision makers. It made this an organisational priority, issued a survey to its global membership (478,000 members), and received only 219 responses back (Baker et al., 2015). The low response rate from project managers and sponsors was thought to be because they are overworked, and in high-pressure environments with significant financial consequences, so have limited time for external tasks that could take away from their project activities. This example demonstrates that the researcher employed some very difficult canvassing work to ensure key participants' involvement. Factors that allowed the researcher to obtain the desired interviewees included extensive networking and joining and engaging with professional industry bodies within Aberdeen and Aberdeenshire. Interview requests went to each of the three appropriate stakeholders for every project. To try and encourage participation, consideration was given to convey transparency of the research purpose, interview length, professional interest in the topic and the ability to review results (Ghuri et al., 2020). There was an emphasis on anonymity to ensure that participants could not be identified for data provided or stored on the researcher's systems. This encouraged participants to discuss their legacy narrative freely without fear of negative consequences or any reputational impact (Denscombe, 2017). The obtainment of interview participants was also made more difficult because of the restrictions imposed by the Covid-19 pandemic and the resulting impact on individuals' availability. It was identified that it was essential in a phenomenological study to get an in-depth understanding of legacy from the correct stakeholders. The researcher went to great lengths to ensure this was achieved and that all identified projects had an appropriate participant. The researcher even obtained consent for the final needed interview by attending the offices of the organisation in person, straight out of hospital with a broken arm, after not hearing back from the original invitations. This level of dedication was required to obtain the required participants but ensured that the data collected was appropriate and effective for investigating legacy. The interview data collected has value as the stakeholders who participated are of a particular value in project management (Grix, 2010; Lock, 2020) and almost exclusively had not been approached previously for academic research purposes. The process of conducting the interviews was accomplished over a 6-month period.

4.4.3.2 Interview Analysis Process

Stakeholders from the fourteen chosen projects, plus Aberdeen City and Aberdeenshire Council representatives, were identified to participate in the semi-structured interviews. The breakdown of participants by role was eight project sponsors, six project managers, and two project architects. The ratio of male and female participants was 10 to 6. While this response breakdown showed a slight predominance towards male participants, it includes more female participants traditionally representative of project leadership roles (Pinto et al., 2017).

The interview responses from the participants were transcribed electronically to enable qualitative data to be reviewed against the codes developed from the document analysis to investigate consistencies and comparisons. One of the criticisms of content analysis is that there can be an overreliance on the frequency of codes which can sometimes obscure or

dilute meaning (Morgan, 1993; Vaismoradi et al., 2013). For the semi-structured interviews, understanding meaning was important to provide the context and reveal the 'why' and 'how' of legacy development. As was the ambition to identify and include any emergent themes that might come out of the interviews. This is the approach of thematic analysis, "*a method for identifying, analysing and reporting patterns (themes) within data*" (Braun & Clarke, 2006, p. 76), and was adopted for analysing the data returned from the interviews. The qualitative narrative provided by the interview participants was analysed and ordered into themes. This was collated into the eight overarching legacy themes for the fourteen projects investigated. Each of these themes is introduced in depth in the next chapter of this thesis. The findings and analysis (chapter 5) explain the relevance of each legacy theme identified and illustrates meaning through qualitative examples provided by project stakeholders. These Aberdeen project focussed legacy themes are then compared to the existing legacy context found within the academic literature.

The analysis of semi-structured interviews is the final part of the triangulation of sources adopted within this research. The document analysis process provides data on 'what' the legacy context was, and the semi-structured interviews expand upon the 'why' and 'how' legacy is applied. This approach was sought to increase the validity of the qualitative investigation (Saunders et al., 2018). This was particularly important as qualitative data results are often questioned because of the subjective nature of responses provided (Lewis-Beck, 1994). Data from the document analysis allowed for discovering converging lines of enquiry within the interview responses (Robson & McCartan, 2016). Triangulation provided conclusions that were more informed (through multiple sources), and added credibility and confidence to them (Patton, 2002, p. 556). It also helped the researcher obtain a more knowledgeable and critical perspective of the data. It enabled an appropriate level of depth and familiarity for the legacy narrative to provide a comparison with the secondary data collection and investigation (Krathwohl, 1993).

4.4.3.3 Limitations and Data Integrity

When considering methodological approaches, there should be consideration given for limitations of the research (Kumar, 2011). In the literature review and methodology chapters of this research, there has been discussion around the concept of 'legacy washing'. With this background, it should be considered (like in all interview research) that participants may not be entirely honest in their responses. This may be linked to factors such as the high-pressure nature of projects and competitive perception (Vesely, 2011), where positive messages can increase the reputational view of their project and facilitate potential future business. The confidentiality approach, the findings of the document analysis, and questions relating to 'how', 'why' and 'where' all contributed to limiting potential 'spin' from participants. By asking these question types in the interviews it also restricts potential biases from the researcher, who has a background and knowledge of legacy. Bias undermines trust in the research processes and its outputs, Sarewitz (2012) notes that it is a consideration which goes "*to the heart of research*" (p.149). Researchers should strive to reduce any potential bias through ensuring that there is data integrity in their approach (O'Donoghue, 2007). Data integrity is essential in the analysis of qualitative sources. Denscombe (2017) suggests a five-stage process to ensure effectiveness in data analysis. This includes preparing the data, familiarising with the data, organising and interpreting the data, verifying the data and representing it. Consideration was given to applying these steps in this research.

Preparation was in-depth, finding appropriate projects within the parameters of the study objectives and then identifying which stakeholders from them would facilitate adequate data for interviews. A consistent approach to these interviews was adopted that was assisted by the findings of the document analysis. Hence, the discussion from the researcher was

knowledgeable and thus provided familiarity with the data. This familiarity was further enhanced through the transcription process for the interviews. The organisation and interpretation were made through codes built upon the developed theoretical framework (chapter three). This ensured that the data extracted was consistent with what was understood by legacy in the academic literature and explored a range of relevant themes within the Aberdeen project context of this research. Document data was inputted within the software program NVivo which allowed for the categorisation and coding of qualitative legacy narratives to enable the process of content analysis (Vaismoradi et al., 2013). Verification and the demonstration that the conducted research is based on practices considered effective are important for research credibility (Silverman, 2020). To ensure this was the case, a triangulation process was adopted using the document analysis, and the literature review as additional data sources to the conducted semi-structured interviews. Validation was achieved with interviewees being provided transcripts of their interviews to comment on accuracy and interpretation.

5.0 Presentation of Document Analysis and Semi-Structured Interview Findings

This section will introduce the findings of the legacy narrative within the public communications for the 14 projects analysed. The document analysis process revealed 47 codes identifying characteristics of legacy (see Table 18: Development of NVivo Legacy Codes in Chapter 4 for coding descriptions). These codes were then followed up for details and legitimacy through semi-structured interviews for each project and also project representatives from Aberdeen City and Aberdeenshire councils. This resulted in eight significant themes of a regional legacy narrative for the 14 projects selected, these are grouped together in Figure 22. This chapter will present the findings and analysis for each of the eight legacy themes identified for this regional context. Each theme will be broken into two sections, the first being the document analysis findings, followed by the analysis of the semi-structured interview results. The structure of this chapter will begin by outlining the usage of the term legacy and any legacy claims being made within the Aberdeen project environment before looking into the characteristics of legacy identified within the thematic coding process. This will be supported with appropriate quotations from research participants to illustrate qualitative expressions and groupings of identified themes for Aberdeen’s regional legacy within construction and infrastructure projects.

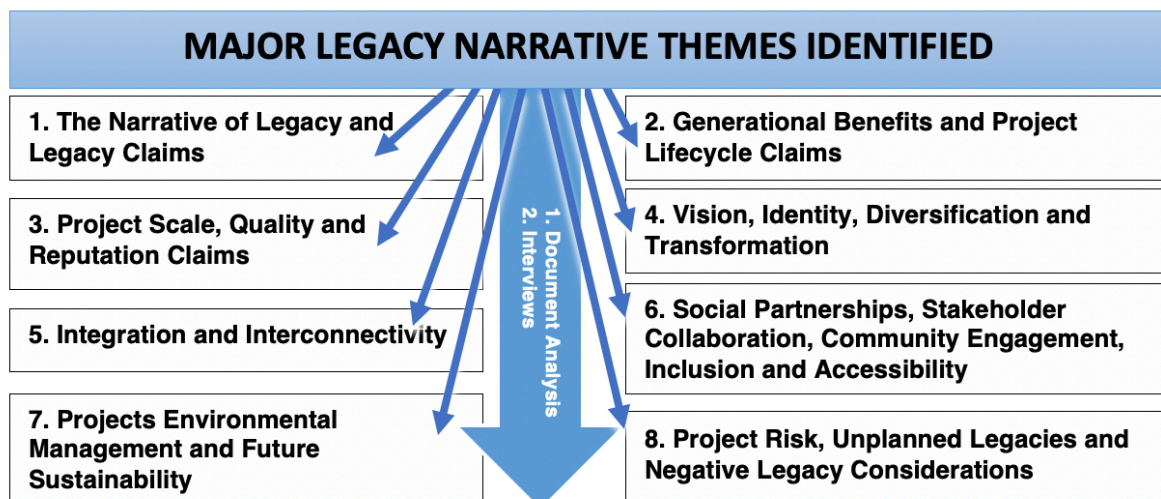


Figure 22: Legacy Themes Identified Through Document Analysis and Interviews (Source: Author)

5.1 The Narrative of Legacy in Aberdeen Projects

The first aspect of the investigation is to identify if the presence of legacy is evident and if this term is being applied in a project context for the sample projects. This was investigated through the document analysis and the interviews and will be outlined in the following section. The literature review highlighted that a recent phenomenon within project management is that project stakeholders are making ‘legacy claims’ for their project outputs (Coelho et al., 2014; Cottam, 2015; Zerjav et al., 2018). This shows the expansion of legacy from its events management core to other project management areas. However, those that have made these claims have primarily been based in London (which hosted the 2012 ‘Legacy’ Olympics) or used project stakeholders who have previously worked on events management related projects. The exploration of Aberdeen-based legacy terminology usage provides an unexplored and unattached context to this previous research environment for legacy claims.

5.1.1 The Narrative of Legacy and Legacy Claims Within the Document Analysis

The analysis of the public utterances for each of the 14 projects reveals the scale of ‘legacy discussion’ in these Aberdeen-based projects. Of note was that every project researched had made at least one legacy claim, with 58 unique legacy claims being recorded in public communications (Figure 23).

LEGACY CLAIMS PER PROJECT	AWPR	Harbour	Airport	TECA	AFC Stadium	Inv Health	Art Gallery	U T Gardens	Music Hall	Prime 4	Bio-Hub	Hywind	Grandhome	Queens Square	TOTAL
	9	6	3	6	13	1	2	3	2	2	2	3	2	4	58

Figure 23: Legacy Claims Per Project (Source: Author)

The qualitative background to what is expressed around legacy differs from project to project. This underlines the lack of consensus agreement on the definition of the term (Chappelet, 2012) and the need to explore further how legacy is being applied (Lienhard & Preuss, 2014). The document analysis reveals that the specificity and nature of the anticipated legacy to be achieved differs. This can range from a high-level vague future ‘positive’ legacy such as:

“We endeavour to leave a lasting legacy once the AWPR project is finished”
Aberdeen Western Periphery Route (McCann, 2017).

The nature of this lasting legacy to be achieved is left unclear in a statement of this kind, but this type of high-level legacy claim was similar to the narrative of the early legacy literature pre the 2002 Olympic symposium (Davies, 2021). We see in the document analysis that the number of times vague legacy claims were made was restricted to only a few rare instances. This shows how legacy discussion has developed in this project context. The results repeatedly show that legacy claims made are done with an indication of who and what the beneficiaries will be. Statements about desiring a legacy were predominantly supported with details and a narrative about the claim. In Appendix 1 (Number of Project Legacy Claims Made and Examples), the volume and nature of claims are collated for each of the 14 projects.

The data in Appendix 1 highlights a range of instances where stakeholders have provided specific and focused narratives for how legacy will be achieved within their project. For example, the following quote in the redevelopment of the Aberdeen Music Hall project:

“This has included creating 24 apprenticeships, 15 work placements and training opportunities and engaging with 450 school, college and university students and community groups to give them a unique insight into this very special renovation and leave a lasting legacy on this community”. Aberdeen Music Hall (Aiken, 2019).

This highlights what type of legacy is envisaged (a social legacy), applied for which stakeholders (Aberdeen community groups) will benefit and has also outlined the type of quantitative engagement evidence that will be created and may be measured. This provides a range of specific details for linking legacy discussion with actual project deliverables. This type of legacy discussion provides some positive perspectives against legacy washing, in

that some substance is given for 'why' and 'how' a legacy will be developed. The specifics of this will be a theme explored in more depth by the data collected from the semi-structured interviews, which will further investigate the rationale behind each project.

The data in Appendix 1, reveals that legacy is presented in several forms for its nature within these project claims. These align well with established legacy literature. These include extensive claims for social (or intangible) legacies (Franklin & Cheung, 2017; Kidd, 2003), tangible built environment legacies (Hiller, 2000; Ritchie, 2000), generational benefits for the projects usage (Preuss, 2015; Tomlinson, 2014), specific sporting legacies (Chappelet & Junod, 2006), sustainability legacy (Ma & Kaplanidou, 2017) and economic legacies (Cashman, 2003; Cornelissen et al., 2011).

Interestingly, in addition to these established legacy types, there are unique legacies with limited or no previous reporting in earlier literature. These include legacy claims around the regional transition of identity, and in this case, one relating to moving the region from an oil and gas industry environment to one providing the infrastructure and resources to diversify into renewables. The Hywind project claims their project is "*an important turning point for legacy oil and gas stakeholders that are transitioning into renewables*" (Better World Solutions, 2018). The Aberdeen Harbour extension project highlights this further, it stated:

"These precedents have helped to inform and shape our thinking around key issues such as legacy, identity, accessibility, connectivity, energy transition and clean energy technology, helping us to re-imagine the future for a 21st century Energy City" (Aberdeen Harbour Board, 2020b).

Another important and under-explored legacy factor evident in these documents is the link to legacy from a local authority vision and an overall master plan. These projects were selected because of their connected vision and strategic regional importance for the future, having been identified as such by Aberdeen and Aberdeenshire council (section 4.4.1.2). Aberdeen Harbour, when outlining its legacy rationale, linked its own legacy ambitions to that of fulfilling the region's masterplan vision:

"with a vision to build a positive and sustainable legacy for Aberdeen Harbour, the people of Aberdeen and the wider region. This is a once in a generation opportunity which must be embraced to realise the masterplan vision" (Aberdeen Harbour Board, 2020b).

The Queens Square regeneration project expanded upon this, outlining that numerous stakeholders worked together and were aligned with the same vision as a method to create and achieve legacy:

"We have a wonderful opportunity to deliver a lasting legacy for Aberdeen and its people. It's terrific to see the public, the council and the business and educational communities working together to produce a plan to maintain our city's rightful position as a leading world energy city" (McKay, 2015).

Another insight from this Aberdeen context that hasn't been picked up in an event's context is that of the project management benefits. These projects that have made claims of legacy and embedded these principles in them will provide a legacy of project skills for stakeholders who design and develop them. The Prime Four commercial project emphasised this by discussing the role of a master planner in a project's planning phase and noted this as being important in developing a legacy.

“The skill of the masterplanner will continue to be called upon to work alongside local communities and planning authorities to shape our towns and cities and to leave a positive legacy for future generations to enjoy and to cherish” (Barker, 2019).

The Grandhome residential development project was another linking planning and legacy, stating that the process:

“will leave a significant legacy for development in Scotland, generating new approaches to place-making practice and community engagement, many of which may ultimately be embedded in planning policy” (Paton, 2010).

This highlights some good potential for better understanding legacy within project governance, that consideration for a ‘legacy project’ could influence other planning policies and procedures. This is logical as Silva (2015) stated that when considering legacy within projects, planning for a longer lifecycle is necessary beyond traditional close-out methods. These Aberdeen-based projects have given significant consideration to long-term regional planning and align with this perspective.

In terms of the volume of legacy claims. It was unexpected that all projects would have legacy claims, but it wasn’t surprising that the project type with the most legacy claims was stadium and event construction, with 19 claims. The development of Aberdeen Football Club stadium/Cormack training park accounted for 13 specific claims, the most of any project analysed. The stadium development aligned with the most established event management legacy literature, much of which is based on developing stadiums fit for their communities and avoiding the creation of white elephants (Grix, 2014; Mussi et al., 2020). The crossover of established sporting legacy themes is applied in this Aberdeen context. This area of legacy development is well established and was interesting to see the extent to which this is being replicated at a regional level, that some of the same sporting legacy claims from previous and current FIFA World Cup planning are turning up in this Aberdeen context. Aberdeen is a location which hasn’t previously (and has no plans to) host a tournament of that scale. The reputation and prestige of the tournament were often thought as the key driver for legacy discussion in events management (MacAloon, 2008). This data highlights that it is evident that legacy claims and usage of legacy terminology are expansive in this regional project environment. It answers positively the consideration that legacy exists within a regional project environment with legacy specifically being communicated. The expanded narrative around this will be explored and followed up during the analysis of the semi-structured interviews.

5.1.2 The Narrative of Legacy Within Semi-Structured Interviews

The first area of exploration within the semi-structured interviews was to identify an understanding of legacy within the selected projects. A project decision-maker was interviewed from each of the 14 projects. A question was posed whether project decision-makers consciously applied legacy in their communications and if there was a wider understanding of how to apply it. At this point in the interview, interview participants had not been given any background to how it had been described in the literature. Table 21 summarises the positions expressed by each of the interviewees.

Table 21: Awareness of the Usage of the Term Legacy in a Project Context

	AWPR	Harbour	Airport	TECA	AFC Stadium	Inv Health Hub	Art Gallery	U T Gardens	Music Hall	Prime 4	Bio-Hub	Hywind	Grandhome	Queens Square
Yes, aware of project management context and legacy.	X			X	X				X	X	X	X		
Maybe, some awareness but details were uncertain		X	X			X	X	X					X	X
No, never heard it applied in that manner.														

Source: Author

The findings show that the projects were split on fully understanding what legacy entails. It highlights that 50% of project decision makers indicated they understood legacy and its application within project management. The other 50% of projects were aware of the term being applied but were uncertain of its full application. Nobody indicated that they hadn't heard the term legacy involved in the development of projects. When pressed for further details, those who claimed they understood legacy development within projects often linked this to having been influenced by the Olympics.

“we work all over the UK, and I know exactly what you are talking about for how legacy has crept into project discussions. I think to be honest...that this came from the Olympics, I see the influence of the London 2012 Olympics all over today's project infrastructure environment”. (TECA Project Decision Maker)

A similar background to legacy was expressed in the Music Hall development:

“you know, all part of that whole legacy issue, in a particular sense, the Olympics, a lot of that is about, I guess political justification”. (Music Hall Project Decision Maker)

While others were more hesitant and ponderous about its usage. Having some awareness of it within project processes but still uncertain about how it fits overall:

“I was racking my brains to think, is this something I have heard of, but yes, legacy in the context of developing for the future is becoming more frequent in project descriptions. I have noticed it”. (Prime Four Project Decision Maker)

“I'm trying to think, I probably have, it's a common term...you see legacy claims creeping into the project management vocabulary. You don't consciously think about it, but there it is; it is in the ether”. (Queens Square Project Decision Maker)

In terms of whether this was a theme requiring further development, some project decision-makers answered enthusiastically about the importance of legacy in their practice:

“Yes, yes, legacy, a hot-button topic. That’s a really interesting theme, I’m intrigued to discuss project management and legacy, that’s a really valuable topic to explore in our industry”. (TECA Project Decision Maker)

All interviewees were aware that it was a practice that was being communicated more within project management circles, but there was a lack of clarity for parameters for understanding legacy, as one in which further development would benefit the discipline of project management:

“I am not surprised that it (legacy) is mixed in with project management and agree that looking into it formally, giving it some definitive structure would be a worthwhile endeavour”. (Art Gallery Project Decision Maker)

With this lack of clarity, questions were posed for participants to describe how they would define project legacy. The legacy factors for what their projects contained will be explored further in this chapter. However, trying to have an overall concept of legacy was explored, and responses were illustrated in Appendix 2, with interviewees providing a description of legacy related to their project.

The data from Appendix 2 provides a range of perspectives for trying to define legacy within a project context. Most interviewees provided a combination of factors; for example, the project decision-maker for Aberdeen Football Club stated:

“I think that (legacy is a) combination of things (heritage, history, long-term community resource, social experience), gives it a really unique feel, and I think it really starts to tick that legacy box”. (Aberdeen Football Club Project Decision Maker)

Within all the interview responses, perspectives on how to define legacy were varied and emphasised different factors. The Aberdeen Harbour project highlighted more themes of improvement, transformation, and benefits in describing legacy.

“A transformational project, reshaping and improving the city landscape, opening it up to a legacy of global opportunities”. (Aberdeen Harbour Project Decision Maker)

The Union Terrace Gardens project decision-makers’ definition focussed on success, being fit for purpose, and having an intangible project impact:

“To define legacy, hmm, well, I would maybe say it includes success, it has to be a success to be remembered, so something that is actively used and liked, I want to maybe liken it to a landmark, having iconic properties”. (Union Terrace Gardens Project Decision Maker)

The Art Gallery project decision-maker defined legacy around specific project factors:

“A project which has that long-term outlook requires a different mindset to develop, a true commitment to do things properly, to fulfil the best vision, the best version of the project as possible”. (Art Gallery Project Decision-Maker)

The Aberdeen City Council decision maker provided a more emotive take, basing their description on intangible perspectives and linking legacy to themes often associated with religious or spiritual matters (heart, soul) and aspirational social factors:

“(Legacy) captures that desire to build that community heart, even the city soul, in its essence, it strives to provide a better future, a better quality of life, inclusive to all groups, to give people and businesses the infrastructure and means to realise their ambitions, fulfil their potential” (Aberdeen City Council Decision-Maker).

In this Aberdeen region context, there wasn't a project that defined legacy as just one thing, the data reveals a range of factors for trying to define it. This aligns well with legacy literature, which notes that legacy is a concept that is not singular but multifaceted (Nedvetskaya, 2022). The definition response themes' range was collated to show the different ways legacy was described by each project decision-maker and the number of instances these themes appeared within the overall interview responses. The collated themes are displayed in Figure 24.

Specific Themes Mentioned	AWPR	Harbour	Airport	TECA	AFC Stadium	Inv Health	Art Gallery	UT Gardens	Music Hall	Prime 4	Bio-Hub	Hywind	Grandhome	Queens Square	Aberdeenshire Council	Aberdeen City Council	INSTANCES
INTANGIBLE																	
Building on Heritage		X			X			X	X	X	X		X			X	8
Reputational Value		X	X	X			X	X			X	X	X	X		X	10
Intangible Benefits		X	X	X	X		X	X			X			X		X	9
Community Focussed				X	X	X	X	X	X	X			X	X		X	10
Cultural Focussed				X			X				X			X		X	5
PLANNED																	
Long Term Vision	X	X		X	X	X	X	X		X	X	X	X	X	X	X	14
Planning Approach			X				X	X	X	X	X			X	X	X	9
Future Orientated	X	X			X		X	X		X		X	X	X	X	X	11
Green Energy Identity		X							X			X		X			4
POSITIVE																	
Provides Opportunities / Benefits	X	X	X	X	X	X	X	X	X	X	X	X				X	13
Transformational		X		X				X	X			X		X		X	7
Interconnectivity		X		X			X			X	X			X		X	7
Successful Function				X		X	X	X		X		X		X		X	8
Accessibility / Inclusion							X									X	2
Economic Benefits							X				X	X				X	4
PROJECT MANAGEMENT METHODS																	
Monitoring	X					X				X				X	X		5
Sustainability		X					X		X		X	X		X			6
Enviornmental Initatives		X										X					2
Organisational Commitment & Approach	X	X		X		X	X	X	X	X			X	X	X	X	11
Multifaceted		X		X	X			X			X			X	X	X	8
Based on Quality				X		X	X	X					X			X	6
Stakeholder Engagement	X			X		X	X	X		X	X			X			8
TANGIBLE																	
Tangible Benefits			X			X	X				X			X			5
UNPLANNED																	
Incorporates Risk				X								X		X	X		4

Figure 24: Collated Legacy Description Themes (Source: Author)

Figure 24 displays an extensive range of themes describing Aberdeen's regional legacy for the fourteen projects and the two representatives from the city and shire councils. This offers a good collective understanding of how project decision-makers have attempted to define legacy, an area of research noted for requiring additional investigation (Tsaur et al., 2017). This is due to a lack of specific study in this area and also because legacy is not static and is

an evolving concept (Grix & Phillpots, 2013; Preuss & Hong, 2021). The literature review section of this research explored how legacy was defined by academic authors and mapped out reoccurring themes identified within these legacy descriptions (see section 2.2.2 Developments in Defining Legacy). These findings are summarised in Figure 5.

	Ritchie (2000)	Hiller (2000)	Chalip (2003)	Roche (2003)	Barney (2003)	IOC (2003)	Kidd (2003)	Gratton & Preuss (2008)	Preuss (2007)	Silva (2015)	Beghetto (2017)	Franklin & Cheung (2017)	Ma & Kaplanidou (2017)	Sum
1. Legacy Type / Nature														
Tangible / Permanent / Infrastructure	X	X				X		X	X					5
Intangible / Social / Human	X	X				X	X	X	X	X		X		8
Multifaceted / Complex			X			X					X			3
2. Time Based														
Long Term	X		X				X						X	4
Short Term			X										X	2
Past Orientated				X	X					X		X		4
Future Orientated				X	X			X	X	X	X	X		7
3. Impact & Improvement														
Improve / Enhance / Benefit	X	X	X		X					X	X		X	7
Generic Impact	X	X											X	3
Positive Impact								X	X	X			X	4
Negative Impact								X	X				X	3
Potential / Opportunity				X			X						X	3
Planned / Expected Outcomes								X	X				X	3
Unplanned / Unexpected Outcomes								X	X				X	3
Sustained													X	1

Figure 5: Legacy Definition Characteristics (Source: Author)

The same approach and structure for collating themes from the literature (Figure 5) were replicated in this research from the interview responses (Figure 24). This allows for comparing existing legacy definitions and how legacy is described in this Aberdeen project context. This Aberdeen regional context provides more specifics and a more comprehensive range of themes present than the previous literature. It is noted that every legacy theme in Figure 5 from the academic descriptions is found in the Aberdeen context definitions, except for 'unplanned' factors (although 'including risk' was incorporated 4 times and is a similarly related theme). One of the limitations of legacy definitions in literature was their lack of empirical testing for accuracy and relevance (Chen & Henry, 2019; Li & McCabe, 2013). This research shows that the academic themes presented have validity, as they are represented extensively, and that project decision-makers have given this information without much awareness or background to academic event management legacy research.

What was new from a regional perspective was the legacy descriptions highlighting the influence of heritage and incorporating elements of the region's past for developing their projects. This provides some practical insights into the concept of a 'retro legacy' (Grix, 2014), which exists here. It was often communicated within these interviews that a factor of the original project vision was to 'honour' the heritage of the North East of Scotland. For example, the Aberdeen Harbour project decision-maker stated:

“we have a heritage that influences and guides our future, we have a belief, a strong historic legacy and that drives us to continue to achieve and seek excellence for the future”.

It was a common theme that the existing regional heritage was to be an inspiration for building future infrastructure. The interview participant from the Aberdeen Music Hall project noted this in their attempt to define legacy:

“As we breathed a bit of new life into the building, we also wanted to ensure that legacy and that heritage was still recognisable for people”.

This inclusion of heritage provided an interesting perspective on how the interviewees described legacy around time-based factors. Project management professionals and terminology have traditionally viewed ‘legacy’ as a past-tense factor, or an outdated project factor to monitor (Thiran et al., 2006). The legacy descriptions in Appendix 2 reveal that this was not how project decision-makers discussed legacy in these Aberdeen regional projects. The Prime Four project decision-maker summed up nicely how interviewees typically positioned legacy, that legacy was something that is:

“Past tense and now future tense, building on from where things left over and a new approach to take forward”.

This aligns well with the findings of the document analysis. The public communications often made that link about looking backwards at heritage and then towards achieving future ambitions. For example, Gossip (2016), noted, *“This region must adopt the renaissance vision and mindset”* before building projects for the future. While the past and heritage were noted as important influences, most projects strongly emphasised legacy being described as future-orientated. This included legacy descriptions using such terminology as *“carried forward”* (Grandhome), *“forward-thinking”* (Hywind), *“opportunities for growth”* (Bio-Hub), considering *“how it will be used in the future”* (Prime Four), whether a project was *“fit for purpose for the long term”* (Union Terrace Gardens), having a *“long term outlook”* (Aberdeen Art Gallery), and to *“seek excellence for the future”* (Aberdeen Harbour).

The Queens Square project decision-maker summarised:

“That is true legacy, that we are not just focused on what’s near, what’s up next, but what’s out in the distance and asks the question, do we have everything we need to get there?”

Another prominent factor to the North East of Scotland projects was describing legacy as being community and culture-focused. The Art Gallery and Bio-Hub project decision-makers explicitly described creating a “cultural legacy”. That legacy was about a commitment to people and putting their needs before economic drivers, and when describing legacy, *“social improvements (were) central to it”* (Aberdeen City Council), and that project efforts will ultimately create a *“strong and vibrant community”* (Queens Square).

There were specific mentions of projects being a benefit for ‘all people’, with part of the project legacy being based on the importance of inclusion and greater accessibility to project resources, thus providing benefits to other groups who may have been excluded previously. This regional-specific focus is also linked to factors of reputation and interconnectivity. There were 10 mentions of reputational legacy and the impact of how the region would be perceived. In academic contexts, this was emphasised as just another ‘intangible’ aspect of

the legacy (Ritchie, 2000). Still, reputation is explicitly communicated in 9 of the 14 projects, so it is a crucial project driver for a future legacy sought. This enhanced regional reputation meant that it sought to change perceptions further afield and would attract more people into the region because of what is being built based on the quality of the projects. While the concept of reputational enhancement is a known driver for Olympic or FIFA events (Gold & Gold, 2014), there have been limited previous studies explicitly linking this to a project legacy. One of the findings of this research is that reputational factors are a driver for project legacy in a regional context where there is no 'mega events' present or planned. This was particularly surprising for projects such as Bio-Hub or Hywind, whose project purpose has limited applicability to tourism or relying upon visitors for income but included reputation factors in their description.

There was also considerable mention of legacy providing benefits, and often linked the description of these benefits as being 'transformational' in nature, providing additional benefits and opportunities for people in the North East. For example, the Art Gallery project decision-maker describes legacy as:

"Transformational in its impact to the community, it will transform its audience with a cultural legacy part of those objectives". (Aberdeen Art Gallery Project Decision-Maker)

When considering benefits, the academic literature highlights that a significant legacy driver is economic factors (Dolan et al., 2019). However, in this regional context, the economic emphasis for legacy was low (4 mentions).

The project management approaches for defining legacy mentioned a number of core legacy themes evident in the established literature, such as monitoring, quality, stakeholder engagement and sustainability. What was different and not seen before in the legacy literature was that in this regional context, there was a widespread understanding of a unique collective vision. There was specific mention in numerous projects for changing the regional identity to create a green energy hub. The Aberdeen Harbour project decision-maker described legacy as having "*ambitions for achieving green energy production*".

Overall, when comparing the academic and regional descriptions of legacy, we see that this regional context has more awareness of specifics, is more varied, and expects legacy themes to have substance for how legacy will be developed. Previous research in this area was primarily theoretical, so this information provides some value for how project practitioners actually perceive and describe the growing trend of legacy within a regional project context.

One of the next steps to developing legacy was understanding stakeholders' attitudes towards the concept. Again, this area required additional empirical data (Cooper et al., 2003; Silvius & Schipper, 2014), and is a research area where little or nothing is known within a regional project context.

When presented with a background to a wider understanding of legacy identified from the academic literature, interview participants were asked if this was representative of what they wanted to achieve with their project, and should their project specifically be considered a legacy project? The responses from each project decision-maker are recorded in Appendix 3: Interview Responses for Their Project Creating a Legacy.

From the qualitative data in Appendix 3, it shows that all project decision-makers responded affirmatively for considering a legacy within their project. This was not surprising as a stakeholder for each project had claimed this in their previous press communications and was outlined in the document analysis. What was interesting was both the level of assurance in their responses and how accurately legacy seemed to sum up project ambitions. The Harbour interview participant stated:

“Our project should be the dictionary definition of a legacy project” (Harbour Project Decision Maker)

Also, noting their credentials for being able to claim this by saying:

“I can’t think of any organisation that is more qualified to talk about legacy, we have been in the legacy business for almost 900 years. That’s why we can work in harmony with the local community and our regional stakeholders, because that legacy is much more than just our own achievements at the harbour, it is a deep and supportive relationship that blossoms over generations”. (Aberdeen Harbour Project Decision Maker)

When provided the full academic background to legacy, a number of project decision makers were enlightened by how appropriate it was to their project ambitions while previously maybe not being fully aware of how it is applied. The Prime Four project decision-maker noted:

“We may not have expressed it in name at the time, but a legacy was certainly what we were hoping to achieve”. (Prime Four Project Decision Maker)

Similarly, the Queens Square project reflected:

“The more I think about what legacy is, I know that what our project hopes to give is just that, a legacy for the people of Aberdeen” (Queens Square Project Decision Maker).

The Harbour project decision maker described it as a light bulb going on:

“Our chat about project management legacy really resonated with me, it was a light bulb going on, that hey, this is exactly what we want to achieve with the harbour development” (Harbour Project Decision Maker)

Some project decision-makers were emboldened by this additional understanding and vowed to incorporate it more into their practice.

“So yes, a legacy project indeed, and a term I will be using myself, knowing a bit more for what a legacy project is, I will be a champion for them in my work” (Union Terrace Gardens Project Decision Maker)

The level of agreement in the responses to how legacy was summarised is outlined in Figure 25.

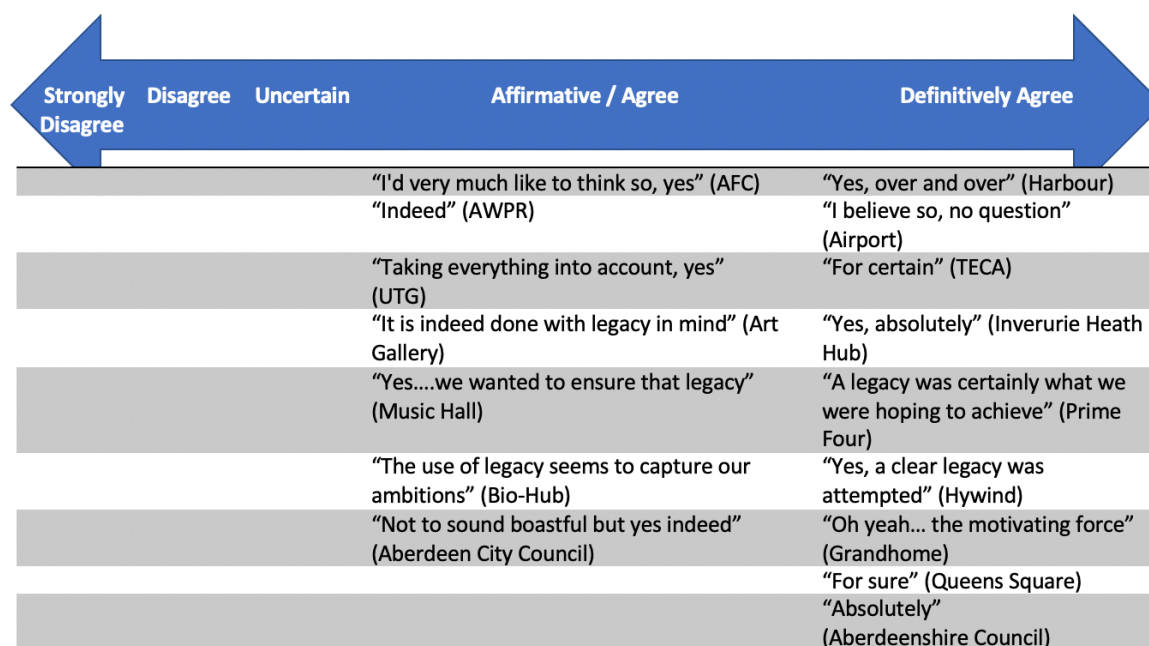


Figure 25: Level of Agreement Expressed for Creating a Legacy (Source: Author)

Figure 25 summarises project decision makers' attitudes towards how appropriate legacy sums up their project outcome and approach. There was strong agreement amongst all 16 interview participants, with an emphasis on definitively agreeing. Interestingly, there was agreement that legacy was an active motivation, not just a word to describe an attribute of a project. There was a belief that the strength of claims for legacy was enhanced because these projects are connected with each other, sharing a part of a legacy vision. The Union Terrace Gardens project decision-maker explained that this is *"that bigger picture, that branches of the legacy it will bring, how it joins with other projects in Aberdeen's transformation plans"*.

The Queens Square project decision-maker noted that further clarifying legacy in a project context could provide better context for a project's ultimate long-term effectiveness:

"Legacy would be a great measure of identifying if the project has been successful or not in the long term". (Queens Square Project Decision-Maker)

When pressed about legacy washing, and possible exploitation of the term, there were thoughts expressed that legacy is more than terminology usage, and there is substance for these projects being different as they are significantly transformational in nature for this region. In addition to this, how project stakeholders have approached the project management in developing their projects offers assurance against exploitation concerns. This will be a theme explored in more depth in this research, but conceptually, the Harbour project decision-maker noted that what they were doing in their project approach wasn't business as usual:

It is not ordinary, but in fact, extraordinary, and in the end, it will be a beacon for the North East region, a bright shining legacy, reshaping the city and shire and everything it represents. (Aberdeen Harbour Project Decision-Maker)

Aberdeen City Council approved many of the projects analysed, and, when pressed about the integrity of applying legacy, they provided the following quote, which sums up well the qualitative narrative for understanding legacy within this regional context:

“To many, legacy, I guess, can be a word that is thrown around as a catch-all, but there is truth behind the motive in how it is used, certainly from the council, as it captures that desire to build that community heart, even the city soul, in its essence it strives to provide a better future, a better quality of life, inclusive to all groups, to give people and businesses the infrastructure and means to realise their ambitions, fulfil their potential. For each of our projects, it has always been more than just a building or a road that has been produced, it was a response to build up the city from the perspective and needs of its people and to provide greater cultural connections and communities”. (Aberdeen City Council Project Decision Maker)

5.2 Generational Benefits and Project Lifecycle

The academic literature highlights that legacy development is borne out of high-profile project failures and the desire of events governing bodies to achieve a more favourable (positive) long-term output (Ma & Kaplanidou, 2017). Here in this Aberdeen-based context, we see a repeated theme from the analysis: the extensive long-term benefits sought for residents and regional stakeholders as a driver for these projects going ahead.

5.2.1 Generational Benefits and Project Lifecycle Within the Document Analysis

The document analysis revealed specific codes within the ‘planned’ and ‘positive’ themes (see Figure 26). These codes highlight the extent to which and how often planned and positive benefits were communicated, with over 2000 mentions within the 14 projects. This illustrated that these themes were extensively shared and were of great importance to project stakeholders.

	AWPR	Harbour	Airport	TECA	AFC Stadium	Inv Health	Art Gallery	U T Gardens	Music Hall	Prime 4	Bio-Hub	Hywind	Grandhome	Queens Square	TOTAL
PLANNED															
Long Term Vision	36	19	18	71	20	15	7	35	5	14	37	16	39	30	362
Stakeholder Initiated	29	5	6	80	15	44	20	12	4	2	37	2	13	9	278
Strategic Priority	27	12	9	68	15	20	11	30	10	12	37	15	23	21	310
															950
POSITIVE															
Needed Regional Resource	39	12	31	35	28	80	14	17	16	5	31	9	15	11	343
Provides Additional Opportunities	49	45	36	23	12	34	29	28	24	12	59	25	14	17	407
Sustainable Future	34	24	10	40	11	34	5	26	14	15	44	25	26	13	321
															1071

Figure 26: Planned and Positive Theme Codes Addressing Generational Benefits (Source: Author)

The data shows that project stakeholders are communicating a rationale for the ‘project need’ based on long-term benefits and being part of a strategic masterplan to provide the region with needed or additional resources to create a sustainable future for its people. Interestingly, this rationale is expressed much more than traditional project motivators

described in the literature, such as economic improvement or that it will provide a physical resource (Silvestre, 2009; Zawadzki, 2022). The code returns for these themes are displayed in Figure 27 and are much more limited than the factors returned in Figure 26.

	AWPR	Harbour	Airport	TECA	AFC Stadium	Inv Health	Art Gallery	U T Gardens	Music Hall	Prime 4	Bio-Hub	Hywind	Grandhome	Queens Square	TOTAL
POSITIVE															
Economic Improvement	34	18	19	51	8	2	3	7	0	20	20	9	6	14	211
TANGIBLE															
Physical Infrastructure Resource	11	15	32	57	10	44	5	13	2	7	13	0	9	5	223

Figure 27: Economic and Physical Infrastructure Code Themes (Source: Author)

This highlights a different perspective on project objectives than is typically indicated within traditional project business case methods based on financial return or asset value (Kerzner, 2010). This is demonstrated by one of the region’s flagship projects TECA being only worth around 80% of what it cost to build, losing 20% of its economic asset value within two years of completion because of the impact of Covid (Gossip, 2021e). In response to this financial loss, project stakeholders emphasised that this wasn’t the point of the resource and that it was commissioned as a needed long-term regional resource for people and businesses.

Consideration for ‘how long’ benefits last has often been an aspect of legacy development, albeit with no consensus for a specific timeline (Gratton & Preuss, 2008). The most repeated legacy timeline in literature is ‘generational’ benefits (Preuss, 2015; Tomlinson, 2014). This same ‘multi-generational’ terminology is communicated extensively within these Aberdeen-based projects. Appendix 4 highlights a timeline of benefits quotes for each project.

The qualitative returns in Appendix 4 show that every single project made claims for ‘generational’ benefits. These ranged in specificity and included general statements such as TECA being described as “*a complex which will benefit the region for generations to come*” (HBD, 2019). Other statements provided more substance for what benefits would materialise, for example, the Bio-Hub project communicated:

“A £40 million project designed to provide jobs for future generations...to bring together world-leading expertise and enable the growth of the life sciences industry for decades to come” (Robertson, 2020).

There were also specific mentions of linking the term ‘generations’ with that of legacy, for example, Aiken (2019) wrote about Union Terrace Gardens:

“The design is a direct response to how people wanted their city to evolve. That we are ready to start work is truly momentous, not just for this generation but in terms of legacy”.

This is significant for understanding legacy as traditional projects do not tend to emphasise ‘generational’ impact, rather that they fulfil project objectives and are ‘closed out’ (Lock, 2020). This demonstrates that these projects have a common focus for their long-term impact and use specific terminology (‘generational’) in their communications, which is the reserve of legacy literature. This suggests that these projects align with the concept of having a ‘project after life’ (Figure 28) as noted by Silva (2015)

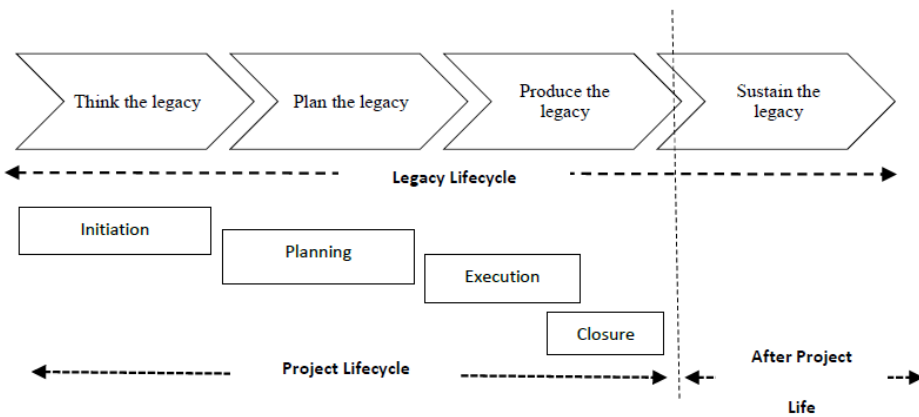


Figure 28: Relationship between the legacy lifecycle and the project lifecycle (Silva, 2015)

It was noted in the literature review that this concept was theoretical, with no empirical testing or understanding for validity in an industry context (Li & McCabe, 2013). The data from the public communications reveal that this selection of Aberdeen regional infrastructure projects had claims communicated for generational project benefits, or a ‘sustained legacy’ as per Silva’s model. This was true regardless of project scale, spend, type, or approach to project fulfilment, indicating that an essential element of their nature and design would be a focus for a sustained project lifecycle. This is a theme which the semi-structured interviews will explore for specifics and validation, but interestingly there were some efforts to define the specific length of benefits beyond generations. Only Gratton & Preuss (2008) have to this point, articulated a legacy time frame (15-20 years). However, this is yet to be tested or views sought from other sources (particularly from industry). In this Aberdeen project context, we see a variety of timelines articulated from the data in Appendix 4 for some projects (Figure 29).

