Transition to a new regional identity: exploring the legacy narratives in a region's construction and infrastructure projects.

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Transition to a New Regional Identity: Exploring the Legacy Narratives in a Region's Construction and Infrastructure Projects

3rd NIBES Research Session - Sustainability Research in Business and Economics

Robert Gordon University, Scotland

Overview

Subject

The exploration of 'Legacy' to a context out with event management.

Focus

Understanding the legacy narrative for developing transformational construction and infrastructure projects identified in Aberdeen and Aberdeenshire.

Approach

An interpretative approach through document analysis and semi structure interviews with strategic project stakeholders.

What is Legacy? The Development of Legacy Understanding within Academic Literature

Legacy Origins

Traditional understanding for the term legacy was developed from legal frameworks and bequests, being characterised as 'property left by a will', for a planned future remembrance (Harper, 2001).

Image Credit: Olympics.com

IOC

The IOC has adopted legacy as a core value for their events and a governing principle of their existence.

2002 Symposium

In 2002 the IOC held an international symposium to better understand and make an attempt to ultimately define legacy.
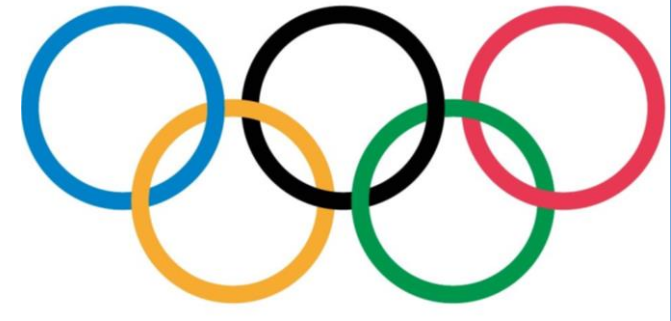
| Pre & Olympic Symposium Legacy Definition Output (2000-2003)	Ritchie (2000)	Hiller (2000)	IOC (2003)	Chalip (2003)	Roche (2003)	Barney (2003)	Kidd (2003)	Sum
1. Legacy Nature								
Tangible / Permanent / Infrastructure	X	X	X					3
Intangible / Social / Human	X	X	X				X	4
Multifaceted / Complex				X	X			2
2. Time Based								
Long Term	X				X		X	3
Short Term					X			1
Past Orientated						X	X	2
Future Orientated						X	X	2
3. Impact & Improvement								
Improve / Enhance / Benefit	X	X			X		X	4
Generic Impact	X	X						2
Positive Impact								0
Negative Impact								0
Potential / Opportunity					X		X	2
Planned / Expected Outcomes								0
Unplanned / Unexpected Outcomes								0
Sustained								0

Pre 2003

Post Olympic Symposium Legacy Definition Output (2004-2019)	Preuss (2007)	Gratton & Preuss (2008)	Silva (2015)	Franklin & Cheung (2017)	Ma & Kaplanidou (2017)	Sum
1. Legacy Type / Nature						
Tangible / Permanent / Infrastructure	X	X				2
Intangible / Social / Human	X	X	X	X		4
Multifaceted / Complex						1
2. Time Based						
Long Term					X	1
Short Term					X	1
Past Orientated			X	X		2
Future Orientated	X	X	X	X		4
3. Impact & Improvement						
Improve / Enhance / Benefit			X		X	2
Generic Impact					X	1
Positive Impact	X	X	X		X	4
Negative Impact	X	X			X	3
Potential / Opportunity					X	1
Planned / Expected Outcomes	X	X			X	3
Unplanned / Unexpected Outcomes	X	X			X	3
Sustained					X	1

Post 2003

Legacy Character Themes
1. Legacy Nature
2. Time Based
3. Impact and Improvement
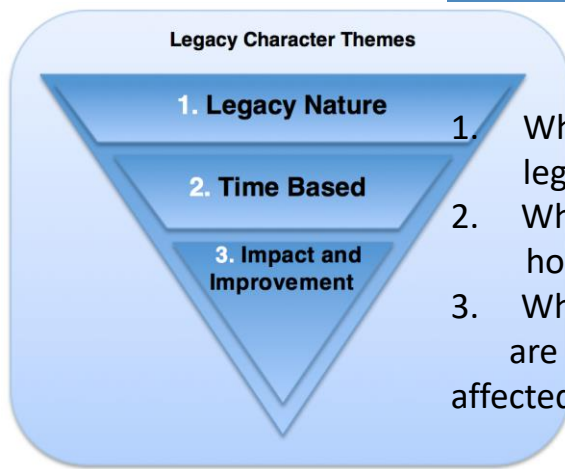
1. What constitutes a legacy.
2. When a legacy begins and how long it lasts.
3. Who legacy stakeholders are and how they are affected.