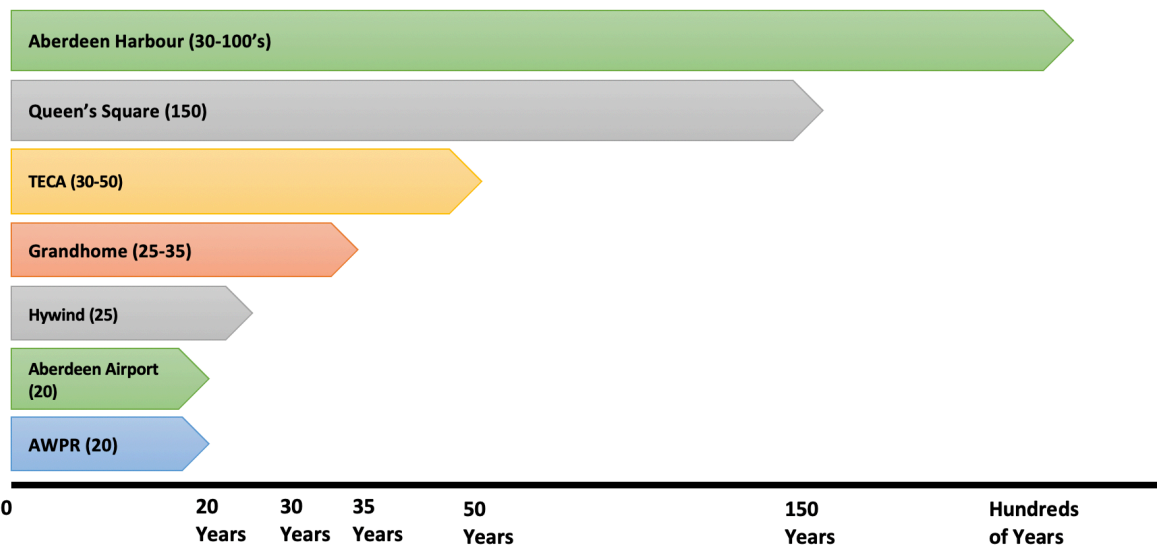


Figure 29: Length of Project Benefits Articulated (Source: Aberdeen Harbour Board 2020, BBC 2019, Beattie 2017, Hebditch 2019, Hockenos 2020, Grandhome Trust 2019, Robertson Group 2019, Wright 2012)

All projects which articulated a specific duration of benefits (Figure 29) did so beyond Gratton & Preuss' (2008) 15-20 year legacy time frame. This suggests that the projects reviewed (claiming 'generational' benefits), could be classified as having a legacy under events management parameters. Additional interview research will explore if project stakeholders agree with this perception. This is important as there wasn't always consistency in the message communicated from the document analysis, for example, for the Aberdeen Harbour extension, it stated:

"Our vision for Aberdeen Harbour spans the next 3 decades and beyond" (Aberdeen Harbour Board, 2020)

However, in other communication concerning benefit duration, the stakeholders go further:

"Aberdeen South Harbour is a visionary project, and one which will serve the region for hundreds of years to come" (BBC, 2019).

There were two other instances of stating 'hundreds of years' of benefits (BBC, 2021 & Findlay, 2019) from Aberdeen Harbour stakeholders, indicating significant assurance for the legacy of their project impact. There are not many instances where a project would make claims of this length, but there are some unique perspectives for the rationale behind this. The confidence in this claim was borne out of serving the Aberdeen community as an operating business for almost 900 years and putting great value in its heritage as a source for vision and future strategy (The Herald, 2021). Alistair Mackenzie, the Chairman of the Aberdeen Harbour Board, stated that *"the port's history...underpins the Trust Port ethos of viewing future generations as key stakeholders"* (Aberdeen Harbour Board, 2016). This project has significant value for analysing legacy as it is commissioned by an organisation which is currently Britain's oldest existing business (Walton, 2021). This provides some interesting perspective for legacy research as very few businesses are even as old as the legacies that this stakeholder is suggesting, and so most organisations wouldn't have the ability to reflect upon hundreds of years of operating practices. The document analysis data indicates a correlation between the length of project benefits communicated and the heritage and previous existence of the project stakeholders' operations. The only projects to claim benefits in the 'hundreds of years' are Aberdeen Harbour, established in 1136, and Queen's Square, which opened in 1776 (National Library of Scotland, 2021). This factor has previously not been considered in terms of legacy development and its associated timeline because the focus in the literature has been primarily around an event to be hosted rather than an established business. This research notes a link between the age of a business and that this influences planning for a future legacy and suggests this be reviewed for further application by other researchers in other projects.

A significant criticism of the timeline aspect of legacy development is that often during the project planning phase, legacy claims are made, which then lack any objectivity for future monitoring (Dimanche, 1996; Li & McCabe, 2013). This theme will be investigated within the semi-structured interviews, but we already see some initiatives to address the long-term realisation of benefits in some of these projects from the document analysis. An example would be from the Inverurie Health Hub project, which created a procurement process called 'Design, Build, Finance and Maintain', with the project *"funded, designed, delivered and maintained by hub North Scotland Ltd. throughout the first 25 years"* (NHS Grampian, 2014). This provides a monitoring process to ensure that benefits are realised and fit for purpose in the long-term, giving more assurance to legacy claims that there is a method for monitoring their fulfilment. This type of initiative could guide future governance of project management methods to enable projects to incorporate legacy principles within their development for an extended timeline.

5.2.2 Generational Benefits and Project Lifecycle Within Semi-Structured Interviews

The semi-structured interviews sought to expand specifics for understanding the length of legacy and approaches taken for ensuring long-term benefits. Similarly, to the findings from the document analysis, many projects introduced their project benefits with a tag of being 'generational', seeking not only to provide benefits for immediate users but to serve users for the long term.

"The gardens are great, top quality and will last generations just like the old gardens served your parents and grandparents, this is what we will achieve with this redesign. So definitely a long-term focus throughout it". (Union Terrace Gardens Project Decision Maker)

There was a repeated emphasis on long-term vision being a priority for providing a legacy.

"The fact that we have a clear vision for long-term impact testifies to how much focus was based on long term benefits". (Bio-Hub Project Decision Maker)

"When we made the decision to invest on this scale, it wasn't to catch up but rather to have a facility that was future-proofed for years to come. Every decision and design on the project had the long-term future of the airport in mind". (Airport Extension Project Decision Maker)

The council, when discussing their approach to project approval noted:

"99% of what we do is with long-term benefit in mind". (Aberdeenshire Council Project Decision Maker)

This long-term functionality was built in from the planning stage, emphasising that project spend would ensure a quality that would endure through the years and require minimal revisions. The Art Gallery project noted their approach:

"This is a building in use since the 19th century, when we are planning for the future we are looking at safeguarding its operations for the next hundred years, that's why we had to get this design and refurbishment right...it may have taken a long time to get right, but it has been done right and won't need an uplift or any patch up in a couple years, this was a job done right and will benefit the community for generations interrupted". (Art Gallery Project Decision Maker)

With a repeated focus on the quality of design, identified future vision, and spending money upfront to ensure minimal future changes, interviewees were pressed for specific timelines of a legacy. With Gratton & Preuss's (2008) baseline of a 15-20 year legacy time frame as the anticipated minimum for a 'legacy project', we see that each project reported a timeframe at least double this. Table 22: highlights the minimum expected length of benefits before having to redevelop a project.

Table 22: Minimum Lifecycle Duration Ranked by Project

Rank	Project	Minimum Lifecycle Duration
1=	Aberdeen Harbour Expansion	200 years + (Hundreds of years)
1=	Refurbishment of Aberdeen Art Gallery	200 years+ (Hundreds of years)
3	Aberdeen Queen’s Square Redevelopment	150 years +
4=	Aberdeen Western Peripheral Route	100 Years + (Over a hundred years)
4=	Aberdeen Football Club Stadium	100 years + (Pittodrie has been our home 122 years...our new home for the next 100).
4=	Union Terrace Gardens	100 years +
7	Grandhome Housing Development	75 years + (phased build over generations)
8=	Aberdeen Music Hall	50-75 years (multiple generations of anticipated usage)
8=	The Event Complex Aberdeen (TECA)	50-75 years (multiple generations of anticipated usage)
8=	Prime 4 Business Park	50-75 years (phased development for expansion possible as well)
11=	Inverurie Health Hub	50 years + (initial period but with expansion possible in design)
11=	Bio-Therapeutic Hub for Innovation	50 years + (includes flexible design for extended lifecycle)
13	Expansion of Aberdeen Airport	50 years
14	Hywind Offshore Windfarm	40 years (but with retrofit design technology to expand potential lifecycle)

Source: Author

Table 22 shows a range of regional projects claiming a legacy and putting a minimum timeframe where there was confidence that their project output would provide benefits equal to when the day they were completed/operational. The responses show that on the ranked length of time, a mix of project types held the anticipated upper timelines. The only group that consistently ranked at the lower end for anticipated timelines were the commercial projects; Prime Four (8th), Bio-Hub (11th), and Hywind (14th). This again links with the theme of need, these projects being more susceptible for requiring a return on investment than other project types. We see those with more economic drivers at the lower end of the lifecycle scale and those with more intangible, social purposes at the higher levels. This can also be due to functionality, with projects like Hywind being limited by technological restrictions for achieving longer benefits (e.g., parts corrode in the North Sea and have a limited functional lifecycle to operate effectively). This hasn’t stopped project designers from seeking future sustainability and implementing features to achieve long-term benefits.

Projects such as Bio-Hub, Inverurie Health Hub, TECA, and Aberdeen Airport may have estimated a lower duration of benefits (50-75 years), but they did put in their project design factors for future expansion/redevelopment to increase this length potentially. Bio-Hub, Aberdeen Airport, and TECA will provide flexibility in their design and potential resource usage to extend a lifecycle. In Bio-Hub and the Inverurie Health Hub, we see that room dimensions can be moved with flexible wall partitions to repurpose for future needs potentially. This innovative response to planning was also seen in Hywind, where they sought to overcome limitations in their current technology at a future time:

“This (previous project in Norway) had an operational lifecycle of 25 years, which was its original purpose and expected term of use. Today, we monitor our turbines

and receive detailed data back about performance and maintenance requirements, parts can be replaced to extend lifecycle, new technology can adapt further enhancements as this industry is discovering new ways fast. We are on to Tampen now, which builds on the successes of Hywind Scotland significantly, our Empire wind project in New York will provide 2000 megawatts of electricity, and we can, with every advancement, look back for potential retrofits to keep the lights going on for places like Scotland". (Hywind Project Decision Maker)

This highlights both the integration of technology to ensure operational quality, but also highlights the presence of another core factor around achieving legacy, monitoring to ensure that legacy benefits materialise (Chappelet, 2019; Owen, 2005). Monitoring was identified within the literature as an essential process for ensuring legacy (Ciambrone, 2018). However, including long-term project monitoring changes the perspective of the traditional project management lifecycle. Projects aren't just 'completed', (closed out), and stakeholders 'move on' to what's next; there is still a need for long-term engagement in that project. Monitoring provides a mechanism for accountability for whether legacy claims will be met in the future. Some authors have noted that long-term monitoring processes must be integrated to be seen as creating a legacy (Smith & Fox, 2007; Tsaur et al., 2017). The selected projects of this research had significant emphasis and approaches adopted for monitoring, indicating another factor for legacy substance in this regional context. The Hywind project mentions its monitoring process:

"We monitor every bit of data to gauge performance. It is not like, say a house or a road that you build and leave it, we engage and are active with our project through the years. We will continually learn from it, tend to it, improve it, replace parts on it, our technology is not only innovative for what it does...it can change what we think of a project for being fit for purpose in the long term". (Hywind Project Decision Maker)

This engagement and future monitoring need is a crucial consideration for both councils and all their project assets (of which this research selection is included). Aberdeen City and Shire councils provide a host of periodic audits, published reports, and recording and responding to annual data to ensure project benefits are 'locked-in' for the future. One of their projects, the Aberdeen Art Gallery, mentions how this works:

"The art gallery is an essential asset in the council's portfolio and will be monitored consistently with planned annual maintenance reports that are clearly budgeted for. It is a listed building, so there are multiple partners monitoring its long-term health. We have robust processes to ensure that it is maintained to the highest standards for generations to come". (Art Gallery Project Decision Maker)

A process for future monitoring and benefits being long-term 'fit for purpose' was often built into the financial plan at the initial planning stage for the selection of projects of this research. Numerous projects noted that this was important for providing substance towards a claim of legacy and that they worked in collaboration with others to ensure accountability for project objectives.

"We worked with lots of stakeholders whose goal was making sure the project was fit for purpose for the long term, or a legacy". (Union Terrace Gardens Project Decision Maker)

There are many mentions of monitoring for the long term within these project interviews. In several instances, specific external regional monitoring bodies were created to ensure legacy benefits continue as anticipated.

“The AWPR project has a monitoring evaluation plan (through the body NESTRANS)...(to) give us a quantified picture of things being monitored... there is a mechanism in place through the Transport Scotland System, and we will try and pick up on that...(for) the 2040 legacy” (AWPR Project Decision Maker)

This approach was also taken by Inverurie Health Hub, which used a specific body to ensure that it is monitored and maintained over a set period which the building will be expected to be like it was the first day it was built.

“we use the DBFN contract, so they design, build, finance and maintain a lot of NHS premises, it's our own workforce who we maintain it. So, with this building, what we do have is it's almost like we've got 25-year mortgage on it and during that time, it's maintained by an external contractor, and so that at the end of the 25 years, the building that we then take over is at the same state as it was right at the very beginning....(when) doing the design a lot of it's been around life cycle costs...we've predicted how much that would cost us to continue to replace for 25 years and built that into the cost of the building so that we don't have to worry about that during that time and that this company has got the money to go and do all those replacements, do all those fixings so that 25 year's time when we actually physically own that building we've got it a good state of repair, so it's built to be resilient, it's built to be sustainable, and we've got measures in place to continue to look after that building until it effectively becomes ours”. (Inverurie Health Hub Project Decision Maker)

This emphasis on monitoring has changed the approach towards the project management. Moving away from traditional lifecycles to include project engagement over many years (in this sample, from 40-200 years). This process adds additional expense to achieve as project budgets are not just allocating money until they ‘go operational’ but for generations in time. This shows clear evidence for the existence of an extended legacy lifecycle as per the investigation of the theoretical framework of this research (Figure 14). In the academic literature, the lack of monitoring within event management projects is common because stakeholders often don't want the future responsibility it entails (Chappelet, 2019). This is a common barrier against achieving a real ‘legacy’, but in this regional context, we see monitoring consistently throughout this project sample, providing more substance and depth towards legacy claims offered. When questioned about legacy washing, project decision-makers were able to provide evidence of regional project need, additional project spend, and extensive monitoring of benefits/quality to show that there was a demonstratable long-term focus for their projects.

“Legacy washing...it depends on how the project is set up. There are many types of projects, and often it comes down to what the project sponsor wants, how they want the project to be conducted, sure, if they want to have a legacy then it can't be cheap and cheerful, you really have to get everything set up right and have the right funding in place to achieve it, its maybe just my opinion but I believe that legacy doesn't come cheap”. (Union Terrace Gardens Project Decision Maker)

We see that for these projects, extensive additional funding is required and project approaches to develop them which ensure long-term benefits fit their intended purpose. It

has resulted in these projects often going over budget and schedule but not compromising for the legacy being ‘done right’.

5.3 Project Scale, Quality and Reputation

One of the factors for investigation in the legacy narrative was seeing if there were differences because of how the project was conceived and designed, and what influence variations for project scale, quality or reputation have.

5.3.1 Project Scale, Quality and Reputation from Document Analysis

Table 23 highlights the range of projects in ranked order by anticipated original cost. Alongside this are the number of project legacy claims. From this, we see a limited correlation between project spend and specific communication of legacy. The projects below £40m in project budget make few claims to legacy (no more than 2), but the most significant projects by spend also make a similar volume of claims. Instead, it seems that legacy is more influenced by project type, where we see high concentrations of legacy mentions. This is evidenced by 64% of all legacy claims being restricted to transport infrastructure and stadium & events construction projects despite accounting for only 38% of the projects analysed.

Table 23: Projects Ranked by Cost and Complexity

Rank	Project	Cost	Legacy Claims
1	Grandhome Housing Development	£1 Billion	2
2	Aberdeen Western Peripheral Route	£809 Million	9
3	Aberdeen Harbour Expansion	£350 Million	6
4	The Event Complex Aberdeen (TECA)	£333 Million	6
5	Prime 4 Business Park	£275 Million	2
6	Hywind Offshore Windfarm	£264 Million	3
7	Aberdeen Queen’s Square Redevelopment	£150 Million	4
8	Aberdeen Football Club Stadium / Cormack Park	£62 Million	13
9	Bio-Therapeutic Hub for Innovation	£40 Million	2
10	Refurbishment of Aberdeen Art Gallery	£34.6 Million	2
11	Union Terrace Gardens	£25.7 Million	3
12	Expansion of Aberdeen Airport	£20 Million	3
13	Inverurie Health Hub	£14.7 Million	1
14	Aberdeen Music Hall	£9 Million	2

Source: Author

However, significant communication was given to the reputational benefits these long-term focussed projects will bring to the region. Figure 30 shows the extent to which widely applied claims of reputational improvement was made to each project.

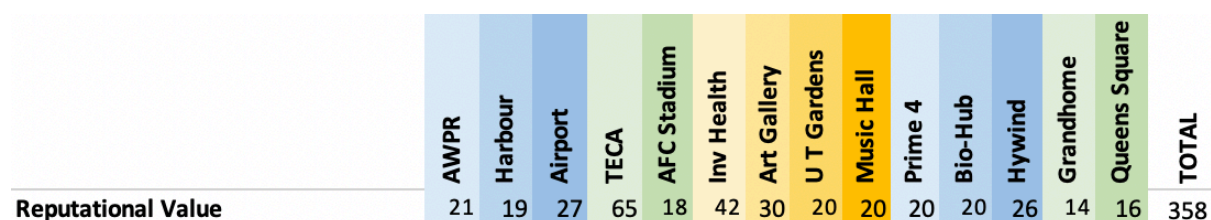


Figure 30: Reputational Value Communicated by Project (Source: Author)

Looking at how the projects described themselves, the most common terms applied included vocabulary such as ‘world class’, ‘transformational’, ‘inspirational’, ‘iconic’, ‘ambitious’, ‘state of the art’, ‘future-proof’ or ‘game changer’, giving insight to how these projects are perceived and fit amongst the region’s other resources. The inference is that these are a quality of resources a ‘level beyond’ existing infrastructure. What has been communicated within these projects was a repeated theme that the difference between these and more traditional or ‘standard’ projects was that these projects had the ability to “*transcend(s) its function*” (Moore, 2019).

This was evident in the document analysis, where projects that provide even functional outputs were repeatedly keen to suggest that there was more to them.

We see this with the Aberdeen Western Periphery Route (AWPR) road bypass, which in multiple instances, was communicated to be “*much more than just a road*” (Transport Scotland, 2018a). General Manager for Aberdeen Roads, Malcolm Findlay, explaining:

“Construction isn’t just about building roads or structures, we see the benefits of leaving a lasting legacy beyond the immediate construction works” (Transport Scotland, 2017).

This theme of wider legacy benefits is something that the Cabinet Secretary for Transport, Infrastructure and Connectivity (at the time of writing), Michael Matheson, expressed in his thoughts on the regional impact AWPR could have:

“As others have rightly said, this project is so much more than a road, it is a statement of intent and a golden opportunity to relaunch the north east of Scotland. I firmly believe it can be a catalyst for positive change for the economy, tourism, the environment and regeneration.” (Transport Scotland, 2018d).

Another project stakeholder, the Cabinet Secretary for Economy, Jobs and Fair Work, Keith Brown, also discussed the project’s ‘more than a road’ objective.

“The AWPR/B-T is a major artery that will breathe new life into the region. It is much more than a bypass, a term that simply doesn’t do justice to a scheme of this vast scale. It will enhance connectivity with the rest of Scotland, better connect local communities, improve productivity, quality of life and allow for better public transport and active travel opportunities in the city” (Transport Scotland, 2018c).

These statements highlight how the project objectives transcend their function and link to wider regional benefits, being the focal point for future opportunities and development. It was also linked repeatedly to regeneration for the region. Councillor Marie Boulton, who chairs the cross-party City Centre Regeneration Working Group, explained for the Queens Square project,

“Regeneration is about more than bricks and mortar and will....give us a platform on which to build up and energise the city’s cultural scene” (Build Scotland, 2015).

Similarly, the Music Hall restoration emphasised that this “*project is about much more than bricks and mortar*” (Spiers, 2016). The TECA project stakeholders shared this same opinion, “*TECA was never about just bricks and mortar, but its impact on Aberdeen and charting a new path for the city*” (Henry Boot Developments, 2020).

In terms of scale, the smaller, more functional project of the Inverurie Health Centre also communicates this objective.

“From the start, the project has been about more than just providing a new building – we’ve worked hand in hand with the local community to make sure the facility will be at the heart of local health and social care for generations to come” (Beattie, 2018a).

Even the proposed new football stadium was “*much more* than simply a football stadium” (Welch, 2007). In similar terminology, the Art Gallery stressed, “It is *not only* a beautiful building” (Visit Scotland, 2020), trying to emphasise that even though the first thoughts of what people may think about these projects (their function) are lauded, they have so much more intangible factors that are driving their design and future applicability. Repeatedly amidst the coding analysis was the discussion of an intangible focus that was given in the project management to design and create something that contributes to a resource’s long-term presence, pride, reputational value, and quality. That the project presented will enhance the prestige of regional resources and regional lifestyles. The sheer volume and consistent discussion around project reputational value suggest a link between intangible project factors and regional legacy development. This intangible or ‘aspirational’ project desire was a key theme of legacy in events management literature where projects developed were linked to their overall ‘experience’ (Cashman, 2003). It was uncertain if this was directed towards the experience of being associated with hosting an internationally lauded event or if there were elements of the project resources themselves being aspirational.

Here we see in a context out with an Olympic Games or FIFA World Cup repeated discussion for legacy obtainment around the aspirational, reputational, and fuelled by perception drivers. This suggests that the nature of the project and associated ‘intangible’ factors are important in considering legacy.

The document analysis consistently emphasises the inclusion of intangible project ambitions to support people better. However, having this as a project priority can present challenges for the project management approach and delivery. In this Aberdeen context, many of the projects reviewed were significantly over their anticipated budget and schedule. To design a project resource that goes beyond a brief ‘that will do the job’ but instead provide ‘generational benefits’ and consider future emphasised impact was shown to add additional complexity, cost and time to complete (Lienhard & Preuss, 2014). To tackle this issue, many projects in their management approach emphasised quality management (over time or budget considerations). Quality management is a project management process that ensures project output is consistent and provides a method to set and achieve standards (Project Management Institute, 2017). We see the extent of this being emphasised in the project communication in Figure 31.

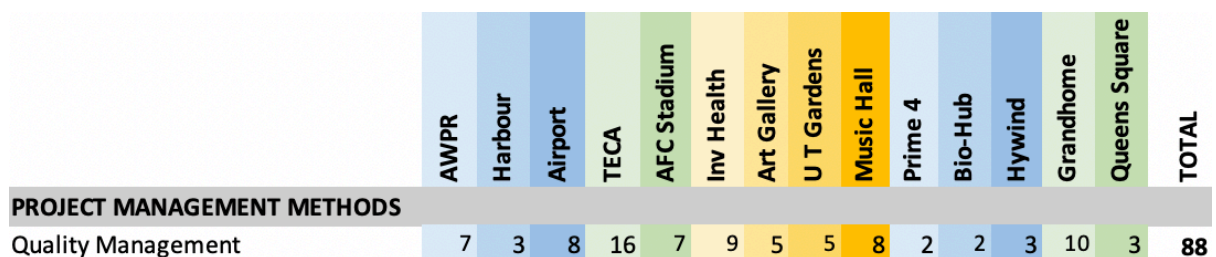


Figure 31: Quality Management Communications by Project (Source: Author)

Figure 31 shows that quality management was communicated as a theme for each project although not in the volumes of ‘reputational value’, which it provides some underpinning for. Quality management is not a core project management theme, so it was not expected to be

emphasised, but it is given here repeatedly for every project. In the Grandhome project, Bruce Smith of The Grandhome Trust stated that quality is a component for achieving long-term benefits.

“The proposals for Laverock Braes are in accordance with the broader design objectives for Grandhome and underline our absolute commitment to maintaining quality from design through to delivery....It is this attention to detail from the outset (which)...contributes to the long term prosperity of the city and surrounding region,”
(Grandhome Trust, 2019b)

Often the communication for quality management may occur on ‘risky’ projects or projects over budget to reassure stakeholders of control or justify spending (Kerzner, 2017). In the qualitative returns in the document analysis, we see little correlation between quality management communications for projects that fit that description. This suggests that the emphasis for quality is on the project management approach adopted to ensure long-term, fit-for-purpose and future-proof developments, all principles and characteristics of legacy.

This output is further affirmed by communication stating the volume of projects that have won national awards, recognising their contribution to industry. This adds to the reputational or intangible aspects of these projects. A number of national awards won by the research projects analysed are listed in Table 24, although many of these projects, due to their completion stage, are not yet eligible for awards.

Table 24: National Project Awards Won

Project	Award
Art Gallery Refurbishment	Art Fund Museum of the Year 2020.
Art Gallery Refurbishment	The Civic Trust Awards top prize: the National Panel Special Award.
Art Gallery Refurbishment	Glasgow Institute of Architects Supreme Award, and the Public Building of the Year.
Art Gallery Refurbishment	Regeneration Project of the Year and Project of the Year awards from Aberdeen Society of Architects.
Grandhome Developments	Seal of Excellence from the National House Building Council
Music Hall Redevelopment	Highly Commended - Civic Trust Awards 2020
Prime Four	BREEAM Accreditation
Prime Four	Development of the Year (Commercial Buildings) at the Scottish Property Awards 2015.
TECA	RICS’ first ever Social Impact Award
TECA	Scottish Property Awards 2020: Development of the Year (Commercial Buildings).
TECA	First Considerate Constructors Scheme Ultra-site in Scotland

Source: Author

The awards achieved provide some additional emphasis for the quality of the project resource and its intangible impacts, such as RIC’s social impact award and consideration of heritage. This aligns well with legacy literature that buildings and infrastructure should fit for a long-term purpose (Gratton & Preuss, 2008) and not negatively impact stakeholders in their design (Leopkey & Parent, 2012). The semi-structured interviews can provide useful insight into this assumption and further explore the role and priority of ‘intangible’ project elements and if these are part of a regional legacy.

5.3.2 Project Scale, Quality and Reputation from Project Interviews

The document analysis themes were represented again in the interviews, and a range of intangible factors was identified as necessary to the narrative of these projects. The scale of the project was less important for achieving legacy; instead, the emphasis was more that these projects were 'more than their function' and 'extra' in terms of project approach and ambitions. A repeated theme within the public communications was the expression that the project 'was more than' merely its primary function. We see that description being used again within the interviews; Aberdeen City Council reflected on its portfolio of projects with the following:

"For each of our projects, it has always been more than just a building or a road that has been produced, it was a response to build up the city from the perspective and needs of its people and to provide greater cultural connections and communities". (Aberdeen City Council Project Decision Maker)

The Queens Square project re-emphasised once more what they had proclaimed in their public communications:

"This project is more than just bricks and mortar, it is bringing life again to the city centre". (Queens Square Project Decision Maker)

A theme that came out of the interviews was that rather than legacy being impacted by different project types, these projects were instead seen as 'legacy projects' in themselves.

"A legacy project is exactly what we set out to achieve and deliver. There was a deep sense of pride in this... It differs so much from other types of projects, which are more straightforward and require less involvement and engagement to get right. A project which has that long-term outlook requires a different mindset to develop, a true commitment to do things properly, to fulfil the best vision, the best version of the project as possible, that includes not compromising on the quality of the materials, design and thinking always from a user's perspective for what they will experience, and specifically not a user coming to visit day one of opening but many decades later". (Art Gallery Project Decision Maker)

The way that these projects were described echoed the terminology of the document analysis. Legacy projects were referred to as *regional flagships, landmarks, special, exceptional, world-class, transformational, visionary, inspirational, and future-proof*, these terms coming out of these interview discussions unprompted. An example of this can be found from the Union Terrace Gardens interview:

"I want to maybe liken it to a landmark, having iconic properties... it would have to go above and beyond, make a statement." (Union Terrace Gardens Decision Maker)

TECA acknowledged that these were a type of project that had benefits which were necessary for the development of the region's long-term sustainability. Making a direct comparison to the origins of Olympic legacy development, showing that this original legacy influence was present in regional project processes:

"This takes us right back to the Olympic legacy, where we see the parallels of building up the region through these flagship projects that provide long-term impacts". (TECA Project Decision Maker)

The impact of these transformational projects resulted in a theme common in the document analysis, an enhanced reputation for the region. This was found extensively within the interviews, with Appendix 5 providing a range of qualitative examples of how it was applied. For example, the Airport project decision-maker discussed these collective, transformational projects, stating, *“they are interconnected; everyone is a winner in this. The reputation of Aberdeen is the winner”*. The Prime Four decision-maker believes these collective projects add *“prestige and respect to Aberdeen”*. Likewise, the TECA project-decision maker felt that *“TECA will bring with it a positive impact to the regions reputation and how people feel about living in Aberdeen”*. The Art Gallery interview participant linked reputation to their project’s legacy:

“We now have a world-class gallery, its reputation will grow the world over, its legacy continues on and will welcome another generation of Aberdeen citizens”. (Aberdeen Art Gallery Project Decision Maker)

The concept of enhanced reputation was also linked to another theme identified within the document analysis process, linking reputation with quality and awards won to justify claims of reputational improvements. We see this in the following statement given by the Aberdeen Art Gallery Project Decision Maker:

“Yes, we sought that it would be a world-class venue, that it will live long in the memories of Aberdonians for generations. The multiple accolades the gallery has received support that we achieved our goals for the quality desired. Winner of Art Fund Museum of the Year, the National Panel Special Award, Public Building of the Year”. (Art Gallery Project Decision Maker)

The adoption of quality management methods was expressed extensively regarding the project management approach. Quality was linked to not only reputational improvement but also future-proofing legacy. If a long-term legacy was to be achieved, then the resource had to be built to an enhanced quality standard which would require additional upfront costs. Aberdeen City Council explained their project approach:

“We run a tight ship when it comes to expectations and doing things right. You can’t make concessions when it comes to the quality of your work. We have found that in maintaining them (projects), that you can’t cut corners, it may look appealing on a balance sheet, but it is always better to get things completed to a high quality up front, so that over the years, it requires less repeat work and major maintenance, you can’t think short term, as it is the long run, it matters so much and saving pennies at the beginning means spending pounds later on”. (Aberdeen City Council Project Decision Maker)

This approach was adopted because of lessons learnt from the past, noting:

“A lot of the (regeneration) projects that you are working on with your research, we experienced so many challenges that were unforeseen or unexpected because of maybe of the council’s lack of appreciation shall we say, for quality in the 70’s and 80’s... That was certainly a lesson in quality ...we have learnt the lessons that a long-term strategy always suits the city best... providing a legacy for the Aberdeen area. We need to protect this established legacy by ensuring work performed on revamping or updating infrastructure is conducted to the absolute highest quality standards”. (Aberdeen City Council Project Decision Maker)

Other projects concurred with the importance of quality impacting legacy. Appendix 6 displays some of the narratives that project decision-makers used to describe the place of quality within their projects. Within this, it shows that achieving a high-quality output was a significant priority. It was noted that the emphasis on quality was enhanced from typical or standard projects, or as the Airport project decision maker described ambitions, “*a step above in quality*”. This was to be achieved with “*a different mindset to develop, (and) a true commitment*” to quality management...with an approach for “*not compromising on the quality of the materials, design and thinking always from a user’s perspective for what they will experience*” (Aberdeen Art Gallery Project Decision Maker). Numerous interview respondents discussed challenges and limitations for project budgets and mentioned specifically their efforts not to sacrifice quality standards. For example, the Aberdeen Music Hall project highlighted that their project sponsors were:

“so committed to the vision that they wouldn’t compromise...they went out and fought hard and got more money in order to deliver the full vision that they wanted, to the quality that they wanted”. (Aberdeen Music Hall Project Decision Maker)

The quality achieved, and benefits of these projects also pointed to another theme emerging from the document analysis: creating an enhanced culture within the region. This signifies a more intangible approach to developing these projects, based on people’s needs rather than traditional economic drivers found with most traditional projects (Kaplanidou et al., 2019). Numerous projects described their involvement as impacting ‘*a cultural revolution*’ happening in the region, that these projects “*really change possibilities for its cultural landscape*” and providing “*an enhanced cultural core is one of its key benefits*” (TECA Project Decision Maker). The importance and emphasis on enhanced culture were repeatedly highlighted as a project driver. The Union Terrace Gardens project decision maker described these project’s impact, noting that they make “*a big cultural influence, shape peoples happiness, what they think of where they live and work and also how they work too. Cultural offerings are really important for the city*”. Appendix 7 highlights some example narratives for integrating culture to project ambition, which was significant.

The findings from the document analysis and the semi-structured interviews strongly emphasise intangible benefits for all of these projects. This aligns with the legacy literature that long-term benefits should not only be tangible but provide a range of intangible benefits as well (Deng et al., 2020; Dolan et al., 2019; Ferrari & Guala, 2017). The analysis shows that this type of benefit is extensively present within this regional project context.

5.4 Vision, Identity, Diversification and Transformation.

The data from this research returned a consistent theme of refining the regional vision, identity, diversification, and a process of transformation. Aberdeen and Aberdeenshire are regions in a unique position in that they are beginning a transformation process in their identity driven by infrastructure projects. The area is known extensively as the oil and gas capital of Europe (Fullerton, 2016). This specific industry has had a significant impact on the region, “*The discovery of oil reserves in the North Sea in the late 1960s led to a rapid transformation of the economy of Aberdeen City and Shire...(this) has become a defining part of the local economic landscape*” (Biggar Economics, 2013).

However, 60 years later, the situation is much different, with hydrocarbon reserves dwindling and extraction costs not profitable (Roorda & Wittmayer, 2014). The sector in Aberdeen also faces additional geographical challenges, political opposition and environmental pressure to

cut reliance on oil production (Elliott, 2021). The Aberdeen oil industry has entered a 'decommissioning' phase and experienced tens of thousands of oil workers leaving the city to find employment elsewhere during the oil price 'downturn' in 2014 (Institute of Historic Building Conservation, 2021). The document analysis tracks this background as economic and local governance stakeholders debate a sustainable future for the region. Moore (2019) asks the fundamental question, "*How does an oil town plan for life when the hydrocarbons run out?*".

The response from regional stakeholders was to diversify the economy away from oil and gas to a new identity based on green energy, as well as enhancing traditional geographical strengths of food and drink, tourism and life sciences sectors (Alexander, 2020). Councillor Marie Boulton, who chairs the cross-party city centre regeneration working group for the Aberdeen region, stated the purpose of diversification: "*We have a wonderful opportunity to deliver a lasting legacy for Aberdeen and its people*" (McKay, 2015). This again places 'legacy' at the core of its key regional ambition. Aberdeen Council co-leader Jenny Laing also made the link to a future vision. "*If Aberdeen is to move away from being so reliant on oil and gas, we must shape our city for the future*" (Hebditch, 2018a). Councillor Laing highlighted,

"Aberdeen City Council is driving unprecedented transformation in our city. We are in the midst of delivering an ambitious £1 billion capital programme which will improve opportunities for individuals and businesses in Aberdeen... Innovation and diversification are at the heart of Aberdeen City Council's plans" (Alexander, 2020).

In total, "*more than £8 billion of public and private infrastructure investment is due to be delivered before 2030*" (Szalay, 2019), to build infrastructure that would allow it to transition away from its previous oil and gas identity. The projects analysed in this research are included in that figure and highlighted explicitly as being strategically important to this vision within the masterplan documentation outlining diversification ambitions (see Table 12 in Section 4.4.1.2).

5.4.1 Vision, Identity, Diversification and Transformation from Document Analysis

The document analysis outlines identity and collective vision as a driver of regional legacy, something little discussed in the existing literature. A part of event management legacy identity was the event itself, and thus there was a timeline to achieve and deliver the event, from which to ultimately build a legacy (Ma & Kaplanidou, 2017). In this regional context, there is no event trigger. Still, the documents show a collective diversification vision of identity and a coordinated masterplan to change the resources to fit it. Rather than traditional projects, which are unique stand-alone developments to provide benefits (usually economic) for an assigned stakeholder, we see in this Aberdeen context projects being part of a greater whole, with a broader purpose to create a new green energy regional identity.

To know if identity, and contribution to vision, is part of legacy development, consideration must be given to whether project developers were aware of the need for diversification and regional vision ambitions and that these influenced their project approach and design. The document analysis shows extensive evidence of all projects identifying ambitions to either diversification or their role in contributing to a wider regional vision. Appendix 8 highlights the qualitative narratives on this theme by project. Most projects were specific to mention the diversification driver, that their projects "*will deliver a transformational regeneration*"

(Urquhart, 2016), and *“help diversify the city’s economy away from oil and gas”* (Hebditch, 2018a).

The data shows that each project has claimed to be part of or influenced by the regional masterplan and its ambitions to transition away from oil and gas. Each project acknowledged its role in contributing to achieving sectoral diversification. The former leader of Aberdeenshire Council, Jim Gifford, notes the strategic purpose of working with organisations to develop this diversification effort.

“In recent years we have taken a collaborative approach as a region to recognise our long-term economic vision through diversification” (Scottish Construction, 2020a).

Here in this document analysis of project factors, we see project stakeholders repeatedly highlight positively and committedly their contribution to the regional diversification objectives. The chair of the Bio Hub board, Professor Stephen Logan, specifically acknowledged this saying:

“This is a transformational project of national significance that supports the regional economic goal of diversification” (Wemyss, 2018).

The Aberdeen Harbour project had advanced to the development stage when it introduced alignment with the regional objectives. *“The priority of ‘transition to a low carbon economy’ was (a) strategic priority that was added in 2011... to diversify into low carbon technologies”* (Biggar Economics, 2013). TECA also highlighted their association with the council’s vision. *“We are in the midst of the most important period of transformation Aberdeen has ever experienced and TECA is integral to the Council’s £1billion capital programme”* (Dalziel, 2019). The AWPR noted the dual purpose of their project, highlighting benefits to its own personal objectives and wider regional ones. The project to build a peripheral route around Aberdeen city was described as *“vitaly important in that wider transport strategy and will support not only our own capital programme but those of our partners in the city”* (Transport Scotland, 2019a). Prime 4 mentioned the appropriateness of the approach to having a masterplan underpinning development and linked it to legacy:

“Masterplanning shapes our towns and cities to leave a positive legacy for future generations to appreciate and enjoy. Never before has planning policy in Scotland placed such an emphasis on the quality and suitability of people’s living environments.” (Samuel, 2020a).

Diversification was an influence on the specific designs of some projects. BDP Architect Director for the Music Hall, Bruce Kennedy, stated *“The transformation of this wonderful ‘sleeping beauty’ of a building into a truly great and popular cultural, civic and community asset, must be a key element in supporting city centre regeneration”* (Welch, 2016). Likewise, the Grandhome housing development stated their *“community will be built according to a masterplan... a design code that will ensure the community meets consistent and high standards throughout”* (Grandhome Trust, 2019a). This narrative supports that it was indeed a collaborative regional effort aligned with an identified vision.

Even projects that had limited relevance to the previous oil and gas identity emphasised their place and role in this transformation. The Music Hall and Art Gallery project would bring ‘cultural significance’ to diversification (Aberdeen City Council, 2019a; Spiers, 2016). Even the local football stadium development *“could help to ensure the regional economy was not so reliant on the oil and gas industry. This is something this region needs right now,*

diversification away from oil and gas... We have a vision" (Walsh, 2016b). But the masterplan (like a core principle of legacy) is based on time. The First Minister of Scotland, Nicola Sturgeon stated, *"Given the difficulties in oil and gas it is a good thing for Aberdeen and the wider North-east economy that we have these big infrastructure investments coming at the same time"* (McLaren, 2016).

These projects, however, were not randomly commissioned, and the masterplan documentation strives to have diversification projects delivered before 2030 (Alexander, 2020), a limited window to achieve change. The timing of *"the most significant transformation in the city's history"* (Aberdeen City Council, 2019b) has repeatedly been emphasised as a need to happen now and to get buy-in from stakeholders. The need to diversify is essential in transforming the region to have a sustainable future (Spiers, 2016). Linking with the characteristics of legacy, Councillor Marie Boulton said, *"it is a once-in-a-lifetime opportunity to achieve something really special for Aberdeen"* (Welch, 2016). Similarly, Council leader Jenny Laing phrased it as *"once in a generation opportunity"* (BBC, 2015). This same timing and emphasis on current needs looking forward into the city's future was echoed by the Harbour developers, *"we're keeping our eye on the bigger picture, which is about creating a once-in-a-lifetime economic development opportunity for the region"* (BBC, 2019). Rather than be derailed or limited by the impact of the Covid pandemic, which is happening during many projects in development, the council stated, *"The impact of COVID-19 has underlined the critical need to future-proof our economy through diversification ...emphasised the fast pace required"*. (Scottish Construction, 2020a).

It is a significant coordination effort to have so much infrastructure in place to support the change. Co-Leader Councillor Douglas Lumsden said: *"The scale and pace of change we are seeing in Aberdeen at present is unparalleled in the city's history"* (Aberdeen City Council, 2019a). What this does, however, is enable these projects to have a cumulative transformational effect on the region. The literature noted that the establishment and fulfilment of vision was part of the process of obtaining a desired legacy (Gold & Gold, 2014). Each project analysed confirmed that project stakeholders considered their project to have 'transformational' regional impact on fulfilling a vision for the future. This was expressed extensively in their public communication. Appendix 9 provides examples of each project communicating in their published documentation their ambitions towards fulfilling transformation.

Appendix 9 provides examples of each project communicating in their published documentation their goal to achieve transformation. Each project used the specific term 'transformation' explicitly in their project communications. This provides some understanding of the nature of a legacy project (which is linked to a pre-determined vision). These are not 'typical' or 'business as usual' projects, but they are 'transformational'. They actively provide resources to alter regional identity and diversify to a desired legacy for stakeholders. Fullerton (2016) summarises this well, stating:

"there is a quiet revolution taking place in Aberdeen... The impact of what is essentially the greatest regeneration project the city has ever seen will be enormous and set in motion a series of events which will guarantee an even greater quality of life in Aberdeen, as well as our future economy, for years to come".

The semi-structured interviews will expand on the themes of this section. They will explore explicit links between legacy and regional identity, diversification, and the transformational nature of projects and whether this impacts legacy development in this Aberdeen/shire context.

5.4.2 Vision, Identity, Diversification and Transformation from Project Interviews

The semi-structured interviews explored the relationship of these projects to vision and regional transformation. Questions were asked around if projects were conducted in a silo, each focusing on its own ambitions or whether they were part of a broader vision and a process for diversifying regional identity. In response to this, each project was identified as being part of the efforts to fulfil the regional vision, and they were able to discuss their efforts in this context extensively. Appendix 10 highlights examples for each project and stakeholders from Aberdeen and Aberdeenshire council around recognising regional vision in their project approach.

The interview data in Appendix 10 highlights the extent to which project stakeholders were very aware of external regional vision ambitions in relation to their projects. The Airport project noted:

“There is significant regeneration efforts going on, we were always aware that we are part of that....we embrace diversification” (Aberdeen Airport Project Decision Maker)

Similarly, the Music Hall representative described their awareness:

“We were very conscious of the bigger picture and the fact that Aberdeen was trying to reinvent itself while also working in parallel with the city council and the master plan” (Music Hall Project Decision Maker)

Most projects noted that it was not just awareness but an active close collaborative relationship with key regional stakeholders; this played a key role in fulfilling vision ambitions. TECA notes the context of their project approach:

“We worked collaboratively with the city council, in lockstep, so we knew exactly that what we were doing at TECA was part of a wider vision for the city”. (TECA Project Decision Maker)

The Harbour project also mentioned this relationship when discussing their project, noting it was:

“not done in silo, (it) was indeed part of that collaborative vision. Aberdeen City Council is a key partner in our project, and we with them, we are fully behind the transformation of the North East. We are part of this sweeping change that it is happening at the moment” (Harbour Project Decision Maker)

Attitudes towards the regional vision adopted by both councils and local businesses were positive and supported by all project decision-makers.

“I’m very much in support of what the council and others privately are trying to do”. (Aberdeen Football Club Project Decision Maker)

“Aberdeen is trying not to have an oil and gas hangover and waking up to a brighter future of green energy and a sustainable economy. Prime 4 is really assisting the council to do that, and of course, we fully support it”. (Prime Four Project Decision Maker)

Numerous stakeholders discussed the selection strategy process for being involved with these regional projects. It was emphasised that it was not those who would offer the cheapest work which would be selected but rather those that had a shared alignment for achieving the vision and future legacy of the region, working with methods that were sensitive to supporting this. TECA noted:

“The council wouldn’t have taken us on to do this job if we were not committed to their vision, doing things right, being part of the community”. (TECA Project Decision Maker)

The Hywind project also mentioned this alignment of shared values around vision:

“It was our vision too, our organisational strategy was diversifying to a low carbon solution. We supported each other, it was a successful partnership. One that continues to thrive”. (Hywind Project Decision Maker)

The analysis of this research has noted in numerous places already about the nature of a project seeking to achieve a legacy. That legacy is often based on the fulfilment of a long-term vision and that the project plays a role in this transformation. This was a discussion that was happening in these sample projects reviewed:

“We and our stakeholders at the council had many conversations about identity, about history, about legacy. What our project brings to the city”. (Queens Square Project Decision Maker)

“These factors really built into the thoughts of a legacy, a North East legacy, what will the city look like for the future, and how will TECA influence that, we believe we played our part in creating a better future, a better legacy for the city and all of that was considered before one brick was put down”. (TECA Project Decision Maker)

Interviewees were asked about their involvement in transforming the North East’s identity, and the region’s efforts to move away from being associated with oil and gas to a new future based around green, renewable and local services. Each project was again able to discuss this extensively, and Appendix 11 shows examples of this narrative.

The interview findings reveal that transformation of identity was a significant project driver, just as was identified in the document analysis. The interviews highlighted more depth, understanding, and commitment to their project roles in enacting diversification.

Aberdeen City Council articulated the background of the transformation for regional identity change and how these projects influenced it:

“Each project approved was part of a bigger vision for the region, critical to it...our regional masterplan, this was the foundation of our efforts, where political opposition was put aside to find common ground for what we want the future of our city to be like, all parties realised that there had to be a transition away from oil and gas which has been the main employer and provides key stakeholders for how this city runs, the ideology around it, it was a significant challenge to think of what will become of Aberdeen post oil, which is happening in our lifetime so needed addressed urgently...(this) allowed us to provide an answer to the people of Aberdeen for how this future post oil was to be achieved.” (Aberdeen City Council Project Decision Maker)

The interviewees could talk about the extent to which these projects identified that their work was in response to these ambitions and was the fulfilment of this vision and expected legacy.

“Identity is only as clear as the opportunities that you provide, for a lot of years there has been discussion in the North East about its identity and reliance on oil and gas to drive its economy, if this wants to be changed, then we can’t just say we want to be known for something else, there needs to be substance to how we present the North East, that all starts with infrastructure to sustain these ambitions...if it wants to be an internationally recognised hub for energy then it simply has to have facilities to match that goal”. (Prime Four Project Decision Maker)

Union Terrace Gardens linked that transformation process to legacy building:

“So, we knew we weren’t revamping a city centre garden, we were transforming the experience of Aberdeen for everyone, that’s where the lofty legacy words come into play, that with everything going on, the ambitious regeneration efforts of the city was legacy building, they had thought about the end game for its citizens, and each project was fulfilling a bit of that vision, that masterplan which was mapped out”. (Union Terrace Gardens Project Decision Maker)

There was unity in approval for this approach. The Harbour noted that *“there isn’t much opposition to (this) change, they know the writing is on the wall for oil and gas”*. This included projects not functionally involved in developing green infrastructure; there was buy-in across all project types. The example thoughts of Aberdeen Art Gallery were:

“Our regeneration investment has provided the infrastructure to generate communities and businesses to sustain people like never before in this area... Aberdeen has long been ingrained with oil and gas...that relationship needs to be phased out and a clean green future embraced by the city, which it has, everybody knows this, we have to make that transition”. (Art Gallery Project Decision Maker)

This support for the transformation of regional identity was consistent. Still, urgency was expressed in achieving it as well, the Harbour project noting that *“no one is under any pretence that oil and gas is a dead dog, and if Aberdeen does not change and move away from it, it will be a dead dog too”*. The Queens Square project also shared similar sentiments noting, *“everyone seems on board with this, but it is just a case of whether the city has missed the bus or not”*.

5.5 Integration and Interconnectivity

A theme similar in nature to a combined planned vision outlined in the last section is integration. These Aberdeen/shire based projects not only contributed to a wider plan but also complemented and benefited each other in function and so are integrated. Integration itself is not a core theme of traditional project management as each project should be considered unique and driven by its own individual business case (Lester, 2014). It was a theme expressed repeatedly in the findings of the document analysis and interviews. Likewise, was that of interconnectivity, a theme where project benefits were not limited to the local area but also sought to attract people into the region from external locations.

5.5.1 Integration and Interconnectivity from Document Analysis

Integration was an often-repeated theme of the document analysis, with mentions of these projects discussed in conjunction, highlighting reciprocal benefits. In the document analysis, a discussion of this nature was coded within a category entitled ‘integration’ (see Table 18 for detailed coding descriptions). There was a volume of 212 codes for integration over the 14 projects, which were broken down by project in Figure 32.

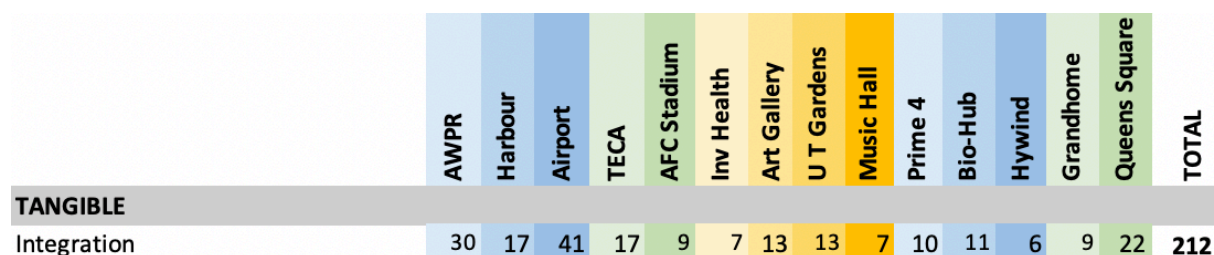


Figure 32: Integration Code Volume by Project (Source: Author)

As anticipated, we can see increased emphasis on integration in the transport infrastructure projects as this is a core function of their operations, with 3 out of the top 4 ranked projects coming from this category (Table 25).

Table 25: Ranked Integration Codes by Project

Rank	Project	Category	Integration Code Volume
1	Airport	Transport Infrastructure	41
2	AWPR	Transport Infrastructure	30
3	Queens Square	Residential	22
=4	Harbour	Transport Infrastructure	17
=4	TECA	Stadium and Event	17
=6	UT Gardens	Regeneration Structure	13
=6	Art Gallery	Regeneration Structure	13
8	Bio Hub	Commercial	11
9	Prime 4	Commercial	10
=10	AFC Stadium	Stadium and Event	9
=10	Grandhome	Residential	9
=12	Inv Health	Regeneration Structure	7
=12	Music Hall	Regeneration Structure	7
14	Hywind	Commercial	6

Source: Author

Out with the transport infrastructure categories, where there was an extensive volume of integration discussion, there weren’t any consistent trends for other category types or project scale, but the theme was applied in all projects. In the qualitative narrative, we can see the extent of consideration of combining projects and the benefits of having these happen around the same time frame. In traditional project management, there is communication given by project stakeholders for their project and its timeline of progression (Turner, 2016). It is unusual that project stakeholders would discuss other projects impacting their own so freely and so often. Yet, in public communications, we see other projects being mentioned in a context of their own:

“The AWPR is much more than a road project... It’s the golden thread which runs between other major infrastructure projects in the city, such as the harbour and the AECC (TECA)” (Buchan, 2018).

Multiple projects discussed a shared unity in their function. The Union Terrace Gardens project, for example stated that it:

“will complement other major infrastructure projects nearing completion, including the Event Complex Aberdeen (TECA) and the redeveloped Aberdeen Art Gallery, both world-class facilities. The city is moving forward as one and making history as we go” (Watters, 2019).

Even when giving a press conference about searching for a new football stadium site, Aberdeen football club mused the wider regional developments:

“We have a fantastic natural asset at the beach. I commend the council for developing TECA [P&J Live], which will be a real asset to the economy when we come out of this [pandemic]” (Aberdeen Football Club, 2021b).

The document analysis consistently links the discussion of project integration with that of providing additional opportunities. These projects happening over the same period, coming under the same master plan, provide an increase in quality resources and enable enhanced benefits that wouldn’t have been possible without integration. Aberdeen Football Club highlighted that their original vision and ambition for their proposed stadium changed because of the:

“Impact of other projects (AWPR), provides opportunities and possibilities unavailable before” (Aberdeen Football Club, 2016).

The Airport project expansion now had new economic opportunities and increased customer benefits based on other regional projects' completion.

“As part of a multi-million-pound terminal transformation project, there’s hope the AWPR project could lead to more routes for passengers. If we can evidence to airlines that the AWPR is allowing more people to come to this airport, rather than travel to other airports, because of ease of access, then it will definitely strengthen the business case for new airlines to operate here” (Buchan, 2018).

The analysis highlights this theme repeatedly: each new project provides an additional resource to the region that triggers increased benefits and value to other projects through this connected integration process. The discussion of integration was often in partnership with benefits and that these projects would increase opportunities for the region. This could be through new resources or providing needed resources previously unavailable to the region.

The coding of these factors provided a narrative that these were significantly important to communicate to Aberdeen/shire stakeholders (Figure 33).

	AWPR	Harbour	Airport	TECA	AFC Stadium	Inv Health	Art Gallery	U T Gardens	Music Hall	Prime 4	Bio-Hub	Hywind	Grandhome	Queens Square	TOTAL
Needed Regional Resource	39	12	31	35	28	80	14	17	16	5	31	9	15	11	343
Provides Additional Opportunities	49	45	36	23	12	34	29	28	24	12	59	25	14	17	407

Figure 33: Coding Volume for Needed Regional Resource and Provides Additional Opportunities (Source: Author)

We see extensive mentions of these factors expressed within all projects analysed. With 750 unique instances communicated to the public and in terms of volume of codes, ‘Needed Regional Resource’ and ‘Provides Additional Opportunities’ were both in the top 10 of all codes (Figure 34).

Rank	Codes	AWPR	Harbour	Airport	TECA	AFC Stadium	Inv Health	Art Gallery	U T Gardens	Music Hall	Prime 4	Bio-Hub	Hywind	Grandhome	Queens Square	TOTAL
1	Stakeholder Management	38	32	17	63	28	67	21	30	6	16	46	28	31	19	442
2	Investment	32	19	55	59	15	60	42	17	31	17	33	11	21	13	425
3	Provides Additional Opportunities	49	45	36	23	12	34	29	28	24	12	59	25	14	17	407
3	Social Benefits	45	3	18	30	49	32	19	26	33	21	33	8	46	44	407
5	Long Term Vision	36	19	18	71	20	15	7	35	5	14	37	16	39	30	362
6	Reputational Value	21	19	27	65	18	42	30	20	20	20	20	26	14	16	358
7	Needed Regional Resource	39	12	31	35	28	80	14	17	16	5	31	9	15	11	343
8	Sustainable Future	34	24	10	40	11	34	5	26	14	15	44	25	26	13	321
9	Strategic Priority	27	12	9	68	15	20	11	30	10	12	37	15	23	21	310
10	Stakeholder Initiated	29	5	6	80	15	44	20	12	4	2	37	2	13	9	278

Figure 34: Top 10 Ranked Project Codes by Volume (Source: Author)

This discussion around adding planned resources was to highlight that the landscape of regional infrastructure has changed through this integration of projects. While there were shared benefits to projects within the master plan, these benefits also extended to the residents of the Aberdeen/shire region. The volume of mentions about the area having new or needed resources and the association of increased opportunities for its people was significant in expressing the fulfilment of the project vision. The literature states that this is a part of the legacy lifecycle, and that post planning, there is the fulfilment of benefits to stakeholders to shape a positive outcome or a desired legacy (Alm et al., 2016; Li & McCabe, 2013). We see this theme of legacy being communicated extensively within all projects within the document analysis. An interesting part of this benefits narrative is not only the positive integration of Aberdeen-based resources, but also continued mentions of wider location benefits and interconnectivity out with Aberdeen/shire. This is an unexpected development as it was anticipated that the focus of regional development would be for the benefit primarily of regional stakeholders. However, we see many mentions of external ‘interconnectivity’, where a project objective is to attract people into the Aberdeen/shire region from out with. This has interesting parallels with event legacy, where often the focus of hosting an Olympics or World Cup is to have long-term tourism benefits or to market the host city to the wider world’s attention (Tsaur et al., 2017). This approach has been criticised as it is often linked with individual or national vanity rather than meeting long-term stakeholder needs or any real economic benefits (Tomlinson, 2014). In this regional context,

however, there is no event ‘shop window’, so the focus of this emphasis is more on providing the region with resources that can match and attract people to have positive experiences in Aberdeen, impacting its reputational value (as highlighted previously in section 5.3.2).

Interconnectivity was an inductive code from the coding process. It was a theme described by the author as ‘*The project design or output is aimed at attracting a wider external audience to engage or travel to the Aberdeen region*’. The document analysis coding revealed that all projects expressed this desire or had increased capability to do so, with extensive discussion on this topic (with 276 mentions, Figure 35).

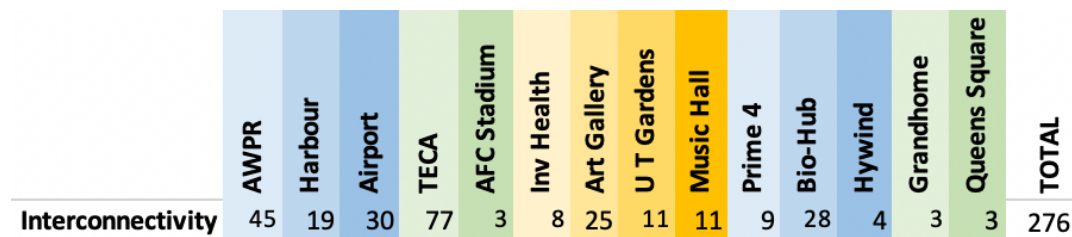


Figure 35: Volume of Interconnectivity Codes (Source: Author)

The council masterplan also emphasised this theme stating, “*our regional economic strategy has internationalisation and diversification at its core*” (Scottish Construction, 2018), that it is bringing together a collection of project infrastructure that will transform the region's capabilities and function. It can be a location of importance and attraction to other places, with the goal that Aberdeen/shire can be viewed as “*a destination rather than a thoroughfare*” (Transport Scotland, 2020). Some of the project discussions back up this theme; these projects were described as “*a powerful magnet*’ (Hebditch, 2017d) in bringing external stakeholders to the area. This was evident through project objectives for the Music Hall, Art Gallery, TECA, Union Terrace Gardens and Queens Square, which desired to provide “*artistic excellence and a cultural tourism destination*” (Welch, 2016) to bring additional tourists to the region. It was also a factor for businesses locating to Aberdeen; when Aker Solutions moved into the Prime Four site, the reasoning behind it was because of the combined project resources:

“*When we decided to build our regional headquarters here at Aberdeen International Business Park, the planned infrastructure projects were a key consideration*” (Transport Scotland, 2018b).

A lot of interconnectivity discussion is based on location and building beyond traditional resources they previously would have to travel further afield to obtain. This is again a theme of legacy (Li & McCabe, 2013) and evident in this regional context through the developed project designs. The Inverurie health centre project provided additional opportunities for healthcare in Aberdeenshire. Logan (2017) states, “*the new building will allow us to introduce a variety of additional or enhanced services in Inverurie... by offering specialist treatments that were previously only available further afield*”. This benefits residents who will have to travel less for services they didn’t previously have access to locally. This theme of location also provides insights into the catchment area for benefits. These Aberdeen/shire based projects created a resource hub for local users but also will be used regularly (and critically) by others who are significantly further afield in location. In the context of Aberdeen, this is especially the case for the remote Islands of Orkney and Shetland (Shetland being 200 miles from Aberdeen), which lack quality resources and rely on travelling to Aberdeen to obtain them. Stakeholders from these areas can now access this region easier (through projects such as Harbour development, Airport expansion, AWPR) and also benefit from improved health care and essential services as well as entertainment and culture from the

other projects (Warnock, 2018). The expanded catchment area was a theme echoed in the TECA development. First, highlighting regional/national interconnectivity:

“The Event Complex Aberdeen is very much a regional facility which will serve residents from Aberdeenshire, Moray and Inverness in the north, to Angus and Dundee in the south” (Wyllie, 2018a).

And then a wider emphasis that it will be:

“a venue which will have truly global reach...It will serve the residents of the city as well as attracting delegates and tourists from home and abroad” (Henry Boot Developments, 2019b).

There was a significant focus on who will benefit from this range of projects and who these stakeholders are. There was repeated emphasis on “local, regional, national and international markets” being benefactors (Aiken, 2018). This interconnectivity in development around a project vision also impacts other areas’ approach, *“other local authorities are looking enviously at what Aberdeen is doing and seeing whether they can try and emulate some of these things, I’m sure there will be a legacy but not just in Aberdeen”* (Robertson Group, 2019). Here we see that the legacy is not restricted to a regional area or location, but that legacy will impact further afield as well.

The drivers and motivators for interconnectivity will be explored further in the semi-structured interviews, but the document analysis also suggests that a consistent motivator is competition from other areas. This is particularly true of the City of Dundee (66 miles away), which has also developed a regional masterplan to change its identity to a cultural hub (Alexander, 2020). While the planned Aberdeen/shire transformation goals and identity are different from Dundee, the success of Dundee’s efforts has raised expectations amongst Aberdeen-based stakeholders (Hebditch, 2019e). We see this in the design of TECA, that these other Scottish regions *“had been in the limelight when it came to culture and entertainment. If Aberdeen was going to give them a run for their money, we knew we had to create something truly unforgettable”* (Henry Boot Developments, 2021). That the Dundee efforts in *“regeneration development was the catalyst for a wave of civic pride among Dundonians and the good news for the Aberdeen City region is that we too are investing heavily in delivering the infrastructure, regeneration and cultural activity to create a truly 21st century environment, right here, right now”* (Beattie, 2018b). The comparison to Dundee (and, to a lesser extent, Glasgow and Edinburgh) was evident in most projects through their communication. Hence, project stakeholders are aware of their own project developments’ regional impact compared to other national location contexts.

5.5.2 Integration and Interconnectivity from Project Interviews

The interviews investigated the theme of integration and the impact of multiple regional projects happening during the same period. All projects recognised that this brought additional benefits to their projects, and some explicitly linked this factor as part of their project legacy.

“It just is so interlinked in this (project) infrastructure which builds to the legacy”
(Aberdeenshire Council Project Decision Maker)

“You see that bigger picture, that branches of the legacy it will bring, how it joins with other projects in Aberdeen’s transformation plans” (Union Terrace Gardens Project Decision Maker)

Interview participants were able to discuss integration and how this links to their project in terms of a wider legacy, it was described using words such as being of *“critical importance to us”* (Airport Project), that *“(integration is the) big picture and it’s dynamic”* (Grandhome Project). The Harbour project went further, stating that these collective project efforts were:

“not only vital for the harbour board, but vital for every business in a 200-mile radius... This will be a massive and impactful benefit to this region, these future possibilities are only possible or even conceivable because of what the city is doing now by expanding its infrastructure”. (Aberdeen Harbour Project Decision Maker)

The Queens Square project also agreed that the overall aim of developing a new regional identity and legacy was only possible with these projects happening at the same time.

“We have benefited from other projects; would this have happened at another time? When you take into the account the cost involved and where it is located, probably not, but we have a council really looking to regenerate and build the city, and to do that is taking risks, is getting bold and splashing out significantly.” (Queens Square Project Decision Maker)

The analysis shows that for each project, just like the document analysis, there was an awareness of other projects happening, recognising this as a benefit and mentioning it in their own approach. Appendix 12 highlights some example narratives of this for each project.

The qualitative returns from the interviews highlight extensive mentions of collaborative practice and cross-pollination of project benefits. The Queens Square project notes:

“Anything that is good for these other projects is good for us. The more infrastructure and development, the more benefits can be unlocked, the more people start to think that things can be built, we have had success in transforming this area, let’s be ambitious and do more in another area”. (Queens Square Project Decision Maker)

Aberdeen Football club found that they were able to have additional options for development after other projects were approved:

“The likes of AWPR was a blessing in disguise for us when we were considering being out of Kingsford...I think there are a number of things that are going on in the region that, yes, I think complement the offering that we could ultimately come up with, I think they need to work in tandem with one another, but you know, collectively at the end of the day what we want is for the Northeast to be a powerhouse”.

They also emphasised the benefits of this being part of a planned and controlled vision for the future:

“As long as whatever is developed is done in a way in which everybody knows what’s going on and it’s fairly open and transparent, and they don’t create unnecessary competition, I guess, between venues...I think provided they are complementary, and they meet the cities of the future agenda around redevelopment, reinvention,

renewables et cetera et cetera, then you know I'm very much in support of what the council and others privately are trying to do”.

Other descriptions during the interviews talked about projects being ‘connected’ or ‘complementary’. This range of projects was a collaborative effort and not one based on competition, working within a bigger-picture identity of a planned regional vision and structure. This was at odds with the more capitalist approach to traditional project development, to build projects for financial opportunities, often at the expense of existing venues (Turner, 2016). The fact that there were so many collaborative efforts and benefits reinforces that legacy projects are not exclusively individually focused like traditional projects but tied to a collective effort or vision. This allows for regional transformation and drives further change. The AWPR project noted that this approach was:

“sending out a positive signal...you know that whole thing there was that aura of let's invest in Aberdeen, Aberdeen's going places”. (AWPR Project Decision Maker)

This links to another theme explored within the analysis, the range and appeal of project benefits and interconnectivity with other locations. Interconnectivity was a coded theme that was found extensively within the document analysis. The interviews revealed that project stakeholders were aware of how they anticipated their project to be perceived and the reach of their project's impact. Appendix 13 highlights some of their comments on location factors and project reach.

The interview data in Appendix 13 revealed that project benefits were not exclusively for stakeholders based in Aberdeen City and Aberdeenshire. Most projects could articulate impact beyond this region; one of the repeated themes from the interviews was the concept of an extended catchment area for benefits. The Airport project noted that *“ourselves and our partners view the airport as having a new catchment area”*, and they were also able to identify ‘how’ this was:

“The AWPR connects us to up to 400,000 potential customers in Tayside... (and also) Shetland and Orkney...our improvements at Aberdeen International will benefit isles patients destined for ARI or the city's leisure facilities” (Airport Project Decision Maker).

Likewise, it was claimed that TECA opened up an *“extended catchment area”* for entertainment (TECA Project Decision Maker), and similarly, Prime Four for retail:

“we have seen consistently that our clients are coming from further afield, even more so than we originally anticipated, so we have an extensive catchment area that supports both local and regional stakeholders” (Prime Four Project Decision Maker)

A catchment area beyond the project location was a theme expressed as being a legacy:

“I think one of the key legacies of the art gallery is that it has served the whole of the North East for generations, it is not a city resource, it is in the city, but it is beloved by the whole region” (Art Gallery Project Decision Maker)

The benefits of these projects are in their increased long-term regional accessibility:

“It's a better-connected region, more resilient to future challenges because we've got better connections in and around the area and potentially to (and out of) the area as

well if you think about the airport, and you know the harbour, and things that have been access points” (AWPR Project Decision Maker)

This increased access and interconnectivity was repeatedly expressed as bringing not only regional or national improvement, but also global impact. The Harbour project emphasised the impact of increased infrastructure connections, that they will help *“the city be better connected to the outside world... bringing in international visitors and international performers to the city”*. Additionally, other projects mentioned that the ‘exceptional quality’ of their project output would result in *“not just local but national and international appeal”* (Art Gallery Project Decision Maker). TECA stated, *“we have really delivered a world-class venue, it was a highly ambitious project vision, an emphasis on quality, a venue that will attract people internationally to use”* (TECA Project Decision Maker). Some projects were able to really articulate how they would benefit on an international scale.

“The Bio-Hub for Innovation development has an influence that is regional for sure but will also have significant national and international impact... We are not solving regional problems with our work but investigating solutions for all manner (of) international health and environmental afflictions, so those benefits will most certainly be felt further afield in every continent on our planet”. (Bio-Hub Project Decision Maker)

This global potential was also a theme for Hywind, who thought the legacy of their Aberdeenshire offshore coast operations would be to learn new solutions for global issues for the future.

In our company we like to remind everyone for creating a sustainable green future that 2.4 billion people live a hundred kilometres from the coast. The potential of these benefits is huge for the whole global population and may allow us freedom from dependency on foreign energy imports from difficult regions”. (Hywind Project Decision Maker)

One of the themes identified from the document analysis was place and competition; that this region lacked resources compared to other areas. This theme was explored in the interviews. The AWPR stakeholder talked of *“competing cities”* for resource quality, and the Music Hall identified itself as *“a project for the region...(where Aberdeen) didn’t have the facilities...and they were missing out”*. (Music Hall Project Decision Maker). Prime Four also expressed this, that their project addressed shortfalls in regional resources.

“This is a region that is some way behind other Scottish areas for out-of-town commercial provision such as Glasgow, Edinburgh, and Dundee. Prime Four changes things and gives consumers new options, quality options, services that have long been sought after”. (Prime Four Project Decision Maker)

And while numerous interviewees thought that *“competition is maybe not the right term”* (Art Gallery Project Decision Maker), they consistently compared themselves to other regional areas’ offerings. The Art Gallery compares its refurbished gallery to the newly built V&A Museum in Dundee, the Music Hall to Dundee’s Caird Hall and Perth’s Concert Hall. The Queens Square project summed up the context of Aberdeen in terms of neighbouring regions rather well:

“For too long in our city, we have not built upon the vast advantages that oil and gas has brought...in that industry people work hard and get paid well, but if you want to

play hard, then you need to go off to Glasgow, Edinburgh or a weekend in London, same if you want to go shopping. Aberdeen just hasn't capitalised on having this money-making machine on our doorstep with its parochial attitudes to development, and now in the last days of oil and gas, it's got its act together" (Queens Square Project Decision Maker)

This highlights that the region has been seeking to rectify a previous lack of infrastructure development through this range of projects. This is done with the ambition to make it more connected, more comparable in anticipated quality to other regions and attract a wider group of stakeholders to engage here. The projects have sought benefits and a future legacy which will be for a more expansive group than it currently serves.

5.6 Social Partnerships, Stakeholder Collaboration, Community Engagement, Inclusion and Accessibility

This section highlights various social aspects for understanding legacy development within this regional context. It introduces repeated themes from the analysis process, including social partnerships and community engagement methods, stakeholder management and collaborative working, and the development of project scope to include new or enhanced accessibility and inclusion for all groups.

5.6.1 Social Partnerships, Stakeholder Collaboration, Community Engagement, Inclusion and Accessibility from Document Analysis

A key theme in the literature for legacy development is collaboration and working in partnership with stakeholders to understand and achieve what a desired legacy will be (Gratton & Preuss, 2008). Beghetto's (2017) definition of legacy is to *"collaborate with external partners and produce solutions that live beyond the life of the project"* (p.188). This is a significant priority for the projects identified in this Aberdeen regional context. The document analysis highlights stakeholder management as the most recorded code (442 times) and features extensively throughout all projects (Figure 36).

	AWPR	Harbour	Airport	TECA	AFC Stadium	Inv Health	Art Gallery	U T Gardens	Music Hall	Prime 4	Bio-Hub	Hywind	Grandhome	Queens Square	TOTAL
Social Partnerships	35	10	5	50	11	4	3	6	6	9	1	5	6	1	152
Stakeholder Management	38	32	17	63	28	67	21	30	6	16	46	28	31	19	442

Figure 36: Stakeholder Management and Social Partnership Codes (Source: Author).

The narrative of the project communications was that these efforts were not performed in isolation but by multiple stakeholders contributing to a wider vision. The impact of this for understanding legacy better is that legacy will have numerous contributors who are engaged together, to understand needs better and deliver them appropriately through involvement with the community that it will benefit (Reis et al., 2017). This has implications for the discipline of project management. While the involvement and consideration of stakeholders have always been an essential factor in projects, for example, using processes such as stakeholder analysis (Aaltonen & Kujala, 2010). The level and scale of social engagement for these projects claiming a legacy goes far beyond traditional project management. Every project reviewed in this research has numerous social partnerships with the Aberdeen/shire community. These partnerships are outside the scope of core project objectives; they

provide local community benefits rather than delivering iron triangle (cost, quality, time) project management fundamentals (Gil et al., 2017). These partnerships provide social rather than functional benefits to projects; working with these community groups will provide awareness, education, and direct involvement in the project, making them part of the legacy and a resource for the future (Marcelino-Sádaba et al., 2015). The engagement with these stakeholders provides a human legacy for the projects, where they will have a tacit understanding of legacy objectives (Spalding, 2022). The range of social partnerships in this Aberdeen/shire regional context was extensive and diverse, covering a wide base of different stakeholders. Table 26 below displays the list of collaborative social efforts, the methods adopted and the projects which applied them.

Table 26: Range of Social Partnerships between Projects and Community

Social Engagement Method	Projects
Creation of apprenticeships and work placements (70+ amongst selected projects)	Inverurie Health Hub, AWPR, Music Hall, TECA, Harbour (5).
Community / townhall meetings	Inverurie Health Hub, Aberdeen Football Club, Prime 4, Queens Square, UTG, Grandhome, AWPR, Harbour, Airport, TECA, Art Gallery, Music Hall, Bio-Hub, Hywind (14).
Questionnaire / online engagement resources	Inverurie Health Hub, Aberdeen Football Club, Prime 4, Queens Square, UTG, Grandhome, AWPR, Harbour, Airport, TECA, Art Gallery, Music Hall, Bio-Hub, Hywind (14).
Donations (financial, food, sports equipment, transport equipment)	AWPR, Aberdeen Football Club, Harbour, TECA, Art Gallery, Prime 4, Hywind, Grandhome, Airport (9).
Hold festivals and community events (includes GoNorthEast festival, cycle races, country walks, long-distance road running competitions, workshops, sporting events).	AWPR, Hywind, Prime 4, Queens, UTG, AFC, Harbour, Inverurie Health Hub, Grandhome, TECA (10).
Social history / heritage documentation (photography, archaeological archive, regional history, heritage museum, exhibitions)	AWPR, Aberdeen Football Club, Hywind, UTG, Grandhome, Harbour, Airport, TECA, Art Gallery, Music Hall, Queens Square (11).
Educational engagement and working with secondary schools (film development challenge, CV workshops, interview skills)	AWPR, Harbour, Hywind, Grandhome, TECA, Prime 4, Aberdeen Football Club, Music Hall, Art Gallery (9).
Charity fundraising (includes efforts for over 160 local organisations such as CLAN Cancer Support, the Red Cross, Camphill School, Aberdeen Cyrenians, Cornerstone, the Archie Foundation, Cancer Research UK, Maryculter Woodland Trust, Maggie’s Aberdeen and the Royal National Lifeboat Institution, AFC Community Trust, Prince’s Trust groups, Northsounds Cash for Kids)	AWPR, Aberdeen Football Club, Hywind, Harbour, TECA, Inverurie Health Hub, Art Gallery, Music Hall, Prime 4, Grandhome (10).
Educational training programmes	AWPR, Hywind, TECA, Bio-Hub, Harbour, Art Gallery (6).
Training, social and recreational resources to community	Aberdeen Football Club, Hywind, Grandhome, AWPR, Harbour, TECA, Airport (7).
Development of a community trust	Aberdeen Football Club, Prime 4, Music Hall (3).

Building community resources out with core project (parks, communal spaces etc)	Harbour, Aberdeen Football Club, AWPR, Grandhome, Prime 4, Queens, Airport (7).
Sponsorship gifting scheme (Project Stepping In)	Music Hall, AWPR, Art Gallery, Hywind (4).
Art installations	Prime 4, UTG, Art Gallery, AWPR, Harbour, Aberdeen Football Club, Music Hall, Grandhome, Queens Square (9).

Source: Author

Apart from community surveys and meetings, all of these approaches would be considered ‘going beyond’ traditional project expectations and engaging with the local community at a more integrated level. The Aberdeen Harbour project gave its reasoning for doing so:

“We hope to become involved with the chosen organisations and build an even deeper supportive relationship. This is an important element of the Harbour’s purpose to create prosperity for generations to come.” (Aberdeen Harbour Board, 2019)

This links well with the legacy literature which highlights the need for long-term social relationships between projects and their end users (Griffiths & Armour, 2013). Some of the methods engaged in Aberdeen are reminiscent of previous legacy projects. The London Olympic Park Development, Crossrail, and HS2 (which all had legacy as their core objective) prioritised creating project apprenticeships so that part of the human legacy would be young people having increased future career opportunities as a by-product of their projects (Cornet et al., 2018; Stevens, 2011). These are costly, so they are not often applied in other contexts. However, for the Aberdeen/shire projects reviewed, we see over 70 new apprenticeships created with the specification that they are for local residents and often specifically for disadvantaged or under-represented groups (Robertson Group, 2019). This provides a people commitment to the region’s future and a meaningful long-term contribution to limit suggestions of any ‘legacy washing’ for these projects. These efforts were also enhanced by engagements such as hosting festivals, training events, and educational programmes to create social integration and a ‘strong culture of collaboration’ (Scottish Construction, 2020a). This doesn’t happen just through external gestures like financial donations, but to achieve increased stakeholder engagement, there must be participatory involvement. Table 26 highlights the very extensive scale of just that, where project contributors have become part of the Aberdeen regional community. This process stakeholders believe will “*leave a lasting legacy on this community*” (Scottish Construction Now, 2018). This is highlighted by project leaders within the sample selected, who have placed great significance on community involvement. Taking the example of a few statements from the AWPR project, the corporate social responsibility manager, Yvonne Gilfillan stated:

“Our staff have become part of the Aberdeen community and it is no surprise that they are delighted to help these charities and groups when they need support” (Hebditch, 2016b).

This emphasises that this effort makes them ‘part of the Aberdeen community’ rather than an external contractor, so it deepens the relationship and interest in local needs. Kirstie Golightly, AWPR community liaison officer, also expressed the impact of project contributors being involved with the community efforts saying:

“It is hugely important to us to be involved... We endeavour to leave a lasting legacy once the AWPR project is finished and our staff are only too delighted to help” (McCann, 2017).

In this instance, again, a sought legacy is articulated, likewise does Malcolm Findlay, General Manager for Aberdeen Roads Limited, who comments about the value of working with local community groups:

“Construction isn’t just about building roads or structures, we see the benefits of leaving a lasting legacy beyond the immediate construction works” (Transport Scotland, 2017).

This level of community engagement led to some developments again uncommon in traditional project management, the preservation, documentation, and the development of regional heritage. Eleven of the fourteen projects had made efforts to work with local bodies to better understand, promote and develop local heritage factors. They are promoting efforts through book publications, documenting the regional history and, creating archaeological archives, providing artefacts and contributions to heritage museums and exhibitions. This suggests increased community engagement and more in-depth awareness of local needs, culture and traditions. These efforts again provide some aspects of understanding what a legacy project consists of. Most projects focus on being complete within time and budget constraints, but in this regional context, we see project stakeholders capturing and understanding the social heritage of the past (and present) around where they build, and use this as a basis for future development and planning legacy. This allows for a more knowledgeable and appropriate future legacy, keeping with established traditions and reducing the white elephant possibilities often highlighted in legacy literature (Mussi et al., 2020). This deeper engagement with local stakeholders for better understanding regional needs also provides some interesting insight not often highlighted in the legacy literature, such as the inclusion of previously excluded groups in the project design. Some of the justifications and drivers for project development were specified as needing to provide generational benefits for groups previously excluded from these resources in the past (see Figure 37 for applicable projects).

<p>Project Design Impacted Significantly to Include Previously Excluded Groups.</p>	<p>Inverurie Health Hub, Aberdeen Football Club, Queens Square, UTG, Grandhome, Airport, TECA, Art Gallery, Music Hall, (9).</p>
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Figure 37: Emphasis for Inclusion and Accessibility for Previously Excluded Groups (Source: Author)

This is a unique local aspect of legacy, it is not driven by an event trigger (as per the literature) but to facilitate greater inclusion and accessibility. It considers who the desired legacy is for beyond ‘the general public’. We see many of the projects commissioned providing needed facilities (often disabled access facilities) that previously weren’t available or suitable. Project decision-makers often expressed in their communication that to create future generational benefits, the final resource would have to provide the same experience for all users (Styles, 2019). This again highlights a project more specifically tailored to real needs and more likely to limit a ‘negative’ project future by adopting expansive, diverse stakeholder collaboration and consideration.

5.6.2 Social Partnerships, Stakeholder Collaboration, Community Engagement, Inclusion and Accessibility from Document Analysis from Project Interviews

The document analysis introduced a range of efforts for community engagement and partnerships as part of a social legacy (Table 26). The interviews sought to explore further attitudes towards community engagement and how this was applied through these individual projects. Much like they communicated in public, each project expressed an opinion that community participation and integration were an important part of their project approach. Numerous interviewees considered their role and position within the North East community. Appendix 14 highlights some qualitative expressions for community engagement for each of the 14 projects and both council representatives.

The interview narrative outlined in Appendix 14 highlights that consideration was given for these projects impacting the community for the long term. In turn, they were identified as being for the community and achieved in partnership with it, this being the key driver for engagement efforts. These projects had considered their community position and clearly understood their role within it. Local governance requirements mandated this; Aberdeen City Council said that for all regional projects, participant organisations had an obligation to *“giving something back to the city as well in the process, knowing the responsibility of being a regional employer”* (Aberdeen City Council Project Decision Maker). The majority of the projects of this research firmly embraced this responsibility. The Music Hall stated about their efforts that *“the project was very much seen as a project for the community”*. Prime Four believes their project output *“gives a community heart... (and) feel we are part of the same team”*. The Airport stakeholders felt confident of claiming, *“We are part of this community”*, the Harbour going as far as to claim that they were part of the region’s heritage and that the North East community had been built up over time around its operations, helping shape its identity. This had an impact on how they approached their project, noting:

“One of the things that came out of those public conversations was just how strong and vital our place in the community is, it strengthened our resolve to ensure that we do this project the right way”. (Harbour Project Decision Maker)

Aberdeen Football Club were another long-term fixture in the community landscape, and because of that, emphasised that working within it required a partnership which transcends its day-to-day operations and impacts its project legacy:

“I think we're one of those organisations which...are central to the community in so many ways, it's not just for us, it's not just about the playing of football on a Saturday at 3 p.m., It's everything else that the club does in terms of the work (for) the community... we are an important institution, I'd like to think in many ways a unifying institution... (with these efforts) you create a real heritage, history, and legacy” (Aberdeen Football Club Project Decision Maker)

TECA also linked legacy with community engagement and how this changes their overall organisational approach to managing projects:

“We were a responsible partner to this community, we weren't just in this for economic reasons, it was just as much to do with people as it was the final building, that is our philosophy at HBD, our legacy you may say, but at the same time it really impacts the legacy of anything we develop, as we not only think about what we build and how this will impact people, but also think about just as much about how we do

it, how we can become a positive part of the community that we work within". (TECA Project Decision Maker)

Consideration was also given to the impact of projects on the community. The Art Gallery notes a transformational effect that the North East community will have because of these engagement efforts:

"feel a greater attachment, greater engagement with it...I think legacy as we have discussed today is inherent in our ambitions for the art gallery refurbishment. This building will be transformational in its impact to the community, it will transform its audience, with a cultural legacy part of those objectives". (Art Gallery Project Decision Maker)

This approach to incorporate and facilitate community benefits also extended to a repeated theme from the interviews, that of increased accessibility and inclusion through the project design. Previously in this research, there has been discussion around projects benefiting each other, including increased accessibility. Still, there were also benefits directly sought for community users and the provision "*that everyone has the same...experience*" (Music Hall Project Decision Maker). Some of the regeneration projects in particular, emphasised greater inclusion and increased accessibility as a project driver. The Art Gallery noting its original building:

"was built specifically for a clientele that didn't exist anymore...one of our ambitions for the project was to make the gallery easy to navigate and accessible for all, where previously people may have felt that the gallery had been closed off to them, but the refurbishment brings the opportunity for new visitors to be able to see this world-class collection". (Art Gallery Project Decision Maker)

The Music Hall and Union Terrace Gardens projects had the same challenges around their 19th-century developments, reinventing them in a way that made previously excluded groups welcome and able to use them without limitation. Their project approach incorporated providing needed wheelchair and ambulance access and a design to benefit all users:

"For the first time, you are now providing wheelchair access, or if you have mobility limitations, you can now get to the park easily for the first time in over a hundred years, suddenly the park, which was so beloved by Aberdeen, is accessible for all" (Union Terrace Gardens Project Decision Maker)

The Music Hall also achieved the same, improving access for those with mobility issues. It also sought increased inclusion for all classes of citizens in their design of the refurbished building. It designed the entrance to encourage new users of all backgrounds to enter and highlight that this was a resource for all. The rationale behind this was articulated:

"It's very much about breaking down psychological barriers as much as physical barriers as well, and I think that was an important thing, it was the idea of it being physically inclusive and also socially inclusive" (Music Hall Project Decision Maker)

This effort for increased inclusion and accessibility was explicitly identified as part of the wider regional legacy of these projects. That they will provide the following:

“a legacy of accessibility to enable entry and easy enjoyment of these facilities, so when taking this into account, it is indeed done with legacy in mind”. (Art Gallery Project Decision Maker)

The approach for achieving increased community engagement and inclusion is based around the project management principle of stakeholder management. This is when project professionals work collectively with impacted stakeholders using project techniques to understand and respond to their needs (Jepsen & Eskerod, 2009). This was identified as being the most populous code from the document analysis. This theme has already been partially mentioned in the findings section with previous discussions around collaborative working and achieving collective visions, which are aspects of stakeholder management. The interviews sought to provide greater insight into the rationale and importance surrounding stakeholder management in relation to developing legacy. Appendix 15 highlights some specific qualitative returns on the subject.

The interview responses highlighted that there was great importance attached to stakeholder management. The Bio-Hub project declared that *“collaboration is the project, without it, it would never have been viable”*. Most of the projects emphasised teamwork and collaborative effort and how this is an essential factor for fully achieving project goals.

“If we are going to meet our goals, it can only be achieved in a collaborative effort with our stakeholders, that’s always the key to project success. The airport can have the vision, but it is working together, in harmony, that is going to get us results”. (Airport Project Decision Maker)

Projects, by nature, will always be challenging; the selection of stakeholders and the stakeholder management approach was seen to foster greater unity and commitment to overcoming issues and fulfilling project objectives. The Harbour project stated in relation to this:

“we had to have an A+ approach for stakeholder management, we needed to really know who we were working with, what their capability or attitude was as everyone was impacted by this, there was a knock-on effect for everyone, so we had to keep communications open and work together to find out the answer to some of our major challenges, and only through this process were we able to figure out solutions to overcome these challenges together”. (Harbour Project Decision Maker).

Similarly, the Art Gallery had the same strategic stakeholder management approach for being resilient to challenges:

“You need a team to achieve your goals, we had an exceptional team, it was challenging at times, running into problems and delays, but we were all on the same page at every stage, there could have been a temptation to get annoyed at issues that arose, pointed fingers, or said just patch it up best you can, but we all knew what we wanted, we knew why we were doing it, we knew what we expected the results to be and we worked hard together to achieve it. We made it work, but it was always a team effort”. (Art Gallery Project Decision Maker)

While most projects articulated stakeholder management as a core significance, project stakeholders also linked this theme directly to legacy. The Harbour project states:

“That’s why we work in harmony with the local community and our regional stakeholders so much because that legacy is much more than just our own achievements at the harbour, it is a deep and supportive relationship that blossoms over generations”. (Harbour Project Decision Maker)

Bio-Hub also articulated this shared legacy amongst stakeholders in their interview:

“I take this back to the planning stage and...thoughts around legacy, to get all these stakeholders on side and involved, this requires a definitive business case that will provide clear opportunities for growth, that we are collaborative partners under the same banner who believe what Bio-Hub will bring. This is not just a wanted legacy for BioAberdeen Limited but all the stakeholders” (Bio-Hub Project Decision Maker)

The interview narrative around legacy development in this regional infrastructure context included stakeholder management principles as part of that legacy. The Queens Square Project sums up this ambition well, stating that project legacy is part of a collective endeavour with stakeholders all working towards that desired vision.

“If we are thinking big, wanting to achieve a legacy for the benefit of many, it’s going to take significant types of projects to make that happen. When you have projects of a certain scale, then you realise if this is going to be able to happen, then your project team, your project stakeholders are going to be quite a varied collection. It is not enough for us to sit here and say, we want to accomplish this, we want to accomplish that, and then pass on a significant part of this work to other contractors to fulfil for how they see fit, we all have to be committed to the project ideology and work on that collectively together”. (Queens Street Project Decision Maker)

5.7 Projects Environmental Management and Future Sustainability

Sustainability is a theme that has seen needed development within project management (Poon & Silvius, 2019). It is a topic that has been much discussed within project governance bodies as it is required and desired in society. It also often conflicts with the short-term, fast-paced objectives of traditional project methods (Kerzner, 2017). The legacy literature highlights the overlapping principles and how sustainability factors may contribute to achieving legacy (Frey et al., 2008; Minnaert, 2012; Mol, 2010). Silva (2015) notes this link as ‘essential’, Ritchie (2000) articulates that in a legacy context, sustainability should *“reflect(s) the values of the local population”* and should demonstrate consideration between the project and its environment. Another theme closely linked with sustainability is environmental management, with environmental factors being one of the core pillars of sustainability (Elkington, 1997). The document analysis revealed that sustainability and environmental management were repeated codes representing the narrative of these projects reviewed.

5.7.1 Projects Environmental Management and Future Sustainability from Document Analysis

The theme of sustainability was identified and explored within the document analysis. The narrative communicated by project stakeholders resulted in developed codes highlighting themes in sustainability (see Figure 38).