Preuss Legacy Cube

Planned — Unplanned — Intangible — Tangible — Negative — Positive
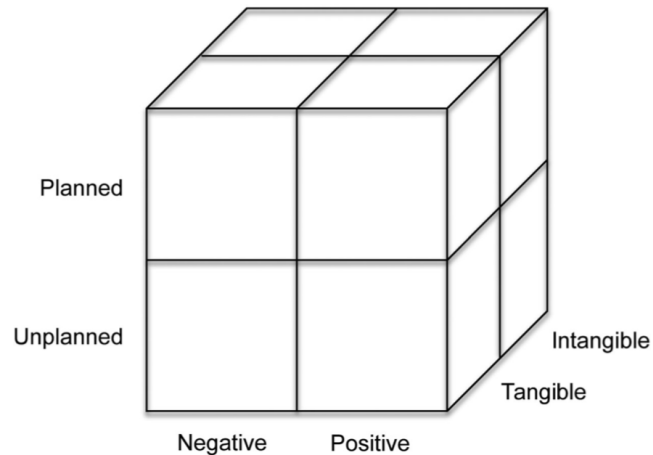
Legacy Cube (Source: Preuss 2015)

- Legacy lacks 'top-down governance' for how it is defined and applied. Legacy characteristics are established but requires practical 'bottom up' exploration to build a wider narrative of how it is being applied.
- Legacy is a research area that has been limited in focus to event management and underexplored in other contexts.
- Investigation into legacy concepts is primarily conceptual with a lack of empirical studies conducted in any context.
- Legacy washing has not been explored. Projects are occurring within the business environment that are making extensive 'legacy claims' although in academic research this has been relatively unexplored and untested for substance or understanding.
- The methods for creating legacy (project management) have limited investigation or practical understanding for how legacy can be implemented or achieved in this context.
- Are the traditional principles and approaches of project management compatible or consistent with those used to develop a 'legacy project'?

Objectives

- To review the existing literature to identify core themes associated with legacy and their potential application within a project management context.

- To construct a conceptual framework based on the identified literature to enable a practical investigation for legacy application in Aberdeen based construction and infrastructure projects.

- To explore how legacy is understood and addressed by project professionals in the context of their projects.

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

- To provide recommendations for effective practice in incorporating legacy within projects.
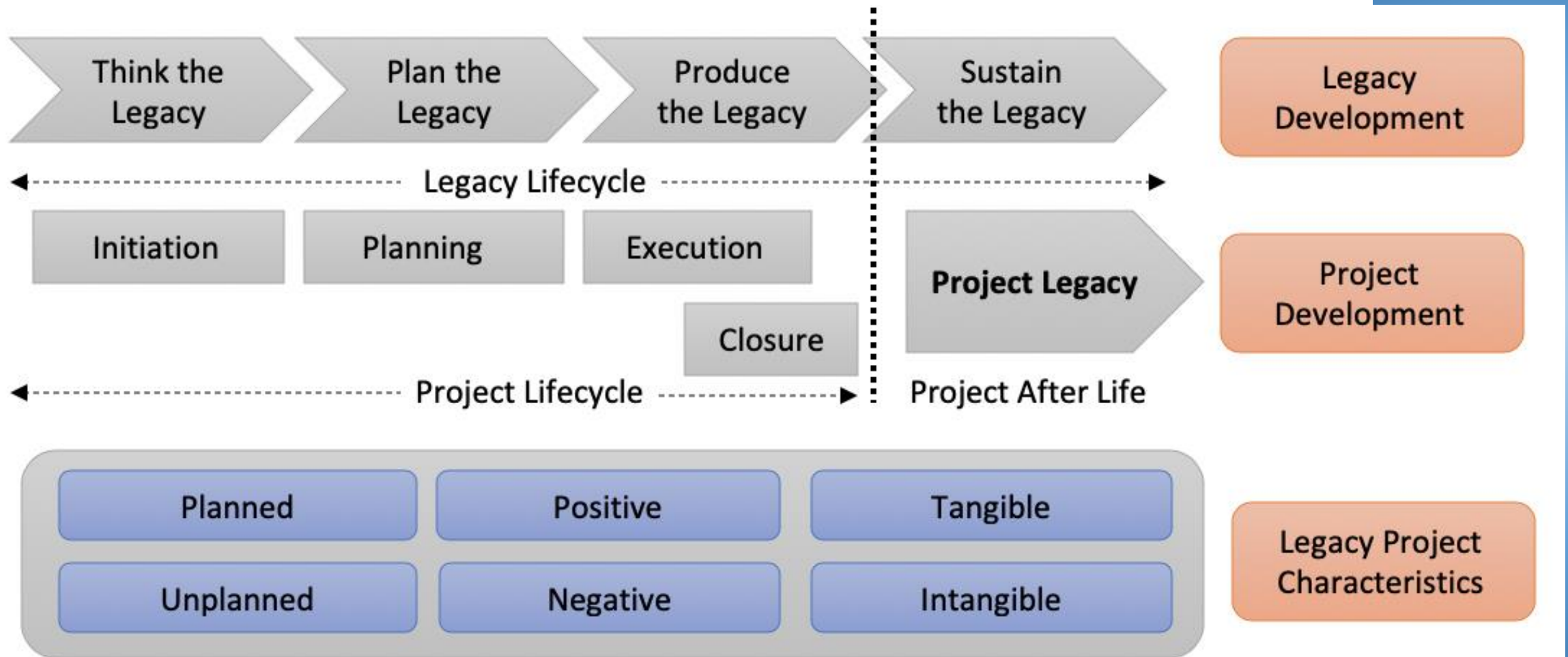
Theoretical Framework