	AWPR	Harbour	Airport	TECA	AFC Stadium	Inv Health	Art Gallery	U T Gardens	Music Hall	Prime 4	Bio-Hub	Hywind	Grandhome	Queens Square	TOTAL
PROJECT MANAGEMENT METHODS															
Energy Efficiency	0	2	0	53	0	0	1	0	0	0	0	13	0	0	69
Environmental Management	31	9	9	28	2	2	2	9	0	8	0	12	18	2	132
Global Initiatives	1	2	0	8	0	0	0	0	0	0	0	13	0	0	24
Green Supply Chain	2	2	0	5	1	1	2	3	1	0	2	3	0	0	22
Sustainability Initiatives	6	15	3	62	1	1	6	1	0	3	4	34	9	0	145

Figure 38: Sustainability Project Management Factors Coded (Source: Author)

We can see from the data that sustainability factors were communicated extensively (392 times), although the type of project varied the volume and nature of factors emphasised. It shows new build (rather than regeneration) projects emphasising more for how sustainability is to be implemented and delivered. The results highlight that each project has considered sustainability in their project development and implemented some measures to include this in its project management. In the literature review (section 2.3.4), there were efforts to compare and contrast the factors around legacy and sustainability and the specific initiatives that facilitated development in this area. The sustainability initiatives that were identified as being most apparent were highlighted by Cotgrave & Riley (2013). Table 27 breaks down their sustainability initiatives to show within the document analysis that these factors were extensively applied and communicated within the projects of this sample.

Table 27: Cotgrave & Riley Sustainability Initiatives for Projects Adopted

Cotgrave & Riley Sustainability Initiatives for Projects	Adoption Efforts for Project Management in Project Sample
<ul style="list-style-type: none"> Procuring from sustainable sources 	Inverurie Health Hub, Aberdeen Football Club, Prime 4, Queens Square, UTG, Grandhome, AWPR, Harbour, TECA, Art Gallery, Music Hall, Bio-Hub, Hywind (13).
<ul style="list-style-type: none"> Complying with statutory standards 	Inverurie Health Hub, Aberdeen Football Club, Prime 4, Queens Square, UTG, Grandhome, AWPR, Harbour, Airport, TECA, Art Gallery, Music Hall, Bio-Hub, Hywind (14).
<ul style="list-style-type: none"> Raising sustainability awareness 	Inverurie Health Hub, Aberdeen Football Club, Prime 4, Queens Square, UTG, Grandhome, AWPR, Harbour, TECA, Art Gallery, Music Hall, Hywind (12).
<ul style="list-style-type: none"> Avoiding waste 	Inverurie Health Hub, Aberdeen Football Club, Prime 4, Queens Square, UTG, Grandhome, AWPR, Harbour, Airport, TECA, Art Gallery, Music Hall, Bio-Hub, Hywind (14).
<ul style="list-style-type: none"> Making best use of talent and resources 	Aberdeen Football Club, Prime 4, UTG, Grandhome, AWPR, Harbour, TECA, Art Gallery, Music Hall, Hywind (10).
<ul style="list-style-type: none"> Introducing recycling schemes 	Inverurie Health Hub, Aberdeen Football Club, Prime 4, UTG, Grandhome, AWPR, Harbour, TECA, Art Gallery, Music Hall, Bio-Hub (11).
<ul style="list-style-type: none"> Avoiding non-renewable resources 	Prime 4, UTG, Grandhome, AWPR, Harbour, TECA, Art Gallery, Hywind (8).

<ul style="list-style-type: none"> Reducing carbon dioxide emissions 	Inverurie Health Hub, Aberdeen Football Club, Prime 4, Queens Square, UTG, Grandhome, AWPR, Harbour, Airport, TECA, Art Gallery, Music Hall, Bio-Hub, Hywind (14).
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Source: Adapted from Cotgrave & Riley, 2013

This again highlights the scale and breadth of project sustainability adoption within the selected projects indicating a priority in approach and management. The project leaders for TECA articulated this and linked it to legacy, noting:

“It’s vital that creativity and sustainability are key drivers in the project so that the end product will leave a lasting legacy for the city, its residents and the hundreds of thousands of visitors who frequent it each year” (McManus, 2020).

Grandhome also reiterated this link that their project:

“will contribute greatly to the long-term sustainability and success of Aberdeen” (Grandhome Trust, 2019b).

Other projects noted sustainability as a principle of their project, but there was also communication for how this was to be achieved. Going through the document analysis, various sustainability initiatives were applied in this sample. These ranged significantly from project to project showing diverse approaches for incorporating sustainability. These sustainability initiatives have been collated and summarised in Table 28.

Table 28: Project Sustainability Initiatives Communicated in Project Approach

Project Sustainability Initiatives Communicated in Press for Project Approach	Project
<ul style="list-style-type: none"> Project incorporated sustainability modelling, reporting, and costing for making the project output fit for future volume and need. 	Inverurie Health Hub
<ul style="list-style-type: none"> Development of a Hydrogen fuel cell transport programme within project site. This project is the first in the UK to deliver low-carbon trigeneration and renewably produced hydrogen at the point of demand Project output to export and recycle excess energy to the national grid. Low carbon emission targets to be achieved through biofuel food waste recycling to heat and cool project site. Adopted and achieved excellent rating in BREEAM accreditation the highest environmental sustainability standard possible. Financial modelling and analysis to inform energy strategy for sustainability efforts. 	TECA
<ul style="list-style-type: none"> Carbon emission reduction targets from project outputs for the whole Aberdeen/shire region. Air quality targets for the project to improve air quality for around 75,000 homes Integration, expansion and improved public transport services, for more effective load usage and closer connections between population areas to reduce transport volume, congestion and commuting time. Developed into the project is car usage reduction initiatives such as creating and linking to park and choose sites. Design improves environmental resources for increased opportunities for pedestrians and cyclists to travel within the region. 	AWPR
<ul style="list-style-type: none"> Innovative strategic response plan to promote awareness for how project development is done to highlight environmental consciousness. 	Art Gallery

<ul style="list-style-type: none"> Goals for limited carbon footprint with a low energy approach adopted. Natural ventilation with pre-tempering and local humidification used rather than conventional air conditioning, usage of low-energy LED's and energy loss mitigators. 	
<ul style="list-style-type: none"> Development of a conversion kit to reduce energy need and consumption and future required maintenance on project site. Sustainable Development and the Environment Master Plan which outlines a series of commitments on the environment, reducing energy use and research to establish the airport's carbon footprint. 	Aberdeen Airport
<ul style="list-style-type: none"> The project output provides the potential for the development alternative fuels, such as hydrogen, and adoption of sustainable green methods for quayside electrification. Features applied to decarbonise into the future linking with regional energy transition and the provision of new fuels and services in compliance with government net zero targets. Project approach compliant for site areas designated as a Site of Special Scientific Interest. Environmental Considerations have been a major influence on the planning, design, and construction of the development to mitigate risk for marine life. Approximately 2.4 million cubic metres of rock has been removed from the seabed and this material will all be recycled and reused elsewhere within the project site. 	Aberdeen Harbour
<ul style="list-style-type: none"> Prime Four achieved BREEAM accreditation, and OPEN supported this through the design and delivery of a sustainable, bio-diverse landscape setting. The project team initiated sustainable travel policy and the integration with park and ride bus services, a car sharing platform and bike maintenance programmes. Consideration was given for resource materials that go beyond standard specification requirements and applied long term solutions with emphasis for corrosion resistance, strength, and longevity. 	Prime Four
<ul style="list-style-type: none"> Long term commitment to local communities and providing local learning opportunities to enhance community benefits. 	Bio Hub
<ul style="list-style-type: none"> Development of regeneration strategy with social, economic, and environmental measures to provide long term benefits to the local community. 	AFC Stadium
<ul style="list-style-type: none"> Investment into this new type of renewable offshore wind technology and expertise to enable the transition towards the use of cleaner and more sustainable forms of energy. 	Hywind
<ul style="list-style-type: none"> Accessibility features included for access for those with mobility limitations including a new accessible walkway route, lift access and new entrance building. Policy of reuse and recycling of previous site materials including all original granite. 	Union Terrace Gardens
<ul style="list-style-type: none"> Integration with urban environment to facilitate the removal of cars in city thoroughfare, restricting traffic to bicycles, buses, and taxis only, to reduce negative environmental impact and move towards net zero ambitions. 	Queens Square / Street
<ul style="list-style-type: none"> Future community needs for sustainable living included in the project planning with integration with Scottish Government's Designing Streets' policy and promotion of progressive environmentally friendly policies for living. Creation of sustainable urban drainage system (SUDS) basins. Project is adopted by the Scottish Government's Scottish Sustainable Communities Initiative. A model for sustainable urban extensions incorporating walkable neighbourhoods, accessible community resources which optimise long term social needs and reduce reliance on cars to encourage a sustainable lifestyle. 	Grandhome

Source: Author

These factors provide good evidence against ‘greenwashing’ being adopted within these projects. For each project, they articulate sustainability as a priority and indicate specific initiatives for ‘how’ sustainability ambitions will be met. The academic literature highlighted a lack of investigation into project sustainability and legacy (Silva, 2015). This study responds to this gap, and the findings of the document analysis highlight that every project made claims for creating a legacy. In addition, each project also claimed that sustainability was a project priority with adopted initiatives to demonstrate these sustainability credentials. This backs up in practice what had been suggested in theory that project legacy and sustainability are closely aligned with considerations given for long-term benefits and how they will be achieved (Gold & Gold, 2014). Both sustainability and legacy in this context have been included and developed within the parameters of a specific ‘vision’; this has impacted the project lifecycle with sustainability factors ensuring that project efforts will be active long after the point in which is usually thought of as the traditional project completion point (Preuss, 2015). The theoretical framework adopted in this research approach (Figure 14) explored whether there was an extended project lifecycle involved for these projects, and this was confirmed in the sustainability initiatives (in addition to the monitoring efforts and long-term transformational benefits discussed earlier).

Another theme identified within the document analysis was that of environmental management. This theme has significant consideration within infrastructure and construction projects because of the scale of potential impact. Within the document analysis, claims for mitigating negative environmental impact were significant (see Figure 39).

	AWPR	Harbour	Airport	TECA	AFC Stadium	Inv Health	Art Gallery	U T Gardens	Music Hall	Prime 4	Bio-Hub	Hywind	Grandhome	Queens Square	TOTAL
Environmental Management	31	9	9	28	2	2	2	9	0	8	0	12	18	2	132

Figure 39: Environmental Management Codes by Project (Source: Author).

Logically, we see projects with significant excavation of site materials have higher mentions of approaches to environmental management. It must be noted that volumes of claims would have been influenced by the stage of the project, and also that some regeneration projects may have already had significant environmental management work previously conducted. The codes also show some correlation with project spend/scale, with the highest of these predominantly mentioning environmental management methods. An impressive factor found in the project communications was that environmental management was not only discussed at a general level, but that each project could articulate specific initiatives in its project management approach. The author has collated these into Table 29 below.

Table 29: Environmental Project Management Initiatives

Environmental Project Management Initiatives Communicated in Project Approach	Project
<ul style="list-style-type: none"> Development and design of project incorporating existing landscape and setting. Site includes listed building so incorporated previously applied natural materials into design. 	Inverurie Health Hub
<ul style="list-style-type: none"> The project location site will reuse 98.9% of the existing site material from former buildings. Quality environmental management above and beyond statutory standards. 	TECA

<ul style="list-style-type: none"> • The project has been designed to be a living environment to attract people and wildlife to the site. Integration with landscape and restoring natural surroundings by planting 30,000 trees and shrub to project grounds. • Environmental engineering to relocate five streams into one new river around the perimeter. This alongside plantation efforts is going to increase the flora and fauna in the area. • Increased accessibility and access for local community to develop over 7km of appropriate paths and walking links to connect local population areas. • Purpose-designed sound mitigation barriers and the facility itself is severely restricted in terms of water discharge rates to mitigate against contributing to local flood risk. 	
<ul style="list-style-type: none"> • Creation of special wildlife bridges, the first of their kind in the country to ensure animals can safely access areas around traffic. • Planning and maintenance efforts to ensure long term biodiversity standards are protected in the north-east. • Compliance with the Scottish Environment Protection Agency (SEPA) recommendations to provide project mitigation measures directing lighting away from rivers, protecting water quality, limiting noise and vibration impact to protect wildlife and prevent pollution. 	AWPR
<ul style="list-style-type: none"> • Reuse and recycling of existing materials into the new building design. This includes the previous marble stair entryway incorporated into new rooftop sculpture terraces. 	Art Gallery
<ul style="list-style-type: none"> • Working in conjunction with local residents to establish development that will be appropriate with the local landscape and mitigate future operational impact and noise levels. 	Aberdeen Airport
<ul style="list-style-type: none"> • Various amenity improvements and landscaping will be carried out to complement the local environment and topography. Access walkways, cycle paths, and play facilities created for the community. • Design of project site area integrates local environment layout to influence berthing and onshore requirements, wave regime, ground conditions, existing infrastructure, environmental and economic considerations. • Applied geotechnical and structural designs of various quay constructions and dredging options to analyse wave agitation and environmental and ground conditions. 	Aberdeen Harbour
<ul style="list-style-type: none"> • Environmentally friendly solutions to project aspects like site drainage were applied to ensure it fitted with the area's natural environment. • Engagement with local community to construct walkways and provide pedestrian access points that are in keeping with the environmental surroundings. 	Prime Four
<ul style="list-style-type: none"> • Consideration for local environment in design including boundary landscaping to mitigate visual and noise impact. 	AFC Stadium
<ul style="list-style-type: none"> • Landscaping and environmental development work with the retention of existing trees, retaining the central lawn, the planting of mature trees including elm-resistant species. 	Union Terrace Gardens
<ul style="list-style-type: none"> • Increased environmental standards applied and to include at its core a higher proportion of green and open space and quality of built environment, in harmony with its surroundings. Stipulation included natural habitat buffer strips within development areas. • Landscaping efforts and land management to include planting of more than 1,200 trees including a range of native species such as beech, birch, hazel and willow. This is in addition to extensive sowing of grasses, wildflowers, and traditional hedging. • Establishment of both formal and more naturalistic elements in the project environment that will introduce a richer range of habitats and provide a net gain of ecological and environmental benefits. 	Grandhome

Source: Author

These factors emphasise that efforts for effective environmental management were an important part of the legacy narrative in this regional context. The projects sought inspiration from the landscape and to build in harmony with the region’s heritage. The AWPR noted this with the project sponsor communicating:

“The AWPR project isn’t just about construction of the route itself...it’s also about our relationship with the environment and the history of the north east of Scotland”
(Transport Scotland, 2019b).

This theme was consistently emphasised, that project identity sought harmony with the North East landscape. This, it could be claimed, was against some of the fundamentals of project management as it added considerable additional expense and complexity to accommodate (Kerzner, 2017). It was thought that if the project was going to deliver a real long-term lasting legacy, this couldn’t be at the expense of environmental damage. The approach across these sample projects was that their projects needed to ‘fit in’ with their surroundings, whether this be the natural or existing built environment. We see that for Bio-Hub the design of the building was developed to reflect the steep topography around it, harmoniously mirroring the landscape (BDP, 2021). A key consideration for Inverurie Health Hub was fitting in with existing art deco period buildings and that the key to its success would be whether it would ‘age well’ within this context (Thorpe, 2015). The airport and Harbour projects designed and named key parts of their development around the heritage of the region (Aberdeen Harbour Board, 2018; Bristo, 2018), making those associations and claiming that their projects were a continuation of the heritage and values of the North East. These efforts aligned with Preuss's (2015) perception of legacy in that benefits were sought during project development, and at the same time, efforts were adopted to mitigate or reduce any negative environmental impact. While Table 29 highlights the initiatives for effective environmental management, the project decision-makers also ensured that there was limited negative environmental impact in other locations. A key consideration for the approach was to limit the impact of the supply chain, to try and keep local, where possible, core project needs such as goods, materials, labour, and other resources. The author has collated the green supply chain efforts communicated to the public (Table 30).

Table 30: Green Supply Chain Initiatives Communicated in Project Approach

Green Supply Chain Initiatives Communicated in Project Approach	Project
<ul style="list-style-type: none"> Integrated selection of local suppliers and contractors to deliver development and services and reduce carbon footprint. 	Inverurie Health Hub
<ul style="list-style-type: none"> Avoiding waste by use of local materials in development. Also includes recycling 98.9% of the existing site material from former buildings. The project applied and achieved certification for a CCS Ultra Site which highlights exceptional green supply chain efforts. 	TECA
<ul style="list-style-type: none"> Green supply chain emphasis with over £115m awarded to sub-contractors based in Scotland with potential for £60m more for local suppliers. 	AWPR
<ul style="list-style-type: none"> Green supply chain principles adopted and applied. Limitation of resources to close project proximity and usage of local manufacture and suppliers. 	Aberdeen Art Gallery
<ul style="list-style-type: none"> Integration of logistics and supply chain services that will work with the renewables industry and the need for local services to provide decarbonised solutions in logistics, fuel, and supply chain support. 	Aberdeen Harbour
<ul style="list-style-type: none"> Engagement with local supply chain to develop project, including where possible Aberdeen based SME’s as stakeholders. 	Bio Hub
<ul style="list-style-type: none"> Usage of local firms in the construction of the development, £8m contracts awarded to Aberdeen/shire businesses to limit carbon footprint. 	AFC Stadium
<ul style="list-style-type: none"> Policy of first mover advantage to hire and use local suppliers and materials. To develop a supply chain in Scotland that can service opportunities in the country and further. 	Hywind

<ul style="list-style-type: none"> • Adoption and transformation of old local oil and gas supply chains and expertise to convert that to renewable energy needs. 	
<ul style="list-style-type: none"> • The adoption and usage of local supply chain to complete the project and provide employment and training opportunities within Aberdeen and the north-east of Scotland. 	Music Hall

Source: Author

These efforts highlighted the approach to being environmentally conscious within the project design. Still, also there was the desire to keep benefits localised and the economic impact towards the local economy where possible. The Aberdeen Football Stadium project stated:

“We are committed to engaging local firms in the construction of the development in order to keep the spend within the region, boosting the economy and creating jobs”. (Beattie, 2019).

This provides a responsible local project management approach and also feeds into wider global sustainability initiatives. In response to the 2015 UN Paris Agreement, Scotland implemented the 2019 Climate Change Act, with the Scottish Government setting a target for net zero emissions of all greenhouse gases by 2045 (Hockenos, 2020). Within project communications, claims were made that the sustainability and environmental management initiatives adopted within these projects would assist the long-term regional achievement of these net-zero targets. Table 31 shows the extent to which projects highlighted that their project objectives were tied to and would help the nation meet global sustainability initiatives.

Table 31: Projects Assisting with 2015 UN Paris Climate Agreement

Global Sustainability Initiative	Projects
Scotland’s National Climate Change Act / Paris Climate Agreement	AWPR, Aberdeen Harbour, Aberdeen Airport, Hywind, TECA, Aberdeen Football Club Stadium, Grandhome, Prime 4, Union Terrace Gardens, Aberdeen Art Gallery, Aberdeen Art Gallery, Inverurie Health Hub (12)

Source: Author

A key project objective was to consider future environmental impact and the running of these project outputs in a manner that saved energy from previous or current levels. TECA went as far as to develop an onsite facility to renewably produce hydrogen (Alexander, 2020). This was part of a bigger-picture vision:

“TECA contributes to the city’s Net Zero Vision which supports Aberdeen’s leading role in energy transition. The city is already leading the way in the UK in developing and deploying renewable technologies to combat global warming and climate change.” (Szmids, 2021)

Hywind was even a global solution to the climate change problem, with its project being experimental for being one of the first commercially viable floating offshore wind farms. The success of the project and the discovery of consistent levels in which electricity could be generated “paved the way” for the UK Government to create more ambitious energy efficiency 2030 targets (Equinor, 2021b). That the project will be:

“reaching up to 2 GW by 2030 and building...to deliver the UK’s longer-term net zero objectives”. (Equinor, 2021a)

As the longer-term impact of these projects materialises, these projects claim that the North East region will reap lasting environmental benefits. The recently completed AWPR is already generating local benefits. Aberdeen city estimated that 3% of regional deaths were due to the deadly air pollutant PM2.5 exacerbated by extensive city congestion (Hebditch, 2020). In the first month after opening the AWPR, all six pollution counters in the region recorded the lowest levels of toxic exhaust fume chemicals in over five years (Ross, 2019). Legacy within construction and infrastructure projects can be thought of as providing generational functional resources (Vadiati, 2020). Still, here in this Aberdeen project context, we see that there are also health and social benefits, that it benefits both people and the environment. The document analysis revealed a strong connection between sustainability and legacy development. They are planned and mentioned side by side as part of the project rationale, and the interviews will explore this further to seek additional confirmation for the extent of the link.

5.7.2 Projects Environmental Management and Future Sustainability from Project Interviews

Having explored the methods and integration of sustainability and environmental management within the document analysis, the interviews will further explore the rationale and ambitions around these themes and how they link to their projects.

The first consideration was that the projects analysed were part of a collective, and some of the key stakeholders approving them outlined that they had clear parameters for expectations in this regional context around sustainability and environmental management. Aberdeen City Council explained this by stating:

“Any approach for any council project or any council approved project needs to have a clear and respectful vision to make sure sustainability and environmental management was approached and responded to with the absolute highest of standards. This includes reducing any potential negative environmental impact on a project and recycling where possible any existing materials, this is fundamental to any plans that would be considered. Efforts must also be made to firstly look to obtain local materials and local contractors for work to reduce the overall carbon footprint of a project”. (Aberdeen City Council Project Stakeholder)

This ambition links well to what was discovered from the document analysis, stakeholders noted that they were aware of these expectations and built them into their project processes. The Union Terrace Gardens project decision maker noted, *“it was part of the agreed contract, which shows just how deep this commitment to sustainability was”*. The Art Gallery redevelopment stated their project response to this sustainability vision outlined by the council was:

“We have sustainability committees, strict regional targets for environmental improvement and have clear expectations for how our development partners execute project work”. (Art Gallery Project Decision Maker)

Similarly, TECA noted that they were aligned with this sustainability priority, and key project stakeholders were only involved in the development because of their sustainability practices and values:

“The city council’s brief to us was very clear, right from our first interactions, the message was TECA should be the UK’s most sustainable venue...the function of the

venue had this with the ability to generate green energy on-site, but there was no point producing this if we neglected sustainability during the building process. I believe the reason the council chose HBD was our commitment and values to sustainability, that we had a track record for implementing sustainability in all our projects, regardless of scale, it was our calling card. So, there was that fit right from the start, that shared value and vision, and I know through the tendering process, we were not the cheapest bidder for the project, we weren't the most expensive either might I add, but we communicated that our priority was for ensuring sustainability best practices at every stage of delivery". (TECA Project Decision Maker)

The interview responses highlighted strong messages of support around sustainability from each project and emphasised it was a principle and practice which shaped their organisational identity. Both the Art Gallery and Prime Four claimed, *"sustainability is part of our culture"*, and the Airport Project stated it was *"part of our creed"*. Hywind went as far as saying, *"everything about the project was built on sustainability"*. It was also noted that everybody was required to apply sustainability methods within operations, and any working partnerships were dependent on this. Prime Four said, *"sustainability is on the top of company agendas when it comes to building partnerships"*. The Queens Square project also notes this as a requirement for stakeholder partnerships in project development:

"We are very proud that we can really provide a clear approach for achieving sustainability, value it, and so do the stakeholders that we work with, that's part of what makes these relationships so successful as we have shared values and doing all that we can for the environment is a core principle of all involved in the project". (Queens Square Project)

The interviews noted overwhelmingly that project decision-makers had embraced sustainability and were extensively engaged with it. Another evident theme was feeling responsible for expanding this to others and being a leader and example for sustainability. Aberdeen Council noting:

"We see ourselves being a leader and an influencer for achieving positive change in the public and their approach to adopting more responsible and environmentally conscious behaviour" (Aberdeen City Council Project Decision Maker)

Aberdeen Football Club has similar ambitions in this area and was *"talking to fans about trying to get them to change their behaviour"* regarding being more active in sustainability improvement (Aberdeen Football Club Project Decision Maker). Stakeholder engagement around sustainability was extensive, and each project decision-maker could articulate methods and attitudes towards it within their project. These were often communicated and documented to the public (and already identified in the document analysis). It was clear from the interviews that project stakeholders shared the council's vision to apply the *'absolute highest of standards'* around sustainability. Appendix 16 highlights some specific examples of how projects placed themselves around this theme.

Some of the sustainability themes discussed in the interviews mentioned long-term benefits and being more responsible in project management practices and outcomes. These were themes already expressed in the literature (Chawla et al., 2018; Silvius & Schipper, 2014). The Inverurie Health Hub also used some of the same terminologies often expressed in legacy literature, that projects will provide *'generational benefits'*.

“In terms of its sustainability, then yeah, that has been factored in and for the generations to come” (Inverurie Health Hub Project Decision Maker).

Another theme expressed from the legacy literature was that of an extended project lifecycle due to sustainability implementation (Cooper et al., 2003; Silvius, 2009). The Bio-Hub project stated that their sustainability efforts *“will allow for a much longer life-cycle for the building”*. There were specific links in the interview responses for sustainability and legacy. This combination is often expressed in event management legacy literature (Gold & Gold, 2014), but relatively unexplored in other contexts or for active projects (Marcelino-Sádaba et al., 2015; Silva, 2015). We see this expressed within these regional infrastructure projects, Aberdeen City Council linking explicitly:

“(sustainability will be) part of that legacy, as we plan to continue to adopt more green and sustainable measures for how Aberdeen operates and moving it away from being based on a carbon economy”. (Aberdeen City Council Project Decision Maker)

TECA noted the wider context of their sustainability efforts:

“this is how we do business, and if this was packaged up as a legacy, then all the more confident for the developments within our communities... we talk in project terms about project deliverables for the client, but I see that turning more into an expected legacy, sustainability has changed the focus in our industry from the short-term to the long-term”. (TECA Project Decision Maker)

The TECA project decision-maker also highlighted that a clearer link between identifying a project legacy and project sustainability efforts would benefit industry practice. We see in the example of TECA, which was a project that was making efforts for both sustainability and creating a long-term legacy, that they noted that if this link were clearly shown, there would be benefits for how projects are managed:

“It would separate those who take environmental responsibility seriously, separate those who cut corners and those who don’t, so yes, a really interesting topic and one I wish the project management bodies would look into as well as you (the researcher) ... It would actually make our job easier with all the reports and sustainability KPI’s we have to monitor, to package this within a legacy framework would all be under that same umbrella”. (TECA Project Decision Maker)

Here we see project stakeholders expressing that there could be governance improvements and additional research on project management legacy, that they would benefit from a framework aligned to their project efforts which would highlight and communicate the legacy factors.

Closely linked with sustainability and introduced in the document analysis section is environmental management. This was a project approach identified as:

“Using principles of being environmentally responsible, applying advances in technology and best practices, and being transparent for the progress, the economic impact and reasoning for what is approved and what was not”. (Aberdeen City Council Project Decision Maker)

All projects had strategies for effective environmental management practices, which was unsurprising considering how they also implemented sustainability methods extensively. When pressed for environmental management's importance, project stakeholders responded positively. On their environmental management efforts, the Queens Square project stated, *"it is a privileged responsibility...it is embedded into so much of our operations"*. The Airport project emphasised it was *"always a priority in our business"*. Aberdeen City Council stated it was *"of critical importance"*, and TECA said, *"environmental management is our calling card... it was a living environment with its own eco-system, and priority number one was ensuring that for any living thing, we left things better than they were"*. It is quite a sensitive theme, and a lack of consideration would certainly have a negative impact on a project, so there were efforts to ensure that this was done to a high level. The Airport project noted that it was a balancing act to consider project development against any negative environmental impact stating their priority was:

"that balance of facilitating improvement and considering environmental protections, getting that trade-off correct". (Aberdeen Airport Project Decision Maker)

The Harbour project also emphasised that the correct environmental management approach was required for project success.

"Our eyes were wide open for doing things (Environmental Management) in a proper and professional manner". (Harbour Project Decision Maker)

Numerous projects highlighted that environmental management efforts were not done in isolation, and were often approached in partnership with other groups to ensure quality standards were applied and met. Bio-Hub summed this up in their project approach:

"All contractors, if they were going to put a bid in for any part of the work, had to demonstrate that they were going to be sensitive to environmental needs" (Bio-Hub Project Decision Maker)

TECA (like several other projects) worked with the Environmental Protection Agency Scotland (SEPA); they stated the rationale behind this as follows:

"To make sure it wasn't just our opinion that we have done enough, but that this was confirmed by experts...you have to engage and work in harmony with partners that are often maybe suspicious of each other, but like I said, sustainability, environmental management is our calling card, so we made that work where other contractors I know would struggle or not provide the resources to do it properly". (TECA Project Decision Maker)

The Harbour project similarly stated the benefits of working with SEPA, and that this even shaped their project management processes.

"This engagement gave us an opportunity to take in the consideration of all affected, their concerns, even helped us plan our risk analysis to ensure a thorough and protective approach was our concern too". (Harbour Project Decision Maker)

The environmental management project approach focused on not just partnerships with other organisations but alignment with wider global government and local initiatives. The Airport Project stated they:

“Work with the government to meet climate commitments and the move towards net zero...every initiative is included in what we do. Whether that is from COP or SDG’s...(we) have significant reporting to government bodies for environmental impact”. (Aberdeen Airport Project Decision Maker)

Project stakeholders were also making the link between environmental management project efforts and legacy. Prime Four reflected the following:

“This is one of the great triumphs of Prime Four, it was built with a green framework, we worked with the environment, not against it, lawns, woodland, meadows, we worked with it to set in facilities. We ensured that there was high-quality environmental landscaping to ensure that any impact to natural life was minimal. This was part of our masterplanning, even the design was inspired by the landscape and the geometrical field patterns of the local traditional fields. This may be a modern complex, but we also wanted to celebrate and be inspired by local rural life and this traditional heritage, again maybe a legacy in there too”. (Prime Four Project Decision Maker)

Aberdeen City Council outlined the importance and consequences of achieving excellence for environmental management project efforts stating:

“If you don’t have reverence for the buildings, the galleries, the parks, and their historic or natural environment, then I think history has shown that this results in a legacy of failure” (Aberdeen City Council Project Decision Maker)

Here we see a mention of a potential negative legacy, an unwanted legacy, should standards not be met, and the project management efforts not appropriate or effective. This highlights the importance of environmental management to anticipated legacy efforts but also that stakeholders were considering what the legacy of their project could be, both positive and negative, which is a theme which will be explored in more depth in the next section.

5.8 Project Risk, Unplanned Legacies and Negative Legacy Considerations

Legacy is often characterised as being an aspirational endeavour, a process of fulfilling vision and seeking long-term benefits, but to get a ‘full picture’ of legacy, then there needs also be consideration given for potential negative aspects or unintended consequences (Lienhard & Preuss, 2014; Matheson, 2010). The theoretical framework applied to this research (Figure 14), made sure to explore aspects of legacy that were unplanned and negative. These themes were found to be present within the document analysis, and the interviews will provide additional insight into whether these factors undermined the development or obtainment of legacy.

5.8.1 Project Risk, Unplanned Legacies and Negative Legacy Considerations from the Document Analysis

The document analysis revealed many factors surrounding the themes of project risk, unplanned factors, and negative considerations, with 1280 instances coded (Figure 40).

	AWPR	Harbour	Airport	TECA	AFC Stadium	Inv Health	Art Gallery	U T Gardens	Music Hall	Prime 4	Bio-Hub	Hywind	Grandhome	Queens Square	TOTAL
NEGATIVE	112	39	32	34	19	26	23	124	3	26	4	14	4	24	484
Exaggerated Benefits	12	3	2	11	0	2	2	14	1	4	0	2	0	3	56
Negative Environmental Impact	22	23	16	3	4	4	3	23	0	5	0	2	3	10	118
Political Influence or Vanity	35	5	5	12	3	17	10	51	1	5	4	3	0	8	159
Poor Quality Design	19	0	3	7	0	2	5	11	1	1	0	1	1	3	54
Public Resistance to Development	24	8	6	1	12	1	3	25	0	11	0	6	0	0	97
UNPLANNED	201	93	58	88	64	24	46	93	21	34	31	9	3	31	796
Exceeds Anticipated Budget	27	4	0	6	4	0	8	9	2	0	1	0	0	2	63
Overruns to Anticipated Schedule	38	12	3	3	8	1	13	8	8	0	5	0	0	2	101
Project Risk or Failure	47	25	16	35	23	10	5	33	7	14	8	2	0	7	232
Stakeholder Change	31	16	8	3	0	1	0	2	0	0	1	0	0	0	62
Uncertain Future Funding	38	19	16	28	18	5	19	20	3	9	13	5	1	12	206
Uncertain Future Impact	20	17	15	13	11	7	1	21	1	11	3	2	2	8	132
															TOTAL 1280

Figure 40: Negative and Unplanned Codes by Project (Source: Author).

The coding process developed several repeated themes around negative and unplanned aspects to project development. These themes will be explored further in this section, but issues were identified in every project. There was a correlation in that larger and longer-scaled projects encountered more issues, and projects that hadn't yet reached the execution phase of work didn't have the entire narrative for unplanned factors coming to fulfilment. There are often concerns in document analysis that there may be bias in reporting, with stakeholders choosing to emphasise positive elements at the expense of negative factors (Saldanā, 2021). The extent of codes on this theme shows that this didn't happen, this can also be attributed to the nature of project management. All projects go through a process of creating a defined schedule and budget with periodic review points (project milestones), this is communicated to stakeholders from the start setting a baseline for expectations (Turner, 2016). This provides some transparency around anticipated progress but allows stakeholders or interested parties (such as the media, politicians, and opposition voices) to question why targets have not been achieved, so discussion about negative aspects was part of the project communication narrative.

5.8.1.1 Project Influence of Coronavirus-19 Pandemic

A repeated factor which was both unplanned and had a significant negative impact on each project was the coronavirus-19 pandemic. Regardless of the nature or stage of the project, all were significantly affected. Covid impacted construction operations with additional restrictions, creating limitations for resource supply or for completed projects stopping their intended function for a period. The document analysis shows the extent to which Covid was discussed through media communications in Table 32. In Appendix17, a table of example quotes have been collated which relate to the pandemic's impact for each project researched.

Table 32: Volume of Covid Discussion in Media Communications by Project Source

Project	No. Specific Article Mentions on Covid Issues
Transport Infrastructure Projects (Aberdeen City & Shire)	
AWPR	6
Aberdeen Harbour	60
Aberdeen Airport	17
Stadium and Event Construction Projects (Aberdeen City & Shire)	
AFC Stadium / Cormack Park	38
TECA	17
Regeneration Structure Projects (Aberdeen City & Shire)	
Inverurie Health Centre	4
Aberdeen Art Gallery	7
Union Terrace Gardens	8
Aberdeen Music Hall	6
Commercial Projects (Aberdeen City & Shire)	
Prime Four	5
Bio-Hub	56
Hywind	7
Residential Projects (Aberdeen City & Shire)	
Grandhome	6
Queens Square / Street	6

Source: Author

Appendix 17 provides details around the impact of covid which was a significant part of the overall project narrative. Those projects currently in the planning or execution phase (Harbour, AFC Stadium, Bio-Hub, Union Terrace Gardens, Grandhome, Queens Square) all experienced delays to the overall completion timeline and an increase in their anticipated project cost because of associated Covid complications. These projects had to include and adhere to additional Scottish Government Covid-19 guidelines for operations or had to halt during defined lockdown periods (Aberdeen Harbour Board, 2020a). These projects also had to introduce enhanced health and safety measures and increased hygiene protocols (BBC, 2020a). With this being a global pandemic, the effect was felt internationally, with supply chains increasingly being restricted or unavailable to some locations. Grandhome noted the immediate impact of covid on their costs, with “*construction inflation (is) running exceptionally high...up to 20%*”. (Gossip, 2021d). One of the benefits of these projects was their emphasis on local contractors to facilitate work, this also helped shield them against external location-based supply staffing issues created by covid. This was not always possible, especially in larger scale projects such as the Harbour development, where they had Spanish engineering company Dragados as a key contracting partner for a significant portion of the project development. Due to Covid and their other significant international project commitments, “*the Covid-19 emergency and other factors have meant that our (Dragados) involvement in the project has ended earlier than originally anticipated* (BBC, 2020b). This left the project without a funding partner, and 30% of the anticipated work was left undone.

Projects already completed also experienced significant covid impact and worries for future viability. There were concerns for future demand for air travel, marine transfer, cruise ships, usage of road networks, or customer interest in recently completed leisure facilities such as TECA, Aberdeen Art Gallery and the Music Hall (Aberdeen Harbour Board, 2020b; Plimmer & Georgiadis, 2020). While these project challenges were consequential, the effects of the covid pandemic also characterised another aspect of the overall project narrative, resilience,

and optimism. Linked with legacy, project decision-makers were keen to emphasise that these were not ‘normal’ projects but essential developments for the North East community. Many claims were made that their project would be key for the region to bounce back post-pandemic. Aberdeen Football Club discussed that one of their project’s future social benefits (or legacy) would be the impact on post-pandemic living with their stadium having...

“the potential to help the region get back on its feet from the pandemic and on the road to recovery, lifting the spirits of our fans and citizens”. (Durent, 2020)

This reinforces that the selection of these projects (being part of a wider vision) was necessary for a resilient future legacy, and so was designed and managed differently. For other projects in the face of a risk on the scale of the coronavirus pandemic, it may have been regular project practice to revise the scale, quality, and not to proceed as intended, or even abort early (Turner, 2016). For this sample project group, it was repeatedly highlighted that this covid experience made them more determined to reach their anticipated standard for quality without compromise. Bio-Hub summed it up well in the press by talking about increased determination and togetherness for stakeholders in response to the pandemic:

“Our sector has demonstrated adaptability and resilience. Academics, clinicians, companies and researchers have responded at pace to the multiple challenges arising from COVID-19”. (Opportunity North East, 2020b)

In the academic literature, there is limited discussion linking legacy and covid 19 because of the pandemic’s newness, and that legacy is primarily based on events. We see in this regional context that it was an unplanned risk factor which had a significant negative financial and operational impact. Despite this, it provided some intangible benefits in terms of commitment to vision (and future legacy), attitude toward project management approach for quality, and enhanced stakeholder management.

5.8.1.2 Political Influence of Project Vanity

Another negative project aspect that was consistent within the selected projects was the influence of politics or that the project was influenced by political vanity. Figure 41 shows the extent of codes within the document analysis, with only Grandhome not returning any instances. However, as they are still in their project’s development stage, this will limit political engagement at the time of analysis.

	AWPR	Harbour	Airport	TECA	AFC Stadium	Inv Health	Art Gallery	U T Gardens	Music Hall	Prime 4	Bio-Hub	Hywind	Grandhome	Queens Square	TOTAL
Political Influence or Vanity	35	5	5	12	3	17	10	51	1	5	4	3	0	8	159

Figure 41: Political Influence or Project Vanity Codes (Source: Author)

Politics and vanity were repeated factors in developing legacy in an event context (Chappelet, 2012). This was despite the fact that the development and articulation of a ‘future legacy’ is supposed to guard against political reasons or vanity factors for developing a project. The event plan should consider generational benefits returned and the reduction of costly white elephants for unused infrastructure (Tomlinson, 2014). Essex and Chalkley (1998) note that this doesn’t always work effectively and that it can be almost impossible to

separate infrastructure development from politics as political parties will have to approve or fund these projects. This will always bring opportunities for rival groups or political parties to make alternative claims for other designs or how funds could have been better used (Leopkey & Parent, 2012).

At the time of this research, the political situation within the Aberdeen region was unique and quite different from most of the UK. Aberdeen city council was run through a coalition of Conservative and Labour councillors, and they function within the framework of a Scottish National Government led by the Scottish National Party (SNP). None of these parties has traditionally any alliance (except for wartime coalitions), and there could hardly be a more politically divided grouping in terms of ideology. To add to this unconventional structure was that these political groups were fundamentally divided about the future makeup of the United Kingdom. A critical risk continually highlighted in the document analysis was the prospect of a second independence referendum to potentially separate Scotland from the rest of the United Kingdom. The last referendum and Aberdeen's voting preferences were still widely perceived within project discussion as being a 'handicap' for the region and resulted in it being treated differently for funding opportunities. The leader of Aberdeen City Council discussed this when introducing the harbour development:

"It's not difficult to imagine why the SNP would treat Aberdeen with such contempt, given that in the independence referendum in 2014, almost 60% of our citizens voted to remain in the Union. She insisted that despite the "handicap" the council's Labour-led administration would continue to be progressive in its efforts to help the city".
(Guest, 2016)

The perception communicated by project stakeholders was that Aberdeen was a very difficult place to make project progress because of its political structure. The project sponsors of Bio-hub reflected:

"I have a very strong view that, right now, both governments spend half their time fighting with each other rather than doing constructive things". (Askeland, 2021)

This led to a range of issues which impacted the project environment. Appendix 18 highlights some of the narratives from the document analysis around political factors or project vanity for each project. It highlights examples of negative communication and political gesturing towards project development within the document analysis, which is evident in every project. Some of these claims and objections specifically labelled project efforts as vanity projects. Wyllie (2018b) wrote, for example, *"this is another indication of the inadequate financing of the art gallery vanity project"*. Another discussion around the Union Terrace Gardens Project was described similarly:

"Our co-leaders are quick to cut budgets to the things that matter most to the public but when it comes to keeping their vanity projects alive they're able to find millions down the back of the sofa." (Hebditch, 2019f)

Political divisions were apparent in the narrative from Appendix 18 as various political stakeholders lauded the projects their own party had backed and regularly derided those that they hadn't. The regional political governance situation was summed up with project stakeholders believing *"Aberdeen City Council are notoriously difficult to deal with"* (Crombie, 2021).

With such different perspectives, it would have been expected that within this environment, it would have been a project barrier resulting in projects being blocked or not attempted. While these groups don't necessarily always agree on the approach, spending, or expected progress, they are all, however, signatories to the regional masterplan, and have belief in the vision of transitioning the region away from an oil and gas identity to a more green energy future (BBC, 2015). Much like its events counterpart in literature, we see in this regional context that legacy needs a collective vision to make progress, and with it can do so in even the most challenging political environments (Reis et al., 2017).

Much like the previous section discussing the impact of covid, there was also a repeated theme of resilience in response to working within a divisive political set-up. This drove initiatives for independent funding in projects such as TECA, Aberdeen Music Hall, and the Art Gallery, where stakeholders perceived that national funding assistance wouldn't be available to them because of their political persuasions. This led to some inventive ways to meet their long-term project objectives. TECA issued long-term bonds within the London stock exchange (Gossip, 2021a). Union Terrace Gardens entered into an unconventional but modern public/private initiative to generate long-term financial assurance (Carson, 2016). Project developers had to go to significant lengths to find funding and look inwards towards developing their projects. This process resulted in them being fully engaged in fulfilling their vision of the project. This approach meant that the project stakeholders did not have to accommodate or compromise to external funding sources' potential demands. It was continually communicated that there was resilience for a system to 'make things happen' and for being 'progressive' to achieve their future goals for the region through their own initiatives and drive. This was borne of the harsh political climate and an inability to rely on external sources, additional assistance, or other funding bodies to bail them out if project risks materialised (Guest, 2016).

5.8.1.3 Unplanned Legacy

In legacy literature, one of the most challenging aspects of developing legacy is a consideration for unplanned aspects (Chappelet, 2012). Preuss's research is considered fundamental in the field as it ensures that there is balance in perspective for considering the vision that will be sought and considerations for unanticipated progress or outcomes (Preuss, 2007). Measures for fully understanding unfulfilled visions are difficult to consider at this point within the legacy literature, because legacy fulfilment is 'generational', so it can take a significant period to analyse any original legacy claims (Gold & Gold, 2014). The document analysis considered unplanned factors for the research period and compiled data for aspects that were not anticipated as part of the original project management plan. In Table 33 the author has collated themes identified in the project communications around unplanned factors, providing a high-level summary and indicating the coding volume for specific aspects.

Table 33: Collation of Unplanned Factors and Category Codes

Project	Coding Volume	Repeated Unplanned Factors
Transport Infrastructure Projects (City & Shire)		
AWPR	Exceeds Anticipated Budget: 27	<ul style="list-style-type: none"> • Project extensively over budget, original projection was £745M but reported cost was £1.45B for the lifecycle of contract repayments. • Exceeded anticipated schedule by 6 months. • A range of unexpected technical complications within building development. • Key contractor Carillion entered liquidation and negatively impacted work and finance requirements. • Legal battle between contractors and sponsor to recapture a portion of expenses. • Uncertainty for post covid travel and future usage. • Unexpected environmental management requirements
	Overruns to Schedule: 38	
	Project Risk/Failure: 47	
	Stakeholder Change: 31	
	Uncertain Future Funding: 38	
Uncertain Future Impact: 20		
Aberdeen Harbour	Exceeds Anticipated Budget: 4	<ul style="list-style-type: none"> • Extension opening delayed a year beyond original schedule (now Oct 2022). • Unexpected shortfall in financing and future viability of green infrastructure development. • Status as a trust port impacting future opportunities and funding. • Wider regional green energy transition needs to be conducted in tandem with Harbour. • Future opportunities rely on UK investment and independence referendum threatens key operations. • Principal contractor Dragados for project pulled out leaving 30% of scheduled work incomplete. • Covid impact to project with shutdowns and working restrictions. • Brexit and market conditions altering anticipated supply chain and procurement. • Weather (storm) conditions impacted development. • Post pandemic industry environment uncertainty with global reduction in shipping activity and cruise industries.
	Overruns to Schedule: 12	
	Project Risk/Failure: 25	
	Stakeholder Change: 16	
	Uncertain Future Funding: 19	
Uncertain Future Impact: 17		
Aberdeen Airport	Exceeds Anticipated Budget: 0	<ul style="list-style-type: none"> • Extension opening delayed beyond original schedule. • Unexpected job redundancies in operation staff and loss of industry expertise. • Local economic downturn around oil and gas price negatively impacting passenger numbers and volume of flight routes. • Brexit uncertainty and challenges, unexpected air passenger duty changes. • Expansion development halted by Covid. • Covid influenced infrastructure changes (testing and new safe processes). • Negative covid impact for passenger numbers and future travel confidence. • Long term covid impact results in airports being a 'risky' investment with £20 billion of covid related debt. • Climate change legislation (COP agreements) impacted operations and development.
	Overruns to Schedule: 3	
	Project Risk/Failure: 16	
	Stakeholder Change: 8	
	Uncertain Future Funding: 16	
Uncertain Future Impact: 15		

Stadium and Event Construction Projects (City & Shire)		
AFC Stadium	Exceeds Anticipated Budget: 4	<ul style="list-style-type: none"> • Covid delaying the advancement of the stadium project and now may be scaled back due to escalating costs. • Covid impacting operating losses of £3-5M annually. Project money being diverted to operations. • Unknown duration for project timeline, original estimate of 2023 to be exceeded. • Uncertainty for project site with two considered locations with mixed benefits and restrictions for both. • Possibility to work within the masterplan framework and more aligned with new regional stakeholders.
	Overruns to Schedule: 8	
	Project Risk/Failure: 23	
	Stakeholder Change: 0	
	Uncertain Future Funding: 18	
	Uncertain Future Impact: 11	
TECA	Exceeds Anticipated Budget: 6	<ul style="list-style-type: none"> • Project extensively over budget, original projection was £333 M but last reported gross cost £425 M. • Exceeded anticipated schedule by 6 months. • Economic environment negatively impacted the current value of the project (-£20.5M). • Contractor pulled out requiring a stakeholder change. • Uncertainty for post covid industry environment and future usage. • Project financed with stock exchange bond issue with significant risk of further debt or credit downgraded. • Function changed to a vaccination centre during Covid.
	Overruns to Schedule: 3	
	Project Risk/Failure: 35	
	Stakeholder Change: 3	
	Uncertain Future Funding: 28	
	Uncertain Future Impact: 13	
Regeneration Structure Projects (City & Shire)		
Inverurie Health Centre	Exceeds Anticipated Budget: 0	<ul style="list-style-type: none"> • Project delays to maternity unit by 6 months. • Concerns about regional population expansion and catchment areas. • Uncertain funding for redevelopment of the wider Inverurie site to match health hub standards.
	Overruns to Schedule: 1	
	Project Risk/Failure: 10	
	Stakeholder Change: 1	
	Uncertain Future Funding: 5	
	Uncertain Future Impact: 7	
Aberdeen Art Gallery	Exceeds Anticipated Budget: 8	<ul style="list-style-type: none"> • Financial cost exceeded anticipated budget (£10M+), still undisclosed. • Exceeded anticipated schedule (by over 2 years). • Additional funding sources and financial planning required. The regional economic downturn impacted expected funding donations (£6.3M shortfall). • Unseen technical complications within building development.
	Overruns to Schedule: 13	
	Project Risk/Failure: 5	
	Stakeholder Change: 0	
	Uncertain Future Funding: 19	
	Uncertain Future Impact: 1	
Union Terrace Gardens	Exceeds Anticipated Budget: 9	<ul style="list-style-type: none"> • Financial cost exceeded anticipated budget (£9M+) • Exceeded anticipated schedule (by 3 years) and still not open to public. • Work halted for periods due to covid restrictions. • Brexit challenges for reduced supply chain and material and resource access. • Uncertain public appetite for it because raw feelings still exist from divisive referendum and rejected alternative design plans. • Changing nature of the city centre and built environment.
	Overruns to Schedule: 8	
	Project Risk/Failure: 33	
	Stakeholder Change: 2	
	Uncertain Future Funding: 20	
	Uncertain Future Impact: 21	
Aberdeen Music Hall	Exceeds Anticipated Budget: 2	<ul style="list-style-type: none"> • Financial cost exceeded anticipated budget (£2M) • Exceeded anticipated schedule by a year. • Unanticipated structural issues adding significant additional work and complexity. • Regional economic downturn impacted expected funding donations.
	Overruns to Schedule: 8	
	Project Risk/Failure: 7	
	Stakeholder Change: 0	
	Uncertain Future Funding: 3	
	Uncertain Future Impact: 1	

		<ul style="list-style-type: none"> • Uncertainty for post covid industry environment and future usage. • Future diversification options for function still unclear.
Commercial Projects (City & Shire)		
Prime Four	Exceeds Anticipated Budget: 0	<ul style="list-style-type: none"> • Changing nature of the regional infrastructure and built environment and business needs. • Additional developments in Dyce and City centre providing unexpected competitive environment. • Planning and future phase development application issues. • Post pandemic changes in user habits and needs. • Investment uncertainty due to external factors such as Brexit and the prospect of second independence referendum. • Regional economy market fluctuations impacting opportunities.
	Overruns to Schedule: 0	
	Project Risk/Failure: 14	
	Stakeholder Change: 0	
	Uncertain Future Funding: 9	
	Uncertain Future Impact: 11	
Bio-Hub	Exceeds Anticipated Budget: 1	<ul style="list-style-type: none"> • Project even in the early stage has already been delayed for construction start and will impact costs further down the line. • Covid pandemic has impacted development, materials prices and also required additional funding sources to be sought. • Future integration with NHS, businesses and other partnerships will need to be established. • Regional skills migration to attract specific skilled scientists.
	Overruns to Schedule: 5	
	Project Risk/Failure: 8	
	Stakeholder Change: 1	
	Uncertain Future Funding: 13	
	Uncertain Future Impact: 3	
Hywind	Exceeds Anticipated Budget: 0	<ul style="list-style-type: none"> • Uncertain future funding models for floating wind farms with expiring and removed national subsidies. • Foreign investment brings uncertainty for future control. • Future development dependent on the generation cost of electricity in comparison with other methods.
	Overruns to Schedule: 0	
	Project Risk/Failure: 2	
	Stakeholder Change: 0	
	Uncertain Future Funding: 5	
	Uncertain Future Impact: 2	
Residential Projects (City & Shire)		
Grandhome	Exceeds Anticipated Budget: 0	<ul style="list-style-type: none"> • Uncertainty around external development for building schools to support growth from site. • Too early to know for budget or schedule alterations but impacted by covid in permissions, planning and site excavation. • Timeline for phased development is variable with unpredictable whole lifecycle.
	Overruns to Schedule: 0	
	Project Risk/Failure: 0	
	Stakeholder Change: 0	
	Uncertain Future Funding: 1	
	Uncertain Future Impact: 2	
Queens Square	Exceeds Anticipated Budget: 2	<ul style="list-style-type: none"> • Concerns around private and public combination model for commitment for spend. • Financial risk and long-term funding commitment for whole project lifecycle. • Economic downturn and impact of oil price causing regional job losses impacting potential need and buyers. • Anticipated costs going over original £150m budget. • Anticipated schedule (2026) will go over. • Requires the sale of other buildings and other organisations being relocated. • Changing nature of the city centre and built environment.
	Overruns to Schedule: 2	
	Project Risk/Failure: 7	
	Stakeholder Change: 0	
	Uncertain Future Funding: 12	
	Uncertain Future Impact: 8	

Source: Author

Table 33 highlights that all projects experienced a range of unplanned factors. This, however, is to be expected; the nature of project management is that projects will only partially go as anticipated (Gil et al., 2017). In this regional project context, we see a range of project management ‘failures’ with significant overspending and projects being heavily over schedule. As discussed previously, we see limited project management attempts to ‘reign things in’ or compromise on quality or ambition to reduce these negative effects. There was still a project management emphasis to ‘do it right’ however long it took or the cost (Moore, 2019). This again goes against the fundamental iron triangle governance principles for managing projects (Kerzner, 2017), highlighting the status and perspective of these projects for future regional needs. We see in Table 33 a host of external environment factors which were unplanned during this period; this included a regional recession, Brexit, Covid-19, an oil price crash, and regional business flight, which all added questions about whether there will still be the same level of need for these developments. In response to this project leaders communicated that each of these projects was driven by a long-term perspective and that it will provide benefits over an extensive lifecycle, so short-term fluctuations are outweighed by the lasting benefits they will provide. This suggests a difference between a traditional project approach and one that has ‘legacy’ in the design. For projects with legacy claims in ambition and design, they prioritise a long-term focus for their output. We see in this context the commitment to this by not changing course when unplanned factors (which were often significantly detrimental) occurred. This has relevance for how we understand project management governance and manage projects for including and achieving legacy. It also agrees with the feature of an extended project lifecycle for a legacy project’s timeline identified by academic authors such as Preuss (2007) and Silva (2015) and as outlined in the theoretical framework of this study.

A future-orientated project vision was often a solution to unplanned factors. We see projects such as Inverurie Health Hub, TECA, Prime Four, Queens Square, Grandhome, and Bio-Hub all include aspects of their design to be flexible for future functions and needs. Even in the relatively short-term period of this research, we see a change of function that was unplanned for one of the region’s major projects but provided a significant benefit for its people. TECA was planned to be a large-scale events and entertainment venue. Still, only a few years into its operations, it had changed function to become the region’s major vaccination centre amidst the backdrop of the covid pandemic (Gossip, 2021a). This was only a short-term measure, and it has reverted back to its original function, but this was a resource that was flexible to meet the needs of the region (in a way that its predecessor would not have managed) and this in the process shaped its legacy in an additional unanticipated positive manner. Legacy is in part based on regional needs and has social, and emotional connections for the resources being built and provided. In this instance, the people of the North East of Scotland already have greater appreciation and engagement for what TECA has been able to provide in a time of real need. Had traditional project methods and values been adopted for TECA, it would have been scaled back, and been more limited in function, and quality, in an attempt to try and regain the almost £100 million over budget and six months over schedule. It was because of stakeholders’ attitudes toward the long-term vision and doing things differently in the project management that this wasn’t the case, “*TECA is an inspired build that is breaking the mould when it comes to design, materials and aesthetics*” (Henry Boot Developments, 2019c). The outcome was that they could provide a resource more fitted to future regional needs and even unanticipated needs of its people, making it more likely to fulfil a more positive legacy within its future lifecycle.

5.8.2 Project Risk, Unplanned Legacies and Negative Legacy Considerations from Project Interviews

The interviews revealed that an unplanned or negative legacy was a consideration given in the planning phase of the researched projects. This provides some substance for these projects having a ‘true legacy’ as Lienhard & Preuss (2014) outlined, where negative and unplanned factors must be included to provide a balanced perspective of long-term outcomes and impact. In this regional context, negative legacies were sometimes a driver for developing long-term project ambitions and often one of the justification factors for project progression. The Art Gallery started planning its redevelopment project by “*consider(ing) groups that were previously negatively impacted by the lack of access to the gallery*”. Part of the accepted project culture was that “*there’s going to be opposition*” (Airport Project Decision Maker) for any project, and those voices needed to be included in the planning. The Queens Square project discusses the balancing act of development and negative impact and reasons that the overall long-term vision and approach needs to be the foundation for development:

“this project has really been considered for future impact, there was extensive consultation, risk assessment, environmental assessments that you typically wouldn’t see in a residential development...when it comes to development, there is always someone who will be negatively impacted, however small, that’s just the nature of change, you can never please everyone and sometimes needed for the greater good, a real vision, a plan is required, that’s the role of the council to oversee and make possible the best solution for its citizens”. (Queens Square Project Decision Maker)

The Harbour project expanded upon this in terms of their approach to unplanned factors:

“You can plan, and you can do all the due diligence, but the nature of projects is that challenges will always arise when you are getting your hands dirty. And it is often not even your own planning but reliance on others that impacts the project” (Harbour Project Decision Maker)

This links to the theme outlined in the last section of the importance of partnerships and collaborations of stakeholders who share the same vision and values. This approach was considered good practice to mitigate against project risks and unplanned factors as stakeholders knew which factors were important to the long-term vision. For example, the Union Terrace Gardens project outlined that their stakeholder partners knew precisely how to manage project boundaries through shared collective values:

“When I think of red lines for the project, money, time, not so much, not that we didn’t act responsibly...but compromising on environmental issues was a line that was never going to be crossed”. (Union Terrace Gardens Project Decision Maker)

That is a significant departure from the project management approach from established governance models prioritising cost and time (Gil et al., 2017; Kerzner, 2017). This highlights that these projects, as part of the regional vision, were managed differently and had a more ethical ambition and one based on quality for long-term benefits. The Art Gallery was a project that went extensively over time and budget. When they reflected on their project approach, they appealed to future users that any short-term negative impact would be offset in the long term by the quality prioritised and achieved:

“I hope all that have been negatively impacted can now look at what we have, and come to an understanding that what we have developed has been worth the pain and lack of access, that it may have taken a long time to get right, but it has been done right and won’t need an uplift or any patch up in a couple years, this was a job done right and will benefit the community for generations interrupted”. (Art Gallery Project Decision Maker)

Aberdeen City Council discussed their approach to unplanned factors; they also linked overcoming challenges with an emphasis on not compromising on quality. This was something that not only was their project management strategy but also linked this to providing a legacy for the region:

“we experienced so many challenges that were unforeseen or unexpected...(on the buildings and parks that are used and appreciated by the people...and providing a legacy for the Aberdeen area. We need to protect this established legacy by ensuring work performed on revamping or updating infrastructure is conducted to the absolute highest quality standards”. (Aberdeen City Council Project Decision Maker)

These project efforts were also conducted in a rapidly changing project environment. Projects had to really consider their priorities as significant negative political factors changed the financial outlook from which they originally planned. Numerous projects bemoaned the significant economic effects of the Coronavirus pandemic, Brexit, and future regional political challenges.

The most widely discussed negative factor was that of Covid, which significantly impacted all projects regardless of the completion stage or project type. The Harbour project noted that Covid was a project risk that was unseen in their original plans and resulted in continuous challenges as developments proceeded:

“This was all a kicker from the coronavirus pandemic, which was something, like everyone else of course, we hadn’t put in our original risk assessments for the projects, but challenge after challenge arose from the pandemic, and certainly every project manager earned every pound of their salary to keep the wheels on this. (Aberdeen Harbour Project Decision Maker)

The Union Terrace Gardens Project interviewee discussed the changes the pandemic had made to the overall project environment:

“Pre-covid, a whole different ball game, another way of working became the norm, not just masks and the like but majorly different rules and regulations that we never anticipated working through, so many stoppages, shortages that we were helpless to alter, so this was a project that was never going to be business as usual and really an eye opener for managing projects in difficult environments”. (Union Terrace Gardens Project Decision Maker)

Prime Four also noted a change to the project environment, that Brexit, in addition to Covid, altered conditions from when they first started on work to their future ambitions:

“The country is a very different place for doing business than when we started out, we have had Brexit, which has disrupted severely our capabilities and costs in the supply chain, and there is also the looming threat of yet another Scottish

Independence referendum which would disrupt our operations further". (Prime Four Project Decision Maker)

The Union Terrace Gardens also articulated the impact of Brexit on their project plans:

"I hadn't even mentioned Brexit until now, but if a container actually made it, you had every project manager arguing that they needed those materials for their project; internally, it was a battle, where the pandemic pitted projects against each other to try and salvage what you could and keep it on track. While we are not at that stage anymore, we are not seeing the costs come down to meet anyone's original project estimates. Brexit and global shortages make day-to-day operations so much harder to do like before. (Union Terrace Gardens Project Decision Maker)

These challenges led to interviewees expanding on a theme which is representative of the North East project environment, that of political impact and how this influences project development. Appendix 19 highlights some examples of this in this regional context.

Political factors were a constant in Olympic legacy development (Smith, 2012; Veal et al., 2012). The data within Appendix 19 reveals the same within this regional context for infrastructure and construction projects. The Bio Hub interviewee summed this up with, *"any project that requires significant investment from political contributors will experience politics"*. In extension, even privately funded projects need approval from council governance, so all projects reviewed have been impacted, and opinions developed for how political factors affected them. A constant narrative was that Aberdeen itself was *"a diverse set up"* (Bio Hub), *"a very polarised society"* (Music Hall) when it came to political affiliations. It negatively impacted project stakeholders working within such a complex regional political structure. The Union Terrace Gardens project decision maker said, *"here in Aberdeen, it really can be toxic...in the end you just get depressed by all that in-fighting between SNP, Tories, and Labour"*. The Queens Square project decision maker also discussed that project organisations have *"to swim through the murky waters of Aberdeen city politics while developing projects"*.

The Aberdeen Art Gallery project interviewee discussed how these divisions impacted their project progress, noting:

"Unsurprisingly, we had limited Scottish Government funding, other areas south of us collect this cash consistently, but Aberdeen almost never gets it, Aberdeen will never be an SNP heartland, so we knew that we were on our own for raising capital and getting this project off the ground". (Art Gallery Project Decision Maker)

The Union Terrace Gardens Project also highlighted something similar that Aberdeen was overlooked for national government funding because of its political make-up:

"We had some serious questions around funding, getting the project back on scope, and when the council approached the Scottish Government for some possible assistance, like they had provided for other regional council projects elsewhere in the country, they were almost laughed out of the meeting, it was shocking, they paid no attention to the details of the gardens, what it would do for Aberdeen, they couldn't see further than the cheek of this Tory, Labour council coming to ask the SNP for help". (Union Terrace Gardens Project Decision Maker)

One of the major themes around negative political aspects in the academic literature was whether projects were based on vanity rather than a true future vision (Chappelet, 2012). In response to this in this regional context, all projects denied the existence of this vehemently, with the economics of this transformational effort ruling this out. Aberdeen City Council explained this:

“It was never an easy task for any of the projects you are investigating, each one had their own challenges and obstacles and certainly opposition, sometimes political, sometimes from sections of the public, but each project had value, and all the economics had to add up, gone are the days of political vanity projects, there wasn’t enough money in the pot to go after things that don’t have a clear need or a clear return on investment to the people of the city, everything had to add up. (Aberdeen City Council Project Decision Maker)

Despite local political challenges and wider challenges such as Brexit and Covid, a repeated theme in response to them was evident from the interviews (like it was in the document analysis): resiliency. The interview narrative revealed that despite such a difficult working environment, and combative stakeholders, these projects could go ahead and be developed because they were part of something ‘bigger’, something that transcended political divisions, and that was their collective belief in the transformational vision for the region. The project decision maker for Aberdeen City Council summed this up:

“Each project approved was part of a bigger vision for the region, critical to it, you brought up our regional masterplan, this was the foundation of our efforts, where political opposition was put aside to find common ground for what we want the future of our city to be like, all parties realised that there had to be a transition away from oil and gas which has been the main employer and provides key stakeholders for how this city runs, the ideology around it, it was a significant challenge to think of what will become of Aberdeen post-oil, which is happening in our lifetime so needed addressed urgently” (Aberdeen City Council Project Decision Maker)

Numerous projects shared this opinion and were optimistic about the future because of being part of the long-term regional vision. They had experienced project challenges such as Covid but believed their projects were also the solution for regional recovery and prosperity. TECA stated they were “a key venue for kick-starting the entertainment industry post-pandemic”. Bio-Hub similarly noted the pandemic as a benefit for progression “we weathered the ups and downs, the coronavirus effect towards the latter stages of planning I believe assisted in cutting through the politics, the value of our work becoming very apparent, essential for future national risk management”. These challenges impacted project attitudes, and there were clear expressions of resilience in interview responses. The Queens Square Project highlighted that these negative factors had made them more ‘up for the challenge’ and more resilient in progressing:

“You can get lost in all the challenges, but it says a lot about us that we are up for the challenge, and that’s the ambition we should have, we know it is going to be tough, but that’s what it takes to get complex projects off the ground”. (Queens Square Project Decision Maker)

The Harbour Project shares similar expressions and even uses the terminology of building resilience:

“The double whammy for us was covid hitting the project, but I feel that this perversely had a strange benefit to us, that the Harbour board and our other stakeholders had the opportunity for a reset, had a bit of a breather, a step back from the day-to-day grind of the project to build some resilience and come out fighting again, together, for how we are going to make this a success”. (Harbour Project Decision Maker)

This link to the vision and resilience amidst a challenging project environment was explicitly identified to legacy. TECA viewed the success and legacy of the resource being linked to the regional vision:

“We have far exceeded the projected footfall, this was not anticipated, especially with the influence of the pandemic, but is evidence of the success of the resource right there, that this was the correct vision, needed by the people here, that already we are seeing the formation of its legacy”. (TECA Project Decision Maker)

The Queens Square project decision maker notes that the resilience of working through these tough project conditions will provide a regional legacy:

“It is that kind of hard decisions that I believe truly make a better legacy for the city, that we need strong voices, strong wills to tread on the toes of how things currently are and change what’s not working... as long as there is an emphasis for quality and respecting the heritage, then I believe that you can be bold and create a bright future... you can’t let progress get lost in the politics”. (Queens Square Project Decision Maker)

The creation of a future legacy through negative and unplanned factors is summed up well by the Union Terrace Gardens project decision maker who summarised the regional context:

“I do believe that the local politics of Aberdeen, which is different from the majority of national politics, has seriously impacted what is done here. Really depressing to experience, but then it does breed determined stakeholders such as Aberdeen Council, that presses ahead to always find a way to succeed, and they really have their principles pinned to their chest, and so when you mention trying to create a future legacy, yes, this group really mean this, are really committed to it, there is no one waiting in the wings to bail them out so everything about their approach needs to be all chips into the centre of the table, support the real vision, they don’t compromise, or water down the project to appease others, they are battle-hardened, and know the vision they want to bring to Aberdeen”. (Union Terrace Gardens Project Decision Maker)

5.9 Chapter Summary

This chapter provided a narrative around the regional development of legacy, analysing the motivators and challenges of incorporating legacy within the 14 selected construction and infrastructure projects. It provided an understanding for how legacy was understood, defined, and applied in this regional context. The document analysis and interview process identified specific (and often unique) legacy factors from the perceptions of the stakeholders who commissioned, designed, and managed these projects. This was compiled into eight legacy themes (Figure 22), which commentary was provided in this chapter comparing their characteristics and application to that of already established literature.

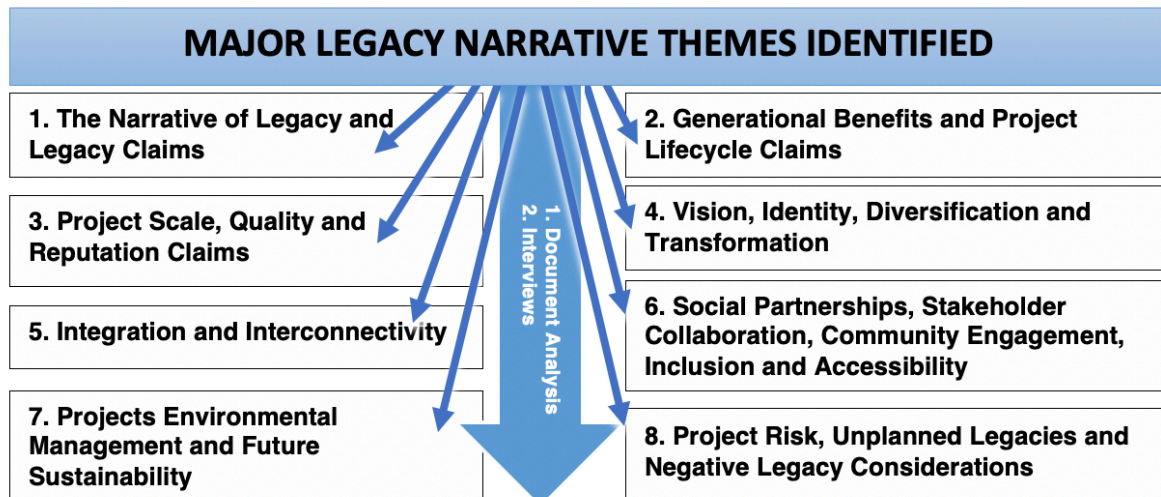


Figure 22: Legacy Themes Identified Through Document Analysis and Interviews (Source: Author)

The upcoming conclusion chapter will reflect on these findings and illustrate further how the analysis fulfils the original aims and objectives of the research. It will also provide a range of project management recommendations based on the analysis of this chapter.

6.0 Conclusions and Recommendations

This research aimed to critically explore the understanding of legacy within a regional development and what implications this has for project management approaches and governance. Legacy is an area of research with minimal exploration in a specific project management context, and this research focused on exploring legacy beyond its event management origins. Because this study investigated a theme from one context (events management) in another (regional construction and infrastructure projects), it was important to ensure that legacy exploration was based on understood and recognised themes. A theoretical framework was created to ensure important legacy characteristics were included in the design of this research so it could justifiably be considered legacy, and findings compared with the existing literature. Similarly, an established methodological approach was taken to ensure robustness for gathering data to underpin the qualitative narrative for understanding legacy's application. A multiple methods approach was applied, with document analysis conducted to identify regional legacy themes, which were then explored both inductively and deductively through semi-structured interviews.

The previous chapter combined the findings and analysis, identifying key themes and approaches adopted in developing Aberdeen and Aberdeenshire regional project legacy. This chapter will summarise the results and put them in the context of the study's objectives. It will also outline the contribution to knowledge, limitations of the research and recommendations for future research in this field.

6.1 Synopsis of Findings

The conclusion chapter will begin by revisiting the aims and objectives of the research and how these have been addressed within this study.

The aim and objectives of this research can be found in Table 34 below.

Table 34: Aims and Objectives of the Study

Aim of the Study	To explore the motivators for, and challenges of incorporating legacy in construction and infrastructure projects, and the implications legacy incorporation has for project management approaches.
Research Objective 1	To examine how the concept of legacy has been described, defined, and understood by project professionals.
Research Objective 2	To explore the approaches and rationale adopted for the development and inclusion of legacy characteristics within Aberdeen-based projects.
Research Objective 3	To assess critically from the perceptions of project stakeholders if the pursuit of legacy requires alterations to established project management practices and to the understanding of the project lifecycle more generally.
Research Objective 4	To provide recommendations for effective practice in incorporating legacy within projects.

Source: Author

6.1.1 Objective 1: Reflection on How Legacy is Understood

The first objective of the research was “*To examine how the concept of legacy has been described, defined, and understood by project professionals*”. This was important to the contribution of knowledge as existing legacy research (even in an events management context) has been overwhelmingly conceptual and untested (Tsauro et al., 2017). Legacy claims for projects have become increasingly common but lack proper definition and governance, and their application by project stakeholders has not been tested in practice (Gratton & Preuss, 2008). The literature review indicated that ‘top-down’ approaches to define and understand legacy had failed (Leopkey & Parent, 2012; Silvestre, 2009), and that ‘bottom-up’ investigations would provide clarity on its application and further development (Girginov, 2011). Having multiple individual studies revealing specific legacy narratives could help develop a bigger picture of how the concept is utilised and understood. This study enabled this by choosing a specific area (Aberdeen and Aberdeenshire), project type (construction and infrastructure), and rationale (projects that enable regional transformation and develop future legacy) as its parameters for determining legacy in this context. This provided a specific focus and a clear scope for a research area which Chappellet (2012) had described as being “*vast and above all somewhat unclear*” (p.77).

One of the aspects identified in the literature review was to ensure that these project professionals were specifically applying ‘legacy’ to their projects and not a similar or alternative concept such as leveraging, foresight etc. All project decision-makers confirmed during their interviews that it was their ambition and approach to develop a legacy. There was no mention within the document analysis of any alternative concept, so there is the confidence that the engagement parameters specifically focused on legacy development. The first stage of the research was to explore inductively if ‘legacy claims’ were being made for these identified projects within their public communications. A feature that was becoming more prevalent within project management communications and discussion in other regional areas (Cashman, 2006; Epstein et al., 2011; Smith, 2014), but as of yet unexplored for application in the context of this research. The document analysis findings revealed that within this Aberdeen/shire context, this same perspective of a future legacy was given as a project driver, with 58 legacy claims being made within the 14 projects analysed, and all projects having identified and stated at least one project legacy in public statements.

	AWPR	Harbour	Airport	TECA	AFC Stadium	Inv Health	Art Gallery	U T Gardens	Music Hall	Prime 4	Bio-Hub	Hywind	Grandhome	Queens Square	TOTAL
LEGACY CLAIMS PER PROJECT	9	6	3	6	13	1	2	3	2	2	2	3	2	4	58

Figure 23: Legacy Claims Per Project (Source: Author)

This research is the first to explore public ‘legacy claims’ being made, this has not been found in previous legacy literature, so it is unclear how prevalent these phenomena are. However, this regional context highlights how often and how widespread legacy claims are being expressed as a project justification. These projects aimed to redevelop the regional resources to facilitate transformational change and so had long-term legacy in their functionality. This study shows a correlation between projects that ‘have an intended legacy purpose’ and claims of legacy being communicated in the press. This was done organically, without the influence of this research, as all projects had communicated a legacy in the press before this research began or through any engagement with the researcher.

The existence of legacy claims from the document analysis was followed up with semi-structured interviews with project decision-makers for additional background and clarity. During this process, it was confirmed that legacy usage was intentional and by design. Project professionals were aware of the term legacy; all project decision-makers interviewed had heard of it within a specific project management context. Responses by interviewees for describing or defining legacy did vary, highlighting the need for more formalised guidance in this area. This was consistent with the legacy literature and the development of legacy as a research theme. The academic literature often expresses the lack of a clear definition as problematic for its current situation (Chappelet, 2012; Ferrari & Guala, 2017). However, these individual 'bottom-up' context studies provide insight into how project professionals defined the concept of legacy they were applying.

In this Aberdeen/shire region selection of projects, project stakeholders each made efforts to define legacy (see Appendix 2). Summarising repeated themes, project legacy was described as different from traditional or routine projects. It was emphasised that a legacy project was 'more than' its intended function. It included terminology such as transformational, vision-orientated, long-term focused, community-engaged, and value-based; these values included heritage, culture, sustainability, quality, accessibility, accessibility, and inclusion. With these findings, it can be deduced that it is definitively legacy that is being expressed, as these align well with concepts and themes for 'how legacy has been defined' in the literature (Lienhard & Preuss, 2014). Legacy descriptions have differed consistently over time (Grix & Phillpots, 2013; Reis et al., 2017), so it is valuable to have definitions and understand how it is viewed within a specific regional context and point in time. Previous legacy descriptions in literature were provided from theoretical papers (see Table 1). Having these definitions from project professionals adds additional perspective. It is valuable because it is 'in the field', data actively applied within an industry context, which is limited in existing legacy research (Thomson et al., 2019). This also provides potential for future studies looking to define legacy more concisely, with this study offering an approach and context that can be compared with.

This research study tried to ascertain further meaning for 'how' project stakeholders arrived at their description because there is no mention of legacy within official project management bodies governance and training publications. There was a significant consideration for the term being applied within their working practices, that '*it was within the ether*' (Queens Square Project Decision Maker), a theme currently being used within projects. There was an acknowledgement that there has been a knowledge shift from legacy being perceived as a term for past-orientated, outdated, previous project output to a term that was future-orientated, planning-based, and visionary in nature. This was an interesting insight because there is limited research on project professionals' attitudes and understanding of the evolution of legacy terminology and its application. Some interviewees made specific links in their understanding of legacy to the influence of the London 2012 Olympic legacy initiatives and how those approaches impacted wider project management practices. This acknowledged a link between event management legacy and project management legacy. These event management origins have now influenced and are evident within project management practices. This also provided insight for an untested consideration discussed in this work's introduction chapter and literature review, whether there is an apparent project influence from areas which have hosted 'legacy events' (e.g. London during the 2012 Olympics) on areas that have not. Aberdeen and Aberdeenshire have not hosted any mega events or national legacy projects (such as HS2) in their history. They are geographically remote from areas that have, but we see within this location projects defining their legacy project understanding from these event principles, specifically the London 2012 Olympics. Now that a connection of influence has been made, this provides opportunities for additional

research out with this study to explore if this link exists in other regional areas or project types.

Having explored how project decision-makers have defined legacy within a project context, the research then explored ‘what’ the legacy of their project was intended to be, and ‘how’ it was to be developed. Ritchie (2000) stated that “*legacies can take many different forms. They may be economic, social, physical, cultural, technical, or psychological in nature*” (p.156). The findings from the document analysis and the semi-structured interviews highlighted several specific themes for what this legacy ‘is’ and ‘how’ project decision-makers have applied and created it within these Aberdeen/shire project developments. These were discussed extensively within Chapter 5 of this work, but this has been summarised in Table 35 below, which outlines the eight identified overarching legacy themes within the scope of this research.

Table 35: Summary for Understanding Legacy in Aberdeen/Shire Regional Context

Identified Themes of Legacy	Summary for Understanding Legacy in Aberdeen/Shire Regional Context
Theme 1: Legacy Nature, Claims and Descriptions	<ul style="list-style-type: none"> • Legacy was claimed for all projects (and not any alternative concept), and all project stakeholders were aware of legacy, although some lacked clarity when defining it. • The nature of legacy is future-orientated but with a respect and starting point for project development based on existing heritage and regional needs. • Descriptions of ‘what’ a legacy project entailed emphasised that the project was ‘more than’ its intended function and included terminology such as transformational, vision orientated, community-engaged, and value-based (including heritage, culture, sustainability, quality, accessibility, inclusion).
Theme 2: Project Scale, Quality & Reputation	<ul style="list-style-type: none"> • Projects specifically identified as being a ‘legacy project’ and was applicable regardless of scale or spend. • Projects prioritised quality in outputs for effective long-term operations. • Intangible factors are considered, and regional reputational improvement sought.
Theme 3: Legacy Timelines	<ul style="list-style-type: none"> • Legacy is ‘generational’ in outlook. The specific timeline ranged from a period of 25 years to 150 years, but all projects had a minimum of 25 years for maintaining benefits. • The project lifecycle is expanded for an extended period of monitoring post the traditional close out.
Theme 4: Vision, Identity & Regional Transformation	<ul style="list-style-type: none"> • The rationale for legacy is built upon a wider agreed vision. In this context the transformation and diversification of regional identity (from oil and gas to green energy).
Theme 5: Integration & Interconnectivity	<ul style="list-style-type: none"> • Legacy projects are a collective endeavour to enhance benefits, capabilities, and scope for other regional projects. • Legacy projects provide both local and wider geographical engagement, they seek to extend the

	resource catchment area and create wider regional awareness.
Theme 6: Stakeholder and Community Engagement	<ul style="list-style-type: none"> • Legacy requires collaborative working and engagement with stakeholders. • Legacy requires the integration of the project and community; social benefits are sought, and existing heritage and culture respected.
Theme 7: Environmental Management and Sustainability	<ul style="list-style-type: none"> • Legacy projects prioritise effective environmental management, minimising impact and working harmoniously within the existing environment. • Legacy projects extensively adopt sustainability measures within the project delivery.
Theme 8: Risk, Negative & Unplanned Legacy	<ul style="list-style-type: none"> • Legacy projects incorporate risk management practices to identify negative impact and work with affected stakeholders. • Project leaders have resilience for continuing and delivering intended vision when negative, unplanned, or political factors occur, this is prioritised over project finance or schedule.

Source: Author

Table 35 highlights, for the context of this study, that legacy consists of a range of specific factors that the project stakeholders wished to achieve. The understanding from previous legacy studies in literature noted that legacy goals, approaches and methods to achieve them differed for each context (Reis et al., 2017). For example, the London Olympic 2012 Legacy objectives differed from the Qatar FIFA 2022 World Cup legacy objectives. In this Aberdeen/shire regional context, we see a specific set of factors that make up the ‘nature’ and approach towards creating and achieving legacy. These contain a range of themes which are specific to this scenario. This highlights again that finding a legacy narrative that ‘fits all’ for what legacy is can be challenging. This is another study that considers the nature of legacy, it does so in a different context from previous research but also concludes that the individual factors which consist of the desired legacy are unique to this context and are a different combination of values. While the overall collection of legacy themes may differ, it is clear from the findings that what is being developed for legacy within this Aberdeen/shire context is consistent with other legacy principles found within event management and the established literature. Table 36 breaks down each factor from the Aberdeen regional legacy make-up and compares their applicability to the existing event management literature and legacy principles.

Table 36: Identified Themes of Aberdeen and Aberdeenshire-Based Legacy Applied to Events Management Legacy Literature

Identified Themes of Legacy in Aberdeen Context	Applicability to Event Management Legacy Literature
Theme 1: Legacy Nature, Claims and Descriptions	
Legacy was claimed for all projects (and not any alternative concept), that there was an awareness of legacy by all project stakeholders although some lacked clarity when defining it.	Consistent. Legacy is usually organised through IOC or FIFA and so all associated projects identified would claim to be part of the legacy development. Legacy claims in public press from individual projects to fulfil an event have not been explored yet in the literature (Girginov, 2011; Gold & Gold, 2013; Li & McCabe, 2013).

The nature of legacy is future-orientated but with a respect and starting point for project development based on existing heritage.	Consistent. Predominately this is true (especially of recent events) because they are location-based and the heritage of the location is a factor for development and promotion (Cashman, 2003; Savishinsky, 2007; Veal et al., 2012).
Descriptions of 'what' a legacy project entailed emphasised that the project was 'more than' its intended function and included terminology such as transformational, vision-orientated, community-engaged, and value-based (including heritage, culture, sustainability, quality, accessibility, inclusion).	Partially. While these factors are all characteristics of legacy in events management, it is a combination that is unique to this Aberdeen context and there is more emphasis on community need and engagement rather than hosting an event itself (Agha et al., 2012; IOC, 2009; Preuss, 2015).
Theme 2: Project Scale, Quality & Reputation	
Projects specifically identified as being a 'legacy project' and was applicable regardless of scale or spend.	Unknown. Most legacy research highlights an 'event legacy' rather than a 'project legacy'. While it is true that projects have been termed legacy projects, there is not enough research to identify if this varies because of scale or spend. Event projects tend to be classified as 'mega-events' and so most research is on a specific scale (Gold & Gold, 2014; Hannan & Sutherland, 2015; Roche, 2000).
Projects prioritised quality in outputs for effective long-term operations.	Consistent. This is predominantly true in what is claimed by project stakeholders but there is limited research on the long-term impacts of quality as a focus as most articles highlight preparing resources for the event happening rather than post event (Ma & Kaplanidou, 2017; Thomas & Crawford, 2011).
Intangible factors are considered, and regional reputational improvement sought.	Consistent. Intangible factors are integrated into 'what a legacy is' for events although less is known on reputational improvement goals as this is difficult to measure (Ferrari & Guala, 2017; Minnaert, 2012; Smith, 2009).
Theme 3: Legacy Timelines	
Legacy is 'generational' in outlook. The specific timeline ranged from a period of 25 years to 150 years, but all projects had a minimum of 25 years for maintaining benefits.	Consistent. Generational is the most common description in events for a legacy length. Specific timeframes which this Aberdeen research provides is rare and is the first collective actually tested study which is not theorised (Dobrovolskienė et al., 2017; Ritchie, 2000; Silvius, 2009; Tomlinson, 2014).
The project lifecycle is expanded for an extended period of monitoring post the traditional close out.	Consistent. While this has been identified in theory, it has until this point lacked investigation for specific application under a legacy banner (Cooper et al., 2003; Cornelissen et al., 2011; Silva, 2015).
Theme 4: Vision, Identity & Regional Transformation	
The rationale for legacy is built upon a wider agreed vision. In this context the transformation and diversification of regional identity (from oil and gas to green energy).	Partially. The vision and ambitions of the event are the driver in an events context, but in this Aberdeen context it is the transformation of regional identity which is unique and not seen

	before in the literature (Dickson et al., 2011; Preuss, 2007; Reis et al., 2017).
Theme 5: Integration & Interconnectivity	
Legacy projects are a collective endeavour to enhance benefits, capabilities, and scope for other regional projects.	Unknown. While events legacy literature discusses what resources will be required to host an event, which is a collective effort, it is unknown for how this impacts other regional projects and their capabilities (Silvestre, 2009; Tsaour et al., 2017).
Legacy projects provide both local and wider geographical engagement, they seek to extend the resource catchment area and create wider regional awareness.	Partially. While not in the same context as the Aberdeen regional efforts and ambitions, events typically seek wider international awareness for a host city and build infrastructure to bring people from wider areas to attend although it is unknown if this benefits for the short or long term (Gold & Gold, 2009; Raco, 2013).
Theme 6: Stakeholder and Community Engagement	
Legacy requires collaborative working and engagement with stakeholders.	Consistent. This is a consistent theme within event legacy literature where diverse stakeholder 'buy in' is required (Cornelissen et al., 2011; Gratton & Preuss, 2008; Pappalepore & Duignan, 2016).
Legacy requires the integration of the project and community; social benefits are sought, and existing heritage and culture respected.	Consistent. Predominately this is true (especially of recent events) although the levels of adoption of this theme varies and not often to the level of this Aberdeen context (Hiller, 2003; IOC, 2009).
Theme 7: Environmental Management and Sustainability	
Legacy projects prioritise effective environmental management, minimising impact and working harmoniously within the existing environment.	Consistent. This is often a driver of legacy communicated (especially of recent events) but there is limited study for how this differs from traditional project approaches (Labuschagne et al., 2005; Poon & Silvius, 2019).
Legacy projects extensively adopt sustainability measures within the project delivery.	Consistent. Many events literature highlight a link between sustainability and legacy although lacks specific application for projects which this research provides (Frey et al., 2008; Grix, 2014; Mol, 2010; Silvius & Schipper, 2014).
Theme 8: Risk, Negative & Unplanned Legacy	
Legacy projects incorporate risk management practices to identify negative impact and work with affected stakeholders.	Consistent. While risk and negative impacts are a theme of event legacy, there is little practical investigation for how this has been adopted in practice (Chappelet, 2019; de Oliveira & Rabechini, 2019; Taylor & Edmondson, 2007).
Project leaders have resilience for continuing and delivering intended vision when negative, unplanned, or political factors occur, this is prioritised over project finance or schedule.	Unknown. Unplanned legacies are a core part of the literature, although application in a project context for a project decision makers resilience to stick to legacy principles is unexplored until now (Griffiths & Armour, 2013; Ma & Kaplanidou, 2017)

Source (Author)

The overview in Table 36, compares the findings of this study with the principles of established legacy literature. The findings of this study revealed that there is consistency in what was identified as the characteristics and features of legacy in the context of this research with that of the wider legacy research found in event management studies. While previous event management studies found different results of the nature of an intended legacy for their specific event, the processes and approaches found in this Aberdeen/shire project context were similar and allow for the conclusion that legacy is present and being specifically and purposely developed. The makeup for what this legacy consists of is unique (Table 35) and has a range of expansive themes. This is to be expected because the scale and potential application of legacy is a large and complex theme (Agha et al., 2012). This has always been the limitation of the research field, the broad number of potential legacy themes returned, and their complexity for how it is understood has limited its development (Gratton & Preuss, 2008). The previous chapters in this work have already identified that what is needed in this research field is more ‘starting points’ for how legacy is understood and applied (Silva, 2015). This research provides this, in its own identified scope, it provides a unique set of parameters for what legacy is. It is a study which is not restricted by being solely based on theoretical perspectives, but expands the research field to include what actual project professionals have applied to real projects. Taking this empirical understanding, this work can be considered a useful construct for all projects when considering legacy and wider generalisation. The author wanted to provide guidance for other project professionals and academic researchers, and so developed a model to conceptualise legacy development factors (Figure 42).



Figure 42: Typology of Legacy in Project Management (Source: Author)

The model outlined in Figure 42 classifies the aspects for developing legacy into a project. This enables an understanding for the factors which make up legacy within a specific project management context. This is a significant contribution of knowledge to the research field as it was something that was previously lacking, and this model allows researchers to bridge the gap of contextualising legacy out with events and into specific projects. It is a contribution which provides comprehensive, practical, and articulated breakdown of what legacy is and how it is being developed in a specific context. It outlines how project decision-makers understand the concept of legacy, define it, and apply it within their projects. Specific timelines for legacy are articulated, the legacy vision is given, as are project priorities and what project management techniques and values are prioritised to achieve it. These were all

factors that were previously unknown, and this research can provide values or descriptions to give substance to any legacy evaluation. It enables the further development and investigation of legacy within project management as it provides a foundation for which additional insight can be built and compared too. This is a gap in the existing literature, not for just an Aberdeen/shire region context or construction and infrastructure project context, but for the whole discipline of project management with actual values and legacy factors making up understanding where previous thought was limited or conceptual only.

6.1.2 Objective 2 Reflection on Approaches and Rationale for Legacy Characteristics

The second objective of the research was “*To explore the approaches and rationale adopted for the development and inclusion of legacy characteristics within Aberdeen-based projects.*”. The previous objective review related to ‘what’ legacy was, and how project decision-makers perceived it. The second objective of this research explored more the ‘why’ and ‘how’ of developing legacy in the defined context of this work.