Diagram: Project Legacy Model (Source: Author, adapted from Preuss 2007 & Silva 2015)
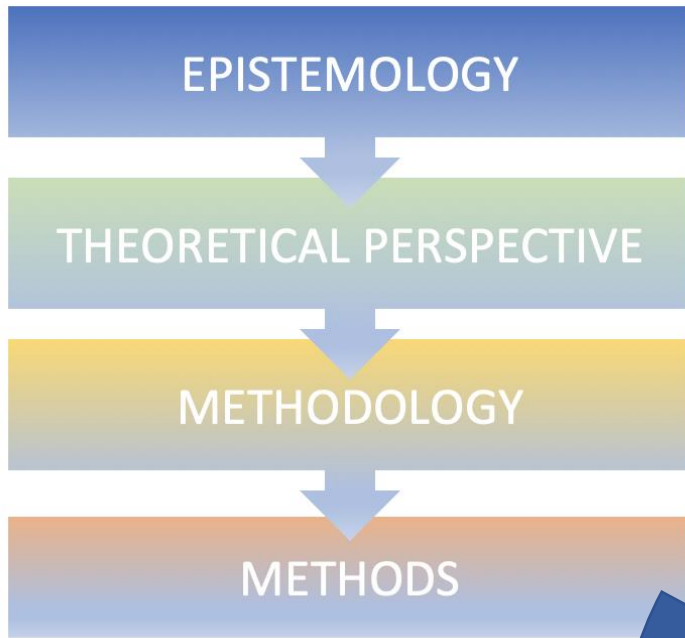
Methods

Diagram: Four Element Research Process (Source: Crotty, 1998)

Epistemology	Theoretical Perspectives / Research Paradigm	Methodology	Methods / Data Collection Method
What and how can I know reality / knowledge?	What approach can we use to get knowledge?	What procedure can we use to acquire knowledge?	What tools can we use to acquire knowledge?
• Objectivism • *Constructivism* • Subjectivism	• Positivism (and Post Positivism) • *Interpretivism* • Critical Enquiry • Feminism • Post Modernism	• Experimental Research • Survey Research • Ethnography • *Phenomenological Research* • Grounded Theory • Heuristic Inquiry • Action Research • Discourse Analysis • Feminist standpoint research etc.	• Sampling Measurement and Scaling • Questionnaire • Observation (participant and non-participant) • *Interview* • Focus Group • Case Study • Life History • Narrative • Visual Ethnographic methods • Statistical Analysis • Data Reduction • Theme Identification • Comparative Analysis • Cognitive Mapping • Interpretative Methods • *Document Analysis* • Content Analysis • Conversation Analysis

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

Prominent Urban Factors in Sporting Legacy Research		
Project Type	**Description**	**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., 2019; Watt, 2013)

Koenigstorfer et al's. (2019)

Image Source: Scottish Construction

Image Source: LDA Design

Image Source: Aberdeen Football Club

Image Source: Kelpie Design

Image Source: Transport Scotland

Image Source: Aberdeen Harbour

Image Source: Prime Four

Image Source: NLA London

Image Source: AJC Homes

Image Source: Scottish Construction

Project Selection – Final Projects

Transport Infrastructure Projects (City & Shire)

Project	Timescale	Cost	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

704 Sources (with selection of Stakeholder generated Communications, News Media, Industry Reports)

£3.387 Billion of project spend

POSITIVE
- Economic Improvement
- Interconnectivity
- Needed Regional Resource
- Provides Additional Opportunities
- Public Support
- Sustainable Future