In this regional project context, it was important to understand what was driving legacy and the rationale behind its existence in these 14 projects. Previous legacy research indicated that the rationale for legacy was ‘triggered’ by successfully awarding a major sporting event to be hosted in a region (Reis et al., 2017). This provided a purpose for a host city’s transformation effort and created defined timelines to achieve this. Within the research context of this work, there was no event trigger, so it explored what drives legacy in this Aberdeen / Aberdeenshire project context. The document analysis revealed a consistent theme for the rationale: these projects were all part of developing regional resources to achieve a specific regional vision. This was confirmed within the interviews; all participants acknowledged that their projects ‘went beyond’ their intended functionality and contributed to a wider objective to transform the Aberdeen/shire region away from an oil and gas identity to one inclusive of green energy development. Project decision-makers from a variety of quite diverse project types revealed that they not only knew of these transformation plans but were a central part of the process for achieving this vision. This was quite a specific driver and one that is unique to this regional location. There are not many global areas that have had an established oil and gas industry and are now looking for alternatives in a decommissioning period. This highlighted the presence of significant regional emphasis for considering future generational needs and made this location well-suited for exploring a study into legacy. It revealed a context that legacy could be developed out with of mega sporting events. This emphasis revealed different needs from other regional areas, so developed regional specific project plans to meet the location’s future needs and the approach to achieve them. One of these different approaches within a project management context starts with the nature of the project itself. In traditional project management, projects are considered individualistic, stand-alone efforts to develop something unique (Kerzner, 2017). However, we see from these findings that in this Aberdeen regional context, these projects were very much part of a collective, which fed up to meet the transformational vision of the region. These 14 projects benefited from the collective project development over a similar timeline, enabling enhancements and unlocking the scope of benefits in their own projects (see section 5.2).

This collective approach enabled projects that were different in scope, size, and impact to be part of the future legacy of Aberdeen and Aberdeenshire. Each project knowing how their project increased benefits for future generations by adding new resources, improvements in functionality, and accessibility to old resources, which, if they were projects conducted in silos, would not be able to claim as being transformative in outlook. Because these projects were part of a wider ambition and regional vision, a different approach was taken to manage

them than expected from traditional standard project governance. These projects were given a higher level of importance by the local authority, and their project management approaches were based upon more expansive principles than established project management methods. In Table 37, the author has summarised the contrasting values for the approaches taken by these 14 Aberdeen-based projects and that of traditional project management.

Table 37: Contrast in Project Management Approaches

	Established Project Management	Project Management Within Aberdeen Based Legacy Projects
Delivery Focus	Short Term Orientation	Long Term Orientation
Interest	Sponsor / Stakeholders	Generational Community Output
Success	Deliverable / Result Orientated	Lifecycle Orientated (with extended project lifecycle)
Ethos	Scope, Time, Budget	Vision, Quality, Environmental, and Sustainability focussed
Complexity	Reduce Complexity	Increase Complexity

(Source: Author, Adapted from Silvius et al., 2012)

Table 37 highlights the very different perspectives provided to realise project completion. It reveals that these Aberdeen-based projects have a delivery focus that is long-term orientated. These projects were able to articulate the anticipated length of legacy, with each project identifying a time period of at least 25 years. This differs from standard project management approaches, where projects are typically conducted in response to short-term requirements and ambitions to focus specifically on the here-and-now (The Association for Project Management, 2019). This also impacts what success is within a project context. Traditionally this is the deliverable to complete project objectives and close out the project (Buttrick, 2013). This is not the case for these Aberdeen-based projects where success is based on long-term measures. This includes the project having a post-completion monitoring phase to review and track progress on a project's output. This is a concept that is not evident in project management governance but a concept that numerous authors have suggested for achieving 'true' legacy (Smith & Fox, 2007; Tsaur et al., 2017). The fact that it is evident here and that project decision-makers identified this as an important factor and designed this concept into their projects (discussing it unprompted within the interviews) gives substance to the fact that these projects have additional depth for future considerations.

Monitoring programmes were applied for these projects, enabling the long-term review to determine if legacy objectives will be met. This is a benefit of having a legacy vision driven by a regional council, as this is a central body with the resources to audit and report on project effectiveness over the long term. This approach (as well as some projects adopting private monitoring schemes) highlights that there is substance beyond 'claiming' a legacy and that schemes and methods are in place to monitor and react to long-term impacts. This research suggests that for achieving legacy then, future monitoring must be a part of that and that there needs to be a central invested body that can oversee this. This links well with event management legacy research where organisations like the IOC or FIFA fulfil this role (IOC, 2009; Kassens-Noor et al., 2015).

This research shows that local councils (sometimes in partnership with private and public monitoring contracts) can function in this role and work in long-term partnerships with project developers. This again leads to project legacy being a collective effort, as this would not be able to be achieved with solo projects but needs a range of stakeholders to work in

partnership to deliver long-term benefits as intended and designed by the original project planners. This is also highlighted by these Aberdeen projects interest being based on generational community outputs rather than the traditional project driver of the sponsor or the funding stakeholder. The community benefits and purpose were repeatedly highlighted in the document analysis and semi-structured interviews. Project plans included a large range of community engagement and impact on a scale not anticipated for traditional project management (see section 5.6). This added significant complexity, cost, and required new project skills for stakeholders but provided community involvement that will continue for many years after project completion, becoming part of a regional social legacy.

Project decision-makers interviewed indicated that these projects were not motivated by economic opportunities, which was the primary focus in the literature (Dolan et al., 2019), but by providing new regional opportunities, community benefits, greater accessibility, and inclusion to resources. Mention of economic drivers and return on investment was very limited in project communications, and it was evident that the majority of these projects were not financially performing well or being maximised to make stakeholders profits (although they were majorly impacted by Covid throughout this research). This was also evident in the project management tools and techniques adopted to complete these projects, where there was considerable emphasis on adding complexity rather than emphasising efficiency and applying the established triple pillars of controlling the scope, time, and budget. This is a major departure from project management fundamentals (Lock, 2020). It also highlights that these projects were again 'more than' their function, and so had to be completed to a standard and method that would ensure long-term success despite adding significant costs, time, and effort to projects.

The project professionals in this research indicated that their project approach was different and was delivered more responsibly to produce the eight identified legacy themes. There were above-normal levels of consideration for environmental management evident, with legacy starting with 'understanding and respecting heritage' before looking to the future. It was felt that damage to the environment needed to be minimised to be fitting with this legacy concept. The project designs were created so that project outputs would work 'with' the environment, not against it. These projects liaised with environmental agencies to protect bio-diversities and minimise and reduce the impact where possible. This added significant costs and expertise to achieve, limited building scope, and extra project time to comply with and complete project objectives. It also added to the community-orientated project purpose rather than traditional project sponsor benefits. These projects extensively worked with their communities to shape their designs and incorporated the opinions of those potentially negatively impacted by work done. This different project ethos was demonstrated significantly when 'unplanned' factors occurred. In project literature, the 'unplanned', risks, or negative factors surrounding legacy development can be minimised in favour of more 'positive' elements but are essential to include if considering a 'real' legacy as not everything will proceed as designed or intended (Dickson et al., 2011; Ferrari & Guala, 2017). In this research, it could be said that this was a 'test' of legacy development. When unplanned factors occurred, how did project stakeholder's respond? Traditional project management approaches would limit the scope and scale of what is intended, reduce the quality, budget, or seek savings or efficiencies (Crawford, 2004; Gil et al., 2017; Kerzner, 2017). It was telling that in this Aberdeen project context, when major unplanned factors such as the covid pandemic or Brexit occurred, project decision-makers did not sacrifice their values. Environmental and sustainability methods continued despite spiralling costs. There was no compromise on quality or looking to reduce costs for the short term, with project decision-makers emphasising that proper quality management processes, materials and approach was a requirement for achieving long-term benefits.

This lack of compromise or applying the project management iron triangle resulted in many of these projects going years over schedule, or significantly over budget. Project decision-makers felt this was the right management approach as their focus was generational, and their projects had to be done right, to last the test of time. This was only possible at great expense, highlighting the collective benefit, but also the costs, of having established bodies such as Aberdeen and Aberdeenshire councils as key legacy stakeholders who could enable this through their financial resources. This project management approach summarised in this research as 'resilience' towards legacy principles is another topic with limited academic exploration. The author believes this would merit further research to investigate if other legacy project claims stick to their principles as 'unplanned' factors occur. This research provides a measure of how much these 14 projects did not deviate from their original legacy vision and delivered a project management approach different from established values (Table 37 and Section 5.6). This research also revealed the impact of how this affected budgets, project schedules, and quality principles. This can be compared in future research with other areas and contexts, exploring project decision-makers resilience to stick with the legacy approach outlined in the right-hand column of Table 37.

The legacy approach to project management for these 14 projects also revealed a significant link between sustainability and legacy. This is a link that has been theorised in literature, but there are limited industry studies which have explored the connection. Silva (2015) hoped that other researchers would "*analyse the links between these concepts, and what role do projects and the discipline of Project Management play towards a more sustainable world*" (p.5). In the findings, section 5.7 highlights a range of sustainability plans, principles, and initiatives these projects adopted. All projects had applied sustainability as a core driver and were able to communicate this through their press releases and semi-structured interviews. Project decision-makers could articulate specifically what sustainability methods they were applying and that it was an important factor for not only their project approach but for the development of an anticipated legacy.

There can be confusion about the differences between sustainability and legacy as they have many similarities, such as long-term focus and increased environmental and social responsibility (Gold & Gold, 2014; Labuschagne & Brent, 2006; Lozano et al., 2014). In the findings of this research, we see that sustainability measures are a core factor to include for achieving a long-term legacy and its inclusion results in an extended project lifecycle (which will be reflected upon further in Section 6.1.3 of this chapter). The presence of sustainability was significant, but it was still only one part (from eight) for the theme of developing regional legacy (see theme seven in Figure 22). All projects had a sustainability plan which meant that it was part of the wider legacy narrative, and the inclusion of sustainability was needed to achieve legacy. This provides additional insight for the academic literature; it confirms that the link between sustainability and legacy existed in this regional project context. The returned data showed that project decision-makers explicitly knew the differences between the two concepts. These 14 projects had considered and designed a range of sustainability initiatives, measures, and processes in their project management methods which helped build substance for a future-orientated planned legacy. This provides some scope for additional research to explore this theme further.

Sustainability is a concept that is much more developed, defined, and advanced when compared to the current state of legacy research (Lienhard & Preuss, 2014). How legacy fits within established sustainability measures such as the UN's SDGs and other sustainability reporting tools is yet to be determined. The findings from the data of this work make mention that in their project plans, stakeholders did consider and plan for compliance with SDGs and

wider COP-driven environmental goals, but this could be explored in further research for specifics in the application.

To conclude this summary of this research objective, it should be reflected that the impact of these more comprehensive legacy-specific project management approaches resulted in a significant increase in project complexity and requirements for regional community engagement. It resulted in methods being applied which can be at odds with established project management fundamentals, so recommendations for how this can be incorporated within project management governance will be discussed in the next section of this thesis (6.1.3). The objective findings did reveal that these project management approaches to plan and develop legacy was to a higher standard and were based on more ambitious, ethically sound vision and values to develop and achieve. This added increased project management complexity. There was a resilience evident not to compromise or adopt project methods that were cheaper, easier, quicker, less quality, less ethical, less sustainable, or more manageable alternatives. These factors showed that these projects were committed to their planned legacy and stuck with their ambitious approaches to achieve it, despite significant risks and major financial setbacks occurring.

This research surmises that the legacy claims given for the 14 projects analysed have a degree of substance due to the project approach adopted and the resilience of project stakeholders to stick with them. This was done in a highly visible environment and resulted in much public criticism, political consequences, and excessive spending from public funds to retain this approach. This shows that there were negative consequences for stakeholders seeking to obtain legacy through these methods. Legacy washing is a concept that has not been explored in literature from a project context (there has not been enough empirical research to test this). This research concludes that legacy washing was not evident in this Aberdeen/shire project context and that there were detailed and specific plans to justify legacy claims being made. Finally, it also suggests that in terms of a project type that it could be considered that a 'legacy project' could be a specific individual project categorisation of its own. That a project which is based around and adheres to the factors contained within the authors Typology of Legacy in Project Management Model (Figure 42), could be labelled specifically as a legacy project.

6.1.3 Objective 3: Reflection for Legacy Influence on Project Management Governance, Practice, and Lifecycle.

The third objective of the research was "*To assess critically from the perceptions of project stakeholders if the pursuit of legacy requires alterations to established project management governance, practice and lifecycle understanding*". The previous objective findings revealed that developing legacy within a project meant applying a range of different principles and approaches compared to more standard project management practices. This third objective reflects more on what this means for broader project management understanding and the governance of the discipline.

This research started by exploring definitions and characteristics of what the parameters of legacy entail and how this is being communicated. This research has already indicated that legacy needs to be understood for the context in which it is found (Cornelissen et al., 2011). A primary purpose of this work is to investigate legacy in a new context. This will ultimately help advance this research field further. If project legacy is explored and better understood in multiple areas, then the consistent patterns identified in these individual contexts can be the first steps for developing the ultimate governance goal in the discipline, which is to move away from "*rhetorical commitment[s]...[to a] formal requirement*" (Veal et al., 2012, p. 176).

The findings of this research relate specifically to projects and project management principles, so data from it can be used to highlight understanding in this area that was not previously available. With no mention of legacy within the existing Project Management Bodies of Knowledge, the starting point must be for what the nature of legacy is within a project management context. One of the limitations of this research was that the investigation was constrained to one regional location. However, this research reveals, for the area of Aberdeen and Aberdeenshire, the important factors for the nature of project legacy.

This research introduced the eight themes of legacy, which were framed into the Typology of Legacy in Project Management (Figure 42). This is a starting example of empirical evidence for the features and processes for understanding, managing, and developing legacy within a project context. The eight themes of legacy would find value to be communicated further to other project professionals for how legacy is being applied in the field, albeit from a specific geographical environment. This information would also act as a baseline for comprehending other efforts and highlighting to project professionals some key differences in approach to deliver a legacy project to that of traditional practice. These findings (summarised in Table 35) show that efforts in developing legacy require project professionals to incorporate new approaches. There were requirements for additional sustainability and environmental initiatives, community understanding and engagement. Projects went on longer, were more expensive, more quality orientated, and had significantly more complexity to plan and execute. With this background and understanding, it would require project professionals to change expectations and approaches for their practice when trying to deliver legacy objectives within their projects.

To fulfil the requirements of objective three, this research explored the link between legacy development and what this could mean for project management governance and practice. The semi-structured interviews revealed that project professionals for these projects felt overwhelmingly that existing project management guidance and governance were limited in this area and did not meet their needs for assisting them in the development of legacy. Numerous interview participants mentioned that they designed and adopted a 'custom' approach to developing their project because of the lack of appropriate official guidance.

The literature review initially explored and revealed no mention of legacy in any edition of official project governance publications. This was another contribution to knowledge, as previously, it was unknown how the governance publications of project management addressed or facilitated legacy. To address this gap, the author reviewed each of the international knowledge group governance publications, which are: '*A Guide to the Project Management Body of Knowledge*' (PMBOK), '*The APM Body of Knowledge*' and '*Managing Successful Projects with PRINCE2*'. Every current and previous edition of these publications (at the time of conducting the literature review) was analysed to determine how legacy was discussed. It was found that within each of the 18 editions and 25 years' worth of updates, the word legacy was never used in these publications, clearly highlighting the lack of any relevant material or guidance to support or facilitate legacy with project management. In addition to this, the data from this research highlighted that project professionals did not find these existing sources useful for exploring legacy.

The interviews also revealed that legacy was an important project management theme; it was described as a '*hot button topic...a really valuable topic to explore in our industry*' (TECA Project Decision Maker), that legacy was already in "*the project management vocabulary...in the ether*" (Queens Square Project Decision Maker). The research findings

show that legacy is a project management theme currently neglected in official governance and lacks the consideration that its appearance in industry warrants. There were numerous comments from interview participants expressing a greater need for additional governance and guidance. This was summed up well by the Art Gallery Project Decision Maker, who expressed they “agree that looking into it formally, giving it some definitive structure would be a worthwhile endeavour”.

This research provides a collection of legacy themes within a defined project management context. This data collected and collated from actual projects have the potential to impact and change governance practices within the discipline of project management if applied further. Table 38 outlines the potential future influence the identified eight themes of legacy from this research could have to impact project management governance.

Table 38: Potential Research Influence and Impact to Project Management Governance Bodies Based on Level of Integration

Potential Research Influence and Impact to Project Management Governance Bodies Based on Level of Integration			
← Commitment to Integrate Principal Findings →			
Project Management Stakeholder Level	Communicate General Awareness	Consideration Given to Operations	Full Implementation and Adoption
Project Management Methodology and Governance	<ul style="list-style-type: none"> Provides additional context to current practice. Expands the discussion for what is possible / required in project management governance. 	<ul style="list-style-type: none"> A starting point for further testing and recording data in relation to how application could be impacted within various industries, scenarios, and scale of operations. Better measurement processes and expectations for potential impact for integration of legacy within project management. 	<ul style="list-style-type: none"> Has the ability to positively redefine project management frameworks and guidance principles to include legacy measures and how to resource and manage them (which is currently lacking). Increased ethical, responsible, and long-term focussed project management (which includes sustainability) can become a central issue of importance rather than a secondary consideration in governance.
Project Management Bodies of Knowledge	<ul style="list-style-type: none"> Adds to the knowledge and background for the legacy theme. A resource to build further research for academics and practitioners. Discussion point that can be expanded within PM communities and communicated upwards. 	<ul style="list-style-type: none"> The eight themes of legacy provide areas for cross-over and potential integration within existing PM approaches, standards, and governance documentation. Identification of current gaps in the knowledge and approach of PM organisations towards legacy. 	<ul style="list-style-type: none"> The tool for future change in advancing PM regulation and standards (including meeting SDGs and global environmental initiatives) Could influence the expansion of current practice and understanding (e.g. legacy could become the 11th Project

			Management Knowledge Area).
Government (Regional, National, International)	<ul style="list-style-type: none"> • Research could provide additional background into current practice and legislation options. • Consolidates a volume of legacy integration research as a resource for building local, national, and international strategic direction and policy. 	<ul style="list-style-type: none"> • The eight legacy themes will have impact across different national approaches to project management. • Potentially help organisations to self-regulate legacy integration to better meet government targets and thus reduce the need for future binding legislation. 	<ul style="list-style-type: none"> • The eight legacy themes will provide support for government decision making, highlighting the legacy potential for approving and financing public projects and how to meet public legacy 'claims' made in this process. • Provides specific areas of application for achieving political visions and developing long-term infrastructure needs around them. • Gives guidance for using resources and responding to the requirements for long term planning and monitoring needs.

Source: Author

Table 38 outlines how the findings of this research can provide additional insight to assist project management governance bodies in incorporating legacy into their values and practices. The table highlights that this can be done at different levels of integration. This can be from just providing general information and awareness of what a legacy project can be and how it fits within current understanding to full adoption within existing frameworks and training programmes. One of the inductive findings returned from the semi-structured interviews was the desire of project stakeholders to have specific guidance inserted into the Bodies of Knowledge and other training and educational materials of the discipline. This research outlines the different approaches required for a legacy project to that of established methods (Table 37: Contrast in Project Management Approaches), so this could be recorded in governance publications and for inclusion in its knowledge areas. This fits in well with current redevelopments and revisions of the Body of Knowledge publications and other governance documentation currently being reviewed to incorporate other long-term orientated themes such as sustainability and UN SDG tracking.

The research findings introduced an overview of eight project management legacy themes and conceptualised these into the Typology of Legacy in Project Management (Figure 42). This provides an understanding of the nature of a project legacy. This has some good applicability for government bodies (both regional and national) for supporting, financing, and approving public projects. These factors provide some standards to prioritise and a baseline for making project legacy claims and monitoring over the long term.

The findings of this research also have applicability at a project level and could enhance the practice of those stakeholders who plan and manage projects. Table 39 outlines the potential impact this research could have on these groups depending on the level of commitment to integrate them into existing procedures.

Table 39: Potential Research Influence and Impact to Project Management Stakeholders Based on Level of Integration

Potential Research Influence and Impact to Project Management Stakeholders Based on Level of Integration			
Project Management Stakeholder Level	Communicate General Awareness	Consideration Given to Operations	Full Implementation and Adoption
Projects	<ul style="list-style-type: none"> • Provide greater background and context towards the potential for the project scope to include legacy. • Provide data for stakeholder attitudes towards legacy and how this relates to current project competences. 	<ul style="list-style-type: none"> • Enables enhanced clarity for the potential structure and management of legacy projects. • Provide a measurement for potential impact to operations for increased legacy approach within projects. • Provide background for the resources required for legacy development in projects. 	<ul style="list-style-type: none"> • Redefine the nature and timeline of projects and enable widespread inclusion of legacy practices. • Contribute to the definition of project success criteria incorporating legacy as a key component. • Have a revised understanding for how legacy impacts a project 'lifecycle'.
Project Sponsor	<ul style="list-style-type: none"> • Expands awareness for the purpose and timeline of a project to meet needs wider than individual organisation needs. 	<ul style="list-style-type: none"> • Provides factors of legacy to review against authenticity of claims made for a project. • Enables an organisation/sponsor to consider in its project planning additional factors around ethics, community, heritage, quality and long-term impact and monitoring. 	<ul style="list-style-type: none"> • Provides understanding for developing organisational frameworks / processes to ensure approved projects have substance to organisational values and not primarily vanity or economically focussed. • Enhances position to communicate and get approved a proposed project by having additional understanding for how it fits local needs and provides long term community benefits.
PMO Office	<ul style="list-style-type: none"> • Provide additional background to the approach PMO stakeholders can have towards incorporating legacy practices. 	<ul style="list-style-type: none"> • Revision of project portfolios to include potential for actual legacy projects and not just limited to projects that are sustainable in nature only. • Better understanding for what 'collective' projects can achieve and enables a new category for more ethical, responsible, and long-term project management. 	<ul style="list-style-type: none"> • Enable practical application to meet organisational mission statements, values, and objectives relating to long term development, community integration, and sustainability targets. • Enable a unique legacy strategy to enable competitive advantage within a portfolio and industry.
Project Manager (also applicable to Project Architect)	<ul style="list-style-type: none"> • Provide awareness for potential skills, approaches and requirements needed for a project manager to consider 	<ul style="list-style-type: none"> • Enable project managers to better gauge future training requirements around an increasingly prevalent industry trend. 	<ul style="list-style-type: none"> • Provides new approaches unrelated to traditional iron triangle objectives for how a project manager

	in developing legacy to a project.	<ul style="list-style-type: none"> • Provide better understanding of project manager competence and attitudes towards legacy obtainment. 	<p>can impact project operations.</p> <ul style="list-style-type: none"> • Highlights a new level of ethical and responsible approach to managing projects. • Provides guidance for project manager competence requirements for long term planning developments.
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Source: Author

Table 39 provides insight that all stakeholders involved in project management governance and practice can benefit from this legacy research. It provides further understanding of the nature of legacy, that the theme complies with project management practices and reveals how project professionals apply it. This provides information for a project manager to know the anticipated skills, competencies and resources required. It also gives background for developing further methodological or strategic approaches to plan and manage legacy factors within a project. The impact of this research to wider project management could be to provide additional clarity to the current practice of making public claims of legacy for projects. Scrutiny of these claims had previously not been tested, but this research provides a range of factors for the nature of project legacy, which other project claims can be compared against. The adoption of the recommendations of this research could also guide the project management approach needed for fulfilling a future vision identified by project sponsors, PMO's and government departments. It provides factors to adopt, allowing a project management approach aligned to legacy principles and meeting organisational vision, values, and commitments to future environmental, net zero or emissions targets. The project approach identified in this research allows stakeholders to plan projects which are more ethical, responsible, and deliver for the long term while positively impacting communities beyond the organisation.

The last aspect of objective three of this research was around project lifecycle understanding and if the findings recommend alterations to established project management practices. This was definitive in that alterations are required as the legacy focus in this Aberdeen-based context was 'generational', and anticipated project involvement was expected to match the length of the legacy being articulated. Traditional phased project management lifecycles where a project is 'closed out' on completion of construction objectives being met were not totally compliant in this context. There was an expectation for 'project monitoring' to be included as part of the project plan to develop a legacy. The monitoring period was at least 25 years for all projects within this sample. Project stakeholders could articulate 'who' or what body would facilitate this (often through the coordination of both councils). The academic literature highlighted that 'post operational' project monitoring was problematic because it was costly, complex, and stakeholders did not want the future responsibility it entails (Chappelet, 2019). This monitoring and long-term auditing of legacy objectives were important features of this regional legacy development. To achieve it, this requires the existence of an extended legacy lifecycle and differs from traditional approaches. This research agrees with the concept of an extended project 'afterlife' which Silva (2015) proposed and which was incorporated and investigated through the theoretical framework of this research (Figure 14). The theoretical framework was the first to combine legacy and project management models and is a contribution to knowledge as it has been successfully applied in this research and can be replicated in other investigations for an approach for understanding legacy.

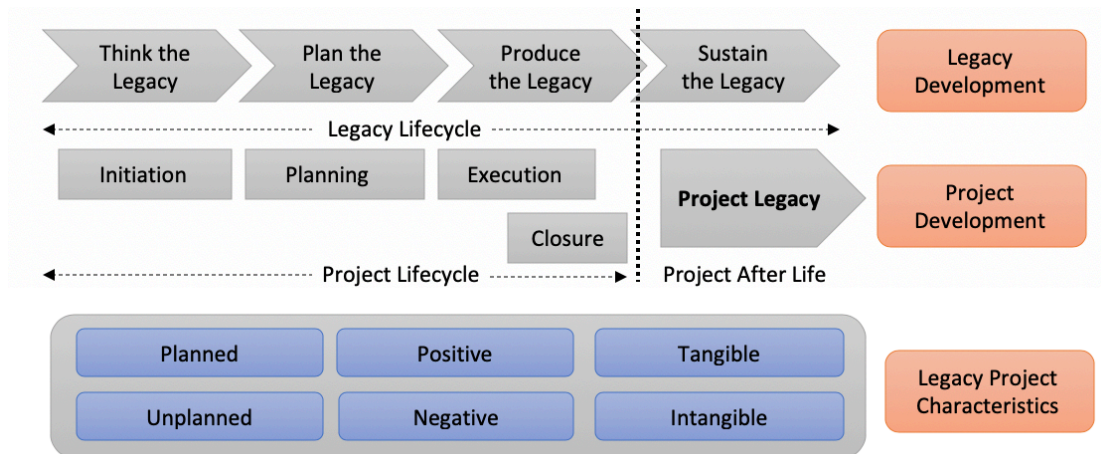


Figure 14: Project Legacy Framework (Source: Author, adapted from Preuss 2007 & Silva 2015)

This research proposes that a legacy needs to be sustained over the period of the anticipated legacy (in this context, projects identified a period of 25 years+). The monitoring process applied fulfils this project afterlife requirement and enables project stakeholders to also respond towards any ‘unplanned’ or ‘negative’ legacy characteristics which may appear over time. This provides again more substance that these projects are based on and committed to a future long-term legacy as originally intended. The research found that legacy development in project management was not exclusively focused on traditional project drivers such as scale, spend, or project type but rather the inclusion of planned factors that would allow long-term benefits to be achieved, which were traceable over an extended timeline. Additional insights into traditional project timeline approaches are important to the discipline of project management. Dobrovolskienė et al. (2017, p.480) notes that “*the lifecycle is the focus paradigm for business and projects*”, and revisions to the existing standard can provide insight and value for approaches adopted. Project management governance and official publications have been slow to incorporate sustainable or future-orientated lifestyle practices (Marcelino-Sádaba et al., 2015), so these findings provide insight that these project bodies can use for future development.

6.1.4 Objective 4: Recommendations for Effective Practice for Incorporating Legacy

The last objective of the research was “*To provide recommendations for effective practice in incorporating legacy within projects*”. Throughout the findings and conclusion chapters, a range of recommendations have been suggested; these will now be summarised in this section. The previous objective section discussed the legacy influence on project governance, practice and lifecycle. This section goes into more detail for recommending and providing guidance for incorporating some of the legacy principles identified in this research. This summary of recommendations presents an overview of that ‘bottom up’ understanding of what legacy is and how it can be applied to better inform future project implementation and development. The following themes will outline the recommendations for incorporating legacy within future construction and infrastructure projects and improving overall project management practices.

6.1.4.1 Recommendations for Projects Making Legacy Claims

A recommendation from the findings of this research for project professionals to effectively claim legacy within their project would be as follows:

- Legacy claims are currently ambiguous and need to be more specific to assist stakeholders in being effective in their public communications for legacy planning and development. Legacy claims should be accompanied by a clear outline of what the legacy intended is, who will benefit, how it is transformational in nature, how the project is planned and managed to safeguard against negative factors and articulate how this will be delivered over the long term.

6.1.4.2 Recommendations for Planning and Incorporating Legacy Within a Project

This section will outline a range of recommendations and guidance for the design and planning of a project to incorporate legacy factors; these include:

- Legacy development within project management should be underpinned by an agreed vision that all stakeholders understand as the project rationale and driver for progress. It should be a vision with enough collective support to drive the legacy project through significant potential political and negative outcomes.
- There should be confidence that legacy can be planned into a project regardless of scale, spend, or type of project. What is important is that the project is part of a collective endeavour and has a specific approach to managing a long-term identified vision.
- There should be an understanding amongst project professionals that the nature of a legacy project is different from the recognised standard. Their project will not be conducted in silo, competing against other resources, but contributing to a combined overarching planned vision. This will require project resources over a much longer timeframe (including post-completion) and specific skills and training to fulfil effectively.
- Legacy projects should have a transformational impact on a geographical region. This goes beyond project function and the addition of a new resource. It will include altering the potential catchment area of resources, the interconnectivity of resources, the interconnectivity to other regional areas (locally, nationally, and internationally), and influencing regional reputations. They integrate extensively with the community they are intended for and require more significant planning for stakeholder engagement, management and understanding intangible/social benefits beyond the immediate project sponsor's needs.
- A legacy project should be able to identify tangible and intangible benefits. It should emphasise and incorporate in the design both planned and unplanned factors. It should be able to articulate clearly through stakeholder and risk analysis who is positively and negatively impacted (and how this could change over time).

6.1.4.2 Recommendations for Applying Project Management Approaches in Developing Legacy

The following recommendations are provided to guide project professionals for specific project management techniques and practices required to incorporate legacy.

- The project management approach in terms of the iron triangle will focus on achieving the original desired scope over time or costs. The project's focus will be to base it on a 'quality' that can enable long-term effectiveness without the need for future re-engineering. A legacy project adds much complexity over a more extended period of time and so requires skilled resources allocated to accommodate and respond to a more challenging environment. Project professionals require an attitude of resilience to ensure quality ambitions are met and not compromised when financial or schedule challenges occur.
- A legacy project has more prominent 'ethics' in the management, planning and execution of work to be done. Project management approaches will extensively explore methods to protect the local environment and do this with limited constraints to reign in associated costs. It will understand the existing values and heritage of the project area and adopt stakeholder management and community engagement plans. It will incorporate protective environmental management practices and prioritise adopting sustainability initiatives in project delivery. This will include recycling existing materials, green supply chains and other sustainable initiatives that achieve certification from accredited bodies and align with national and international climate and environmental ambitions.
- The lifecycle understanding of traditional project management is revised with a long-term focus for a project that is understood to be 'generational'. This will be incorporated within a project's original initiation and planning stage and monitored for an extended period post-completion.
- To effectively deliver a legacy project, a monitoring system through a purposefully set up and qualified body is established to monitor project goals for a minimum of 25 years. This research found that regional councils effectively provide this service with existing skills in long-term asset management, auditing, inspection, co-ordinating vision fulfilment and have a vested interest and financial resources to support projects in their jurisdiction.

6.2 Contribution to Knowledge

Having presented an overview of how the research objectives have been met, section 6.2 will outline aspects of the research that have contributed to advancing existing knowledge. This is applied within the scope and parameters of this research and will be broken down by contributions to theory, practice, and methodology.

6.2.1 Contributions to Theory

Much of the existing literature on legacy, even in an events management context, is conceptual (Tsaur et al., 2017). This research contributes to theory, having investigated or tested aspects of legacy that have been theorised or providing new insights into existing thought. This includes:

- Providing a unique context for exploring legacy that produced empirical data to compare with existing conceptual understanding.
- Considering legacy development for five different types of active projects within construction and infrastructure (commercial, residential, transport infrastructure, stadium & event construction, and regeneration structures) and that these are all effective for applying regional legacy development.
- Providing for this regional context a range of eight legacy themes which provide the foundation for understanding and comparing further explorations for what legacy is

and the factors that create it. This was developed into the Typology of Legacy in Project Management (Figure 42).

- Confirming the importance of monitoring as outlined in previous legacy research but provides a set time length for monitoring requirements (minimum 25 years), how to apply them and how this links to existing project timeline methodologies.
- Demonstrating that from a project management perspective that legacy requires the adoption of an extended project lifecycle.
- Providing a contextual overview of the literature in the combined themes of legacy and project management. The literature review map (Figure 1), highlights themes that have previously not been explored collectively together and provides a structure around understanding the key areas in both topics.
- Confirming within this regional project management context that there is a link between legacy development and sustainability, with sustainability initiatives being present in every project analysed.
- Revealing that the 'legacy washing' concept (which was introduced in this research) was not present in this regional project management context.

6.2.2 Contributions to Practice

This thesis also provided a range of practical insights that have unique implications for the discipline of project management. This includes:

- This study has been the first to monitor and track the volume and nature of project 'legacy claims' communicated to the public.
- Have provided a range of definitions for how project professionals define legacy within a project context. This research identified that the previous 'retro', 'outdated project parts', and past tense use in project management terminology are no longer prominent. Legacy is now considered in this context to be future, and vision-orientated, 'more than' its intended function, transformational for its intended community, long-term focussed and built on a range of project values including heritage, regional culture, stakeholder engagement, sustainability, quality, accessibility, and inclusion.
- Have confirmed that project professionals are designing within their projects, specifically legacy, and not an alternative concept such as leveraging, foresight, etc.
- Identified the role and position regional councils could have for developing legacy within project management (including both positive and negative factors). The research reveals that the structure of regionalised councils can be an effective driver for pursuing legacy. It identified how councils provide targeted future-orientated project documentation of their assets and other regional resources, which can facilitate long-term monitoring of legacy claims. It notes how councils can shape regional project development and influence the approach and type of projects required to create legacy by developing a transformational regional vision. This research also uniquely explored project professionals' attitudes and working relationships to develop legacy in projects within a council structure.
- Identified that project professionals need additional guidance on the topic and development of legacy from project management governance bodies and publications. The research suggests how and where this could be applied within project management governance.
- Developed a database of projects which have been analysed for specific legacy factors. This provides insights and data for practitioners to apply as a resource and there is commercial value in using this for further legacy exploration.

- Identified a link between some projects developing legacy in the Aberdeen region and that from the 2012 London Olympics. Projects noted an awareness and influence of the legacy initiatives and approaches adopted from that event. This is despite Aberdeen/shire being a region that is geographically remote from London and other areas which have hosted mega events previously, this is a theme that was previously unknown.

6.2.3 Contributions to Methodology.

The objectives of this research highlighted an approach to explore legacy from the perspectives of those that design and develop it within their projects. The focus of the research was extracting understanding and meaning from practical applications and not in exploring methodological approaches, so contributions in this area are minimal. There was, however, a contribution that underpinned the methodological approach taken and that has research value. This is outlined below:

- The development of a theoretical framework and methodological approach for exploring legacy in a regional project management context, which is repeatable and can be applied in other contexts.

6.3 Limitations of the Research

It should be noted that all academic studies will have limitations regardless of the contributions provided (Saldanā, 2021). This section will highlight the limitations of the work, and this includes the following:

- The academic literature notes that research out with a sporting mega-event context is at a 'starting point' in positing this work within the research field. This means that research conducted will have limited potential for 'like for like' comparisons at this point. It also meant that the scope of the research theme was expansive and branches a considerable number of topics where a more niche exploration (which was not possible) could have provided more depth on certain topics.
- The approach adopted is to explore the narrative of the design, plans, and project management methods to develop legacy. This focuses on stakeholders who 'create' legacy but does not consider the impact these projects will have on those who will extensively use these projects. However, it will take a 'generation' before the data to explore that effectively will become available.
- This research explores the narrative of 14 projects intended as a future regional legacy. The methodological approach required a set of parameters for inclusion in this research, resulting in a fixed sample size of 14 projects.
- While all relevant documents were considered in the first analysis stage, the volume of interviews with project decision-makers was one for each project (plus representatives from Aberdeen and Aberdeenshire councils). Few project stakeholders have the capacity to be a project decision maker who can design, plan, and develop legacy. This was predominately two (project sponsor and manager), but in others, three (a project architect depending on the type of project), which in theory, all could have been interviewed. This was not done as they were all going over the same agreed and signed-off project plan, and it is very difficult to get participation from project stakeholders at that level.

- This research was conducted during significant external environment challenges within these projects (Brexit, covid pandemic, and international conflicts impacting supply chains). This was discussed for its impact on the research within the thesis. However, at times it limited the scope and possibilities of the researcher as intended participants and projects were not available or accessible for long periods.

6.4 Recommendations for Future Research and Development in this Research Area

As highlighted in this concluding chapter, there is a need within this research theme to develop further and build upon the research findings, which have provided legacy data for a specific context. The advancement of legacy research in a project context would benefit from future researchers exploring some of the following themes:

6.4.1 Future Research for Projects Legacy Claims

The additional investigation of legacy 'claims' within projects. This has not been explored within the literature, so it is unclear how prevalent this is within a project management context. This research provides for this regional area the volume and nature of project legacy claims; it also provides the 'how' and 'why' of these claims from project decision-makers. This data allows for comparisons to be applied from other regional areas or project groupings. It also offers a basis for exploring research in 'legacy washing' and articulating the substance behind claims made in public communications.

6.4.2 Future Research into the Nature of Project Management Legacy and Location

The eight themes of regional project management legacy produced from this research (Figure 42) provide a foundation for further exploration into other geographical environments and contexts for understanding 'what' legacy is and 'how' it is developed. The methodological approach adopted in this study is repeatable, allowing for a wider exploration with more consistent and comparable data returned. The further empirical exploration of 'bottom up' contexts for legacy development was identified as a driver of this research, and more is required. If there were an increased volume of these studies over time, it would enable more possibilities for better defining and agreeing on 'top down' legacy parameters and providing more clarity to the research theme, which it lacks at this moment in time.

6.4.3 Future Research Related to Time-Based Legacy Factors

This research highlighted a link in awareness between current Aberdeen-based legacy practices and the 2012 London Olympic legacy program. This event is over a decade past, and its influence is still apparent in this field but could be explored further for how extensive its impact has been within project management. This could also be explored for other mega events (other Olympics, FIFA World Cups, UEFA European Championships, Commonwealth Games) for how legacy plans in these events have influenced project management attitudes and behaviours.

This research was conducted during a period of significant external environment challenges (Brexit, covid pandemic, and international conflicts impacting supply chains). Additional research in a more stabilised time point could be applied to see the impact these challenges had on legacy development. This also links to another theme identified from the research, that of 'resilience' from project stakeholders towards maintaining legacy principles under 'unplanned' or 'negative' circumstances. The author believes this would merit further

additional research to investigate if other legacy project claims stick to their principles as these factors occur.

6.4.4 Legacy and Project Management Governance and Sustainability Development

This research outlined current limitations in existing project management governance and guidance for project professionals seeking to incorporate legacy principles within their projects. Additional research on what specific training is required and how this can be adapted within the Body of Knowledge publications would move practical implementation within projects further.

There could be additional development into legacy and the implications for societal development. The impact of projects is significant to the development of our planet and society. Projects create new structures and products; an average of a third of all global GDP spend is on projects and are fulfilled through a project management process (Eskerod & Huemann, 2013). Currently, most projects are short-term focussed, ineffective, and have less than a 50% success rate for delivery (Kerzner, 2017). This research has shown that incorporating legacy differs from established project methods (see Table 37). Additional exploration to consider the impact of 'legacy project' approaches should be reviewed to determine if there are changes in project success rates, satisfaction, delivery complexity, project lifecycles, and impact on the environment and communities within a range of project types and methods.

This research has highlighted the links between legacy development in project management and other future-orientated efforts, including sustainability and approaches for meeting local, national, and international climate and environmental goals. Further research could provide more specific insight into where legacy 'fits' within the UN's SDGs and how legacy can be a factor for better-achieving targets for climate emissions, net zero and other sustainable development goals.

Ultimately, this work's most relevant future exploration would be to identify the impact and the success of legacies claimed in the 14 projects analysed in this research. This, however, will require a waiting period of 25 years before the required data would be fully available due to the legacy length expressed and the nature of the research field.

Appendix

Appendix 1: Number of Project Legacy Claims Made and Examples

Project & No. of Legacy Claims	Example Legacy Narrative in Public Communications
Transport Infrastructure Projects (City & Shire)	
AWPR (9)	<p>“Construction isn’t just about building roads or structures, we see the benefits of leaving a lasting legacy beyond the immediate construction works” (Transport Scotland, 2017).</p> <p>“We endeavour to leave a lasting legacy once the AWPR project is finished” (McCann, 2017).</p> <p>“The CJV aspire to leave a positive legacy – a project that was well managed, with staff integrating locally and having a harmonious relationship within our communities” (Police Scotland, 2015).</p>
Aberdeen Harbour (6)	<p>“These precedents have helped to inform and shape our thinking around key issues such as legacy, identity, accessibility, connectivity, energy transition and clean energy technology, helping us to re-imagine the future for a 21st century Energy City” (Aberdeen Harbour Board, 2020b).</p> <p>“The potential scale and economic impact means that it is a development of national importance with a vision to build a positive and sustainable legacy for Aberdeen Harbour, the people of Aberdeen and the wider region. This is a once in a generation opportunity which must be embraced to realise the masterplan vision” (Aberdeen Harbour Board, 2020b).</p>
Aberdeen Airport (3)	<p>“leading this legacy project, which is set to transform each area of the customer airport experience when complete” (Scottish Construction, 2014).</p> <p>““Every penny we invest at Aberdeen Airport is an investment for the future, creating a legacy that delivers long term benefits for the city and shire economy” (Advance Defence Security, 2012).</p>
Stadium and Event Construction Projects (City & Shire)	
AFC Stadium / Cormack Park (13)	<p>“stadium which will provide a lasting sporting and community legacy for the whole region” (Aberdeen Football Club, 2016).</p> <p>“Lasting football legacy is Aberdeen’s number one aim” (Beattie, 2019).</p> <p>““This is the biggest new football stadium build in Scotland in 100 years and our aim is to make it a lasting legacy we can all be proud of, which adds to the sporting and cultural richness of the region” (Beattie, 2019)</p>
TECA (6)	<p>“I think it's going to be a tremendous legacy for the north, for Aberdeen in particular. Aberdeen has got a history of coming out on top and doing the right thing and I think this is a tremendous thing to have done here. It will be here for a long time but it'll have its mark across the country” (Robertson Group, 2019).</p> <p>“It’s vital that creativity and sustainability are key drivers in the project so that the end product will leave a lasting legacy for the city, its residents and the hundreds of thousands of visitors who frequent it each year for both business and leisure” (McManus, 2020).</p>

Regeneration Structure Projects (City & Shire)	
Inverurie Health Centre (1)	“Conservation shouldn't be the legacy of past generations, weighing like a financial nightmare on the living. Arguably, the conservation of Inverurie's heritage should be a partnership between past, present and future” (Press and Journal, 2015).
Union Terrace Gardens (3)	“The design is a direct response to how people wanted their city to evolve. That we are ready to start work is truly momentous, not just for this generation but in terms of legacy. The changes to the build environment in Aberdeen are dramatic – but it's also bringing a real shift in the cultural outlook of residents and the outside view of the city, with visitors embracing all we have to offer and the plans we have for the future.” (Aiken, 2019)
Aberdeen Art Gallery (2)	“This is an important project for Aberdeen and it is imperative that what will be a lasting legacy for the city is completed to the exacting standards required for a development of this significance” (Pitcher, 2017).
Aberdeen Music Hall (2)	“This has included creating 24 apprenticeships, 15 work placements and training opportunities and engaging with 450 school, college and university students and community groups to give them a unique insight into this very special renovation and leave a lasting legacy on this community” (Aiken, 2019).
Commercial Projects (City & Shire)	
Prime Four (2)	“The skill of the masterplanner will continue to be called upon to work alongside local communities and planning authorities to shape our towns and cities and to leave a positive legacy for future generations to enjoy and to cherish” (Barker, 2019).
Bio-Hub (2)	“In line with the aspirations of the project partners for economic recovery, and our own commitment to the communities where we work, we will be engaging with the local supply chain and SMEs, and providing local learning opportunities which will further enhance community benefits. Our delivery of both the facility and community benefits, will further enrich the legacy of BioHub” (Scottish Construction, 2021).
Hywind (3)	“Hywind also marks an important turning point for legacy oil and gas stakeholders that are transitioning into renewables” (Better World Solutions, 2018).
Residential Projects (City & Shire)	
Grandhome (2)	“The SSCI Charrette series will leave a significant legacy for development in Scotland, generating new approaches to place-making practice and community engagement, many of which may ultimately be embedded in planning policy” (Paton, 2010).
Queens Square / Street (4)	“We have a wonderful opportunity to deliver a lasting legacy for Aberdeen and its people. It's terrific to see the public, the council and the business and educational communities working together to produce a plan to maintain our city's rightful position as a leading world energy city” (McKay, 2015).

Source: Author

Appendix 2: Descriptions of Legacy Provided within Interviews

Project	Descriptions of Legacy Provided within Interviews
Transport Infrastructure Projects (City & Shire)	
Aberdeen Harbour	<i>“A transformational project, reshaping and improving the city landscape, opening it up to a legacy of global opportunities. In this case a sustainable port fulfilling the global ideals and ambitions for achieving green energy production....That by having this vision, this purpose, it will allow us to rescue nations from energy dependence from hostile nations and giving Aberdeen and really all of Scotland a future that matches all the</i>

	<p>words spoken at COP, this is our project legacy, it is more than bricks and mortar, it is shaping the world in which we live and work, to make a better future for all. Our legacy values are embedded in every day of work for the harbour expansion project and these values will only expand once the project is live. The world will catch up with our vision and then the true legacy will be discovered, I believe this is a project ahead of its time, it is forward thinking, and generations of Aberdonians will benefit from what we plan and do today”.</p> <p>“Here at the harbour, we are in the legacy business, from our traditions and business excellence, we have a heritage that influences and guides our future, we have a belief, a strong historic legacy and that drives us to continue to achieve and seek excellence for the future, makes us be more specific in what we want our future vision to be, what that legacy we strive for”.</p>
Aberdeen Airport	“I suppose legacy is what you leave, what you are proud of. The fruits of your labour so to speak, that’s the first thing that came to mind”.
AWPR	“If you look at 2040 you think well what will happen in 10, 15 years, well I think what we’re trying to do is develop Aberdeen Rapid Transit...doing that better so I think that you’d see that as being the legacy or a legacy of how do we actually translate that phrase locking in the benefits of the AWPR”.
Stadium and Event Construction Projects (City & Shire)	
AFC Stadium	“I think that combination of things (heritage, history, long-term community resource, social experience) gives it a really unique feel and I think it really starts to tick that legacy box and then some more as well”.
TECA	“It changes the reputation of the city, how it is thought of, that is part of its new legacy too, that it is a now a destination able to host the biggest events in TV, sports, music, media, where before maybe Aberdeen was excluded as a cultural stronghold, a more limited location, a provisional location, but now it can attract the best internationally, that will really open up the cultural offerings available to the city...we have far exceeded the projected footfall, this was not anticipated, especially with the influence of the pandemic, but is evidence of the success of the resource right there, that this was the correct vision, needed by the people here, that already we are seeing the formation of its legacy....the legacy of TECA is not just for Aberdeen but for the whole country, that other places will look enviously at what Aberdeen is doing... we have really delivered a world class venue, it was a highly ambitious project vision, an emphasis for quality, a venue that will attract people internationally to use...they come to Aberdeen instead, other infrastructure will build around that, businesses will come and look at this area and see there are opportunities here, that they can capitalise from this and push forward the transformation of the North East....our commitment to improving the region, that we were a responsible partner to this community, we weren’t just in this for economic reasons, it was just as much to do with people as it was the final building, that is our philosophy at HBD, our legacy you may say, but at the same time it really impacts the legacy of anything we develop, as we not only think about what we build and ...the impact (to) people, but also think about just as much about how we do it, how we can become a positive part of the community that we work within”.
Regeneration Structure Projects (City & Shire)	
Inverurie Health Centre	“there was obviously when you’re speaking about legacy there was something lovely as well because the site that we built the new employee health and care hub one used to be a maternity hospital so to kind of bring that back in to the community...I think how we approach(ed) that project, how we dealt with the construction, how we dealt with the commission, and the aftercare...the fact that we should have our communities on board, that we keep them engaged the whole way because there wasn’t the same level

	<i>of opportunity to do that with Foresterhill and oh my goodness did you see the difference in terms of that”.</i>
Aberdeen Art Gallery	<i>“A legacy project is exactly what we set out to achieve and deliver. There was a deep sense of pride in this...It differs so much from other types of projects which are more straightforward and require less involvement and engagement to get right. A project which has that long term outlook requires a different mindset to develop, a true commitment to do things properly, to fulfil the best vision, the best version of the project as possible, that includes not compromising on the quality of the materials, design and thinking always from a user’s perspective for what they will experience, and specifically not a user coming to visit day one of opening but many decades later, what will their accessibility requirements be at that stage? Can we provide a long-term sustainable experience?...I think legacy...is inherent in our ambitions for the art gallery refurbishment. This building will be transformational in its impact to the community, it will transform its audience with a cultural legacy part of those objectives. It will also provide economic benefits as it attracts visitors from home and abroad, year after year. Its legacy will be to inspire a new generation of visitors, a legacy of accessibility to enable entry and easy enjoyment of these facilities so when taking this into account, it is indeed done with legacy in mind”.</i>
Union Terrace Gardens	<i>“To define legacy, hmm, well I would maybe say it includes success, it has to be a success to be remembered, so something that is actively used and liked, I want to maybe liken it to a landmark, having iconic properties maybe?...it would have to go above and beyond, make a statement....We worked with lots of stakeholders whose goal was making sure the project was fit for purpose for the long term, or a legacy....we knew we weren’t (just) revamping a city centre garden, we were transforming the experience of Aberdeen for everyone, that’s where the lofty legacy words come into play, that with everything going on, the ambitious regeneration efforts of the city was legacy building, we had thought about the end game for (the city’s) citizens and each project was fulfilling a bit of that vision, that masterplan which was mapped out”.</i>
Aberdeen Music Hall	<i>“As we breathed a bit of new life into the building we also wanted to ensure that legacy and that heritage was still recognisable for people...and make a radical transformation but you know they really appreciate the qualities of the existing building and its legacy, and actually that really is an important thing is that sense of these buildings are not our plaything to transform the way we want, they are their own thing for the communities they represent...that's very much where they see themselves repositioned into science and technology, sustainable energy sources and leaving that legacy of oil and gas behind”.</i>
Commercial Projects (City & Shire)	
Prime Four	<i>“Past tense and now future tense, building on from where things left over and a new approach to take forward....(talking about) legacy I immediately associated this with masterplanning, having a project vision and having this planned out, right down to the last detail, and this plan is not just for the finished site but for how it will be used in the future, how it can be adapted, how it connects with other areas, how it improves peoples life’s, how it extends life for the city’s businesses, that was our approach, our ideology....This may be a modern complex but we also wanted to celebrate and be inspired by local rural life and this traditional heritage, again maybe a legacy in there too”.</i>
Bio-Hub	<i>“The cultural legacy will be a product of that increased engagement, the dynamic synergy of this created working environment, this could be generated through successes in innovative practice in life sciences but also through an increase of reputation, resources, base, and the like....I take this back to the planning stage and...thoughts around legacy, to get all these stakeholders on side and involved, this requires a</i>

	<i>definitive business case that will provide clear opportunities for growth, that we are collaborative partners under the same banner who believe what Bio-Hub will bring. This is not just a wanted legacy for BioAberdeen Limited but all the stakeholders I have named, these are significant contributors to the make-up of Aberdeen and its regional economy.....But this is merely a continuation of the legacy of the innovative research work that Aberdeen has always produced and then impacted on the international stage”.</i>
Hywind	<i>“I would say our legacy as you put it would definitely be around technological innovation and forward thinking, being a pioneer in the North Sea for commercialised floating solutions. This technology will likely be required for 80% of the world’s wind resources if we are going to decarbonise energy production. Our legacy in Hywind Scotland will be to demonstrate to the wider world, effective, green, sustainable solutions for future energy requirements”.</i>
Residential Projects (City & Shire)	
Grandhome	<i>“that great chunk of land out at Grandhome, at the Bridge of Don, has been in the Patton family for hundreds of years so there’s a kind of a legacy almost in that...I think this all came out of David Patton’s vision to see something that was almost in a way carried forward as he would have seen as the Patten family legacy...the motivating force from the very beginning was to do something special that you know everybody could be proud of”.</i>
Queens Square / Street	<i>“Looking at the achievements, the success of the original project. Planning to create a legacy kind of flips that, that legacy is being created on the drawing room floor, that you create it, you shape it, you make it happen, and this unlocks an awareness for its impact...if we are thinking big, wanting to achieve a legacy for the benefit of many, it’s going to take significant types of projects to make that happen. When you have projects of a certain scale then you realise if this is going to be able to happen then your project team, your project stakeholders are going to be quite a varied collection....we all have to be committed to the project ideology and work on that collectively together.... When you look at it this way, then it is definitely creating legacy. We are not just fulfilling a job, we are part of the bigger picture for the future, a future that has been carefully thought out, debated, knowing how it fits the vision for the city, part of the regional masterplan, a residential project that looks at a world that is post oil and gas for Aberdeen, and responding for that actuality. That is true legacy, that we are not just focussed on what’s near, what’s up next, but what’s out in the distance and asks the question do we have everything we need to get there? Queens Street will be part of the landscape of this city for hundreds of years, its civic heart, and will ensure there is a strong and vibrant community always in this city, that’s quite a legacy I think”.</i>
Council Stakeholders (City & Shire)	
Aberdeen shire Council	<i>“One of the legacies...that i’m going to claim forever is that there is now...smart planning, specific, measurable, achievable...really we had no real smart targets in Aberdeenshire council...and now we do...to make sure that we know where we are now, where we want to get to and measure the progress”.</i>
Aberdeen City Council	<i>“(Legacy) captures that desire to build that community heart, even the city soul, in its essence it strives to provide a better future, a better quality of life, inclusive to all groups, to give people and businesses the infrastructure and means to realise their ambitions, fulfil their potential. For each of our projects it has always been more than just a building or a road that has been produced, it was a response to build up the city from the perspective and needs of its people and to provide greater cultural connections and communities....Certainly, just to your point, I have worked tirelessly on many of these projects...I feel in a sense that seeing them in place is part of my own legacy in the role.....but they are in place and not only that they are being used, being loved, and can</i>

	<p><i>see what a great difference they are making in the lives of our local people, so I take great pride in my role in getting these projects off the ground, negotiating these multi-million-pound deals and getting them past the finish line....when it comes to giving the green light to city infrastructure projects. We look at the bigger picture, the longer picture, the legacy we want for the future of this city and making this city a better place for all its inhabitants. This is not always based on economics or commercial positions, but one that has those social improvements central to it as well, that is an equally important part of the vision. This is the cities legacy, we may organise how the money is spent but the tax payer ultimately funds the future, we always give them a say in how that money is spent, public feedback is critical to any project or its design, if a project is going to be a success and fit for purpose, used to the extent that it is commercially viable, then we need to get that public voice and understand how it integrates with the needs of those that will use it”.</i></p>
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Source: Author

Appendix 3: Interview Responses for Their Project Creating a Legacy

Project	Will Their Project Create a Legacy?
Transport Infrastructure Projects (City & Shire)	
Aberdeen Harbour	<i>“Yes, over and over, legacy is the fabric, the soul of the project, it is the essence of what we seek, that it will see hundreds of years of impact for the North East. It is the newest chapter of legacy for a business that has specialised and been built on legacy....I can’t think of any organisation that is more qualified to talk about legacy, we have been in the legacy business for almost 900 years. That’s why we can work in harmony with the local community and our regional stakeholders, because that legacy is much more than just our own achievements at the harbour, it is a deep and supportive relationship that blossoms over generations....our chat about project management legacy really resonated with me, it was a light bulb going on, that hey, this is exactly what we want to achieve with the harbour development. It is not ordinary, but in fact extraordinary, and in the end, it will be a beacon for the North East region, a bright shining legacy, reshaping the city and shire and everything it represents.....our project should be the dictionary definition of a legacy project”.</i>
AWPR	<i>“Indeed...I think that you'd see that as being the legacy”</i>
Aberdeen Airport	<i>“I believe so, no question. It will be used, will create opportunities, it will allow Aberdeen to develop to its full potential, allowing the transport of people and cargo to build a better future for this great region....it makes sense, it is making a significant impact to the area so would justify saying it”.</i>
Stadium and Event Construction Projects (City & Shire)	
AFC Stadium	<i>“I'd very much like to think so, yes. I think that combination of things (legacy factors) gives it a really unique feel and I think it really starts to tick that legacy box and then some more as well”.</i>
TECA	<i>“For certain, I think I mentioned in one of our press releases something along the lines that the legacy of TECA is not just for Aberdeen but for the whole country, that other places will look enviously at what Aberdeen is doing. I said that at the time and stand by that today”.</i>
Regeneration Structure Projects (City & Shire)	
Inverurie Health Centre	<i>“Yes, absolutely, because I also think that it's held in regard in terms of further future developments...how we approach that project, how we dealt with the construction, how we dealt with the commission, and the aftercare”.</i>

Aberdeen Art Gallery	<i>"I think legacy as we have discussed today is inherent in our ambitions for the Art Gallery refurbishment. This building will be transformational in its impact to the community, it will transform its audience, with a cultural legacy part of those objectives. It will also provide economic benefits as it attracts visitors from home and abroad, year after year. Its legacy will be to inspire a new generation of visitors, a legacy of accessibility to enable entry and easy enjoyment of these facilities so when taking this into account, it is indeed done with legacy in mind".</i>
Union Terrace Gardens	<i>"Taking everything into account, yes, I would. After our discussion it is really interesting to break down the impact of the project, or what it will do for the people of Aberdeen...when we reflect like we have, you see that bigger picture, that branches of the legacy it will bring, how it joins with other projects in Aberdeen's transformation plans. So yes, a legacy project indeed, and a term I will be using myself, knowing a bit more for what a legacy project is, I will be a champion for them in my work".</i>
Aberdeen Music Hall	<i>"yes....we wanted to ensure that legacy"</i>
Commercial Projects (City & Shire)	
Prime Four	<i>"We may not have expressed it in name at the time, but a legacy was certainly what we were hoping to achieve".</i>
Bio-Hub	<i>"For each factor I could say that yes, we included them in our overall plans, so there is that association of what we are doing and your research. The use of legacy seems to capture our ambitions".</i>
Hywind	<i>"Yes, a clear legacy was attempted, this was never business as usual...it was 10 years in development, it was innovative in what we set out to achieve, it was ambitious, it was risky, but now because of what we achieved, floating turbines can be used in deeper waters and reach more consistent wind speeds. Our objective was always to prove that this technology could be cost effective and unlock the potential for future commercial scale operations and allow our planet to have a real chance at meeting net zero targets".</i>
Residential Projects (City & Shire)	
Grandhome	<i>"Oh yeah...the motivating force from the very beginning was to do something special that you know everybody could be proud of".</i>
Queens Square / Street	<i>"For sure, the more I think about what legacy is, I know that what our project hopes to give is just that, a legacy for the people of Aberdeen. That's why I referenced earlier that our planning is not 25 years in the future or the lifecycle of the homes we will build, but that we are planning is 150 years into the future. I guess it is important (legacy), it does sum up that objective of the project succinctly, and a legacy would be a great measure of identifying if the project has been successful or not in the long term".</i>
Council Stakeholders (City & Shire)	
Aberdeen shire Council	<i>"Absolutely...it just is so interlinked in this infrastructure which builds to the legacy".</i>
Aberdeen City Council	<i>"Not to sound boastful but yes indeed. Those things you mention (legacy factors), all go into the process of what we do, and why we do it. When it comes to giving the green light to city infrastructure projects, we look at the bigger picture, the longer picture, the legacy we want for the future of this city and making this city a better place for all its inhabitants".</i>

Source: Author

Appendix 4: Quotes on Benefits Longevity in Public Communications

Project	Example Quotes for Time Length of Benefits in Public Communications
Transport Infrastructure Projects (City & Shire)	
AWPR	“The plan, known as NESTRANS 2040, will shape transport policies and actions for the next 20 years...although the strategy is a long-term plan for the next 20 years” (Porter, 2020).
Aberdeen Harbour	<p>“The harbour is at the very heart of Aberdeen creating prosperity for generations of Aberdonians for hundreds of years. We want to ensure that this not only continues for current and future generations, but that we play an increasing role in the economy of the north-east of Scotland, and of Scotland as a whole” (Findlay, 2019).</p> <p>“The new harbour will be expected to provide shelter to ships for the next 100 years” (BBC, 2021).</p> <p>“Aberdeen South Harbour is a visionary project, and one which will serve the region for hundreds of years to come” (BBC, 2019).</p> <p>“Our vision for Aberdeen Harbour spans the next 3 decades and beyond” (Aberdeen Harbour Board, 2020b).</p>
Aberdeen Airport	<p>“I am delighted to see that the management team at the city airport has the vision and commitment to take the facility forward over the next 20 years” (Wright, 2012).</p> <p>“We’re creating something that’s fit to future-proof the airport all the way through to 2044” (Beattie, 2017).</p>
Stadium and Event Construction Projects (City & Shire)	
AFC Stadium / Cormack Park	<p>“In order to derive greater benefits for the club, its players – particularly the future generation – and the wider community” (Pan Stadia Arena, 2019).</p> <p>“It will serve as an excellent community engagement base from which to inspire future generations for years to come” (Gossip, 2019).</p>
TECA	<p>“A complex which will benefit the region for generations to come” (HBD, 2019).</p> <p>“This exhibition centre is going to be here for many years and many generations to come” (Lumsden, n.d.).</p> <p>“TECA is still going to be a facility that people are coming to see in 30, 50 years” (Robertson Group, 2019).</p>
Regeneration Structure Projects (City & Shire)	
Inverurie Health Centre	“This facility will be at the heart of local health and social care for generations to come” (Hub North Scotland, n.d.).
Aberdeen Art Gallery	<p>“An art gallery complex fit for the foreseeable future” (Welch, 2009).</p> <p>“The redeveloped Aberdeen Art Gallery will serve generations of residents and attract hundreds of thousands of visitors from at home and abroad each year” (Aberdeen City Council, 2019a).</p> <p>“The Aberdeen Art Gallery & Museum aims to be the city's most inspiring, accessible and welcoming public building, there for all to enjoy, for generations to come” (Ironside, 2019).</p>

Union Terrace Gardens	<p>"We are working closely with all parties to make sure Union Terrace Gardens is a wonderful asset for Aberdeen for generations to come" (McManus, 2017).</p> <p>"The design is a direct response to how people wanted their city to evolve. That we are ready to start work is truly momentous, not just for this generation but in terms of legacy" (Aiken, 2019).</p> <p>"Union Terrace Gardens represents a glorious gift from the past and in turn can be our gift to future generations. It is ours to nurture" (BBC, 2016).</p>
Aberdeen Music Hall	<p>"Remaining culturally relevant and at the forefront of innovation and creativity for generations to come" (Heritage Fund, 2018).</p> <p>"We also wanted to give it a new life to make it more interesting for new generations. We wanted to create an inspirational space for generations to come." (Ollerova, 2019).</p>
Commercial Projects (City & Shire)	
Prime Four	"To leave a positive legacy for future generations to appreciate and enjoy" (Samuel, 2020b).
Bio-Hub	<p>"This flagship hub in Aberdeen will deliver long-term economic, health and societal benefits" (Scottish Construction, 2020a).</p> <p>"A £40 million project designed to provide jobs for future generations...to bring together world-leading expertise and enable the growth of the life sciences industry for decades to come" (Robertson, 2020).</p>
Hywind	<p>"The Hywind project from the development through to the production phase and are still involved to investigate long-term potential for floating wind.... develop the next generation of offshore wind technologies" (BBC, 2017).</p> <p>"With a net-zero target set for 2045, he's right: the energy transition must accelerate and we must all work together to ensure that acceleration delivers for Scotland's economy" (Hockenos, 2020).</p>
Residential Projects (City & Shire)	
Grandhome	<p>"Grandhome is a strategic development within the Aberdeen Local Development Plan. The new community will be delivered in a series of phases over the next 25-35 years" (Grandhome Trust, 2019b).</p> <p>"Its creation by saving a little piece of history for future generations" (Grandhome Trust, 2018).</p> <p>"Grandhome aims to set new standards for development in Scotland and will deliver vital new facilities and homes in the area over the next 25 years" (Grandhome Trust, 2013).</p>
Queens Square/ Street	<p>"We are now understanding what we need for Queens Street and looking at our future demand. I mentioned the heritage. We are looking at how we can adapt that and make sure it is fit for purpose for the next 150 years" (Hebditch, 2019c).</p> <p>"the setting for a new generation of city living" (Build Scotland, 2015).</p>

Source: Author

Appendix 5: Example Interview Discussion Around the Theme of Reputation

Source:	Example Interview Discussion Around Theme of Reputation
Art Gallery Project Decision Maker	<i>"We had very ambitious plans for the gallery, to bring this historic venue to a 21st century audience, blending heritage features with contemporary needs, this has been successfully achieved and we now have a world class gallery, its reputation will grow the world over, its legacy continues on and will welcome another generation of Aberdeen citizens".</i>
Aberdeen Airport Project Decision Maker	<i>"They are interconnected; everyone is a winner in this. The reputation of Aberdeen is the winner".</i>
Prime Four Project Decision Maker	<i>"Our project gives the region a strong identity, one comparable to any international hub, the business partners that have come to be part of this project are some of the top companies in the world, that brings with it some prestige and respect to Aberdeen".</i>
TECA Project Decision Maker	<i>"Aberdeen now truly has something that you can say with a straight face that is world class. I think local people will have pride in that, and as the years go on, more and more people will experience it, and they can show it off to visitors, that this pride will grow and be a big part of what makes the region, I believe TECA will bring with it a positive impact to the regions reputation and how people feel about living in Aberdeen, so I respect fully and admire the councils vision to bring such a facility here, regardless of the cost and hurdles to do so....It changes the reputation of the city, how it is thought of, that is part of its new legacy too, that it is a now a destination able to host the biggest events in TV, sports, music, media, where before maybe Aberdeen was excluded as a cultural stronghold, a more limited location, a provisional location, but now it can attract the best internationally, that will really open up the cultural offerings available to the city".</i>

Source: Author

Appendix 6: Example Interview Discussion Around the Theme of Quality

Source:	Example Interview Discussion Around Theme of Quality
Art Gallery Project Decision Maker	<i>"A project which has that long term outlook requires a different mindset to develop, a true commitment to do things properly, to fulfil the best vision, the best version of the project as possible, that includes not compromising on the quality of the materials, design and thinking always from a user's perspective for what they will experience"</i>
Aberdeen Airport Project Decision Maker	<i>"The finished refurbishment was a step above in quality for sure, our passengers have fed back to us how much they love the new facilities, a much improved passenger experience".</i>
Aberdeen Football Club Project Decision Maker	<i>"They get...involved with the club in some way and so I think it's absolutely right that we make sure we deliver the best quality stadium we can".</i>
Grandhome Project Decision Maker	<i>"From the very beginning the whole object was to do something that was going to be community based, sustainably based, high quality....well I know, it cost us quite a lot of money because of the quality of the buildings that we were looking for, the finishes and everything else and so the builders were paying us less for the plots because they were having to</i>

	<i>abide by our design code and to comply with the overall master plan...we're actually finding that even through difficult times there are some builders who are interested in being part of Grandhome, because they can see that it showcases quality, showcases what they can do, that draws them to it".</i>
Inverurie Health Hub Project Decision Maker	<i>"No well, we were actually commended on that (quality of final project), and I think without blowing our own trumpet, I think...(our) emphasis on what needs to make the building function when it came to value engineering we were absolutely key so that he was able to identify where fees and prelims could maybe be cut back rather than cutting out anything to do with function".</i>
Music Hall Project Decision Maker	<i>"They were definitely one of those clients that was so committed to the vision that they wouldn't compromise...they went out and fought hard and got more money in order to deliver the full vision that they wanted, to the quality that they wanted".</i>
Prime Four Project Decision Maker	<i>"What we are doing is expanding the capacity and resources of the whole region. We have done so with exceptional quality, which is the envy of others"</i>
Queens Square Project Decision Maker	<i>"I think the approach we have taken for being sensitive to the heritage of the area and our approach for quality kind of limits all the usual negative impact that other housing developments tend to cause".</i>
Union Terrace Gardens Project Decision Maker	<i>"The Gardens are great, top quality and will last generations just like the old gardens served your parents and grandparents".</i>
Aberdeen City Council Project Decision Maker	<i>"We need the private sector to be part of our masterplan vision, not just acting on their own economic vision but giving something back to the city as well in the process, knowing the responsibility of being a regional employer, creating an Aberdeen that is better to live and work, this doesn't come with short-cuts or saving pennies, it needs quality investment, quality infrastructure".</i>

Source: Author

Appendix 7: Example Interview Discussion Around Theme of Culture

Source:	Example Interview Discussion Around Theme of Culture
Art Gallery Project Decision Maker	<i>"We believe it will be a central part of a cultural revolution in Aberdeen. The council is investing a billion pounds in transforming the built environment and leading this cultural charge in the region. The art gallery, along with the refurbished music hall will be part of our strategy to bid to be the 2025 UK city of culture. We are diversifying our economy and building it around cultural enterprises, to get Aberdeen talked about as a leading city for hosting events around the world.....an uplifting experience that will be a legacy for the people of this region to enjoy time and time again".</i>
Queens Street Project Decision Maker	<i>"I have already mentioned public demand and the impact it has for placemaking, being the urban quarter of Aberdeen, its civic heart, but also the impact it will have to be close by amenities, and the cultural revolution that is happening in the city....A healthy and vibrant cultural scene adds so much value to what an area is, Queens Street addresses that, if that's what you love and want to be part of, come live it, have these things be on your doorstep, walk past them everyday, pop in, be inspired".</i>

Prime Four Project Decision Maker	<i>"Sustainability is part of our culture".</i>
TECA Project Decision Maker	<i>"I think the function of the venue dictates that it will, to have something of this scale and quality in Aberdeen will really change possibilities for its cultural landscape.... that will really open up the cultural offerings available to the city, that will be an influence for its people, local kids will be part of all this, and be opened up to the many more cultural opportunities available to them".</i>
TECA Project Decision Maker	<i>"I think if you are to look at what TECA provides the North East, an enhanced cultural core is one of its key benefits, that is what Aberdeen City Council wanted, that was part of their vision, some people are maybe critical of how much was spent on a venue like this, especially when you factor in that the tax payer foots the bill, but Aberdeen like other places are finding that you can't put a price on culture, as this has so much impact to the quality of life for a city, if you want to have people live here and be seen as an attractive destination then you need a thriving cultural scene, and that starts with events happening, TECA finally gives Aberdeen a leading UK facility to launch itself not to the rest of the UK but to the world".</i>
Aberdeen City Council Project Decision Maker	<i>"For each of our projects it has always been more than just a building or a road that has been produced, it was a response to build up the city from the perspective and needs of its people and to provide greater cultural connections and communities".</i>
Union Terrace Gardens Project Decision Maker	<i>"Amongst the great granite mile there is this glorious green space calling you, where you are changed from the daily grind, that you can take a deep breath in and feel alive again. That will have I believe a big cultural influence, shape peoples happiness, what they think of where they live and work and also how they work too. Cultural offerings are really important for the city".</i>

Source: Author

Appendix 8: Example Quotes in Press Discussing Project Diversification or Vision

Project	Example Quotes Discussing Project Links to Diversification or Vision
Transport Infrastructure Projects (City & Shire)	
AWPR	<p><i>"The £745million Aberdeen Western Peripheral Route, which is scheduled to open in the coming months, could help diversify the city's economy away from oil and gas" (Hebditch, 2018a).</i></p> <p><i>"feeds into our City Centre Masterplan designed to revitalise the area turning it into more of a destination rather than a through-road (Transport Scotland, 2018c)</i></p>
Aberdeen Harbour	<p><i>"One of the main purposes of the new harbour extension, commissioned in 2016 and due to be opened in phases by around the end of this year, is to adapt to the shift to renewables and decarbonisation" (The Herald, 2021).</i></p> <p><i>"An ambitious and transformational vision which articulates how we will continue to diversify our business and lead Scotland's energy transition from oil and gas over the next 30 years to 2050 and beyond" (Aberdeen Harbour Board, 2020b).</i></p> <p><i>"Aberdeen South Harbour is a visionary project, and one which will serve the region for hundreds of years to come" (BBC, 2019).</i></p>

Aberdeen Airport	<p>“The airport expansion would help bolster and bring much-needed diversity to the north-east economy” (Walsh, 2016a).</p> <p>“This Master Plan sets a positive vision for improvements to Aberdeen airport and this vision is strongly supported by the Council. I am delighted to see that the management team at the city airport has the vision and commitment to take the facility forward over the next 20 years” (Wright, 2012).</p>
Stadium and Event Construction Projects (City & Shire)	
AFC Stadium / Cormack Park	<p>“The club said the multimillion-pound investment could help to ensure the regional economy was not so reliant on the oil and gas industry. This is something this region needs right now, diversification away from oil and gas...We have a vision to bring this club into the 21st century and we set out along that path around three years ago” (Walsh, 2016b).</p> <p>“A vision to deliver a dynamic, inspirational and inclusive community sports campus, football academy and stadium which will provide a lasting sporting and community legacy for the whole region” (Aberdeen Football Club, 2016).</p>
TECA	<p>“The new venue fits in with our Regional Economic Strategy which has the themes of diversification into industries other than oil and gas”. (Henry Boot Developments, 2019a)</p> <p>“When we made the decision to invest in TECA it was important that we were creating a facility that met the needs of the local population but also allowed us to look at diversifying our economy” (Robertson Group, 2019).</p>
Regeneration Structure Projects (City & Shire)	
Inverurie Health Centre	<p>“This new health facility in Inverurie is an excellent example of integrated health and social care, providing people with services located in a single setting, at the heart of the community. It is exactly in line with our vision” (Paterson, 2019)</p> <p>“Are only a part of that vision and we have a variety of ongoing and planned work that will see us continue to build on this progress in the months and years ahead.” (Scottish Construction, 2015).</p>
Aberdeen Art Gallery	<p>“The local authority has long hoped to develop the city’s cultural offering to help diversify the economy away from oil and gas and into tourist markets” (Hebditch, 2017c).</p>
Union Terrace Gardens	<p>“This design commission will deliver a transformational regeneration scheme for Union Terrace Gardens. This is not simply about historic renovation of a much-loved Victorian park but the delivery of a contemporary, attractive and active environment for residents, workers and visitors to Aberdeen city centre” (Urquhart, 2016).</p> <p>“The project would be vital for city centre regeneration. Union Terrace Gardens (is) an integral piece of the city centre masterplan jigsaw, and will fall into place this year as we make a leap forward in the bold and inspiring vision for the heart of Aberdeen”(Hebditch, 2019a).</p>
Aberdeen Music Hall	<p>“The revitalised Music Hall will play an important role in Aberdeen’s vision to be a vibrant, creative and ambitious city with a strong cultural identity, a centre of artistic excellence and a cultural tourism destination...must be a key element in supporting city centre regeneration and APA’s vision for the future” (Welch, 2016).</p>
Commercial Projects (City & Shire)	
Prime Four	<p>"Masterplanning shapes our towns and cities to leave a positive legacy for future generations to appreciate and enjoy. I'll be working closely with colleagues at Halliday</p>

	Fraser Munro to deliver masterplans which meet the aspirations of all stakeholders by looking at the complete picture” (Samuel, 2020a)
Bio-Hub	<p>“This is a transformational project of national significance that supports the regional economic goal of diversification and will contribute to the national ambitions for life sciences as a driver for health and wealth.” (Wemyss, 2018).</p> <p>“Established to diversify the north-east economy away from a dependency on oil and gas” (Robertson, 2019).</p>
Hywind	<p>“We believe that floating offshore wind is the next wave in renewable energy and that it can achieve profitability by 2030 through scale and industrialization” (Equinor, 2021b).</p> <p>“agreed the hugely significant North Sea Transition Deal which will provide investment into this type of technology and expertise as we transition towards the use of cleaner and more sustainable forms of energy”(Proctor, 2021).</p>
Residential Projects (City & Shire)	
Grandhome	<p>“Our vision is to provide an attractive and vibrant community in which to live and work, and which will contribute greatly to the long-term sustainability and success of Aberdeen.” (Grandhome Trust, 2019b).</p> <p>“The community will be built according to a masterplan which has been designed over the past decade by an internationally recognised team of architects in consultation with the local community” (Grandhome Trust, 2019a).</p>
Queens Square / Street	“We are seeing progress in our vision for regeneration and I think the public are getting behind that. “The masterplan is a long-term plan and now we are looking to the next phase.” (Hebditch, 2019d)

Source: Author

Appendix 9: Example Project Transformation Narrative

Project	Example Quotes Discussing ‘Transformation’
Transport Infrastructure Projects (City & Shire)	
AWPR	“It is important to recognise the transformational effect this project has had on people’s daily lives in the north east” (Transport Scotland, 2020).
Aberdeen Harbour	“Investing in the construction of the £350m South Harbour, representing a transformational step-change in how the port will operate into the future....We aim to be the greenest Port in the UK, playing a pivotal role in what will be a transformational period for our region”(Aberdeen Harbour Board, 2020c).
Aberdeen Airport	<p>“We have provided the solid structure needed to move forward and deliver the largest transformation project Aberdeen International Airport has seen in three decades” (World Construction, 2017).</p> <p>“The terminal transformation is a fitting legacy to her time at the helm of the airport” (BBC, 2018).</p>
Stadium and Event Construction Projects (City & Shire)	
AFC Stadium	“transformation project is nearing completion” (Bates, 2019).
TECA	‘With many new chapters in Aberdeen’s story being written, and today is the most significant part of what is an unprecedented programme of transformation throughout the city... which will benefit the region for generations to come. It has been a pleasure to

	<p>deliver the transformational vision of Aberdeen City Council and Henry Boot Developments” (Henry Boot Developments, 2019b)</p> <p>“The project will be transformational for Aberdeen and the North East” (Munro, 2019)</p>
Regeneration Structure Projects (City & Shire)	
Inverurie Health Centre	“Nicola Sturgeon also declared the ‘transformational’ £14.7 million Inverurie Health and Care Hub officially open” (Gray, 2019).
Aberdeen Art Gallery	<p>“winning the National Panel Special Award, for its “transformational” project at Aberdeen Art Gallery” (Donnelly, 2021).</p> <p>“The art gallery project has been hailed by council leaders as ‘transformative’ and a key plank of their cultural strategy to attract more visitors to the city while also boosting facilities for locals” (Hebditch, 2018b).</p>
Union Terrace Gardens	<p>“To regenerate the city centre which said we need something transformational, a magnet in the city centre which is going to cause people to go there (Smith, 2013a).</p> <p>“This is a moment for celebration right across Aberdeen. The investment we’re making is transforming our city and the benefits will be felt throughout the region. Generations to come can share in the rewards” (Aberdeen Business News, 2019).</p>
Aberdeen Music Hall	<p>“The Transformation project aims to retain the original period features, revealing the classic beauty of the hall and making it a contemporary space, accessible to all” (Moreno, 2018).</p> <p>“Throughout the transformation process, we have looked to users of the hall to share their stories of the venue and influence the future of this fantastic building (Hebditch, 2016a).</p>
Commercial Projects (City & Shire)	
Prime Four	“We strongly believe that we all need to get behind and even more importantly, deliver on the transformation of our city centre, through the council’s masterplan” (Hebditch, 2017a)
Bio-Hub	“BioHub is an iconic and truly transformational project that will deliver a huge boost to north east Scotland’s life sciences sector and contribute to the region’s economic recovery by creating jobs and providing the commercial infrastructure to support and attract businesses” (Wemyss, 2021).
Hywind	“Energy transition...a profound transformation”. (Scottish Renewables, 2020)
Residential Projects (City & Shire)	
Grandhome	“We are embarking on the first phase of what is a long process to secure funding to invest in facilities that will enable the transformation of health and care services and meet the additional demand arising from planned new housing in the Grandhome and the Bridge of Don areas” (Da Silva, 2019).
Queens Square / Street	<p>“Queen Street is regarded as an opportunity to deliver transformational placemaking and high-quality urbanism to complete the civic quarter of the city” (Aberdeen City Council, 2019b).</p> <p>“The vision for Queen Street is the transformation of the area into a new mixed-use urban quarter” (Invest Aberdeen, 2020b)</p>

Source: Author

Appendix 10: Example Interview Discussion Around Themes of Regional Vision and Identity

Source:	Example Interview Discussion Around Themes of Regional Vision and Identity
Transport Infrastructure Projects (City & Shire)	
Aberdeen Harbour Project Decision Maker	<i>"This project is of great importance for the North-East achieving its goals, not just the Harbour Board but the whole Northeast. Without it the energy transition zone wouldn't be viable, the strategic vision of Aberdeen would be unfulfilled and frustrated....This was communicated clearly through our masterplan documentation, a significant part of this explored the history of the region as well as the future vision, developing the argument for why it is essential for the continuation of this great city resource...Our project is a visionary project, and the naming of the quays represent that we share and are part of local history, its legacy and with this major new project we are repeating that history and will produce a legacy that will last and impact just as much in the future as we have in the past since 1136...(it was) not done in silo (it) was indeed part of that collaborative vision. Aberdeen City Council is a key partner in our project and we with them, we are fully behind the transformation of the North East. We are part of this sweeping change that it is happening at the moment".</i>
AWPR Project Decision Maker	<i>"Projects that both Aberdeen and Aberdeenshire councils have indicated that are essential for their future masterplan, their future regional strategy...that gave confidence to developers to go ahead and also develop in other areas... building this big road sent a signal that Aberdeen meant business...there was that aura of let's invest in Aberdeen, Aberdeen's going places, we're building a road, it's very visible, it's going to change connectivity, it's going to transform the city...I think there was this development aura which AWPR was part of".</i>
Aberdeen Airport Project Decision Maker	<i>"We were the beneficiary of a wider vision, and this enabled further growth for the airport and the region as a whole".</i>
Stadium and Event Construction Projects (City & Shire)	
TECA Project Decision Maker	<i>"It knew what it wanted in terms of vision, as this project to build TECA was part of the councils priority programme at the time, their 2035 vision, there was also the initial City Region Deal in place as well, so they had a clear idea for what they wanted and were ready to invest in transforming the city. We were selected from the tendering process because of our shared vision, that our concept was ambitious and fitted in with what the council wanted in terms of their strategic vision for the city, a flagship project, that it would be a statement of intent, that Aberdeen is open for business...We worked collaboratively with the city council, in lockstep, so we knew exactly that what we were doing at TECA was part of a wider vision for the city. The council wouldn't have taken us on to do this job if we were not committed to their vision, doing things right, being part of the community. TECA was always seen as a project that will revolutionise this area, make people think again for what Aberdeen is, that other businesses and opportunities would grow off the back of it".</i>
Aberdeen Football Club Project Decision Maker	<i>"I think provided they are complementary, and they meet the cities of the future agenda around redevelopment, reinvention, renewables et cetera et cetera then you know I'm very much in support of what the council and others privately are trying to do".</i>
Regeneration Structure Projects (City & Shire)	
Art Gallery Project Decision Maker	<i>"We took our vision full on, knowing that it was going to be a significant challenge"</i>
Inverurie Health Hub Project Decision Maker	<i>"There was collaboration anyway because it was a joint project... so it did put Inverurie on the map for a while...there was a lot of emphasis on what we were doing for the local area and also in terms of...trying to make sure we were resilient having the Inverurie Health and Care Hub be resilient".</i>
Music Hall Project Decision Maker	<i>"They were definitely one of those clients that was so committed to the vision that they wouldn't compromise and they found ways to raise the money rather than think</i>

	<i>again...they went out and fought hard and got more money in order to deliver the full vision that they wanted, to the quality that they wanted...that's very much where they see themselves repositioned into science and technology, sustainable energy sources and leaving that legacy of oil and gas behind".</i>
Union Terrace Gardens Project Decision Maker	<i>"Aberdeen City Council was the project sponsor so there is no question that this is just one part of their regional masterplan vision, that what we are achieving in this project feeds into wider city efforts to...transform the city...In this case the council were clear with us about what they want the gardens to achieve, specifically mentioning that it will contribute to a move away from it being an oil and gas city, that this green space is more keeping with their new green energy ambitions...so, I do believe that what is happening at the Gardens as well as at other Aberdeen projects is changing this city, the identity away from oil and gas".</i>
Commercial Projects (City & Shire)	
Prime Four Project Decision Maker	<i>"Our project gives the region a strong identity, one comparable to any international hub...there is a lot going on in this region for building up its resources and we are proud to contribute to this. Identity is only as clear as the opportunities that you provide, for a lot of years there has been discussion in the North East about its identity and reliance on oil and gas to drive its economy, if this wants to be changed then we can't just say we want to be known for something else, there needs to be substance to how we present the North East, that all starts with infrastructure to sustain these ambitions".</i>
Hywind Project Decision Maker	<i>"We had the same goals as your council, same vision...this was fundamental to us, it was our vision too, our organisational strategy was diversifying to a low carbon solution. We supported each other; it was a successful partnership, one that continues to thrive".</i>
Bio-Hub Project Decision Maker	<i>"The fact that we have a clear vision for long term impact testifies to how much focus was based for long term benefits".</i>
Residential Projects (City & Shire)	
Queens Square Project Decision Maker	<i>We and our stakeholders at the council had many conversations about identity, about history, about legacy. What our project brings to the city, that's why we are part of the City Region Deal, you can't just have office developments, entertainment, recreational or cultural development, you need those residential developments too. I am pleased that this was quickly recognised and emphasised as the transformation plans were set out for the city....we are thinking about another audience, one beyond oil and gas, providing a dynamic inner-city community that will be part of that urban quarter...I believe we are central in changing that identity away from oil and gas, central to the city's regeneration ambitions...when it comes to development there is always someone who will be negatively impacted, however small, that's just the nature of change, you can never please everyone and sometimes needed for the greater good, a real vision, a plan is required, that's the role of the council to oversee and make possible the best solution for its citizens".</i>
Grandhome Project Decision Maker	<i>"When the council started to look for more land for development in that area, he had a vision to bring forward the land that's now being developed to Grandhome as a planned community based type of development, very heavily socially orientated...trying to infiltrate some sustainable concepts and some community concepts into this...I think that it was very much before his time...this vision".</i>
Council Stakeholders (City & Shire)	
Aberdeenshire Council Decision Maker	<i>"We're moving away from a carbon economy and it needs to be replaced so and those hundred thousand jobs like those workers need to be retrained and to go into another area, so we need to re-profile the North East.... We need to keep the North East which has always been the beating heart of the Scottish economy and Scotland, the North East can't afford to lose that, so we do need to find that new identity...clearly that's moving towards this new greener identity for the area".</i>
Aberdeen City Council Decision Maker	<i>"Each project approved was part of a bigger vision for the region, critical to it, you brought up our regional masterplan, this was the foundation of our efforts, where political opposition was put aside to find common ground for what we want the future of our city to be like, all parties realised that there had to be a transition away from oil</i>

and gas which has been the main employer and provides key stakeholders for how this city runs, the ideology around it, it was a significant challenge to think of what will become of Aberdeen post oil, which is happening in our lifetime so needed addressed urgently... what the future identity of Aberdeen will be...for our part we have really provided an infrastructure base for ensuring the long-term economic future of Aberdeen by trying to create an identity that is close to what we had before but more in line with the environmental ambitions of the present and the future. We were the oil and gas capital of Europe but now we want to be seen as the energy capital of Europe”

Source: Author

Appendix 11: Example Interview Discussion Around Themes of Regional Transformation and Diversification Processes

Source:	Example Interview Discussion Around Themes of Transformation and Diversification Process Within the Region
Transport Infrastructure Projects (City & Shire)	
Aberdeen Airport Project Decision Maker	<i>“The North East is open for business, these are exciting times, there is significant regeneration efforts going on, we were always aware that we are part of that...we embrace diversification and are developing new avenues to limit our reliance on business travel. Historically, oil and gas clients shall we say have been our best customers, they are more profitable, more consistent than leisure travelers but now we need to focus on regional tourism and connecting with international hubs”</i>
Aberdeen Harbour Project Decision Maker	<i>“Our work in this area is key for the regions diversification goals...we contribute a significant portion to the success of future diversification as so many Aberdeen businesses plan on our development for their future plans and direction. Aberdeen Harbour over the next decades will be a key contributor for this region reaching the Scottish and UK 2050 net zero targets. This transformation is propped up by the Aberdeen chamber of commerce and many Aberdeen businesses, so there isn’t much opposition to change, they know the writing is on the wall for oil and gas....no one is under any pretense that oil and gas is a dead dog, and if Aberdeen does not change and move away from it, it will be a dead dog too...that is the future of Aberdeen unless it transitions and diversifies its core businesses, business leaders are aware and on the whole on the same page for change”.</i>
AWPR Project Decision Maker	<i>“Yes, this is part of the energy transition, this is the new look Aberdeen, better connected, outward-facing and able to connect better with the supply chain to facilitate the economic challenges that will come from the new energy transition”.</i>
Stadium and Event Construction Projects (City & Shire)	
TECA Project Decision Maker	<i>“It was about transforming Aberdeen, to making it ‘a have’ rather than a ‘have not’ when it came to world class facilities, so all these factors really built into the thoughts of a legacy, a North East legacy, what will the city look like for the future and how will TECA influence that, we believe we played our part in creating a better future, a better legacy for the city and all of that was considered before one brick was put down...certainly the council wanted an economy that diversified away from oil and gas so I suppose TECA helps achieve that... TECA is the venue where this (regional transformation) discussion is taking place, events have been hosted where speakers discuss ideas and work out how the city moves beyond oil and gas, and making the transition in a sustainable manner, in fact I think most of the business conferences held here have addressed this in some way”.</i>
Aberdeen Football Club Project Decision Maker	<i>“When the council decided to revisit the city centre master plan and wanted to look at regeneration it was at that point that they approached the club and said look is there a willingness from the club to consider staying in the city centre?”.</i>
Regeneration Structure Projects (City & Shire)	
Art Gallery Project Decision Maker	<i>We are diversifying our economy and building it around cultural enterprises...what has been developed here helps us to diversify from a region that has been based on heavy industry and the hard work of its people, now there are more cultural opportunities, to be engaged in the creative industries...our regeneration investment has provided the</i>

	<i>infrastructure to generate communities and businesses to sustain people like never before in this area. We are also doing this at a time when it is critical that we do so for the long-term health of the region. Aberdeen has long been ingrained with oil and gas, even here at the art gallery, BP has been a cultural partner since the 1980's but that relationship needs to be phased out and a clean green future embraced by the city, which it has, everybody knows this, we have to make that transition.</i>
Inverurie Health Hub Project Decision Maker	<i>"In terms of moving away from oil and gas...(it) just gave more attraction to health and social care as a potential career for people".</i>
Music Hall Project Decision Maker	<i>"It was all about a transformation, and the transformation was all about the city expanding the offer, bringing in new audiences and making it more appealing...they're (project architects) going to come in and make a radical transformation but you know they really appreciate the qualities of the existing building and its legacy....We were very conscious of the bigger picture and the fact that Aberdeen was trying to reinvent itself while also working in parallel with the city council and the master plan...we knew about the transition it was going through, certainly trying to move away from an oil-based economy slowly, and now the city is obviously looking at renewables and that's a whole new growth sector which is fantastic to see, but that takes time, it takes a lot of pain to transition the economy"</i>
Union Terrace Gardens Project Decision Maker	<i>"We knew we weren't revamping a city centre garden, we were transforming the experience of Aberdeen for everyone, that's where the lofty legacy words come into play, that with everything going on, the ambitious regeneration efforts of the city was legacy building, they had thought about the end game for its citizens and each project was fulfilling a bit of that vision, that masterplan which was mapped out".</i>
Commercial Projects (City & Shire)	
Prime Four Project Decision Maker	<i>"It is no secret that the region is transitioning away from oil and gas, the identity shift was started by the oil and gas downturn, and it has been up and down ever since, the council is looking for diversification, more stability and Prime 4 provides facilities for all types of companies to locate to Aberdeen. We have green energy companies, and even the oil and gas companies are changing roles to renewables and remaining with us. Aberdeen is trying not to have an oil and gas hangover and waking up to a brighter future of green energy and a sustainable economy. Prime 4 is really assisting the council to do that, and of course we fully support it".</i>
Hywind Project Decision Maker	<i>Equinor as well as many heavy oil and gas industries realise the finite nature of North Sea operations and so wanted to diversify, not to just change or mix up our portfolio of assets but make a significant contribution to the world...to power the green energy revolution, we have the creativity for solutions, have experts, good people, smart people, and we are well funded, have strategic partnerships with investors to make this a success. As the world transitions to new needs, so does our organisation and this is reflected to all employees in our mission and values.</i>
Bio-Hub Project Decision Maker	<i>"The right word in summing up the nature of the project, transformation. How we described it in our last press release update was a transformational project of national significance which diversifies regional ambitions...This is a key project in this region for accelerating transformational change...Aberdeen finds itself now desperate to evolve away from offshore operations, both politically and commercially its viability has waned. Bio-Hub is part of the regional renaissance to stimulate different local opportunities for a broader economy...all those skilled oil and gas roles will need to evolve too if we are going to retain and thrive in the North East.</i>
Residential Projects (City & Shire)	
Queens Square Project Decision Maker	<i>For too long in our city we have not built upon the vast advantages that oil and gas has brought...Aberdeen just hasn't capitalised on having this money making machine on our doorstep with its parochial attitudes to development, and now in the last days of oil and gas, it's got its act together and thought, wait a minute, let's build something in the hope that people stay, so we see P&J Live being built, the AWPR, some really exciting beach front developments. Everyone seems on board with this, but it is just a case of whether the city has missed the bus or not".</i>

Grandhome Project Decision Maker	<i>"You've got to be prepared to be dynamic, some things will change... the truth is that the world changes and master plans have to try and stick with your principles but be flexible in terms of the demands".</i>
Council Stakeholders (City & Shire)	
Aberdeenshire Council Decision Maker	<i>"I lean more towards the transformational element, the vibrancy, there's a lot going on now... it becomes much more transformational".</i>
Aberdeen City Council Decision Maker	<i>"The transition away from oil and gas as this was a driving principle to the council and our diversification efforts...we really have to make sure that those developments are built and co-ordinated in the North East, that we can replace some of the established skills, established industrial capacities for oil and gas and that they can transition to green energy development".</i>

Source: Author

Appendix 12: Example Interview Discussion Around Themes of Regional Integration of Projects

Source:	Example Interview Discussion Around Themes of Regional Integration of Projects
Transport Infrastructure Projects (City & Shire)	
Aberdeen Airport Project Decision Maker	<i>"There is a range of large-scale projects taking place right now....which are of critical importance to us, the city bypass, the harbour extension, P&J Live. Our project was part of that 8 billion pounds being spent here to make it a truly first class location for our passengers, the airport is the gateway for experiencing that...I believe that what we have done at the airport was one of the drivers for that change, that business in the North East couldn't really expand without us...the local business community engaged with us and effectively said, we the North East economy couldn't grow at the rate it would like without an airport expansion and additional capacity to enable key external business links....they (regional projects) are interconnected; everyone is a winner in this".</i>
Aberdeen Harbour Project Decision Maker	<i>"In transport infrastructure we have just had the AWPR completed after decades of promises, the airport has been updated, again a project a long time coming. We are going to be part of that infrastructure expansion, helping the city be better connected to the outside world, Aberdeen really is starting to shape its own identity, TECA is operational and bringing in international visitors and international performers to the city. The Harbour development is not only vital for the harbour board, but vital for every business in a 200-mile radius. It changes what can come in and out of the region, how we can do business, or what a business could be. Suddenly, green energy is possible, the oil and gas supply chain flipped, with sustainability front and centre, and ultimately it is the hope to be become a free port. This will be a massive and impactful benefit to this region, these future possibilities are only possible or even conceivable because of what the city is doing now by expanding its infrastructure".</i>
AWPR Project Decision Maker	<i>"Things don't ever happen in isolation...you've got Prime Four being developed at Kingswells, you've got expansion of the business park at Westhill, you've got all the stuff at the airport, the airport master plan going ahead and some of these associated industrial development around there, you've also probably got things like Chapelton, and some of the stuff to the south of the city being influenced by the commitment of the institution of the Northeast and the Government saying we're going to build this big project in this area, sending out a positive signal, on TECA, you know that whole thing there was that aura of let's invest in Aberdeen, Aberdeen's going places, we're building a road, it's very visible, it's going to change connectivity, it's going to transform the city".</i>
Stadium and Event Construction Projects (City & Shire)	
TECA Project Decision Maker	<i>"We benefited from other projects happening, just as TECA was a driver for regional opportunities this maybe doesn't get to the level you would want to transform Aberdeen unless you are revamping the airport and adding capacity there, the AWPR completely recharging the transport infrastructure of the region....that's all changed now because the AWPR, we couldn't feasibly be so accessible without it".</i>

Aberdeen Football Club Project Decision Maker	<i>"The likes of AWPR was a blessing in disguise for us when we were considering being out of Kingsford because obviously it helps considerably from a transport perspective given that given the location is literally just off the off the motorway... I think there are a number of things that are going on in the region that yes I think complement the offering that we could ultimately come up with, I think they need to work in tandem with one another, but you know collectively at the end of the day what we want is for the Northeast to be a powerhouse".</i>
Regeneration Structure Projects (City & Shire)	
Art Gallery Project Decision Maker	<i>"Projects like the art gallery and music hall refurbishments really make a statement for what is happening in Aberdeen and nowhere in Scotland has a facility to match the P&J Live, the most expensive and modern exhibition and conference centre in the whole of the UK".</i>
Inverurie Health Hub Project Decision Maker	<i>"Based on what they're going to do with the Baird and Anchor which is obviously one of the big projects that Aberdeen city are doing just now...they were also doing the Inverurie Academy as well at the same time so there was a lot of emphasis on what we were doing for the local area".</i>
Music Hall Project Decision Maker	<i>"You know as (project role), we can only deal with a project that's in front of us, but you have to be aware of the wider city context and we knew at the exhibition centre work (TECA) that was happening it's a very different type of venue and it was always going to be a different type of venue and it's good for Aberdeen that it has that variety".</i>
Union Terrace Gardens Project Decision Maker	<i>"There has been a lot of money spent here in Aberdeen recently, the P&J Live, the Harbour, Airport, and we were well aware of many of these projects as (company name) has bid or is working on some of them, some of them are right beside the Gardens, the Art gallery refurbishment had just finished when we were working on designs, there was also the Music Hall which we had some contracting responsibility for. We felt that push from the council about the purposes of each of the projects, so we knew we weren't revamping a city centre garden, we were transforming the experience of Aberdeen for everyone, that's where the lofty legacy words come into play, that with everything going on, the ambitious regeneration efforts of the city was legacy building, they had thought about the end game for its citizens and each project was fulfilling a bit of that vision, that masterplan which was mapped out".</i>
Commercial Projects (City & Shire)	
Prime Four Project Decision Maker	<i>"Major international companies wanted something close to the airport, close to supply chain networks up and down the coast...Too long this area had been static and had not catered for the future or even maintaining infrastructure that would make it a competitive and attractive place to invest and work".</i>
Hywind Project Decision Maker	<i>"We advanced a lot of oil and gas technology to apply it and make it green technology, many Aberdeen operators will be familiar".</i>
Bio-Hub Project Decision Maker	<i>"Take the Western Periphery route, it is a road but its impact to say London or Manchester will be much more minimal to those users from the North of Scotland that will get the real benefits of its presence time and again...This development (Bio-Hub) will function where we will be connected in an extensive network, engaged in...(a) collaborative working strategy with many different types of stakeholders"</i>
Residential Projects (City & Shire)	
Queens Square Project Decision Maker	<i>"We have benefited from other projects, would this have happened at another time? When you take into the account the cost involved and where it is located, probably not, but we have a council really looking to regenerate and build the city, and to do that is taking risks, is getting bold and splashing out significantly...Anything that is good for these other projects is good for us. The more infrastructure and development, the more benefits can be unlocked, the more people start to think that things can be built, we have had success in transforming this area, let's be ambitious and do more in another area. Like we talked about, a better art gallery, an enhanced music hall, Lemon Tree provides opportunities, for projects like ours, but also restaurants and retail who may want to cater to those people coming back into the city".</i>

Grandhome Project Decision Maker	<i>‘The whole thing is a big picture and it's dynamic and so there's no doubt that the AWPR, the development at the airport, the development around the airport, all of that, it's all wrapped up together...we got to be part of that and respond to that’.</i>
Council Stakeholders (City & Shire)	
Aberdeenshire Council Decision Maker	<i>‘It just is so interlinked in this infrastructure which builds to the legacy’</i>
Aberdeen City Council Decision Maker	<i>‘I have worked tirelessly on many of these projects, and they are key assets to the city’s portfolio...I feel in a sense that seeing them in place is part of my own legacy in the role. We have identified as a project which can benefit Aberdeen and have gone through an approval process with the project organisations to ensure that the approach to their development is appropriate to our expectations. So, if I bring up which of these we were the main sponsor for, that would include TECA or as it is now known the P&J Live Arena, the Art Gallery, Union Terrace Gardens which is due to be completed soon, the Music Hall is in partnership with Aberdeen Performing Arts but still comes under the councils remit, the only one on this list which we had no real say in or partnership with is the Inverurie Health Hub, that is an Aberdeenshire Council project with NHS Grampian. The rest we have worked together as stakeholders’.</i>

Source: Author

Appendix 13: Example Interview Discussion Around Themes of Interconnectivity

Source:	Example Interview Discussion Around Themes of Interconnectivity
Transport Infrastructure Projects (City & Shire)	
Aberdeen Airport Project Decision Maker	<i>‘Ourselves and our partners view the airport as having a new catchment area...it will allow us to accommodate even more passengers. The AWPR connects us to up to 400,000 potential customers in Tayside. There are passengers that have had to travel through Edinburgh, Glasgow or Manchester but can now consider reaching Aberdeen with the bye-pass slashing journey times to Dyce...Our catchment has always been more than the Aberdeen region, Shetland and Orkney, the lack the facilities (they have)...so connection is vital for those places. Our improvements at Aberdeen international will benefit isles patients destined for ARI or the city’s leisure facilities’.</i>
Aberdeen Harbour Project Decision Maker	<i>‘The public really connected with the vision of the project, were very excited about the thought of cruise liners being in the city, to be able to pop on board and head off somewhere was a new option that is on our doorstep, not a drive down to Glasgow or Edinburgh to fly somewhere because Aberdeen doesn’t have the route. It would be role reversal, that residents from those areas would be instead coming up to Aberdeen to sail off into the sunset’.</i> <i>‘We are going to be part of that infrastructure expansion, helping the city be better connected to the outside world... bringing in international visitors’.</i>
AWPR Project Decision Maker	<i>‘It's a better-connected region, more resilient to future challenges because we've got better connections in and around the area and potentially to (and out of) the area as well if you think about the airport, and you know the harbour, and things that have been access points’</i>
Stadium and Event Construction Projects (City & Shire)	
TECA Project Decision Maker	<i>‘The legacy of TECA is not just for Aberdeen but for the whole country, that other places will look enviously at what Aberdeen is doing. I said that at the time, and stand by that today, because we have really delivered a world class venue, it was a highly ambitious project vision, an emphasis for quality, a venue that will attract people internationally to use...This takes us right back to the Olympic legacy, where we see the parallels of building up the region through these flagship projects that provide long term impacts, we see that here for TECA that the long-term benefits are that people now don’t have to travel to the places you mentioned to see the artists that they want to, they come to Aberdeen instead, other infrastructure will build</i>

	<i>around that, businesses will come and look at this area and see there are opportunities here, that they can capitalise from this and push forward the transformation of the North East....It has opened...that extended catchment area”.</i>
Aberdeen Football Club Project Decision Maker	<i>“We are an important institution...I now see countless people on a non-match day going to the stadium... if we can create a stadium and related facilities around it that can cater to the wider community then for sure that's exactly what we want to be doing... we'd love it to be able to host international games”.</i>
Regeneration Structure Projects (City & Shire)	
Art Gallery Project Decision Maker	<i>“I think one of the key legacies of the art gallery is that it has served the whole of the North East for generations, it is not a city resource, it is in the city but it is beloved by the whole region... (the gallery) will have not just local but national and international appeal... if you build something of exceptional quality then it will attract people to the region”.</i> <i>“Competition is maybe not the right term but as a council we try to ensure that what we provide is of the highest quality and are aware of what is happening nationally...we have received rave reviews for the overall experience of the gallery. We have had many visitors from Dundee and while the V&A has a very impressive exterior...what a lot of these V&A visitors have mentioned to us is that in terms of art we are by far and away superior”.</i>
Inverurie Health Hub Project Decision Maker	<i>“I think it gives Inverurie the focus that it deserves in terms of health and social care to try and prevent people having to come into Aberdeen city for more routine diagnostics and before we didn't have radiology and we didn't have maternity services within that location, so it now has...which is a which is a massive, massive benefit”.</i>
Music Hall Project Decision Maker	<i>“The project was very much seen as a project for the community, but it was also seen as a project for the region...you really didn't have the facilities for that and there were missing out in certain acts that wouldn't travel north because the facilities were really poor to go out there...we're aware of the network of venues that operate around Scotland and as I said we were aware that Aberdeen it was always branded Scotland's Concert Hall of the North for the client, and i think they were very conscious that it was a bit of a reach from the central belt and that Perth had managed to get itself more included in that kind of triangle in a sense and Dundee obviously is in there too, in the mix with the Caird Hall, but it was also a bit more difficult to draw certain types of performance North to Aberdeen, that was a disadvantage, so we were conscious that it had to compete on that same stage in terms of quality of the venue, the quality for artists, and the quality for audiences and it was a regional venue as well, it wasn't just for the city because Aberdeenshire is a big area”.</i>
Union Terrace Gardens Project Decision Maker	<i>“LDA (project developers) may be able to tell you more about that and their legacy positions and especially now they are working up here in Aberdeen... it is a statement project for the city. One of the first things I got introduced to right from the off is just how much this means to the city of Aberdeen, to the people of Aberdeen. I am not from the city, so it hit me like a ton of bricks that everyone I spoke to made it crystal clear just how much this matters”.</i>
Commercial Projects (City & Shire)	
Prime Four Project Decision Maker	<i>“This is a region that is some way behind other Scottish areas for out-of-town commercial provision such as Glasgow, Edinburgh, and Dundee. Prime 4 changes things and gives consumers new options, quality options, services that have long been sought after, and we have seen consistently that our clients are coming from further afield, even more so than we originally anticipated, so we have an extensive catchment area that supports both local and regional stakeholders”.</i>
Hywind Project Decision Maker	<i>“Floating offshore wind unlocks areas such as North East Scotland where there is much wind and natural resources...In our company we like to remind everyone for creating a sustainable green future that 2.4 billion people live a hundred kilometres from the coast. The potential of these benefits is huge for the whole global</i>

	<i>population and may allow us freedom from dependency on foreign energy imports from difficult regions”.</i>
Bio-Hub Project Decision Maker	<i>The Bio-Hub for Innovation development has an influence that is regional for sure but will also have significant national and international impact...This development will function where we will be connected in an extensive network, engaged in an international, global collaborative working strategy with many different types of stakeholders, pushing through innovation, and getting these to the right markets at the right time. We are not solving regional problems with our work but investigating solutions for all manner international health and environmental afflictions, so those benefits will most certainly be felt further afield in every continent on our planet...This I believe will be key to getting the impact we hope and provide global benefits in life sciences.</i>
Residential Projects (City & Shire)	
Queens Street Project Decision Maker	<i>“For too long in our city we have not built upon the vast advantages that oil and gas has brought...in that industry people work hard and get paid well, but if you want to play hard then you need to go off to Glasgow, Edinburgh, or a weekend in London, same if you want to go shopping. Aberdeen just hasn’t capitalised on having this money-making machine on our doorstep with its parochial attitudes to development, and now in the last days of oil and gas, it’s got its act together”.</i>
Grandhome Project Decision Maker	<i>“We started, at the time there was a real drive on the part of planning authorities and the Scottish Government to...promote high quality development and sustainable development and Grandhome got involved...set up a series of what they called charrettes...was very much the world leader in this”.</i>
Council Stakeholders (City & Shire)	
Aberdeenshire Council Decision Maker	<i>“I think if we go for the wider catchment area, that in itself benefits the local residents because as I say that the wider catchment area brings people into wherever it may be, Aberdeen they spend their money there and Aberdeen's economy grows”.</i>
Aberdeen City Council Decision Maker	<i>“I believe we have such a good head start with our regional make up, our oil and gas history, but that’s where some of our more cultural offerings come into play, we want to attract and retain a lot of the major players in green energy, to have a presence in Aberdeen, that takes us back to our regional masterplan and ensuring that it is a great place to live and work... their perspectives of being part of a wider connected Aberdeen.</i>

Source: Author

Appendix 14: Example Interview Discussion Around Themes of Community Engagement

Source:	Example Interview Discussion Around Themes of Community Engagement Within Projects
Transport Infrastructure Projects (City & Shire)	
Aberdeen Airport Project Decision Maker	<i>“We are part of this community, every penny that we put into this project is a future investment for everyone in the city and shire”.</i>
Aberdeen Harbour Project Decision Maker	<i>“It gives the people of the North East an identity, a heritage, a legacy even, and we see that pride as people come down to the harbour area to walk and breath in this heritage, if you were ever to take away the ships in this harbour, Aberdeen would be undressed, it would be a city unrecognisable for its people as it has been a constant for over a thousand years...this harbour project is keeping a major part of Aberdeen’s cultural heritage alive for future generations... One of the things that came out of those public conversations was just how strong and vital our place in the community is, it strengthened our resolve to ensure that we do this project the right way, the most environmentally friendly way possible, and that we had to be open and honest and tell the public how things really are as we progress....Aberdeen</i>

	<i>residents will have this advantage and opportunity for advanced knowledge and understanding which will impact a whole generation for the better. A positive force in young people's lives, a knowledge legacy, had our project not happened they would not have been in that position to learn on their doorstep or have this valuable inspiration".</i>
AWPR Project Decision Maker	<i>"were quite good at getting community groups, community councils, interested parties...talking it through and communicating the project to interested parties...setting that up and telling the story. So, I think that had a benefit for affected communities".</i>
Stadium and Event Construction Projects (City & Shire)	
TECA Project Decision Maker	<i>"Our commitment to improving the region, that we were a responsible partner to this community, we weren't just in this for economic reasons, it was just as much to do with people as it was the final building, that is our philosophy at HBD, our legacy you may say, but at the same time it really impacts the legacy of anything we develop, as we not only think about what we build and how this will impact people, but also think about just as much about how we do it, how we can become a positive part of the community that we work within".</i>
Aberdeen Football Club Project Decision Maker	<i>"I think we're one of those organisations which as you say are central to the community in so many ways, it's not just for us, it's not just about the playing of football on a Saturday at 3 p.m., it's everything else that the club does in terms of the work the community trust does...we are an important institution, I'd like to think in many ways a unifying institution... you create a real heritage, history, and legacy, then you know it starts to really stack up in quite an interesting way...so from an infrastructure perspective if we can create a stadium and related facilities around it that can cater to the wider community then for sure that's exactly what we want to be doing...we want the regenerated beach including the stadium to be a place where you know people migrate to, they want to be there".</i>
Regeneration Structure Projects (City & Shire)	
Art Gallery Project Decision Maker	<i>"In terms of impact to the community and as a community resource this will provide great benefits, being the trigger for more people to experience the gallery's world class collection...feel a greater attachment, greater engagement with it...I think legacy as we have discussed today is inherent in our ambitions for the art gallery refurbishment. This building will be transformational in its impact to the community, it will transform its audience, with a cultural legacy part of those objectives".</i>
Inverurie Health Hub Project Decision Maker	<i>"Speaking about legacy there was something lovely...to kind of bring that back into the community...so there was lots and lots of engagement. We had public representatives that were on our project team they were fantastic, we had during the build, we contacted lots of local groups and asked them if they wanted to come along for regular visits so they would come at different stages and come onto the building site...they were really instrumental in terms of...making sure that we got it right".</i>
Music Hall Project Decision Maker	<i>"we're very conscious that it was a community venue as well as a cultural venue...that's absolutely the key and the vision of the operator and the drive that they bring to it. So, the project was very much seen as a project for the community, but it was also seen as a project for the region so it was expanding community engagement, community events, education crucially...so, it's very much about breaking down psychological barriers as much as physical barriers as well...We were very conscious that you know we had a real treaty, not just to the building as a piece of architectural heritage but also to the building as a kind of repository for the memories of the people Aberdeen and that was important".</i>
Union Terrace Gardens Project Decision Maker	<i>"we are taking into account what the people of Aberdeen want from their gardens, what we have delivered is exactly that, we know what people want from the councils citizen space survey which collected over 1400 responses, so that is some good feedback, the findings were overwhelmingly for a gardens that builds on the existing heritage and feel with additional and modern facilities to support it"</i>
Commercial Projects (City & Shire)	

Prime Four Project Decision Maker	<i>"People often think of Prime Four as a business park or an industrial estate but that is completely wrong, it is a site of essential amenities and benefits the local area, this gives a community heart to the Kingswells area, bringing all manner of social and commercial usages...Yes, of course, there is the physical site, but we pride ourselves on being innovative, working with others and being a contributor to this community. We all work as a team, feel we are part of the same team so we year-round support and host events here on site, and encourage our tenants to do the same, which they do, and so together there is always something going on here for this community...One of the things we are most proud of was the creation of the Prime Four Community Trust, where we have sought to make a real difference in our community and worked closely with local charitable organisations".</i>
Hywind Project Decision Maker	<i>"We start off by reviewing key successes and lessons learnt but go into any project with an open mind and flexible for how we want to tackle it...within the communities we operate within".</i>
Bio-Hub Project Decision Maker	<i>"When you...drive change there will be an associated cultural impact, that's true at both micro and macro levels...The cultural legacy will be an output of that increased engagement, the dynamic synergy of this created working environment".</i>
Residential Projects (City & Shire)	
Queens Square Project Decision Maker	<i>"That's what we have missed in the city, proper efforts for community development and what our project brings back and also we are securing the place for our historic assets, that they are not just an attraction but a key part of people's daily life, and when that happens it impacts and reflects on who we are".</i>
Grandhome Project Decision Maker	<i>"being developed to Grandhome as a planned community based type of development, very heavily socially orientated...from the very beginning the whole object was to do something that was going to be community based".</i>
Council Stakeholders (City & Shire)	
Aberdeenshire Council Decision Maker	<i>"We've got to try and get that balance...which provides services and benefits to the local community".</i>
Aberdeen City Council Decision Maker	<i>"We need the private sector to be part of our masterplan vision, not just acting on their own economic vision but giving something back to the city as well in the process, knowing the responsibility of being a regional employer".</i>

Source: Author

Appendix 15: Example Interview Discussion Around Theme of Stakeholder Management

Source:	Example Interview Discussion Around Theme of Stakeholder Management
Art Gallery Project Decision Maker	<i>"We worked closely with our stakeholders to minimise disruptions and to develop this major project while also being able to have the airport operating as business as usual, not an easy feat to achieve but the project was completed successfully with little impact on passengers traveling through the airport".</i>
Aberdeen Harbour Project Decision Maker	<i>"We have already touched upon this multiple times which highlights just how crucial working with stakeholders is, the harbour extension is a massive project and we don't have the resources to achieve this on our own for sure, so we are reliant on our partners and that means being in constant and effective communication...A project is a busy, often dirty job, a hectic endeavour, and we didn't want to lose sight that we are in tandem with our neighbours. We have worked in partnership with I think over 50 groups, charities, on a project where every penny counts".</i>
Aberdeen Football Club Project Decision Maker	<i>"You're talking about something that is a large piece of infrastructure...there are multiple stakeholders, the council obviously plays a leading role in a number of areas but then they're very much reliant on some of the private sector side of things like ourselves as a football club to come help you know share and deliver their vision... I think the key to that and being successful is just being transparent and cards on the</i>

	<i>table, this is how we see it working or playing out and communicating very openly with people as to as to what you're trying to achieve".</i>
TECA Project Decision Maker	<i>"we worked extensively with local stakeholders, getting a feel for what people wanted, well actually more like what people needed, it was an exciting project, we were all in with this".</i>
Art Gallery Project Decision Maker	<i>"This was new territory for the council and some of our partners but one which I believe we fully succeeded in achieving the right blend in the design"</i>
Music Hall Project Decision Maker	<i>"but in terms of the (stakeholder management) process we met with the client stakeholders we met with their staff we gathered feedback and we drew up what we call a spiritual brief".</i>
Prime Four Project Decision Maker	<i>"We pride ourselves on being innovative, working with others and being a contributor to this community. We all work as a team, feel we are part of the same team so we year-round support and host events here on site, and encourage our tenants to do the same".</i>
Bio-Hub Project Decision Maker	<i>"Right there you will see the benefit of collaboration, being if you would, right at the centre of the action....will provide business opportunities for how businesses are run in the 21st century".</i>
Queens Square Project Decision Maker	<i>"We will have lots of stakeholders, lots of contractors who will complete the work. We need to all be on the same page, we all have to be fully aware of what the approach to the project is and know this is not a standard project, this is a visionary project...The stakeholders we work with have been carefully selected because they offer us that fulfilment, that they know the quality of game we are playing in and these are quality players, star players and all our reputations are on the line together, and we will work through challenges as a team, not playing the blame game if we experience problems, we play as a team and win as a team".</i>

Source: Author

Appendix 16: Example Interview Discussion Around Theme of Sustainability

Source:	Example Interview Discussion Around the Theme of Sustainability
Airport Project Decision Maker	<i>"Sustainability is paramount in our industry, we embrace it totally. It is part of our creed, we have meeting after meeting about sustainability and implement it all through all our operations. Any development such as an airport expansion goes through such a rigorous approval process where future sustainability, usage, capacity, environmental damage, pollution level, air quality, regional support, are both the justification for going ahead and also the reason for blocking a development. To have a sustainable future there needs be balance, to weigh up the pro's and con's of what this will bring and so the only way a project of this type would get approval is on the basis of demonstrating sustainability in its approach...that where possible we first look locally to do the work, and limit where possible our carbon footprint, and of course reporting on all these measures, not just a case of talking about sustainability but being able at the end of the project to have a sustainability report that is available to the public"</i>
Aberdeen Football Club Project Decision Maker	<i>"It was briefed into the architect at a very early stage that there were a range of things that we wanted to see done from an environmental and a sustainability perspective...we've just recently signed up to the UN sports for Climate Change Framework which is an important piece of work which really sees us commit to a series of goals on the environmental front... want to try and minimise energy consumption, we want to realise whatever renewable energy opportunities there are...we want to promote the efficient use of water...you know looking at the biodiversity around the stadium where we can, using sustainable construction models and methods and materials, minimising our waste and maximising our recycling, talking to fans about trying to get them to change their behaviour and trying to promote as much active travel as we can whether that means lots of electric charge points, the EV's, those are all the sorts of things that are top of our mind for us".</i>

AWPR Project Decision Maker	<i>"There has been a redistribution effect of these things and heavy goods vehicles are now more likely to root around the AWPR than they are the North Anderson Drive which then brings safety and environmental and congestion benefits".</i>
Art Gallery Project Decision Maker	<i>"Certainly, this is embedded into the culture of the council and how we do things. We have sustainability committees, strict regional targets for environmental improvement and have clear expectations for how our development partners execute project work. The gallery refurbishment is evidence to this, the original marble was reused elsewhere in the design, similar to our expectations for other council projects such as Union Terrace Gardens and the Music Hall where we have a reuse and recycle policy".</i>
Hywind Project Decision Maker	<i>"Everything about the project was built on sustainability. It is a sustainability solution for the world, the first project attempt to apply wind energy to decarbonise offshore oil and gas production. We know the planet needs to transform away from oil and gas and decarbonise...the core function of our developments is progress and getting this technology more affordable for expanded scale of adoption so we can facilitate that global change".</i>
Prime Four Project Decision Maker	<i>"We made sustainability a priority right from initiation of the project, if we want to attract the right partners then they want to feel confident that our resources have been developed in the right way, and sustainability is on the top of company agenda's when it comes to building partnerships. Through our actions, everyone knows our sustainability credentials, capped off by achieving BREEAM accreditation and designing Prime Four on a sustainable, bio-diverse landscape setting which has won us multiple awards. We see sustainability initiatives...in our daily operations in addition to site project management, we have on site a sustainable travel policy, integrated park and ride services and cycle to work schemes. Sustainability is part of our culture".</i>
Bio-Hub Project Decision Maker	<i>"What we are building is not a car park, flats, or a shop on the site, it is sustainably reusing a brownfield site so there is value our development...the architects created a flexible structure with movable internal partitions so that the layout could be easily reconfigured for changing future needs. This added to the cost but I believe it will allow for a much longer life-cycle for the building, that its future may not even necessary be in life sciences but can be fit for purpose in other requirements, crucially not having to knock it down and start again to achieve that, that it can be sustainably used for the future and minimising the environmental impact in the process".</i>
Inverurie Health Hub Project Decision Maker	<i>"So, it's very modular built, so walls could move, windows could move and all that type of stuff so it's got that ability to change function, we've also still got expansion space as well and we've got the energy centre which is absolutely massive, but that can deal with lots of changes in terms of the function for that, so in terms of its sustainability then yeah that has been factored in and for the generations to come"</i>
Queens Square Project Decision Maker	<i>"When we are managing projects today, there is so much responsibly for including sustainability, it is embedded into so much of our operations...we don't hide away from that or think it's a hassle but embrace it and we are very proud that we can really provide a clear approach for achieving sustainability, value it, and so do the stakeholders that we work with, that's part of what makes these relationships so successful as we have shared values and doing all that we can for the environment is a core principle of all involved in the project".</i>
Grandhome Project Decision Maker	<i>"from the very beginning the whole object was to do something that was going to be community based, sustainably based, high quality...you get planning permission to carry out a valuable development and then you start trying to infiltrate some sustainable concepts and some community concepts into this but this actually was driven in that way from the very grassroots...the Scottish Government ran an initiative just after that called the Scottish Sustainable Communities Initiative (SSCI), and again Grandhome got involved in that, it was one of a few that was involved in that and that was all about trying to promote sustainable development".</i>

TECA Project Decision Maker	<i>"we put a lot of effort in conducting our projects in a sustainable manner, we use where possible local contractors, supply chains, reuse or recycle materials, we do things in a responsible manner, we ensure we are BREEAM certified, we won a prestigious National Ultra Site Award on the back of our efforts for community engagement...everything about it is based on sustainability, environmental responsibility, and TECA encapsulates all those goals, all those ambitions for future green energy, making a statement for the city to fulfil its transformation ambitions, I think it is vital for a sustainable economy, a sustainable future for the Aberdeen region, and TECA delivers that I believe".</i>
Union Terrace Gardens Project Decision Maker	<i>"Yes, that was central to the project approach. All stakeholders had this (sustainability) as a priority. The project plans really took what existed within the park and looked first and foremost to reuse or recycle, that was stipulated within the planning permission...the sustainability emphasis stuck through thick and thin, and always there was a goal for net environmental gain...When I think of red lines for the project, money, time, not so much...but compromising on environmental issues was a line that was never going to be crossed".</i>
Aberdeen City Council Project Decision Maker	<i>"Today we see the fruits of that and recycling being a core effort in our battle against climate change. We have adopted many environmentally friendly approaches to how the city operates, we were the first council to approve and adopt hydrogen busses, we are putting in electric charging stations at one of the highest rates for any city outside London, and again all the efforts we discussed before for transitioning the city towards being a centre for green and clean energy....sustainability and environmental management, this of course we take to be of critical importance"</i>
Aberdeenshire Council Project Decision Maker	<i>"We were the first council in Scotland to have a carbon budget, so we are one of the few councils in Scotland probably possibly the only one that had as a Policy Committee specifically for sustainability".</i>

Source: Author

Appendix 17: Coronavirus 19 Pandemic Discussion Within Documents

Project	No. Specific Article Mentions	Example Quotes Discussing Covid
Transport Infrastructure Projects (City & Shire)		
AWPR	6	<i>"Although the strategy is a long-term plan for the next 20 years, the partnership is aware of the impact of Covid-19, and the changes it has made to how, and how often, we travel." (Porter, 2020)</i>
Aberdeen Harbour	60	<i>"The interruption to the schedule as a result of the Covid-19 emergency has had the effect of greatly compounding those existing challenges." (BBC, 2020b)</i> <i>"The appointed contractor departed from the project and works substantially delayed with Covid 19 having a significant impact." (Doig and Smith, 2022)</i>
Aberdeen Airport	17	<i>"What has been well documented is the catastrophic damage that Covid-19 has had on the aviation industry and we have seen a decline in revenue circa 59% this year and the future continues to look bleak". (Aiken, 2020)</i>
Stadium and Event Construction Projects (City & Shire)		
AFC Stadium / Cormack Park	38	<i>"Our plans to progress to the next stage have stalled due to the financial challenges we are facing as a result of the pandemic." (Coliseum, 2021)</i> <i>"The impact of the COVID-19 pandemic has increased losses at Aberdeen further as the club announce a £2.9m loss for the financial year ended 30 June 2020." (Aberdeen Football Club, 2021a)</i>

TECA	17	<p><i>"The coronavirus pandemic has effectively closed the venue for the majority of 2020." (Gossip, 2021a)</i></p> <p><i>"Over the medium to long-term, the impacts of the pandemic on the events and conference industry may result in a shift in demand for TECA's services, resulting in the local authority having to reconsider the focus of the site." (Gossip, 2021a)</i></p>
Regeneration Structure Projects (City & Shire)		
Inverurie Health Centre	4	<i>"It now has a key role in post-pandemic recovery planning as a strategic infrastructure development partner" (Findlay, 2021)</i>
Aberdeen Art Gallery	7	<p><i>"It's second enforced closure due to the unprecedented impact of the worldwide COVID-19 pandemic" (Pyke, 2021)</i></p> <p><i>"Aberdeen Art Gallery will be a vital building block in Aberdeen's social and economic recovery post – pandemic." (Donnelly, 2021)</i></p>
Union Terrace Gardens	8	<p><i>"The Covid situation has highlighted more than anything the importance of having green space within the urban environment and how it can help with physical and mental wellbeing". (Gossip, 2021c)</i></p> <p><i>"There is no doubt we have challenges, exacerbated by Covid-19, and our work is not complete". (Gossip, 2021c)</i></p> <p><i>"The pandemic had added around eight months onto the timeline, with the road now due to open in summer 2022". (Gossip, 2020)</i></p>
Aberdeen Music Hall	6	<i>"The venue, in common with every other entertainment centre in Britain, is closed at the moment due to the impact of the Covid-19 outbreak". (Drysdale, 2020)</i>
Commercial Projects (City & Shire)		
Prime Four	5	<i>"The firm had previously opened up a consultation with employees and made the cuts last week, blaming a 'dramatic shift' in the oil and gas industry and the global pandemic". (Wyllie, 2020)</i>
Bio-Hub	56	<p><i>"We have revised the planned start date for the construction of BioHub because of the impact of coronavirus on the construction sector". (Scottish Construction, 2020b)</i></p> <p><i>"We know that these are extremely challenging times as the country tackles unprecedented health, financial and economic challenges caused by the COVID-19". (Opportunity North East, 2020a)</i></p> <p><i>"The impact of COVID-19 has underlined the critical need to future-proof our economy through diversification". (Invest Aberdeen, 2020a)</i></p>
Hywind	7	<i>"Floating turbines usher in a new wave...how renewable energy could emerge on top after the coronavirus pandemic". (Hockenos, 2020)</i>
Residential Projects (City & Shire)		
Grandhome	6	<p><i>"A decision had been due to be made in May, but was delayed due to the Covid-19 pandemic". (Hall, 2020)</i></p> <p><i>"Given the continued uncertainties surrounding Covid-19, to support the proposal of application notice, Drum will create an online consultation model"</i></p>

		<p><i>following the Scottish Government and local planning guidelines for public consultation during the coronavirus pandemic". (Morrice, 2021)</i></p> <p><i>"Visiting sites, contractors explained that they are now struggling to get materials, and this is likely to continue for a considerable period of time...So the impact of Covid isn't just the closure period last year, this is going to be quite extensive and it looks like it will continue for a large part of this year....Construction inflation is running exceptionally high as well – in some aspects up to 20%". (Gossip, 2021d)</i></p>
Queens Square / Street	6	<p><i>"As traditional industries mature and new opportunities emerge in the new post-Covid-19 'normal', what are the ramifications for the historic built environment? And how can building conservation provide or contribute to solutions?" (Institute of Historic Building Conservation, 2021)</i></p>

Source: Author

Appendix 18: Number of Political and Vanity of Codes with Examples

Project	No. Source Mentions	Example Quotes Discussing Politics / Vanity
Transport Infrastructure Projects (City & Shire)		
AWPR	35	<p><i>"The Scottish Government's handling of the contract for the AWPR has been nothing less than shambolic. From start to finish, the Scottish Government has covered up its incompetence by focusing on procedural issues". (Urquhart, 2019)</i></p> <p><i>"What a shambles. It is clear that the Scottish Government has lost all control over the project and ministers have no idea when the road will be ready." (Ross, 2018)</i></p>
Aberdeen Harbour	5	<p><i>"It beggars belief that the Scottish Government is not willing to support it. Questions need to be asked around why, and they cannot hide behind procedural vagueness". (Hall, 2021)</i></p>
Aberdeen Airport	5	<p><i>"Owners of Aberdeen Airport urged every Scottish MP to vote in favour of plans... warning them that if it doesn't go ahead it could cost Aberdeen thousands of flights and hit the local economy". (Air Quality News, 2020).</i></p>
Stadium and Event Construction Projects (City & Shire)		
AFC Stadium / Cormack Park	3	<p><i>"Aberdeen City Council are notoriously difficult to deal with and haven't even glanced the way of its football club in recent years. But now, for whatever reason, they have changed tact and have approached Aberdeen with what looks like an option to stay down the beach". (Crombie, 2021)</i></p> <p><i>"It's clear for all to see that the UK Government doesn't consider Aberdeen to be a priority for these funds and, even if they did, the reality is that it would only provide a tiny fraction of the money needed". (Gossip, 2021b)</i></p>
TECA	12	<p><i>"Council chief has slammed the Scottish Government for ignoring pleas to help pay for a £333 million exhibition centre while considering contributing to a similar project in Glasgow. Whilst I relish competition and wish Glasgow well, I am somewhat disappointed that once again Glasgow is likely to be seen as a special case with funding being made available from the Scottish Government while Aberdeen loses out". (Wyllie, 2018a)</i></p>

		<i>"This report serves as a timely reminder for the people of Aberdeen that while the Tories are cutting front-line services and raising council tax by 4.5%, they have still been able to find almost half a billion pounds for the new conference centre". (Hebditch, 2019g)</i>
Regeneration Structure Projects (City & Shire)		
Inverurie Health Centre	17	<i>"Building work starting on the new Inverurie Health Centre was visible proof of the difference made by the SNP in the North-east. We are well up for the battle ahead. I stand for re-election on my record". (Merson, 2017)</i>
Aberdeen Art Gallery	10	<i>"This is another indication of the inadequate financing of the art gallery vanity project. It is typical of this coalition to try and make grand gestures based on unsound financial judgements. The lack of resources to pay for this refurbishment adds considerable pressures on the public purse."</i> (Wyllie, 2018b) <i>"Time and time again this council coalition have displayed a complete lack of control over this project. Folk in Aberdeen will be wondering what on earth is going on? The grim reality is that this is one of many delayed projects which has become a hallmark of the Tory and suspended Labour councillors who run our city". (Thompson, 2019)</i>
Union Terrace Gardens	51	<i>"The SNP show no ambition when it comes to the city centre while this administration will continue to improve the city for future generations."</i> (Hebditch, 2019b) <i>"Our co-leaders are quick to cut budgets to the things that matter most to the public but when it comes to keeping their vanity projects alive they're able to find millions down the back of the sofa." (Hebditch, 2019f)</i>
Aberdeen Music Hall	1	<i>"How on earth can you go looking for investors in the Music Hall when companies in the city are making people redundant". (Hendry, 2018).</i>
Commercial Projects (City & Shire)		
Prime Four	5	<i>"North-east councillors have raised serious concerns about plans for a £100million retail park on the outskirts of Aberdeen. Aberdeenshire's infrastructure committee unanimously agreed to submit a "holding objection" to the proposed extension of the Prime Four Business Park in Kingswells". (King, 2016)</i> <i>"The application exercise has provided us with a (negative) wider understanding of the current priorities of the administration for the city centre and Aberdeen as a whole". (Hebditch, 2017b)</i>
Bio-Hub	4	<i>"Both the Scottish and UK governments should build bridges rather than fighting with each other...there could be better collaboration between their two administrations, while the issue of Scottish independence still looms as a major barrier". (Askeland, 2021)</i>
Hywind	3	<i>"Pointed to policy changes at a government level which have held back the necessary deployment of renewable energy, citing the shift from the Renewables Obligation to Contracts for Difference support schemes as a nadir". (Scottish Renewables, 2020)</i>
Residential Projects (City & Shire)		
Queens Square	8	<i>"We may be the lowest funded local authority in Scotland but the breadth and depth of the new projects taking place are genuinely awe-inspiring"</i> (Fullerton, 2016)

		<i>"I appreciate that the administration are really keen to be seen as 'doing things' but if they spent more time delivering existing projects on time and to budget rather than promoting others that have little to no detail, council finances might be in a little better shape."</i> (Hebditch, 2019c)
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Source: Author

Appendix 19: Example Interview Discussion Around Theme of Political Factors

Source:	Example Interview Discussion Around Theme of Political Factors
Aberdeen Football Club Project Decision Maker	<i>"We have no idea what the new election will bring, there are multiple stakeholders, the council obviously plays a leading role in a number of areas but then they're very much reliant on some of the private sector side of things like ourselves as a football club to come help you know share and deliver their vision so it's a very complex political and otherwise environment in which to operate"</i>
Art Gallery Project Decision Maker	<i>"Unsurprisingly, we had limited Scottish Government funding, other areas south of us collect this cash consistently, but Aberdeen almost never gets it, Aberdeen will never be an SNP heartland, so we knew that we were on our own for raising capital and getting this project off the ground".</i>
Prime Four Project Decision Maker	<i>"The country is a very different place for doing business than when we started out, we have had Brexit, which has disrupted severely our capabilities and costs in the supply chain and there is also the looming threat of yet another Scottish Independence referendum which would disrupt our operations further".</i>
Bio-Hub Project Decision Maker	<i>"It is a diverse set up, being based in Aberdeen I have limited basis for comparison for other areas, any project that requires significant investment from political contributors will experience politics, we certainly did, we weathered the ups and downs, the coronavirus effect towards the latter stages of planning I believe assisted in cutting through the politics, the value of our work becoming very apparent, essential for future national risk management, to the extent that we received backing from both the Scottish National Government and the UK Government".</i>
Music Hall Project Decision Maker	<i>"There's political intentions...that's reflective I guess of a very polarised society I guess, and that's going to make it very difficult to move forward in some ways because you get things pulling in opposite directions".</i>
Queens Square Project Decision Maker	<i>"one risk that we see on the horizon is the city council elections in May. We talked about this before about having to swim through the murky waters of Aberdeen city politics while developing projects, we are lucky as our project is operational and work has commenced...I believe we are going to need to be innovative to handle that challenge and work the best we can with potentially changing stakeholders".</i>
Union Terrace Gardens Project Decision Maker	<i>"Here in Aberdeen, it really can be toxic...in the end you just get depressed by all that in-fighting between SNP, Tories, and Labour...I have never seen the like anywhere else, to be honest the Gardens have a soft opening in late April so all going well we won't have to deal too much with a new council after the elections, which is a relief".</i>

Source: Author

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