NEGATIVE
- Exaggerated Benefits
- Negative Environmental Impact
- Political Influence or Vanity
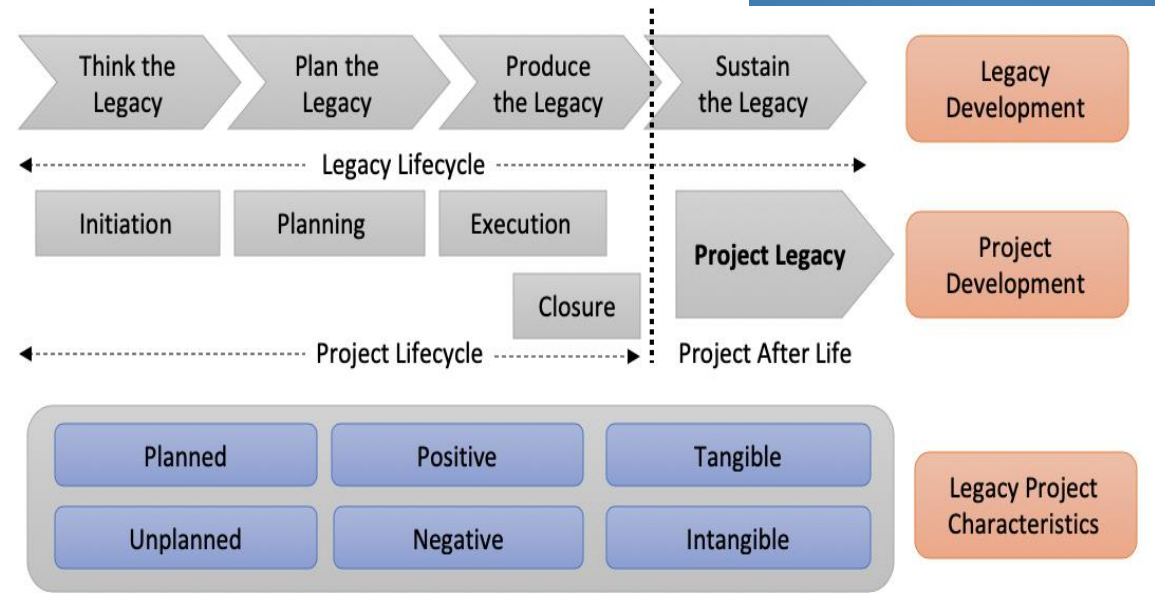- Poor Quality Design
- Public Resistance to Development

TANGIBLE
- Integration
- Physical Infrastructure Resource
- Site Regeneration

INTANGIBLE
- Knowledge Increase
- Reputational Value
- Social Benefits

PLANNED
- Investment
- Long Term Vision
- Organisation, Management & Developm...
- Specific Legacy Reference
- Stakeholder Initiated
- Strategic Priority

UNPLANNED
- Exceeds Anticipated Budget
- Overruns to Anticipated Schedule
- Project Risk or Failure
- Stakeholder Change
- Uncertain Future Funding
- Uncertain Future Impact

PROJECT MANAGEMENT METHODS
- Certification or Awards
- Contract Management
- Energy Efficiency
- Environmental Management
- Global Initiatives
- Green Supply Chain
- Human Resources
- Lessons Learned
- Lifecycle Management
- Monitoring
- PM Iron Triangle
- Quality Management
- Risk Management
- Scheduling and Project Planning
- Social Partnerships
- Stakeholder Management
- Sustainability Initiatives
- Use of New Technology

Think the Legacy → Plan the Legacy → Produce the Legacy → Sustain the Legacy

Legacy Lifecycle

Initiation | Planning | Execution

Closure

Project Legacy

Project Lifecycle — Project After Life

Legacy Development

Project Development

| Planned | Positive | Tangible |
| Unplanned | Negative | Intangible |

Legacy Project Characteristics

Codes	AWPR Ref	Harbour Ref	Airport Ref	TECA Ref	AFC Stadium Ref	Inv Health Ref	Art Gallery Ref	U T Gardens Ref	Music Hall Ref	Prime 4 Ref	Bio-Hub Ref	Hywind Ref	Grandhome Ref	Queens Square Ref	TOTAL
INTANGIBLE	**76**	**24**	**45**	**110**	**70**	**82**	**51**	**47**	**54**	**44**	**84**	**49**	**61**	**60**	**0**
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	1	25	0	11	0	6	0	0	97
PLANNED	**144**	**64**	**101**	**320**	**86**	**172**	**89**	**110**	**58**	**50**	**167**	**53**	**117**	**90**	**1621**
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	9	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

Project Legacy Claims

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

"Construction isn't just about building roads or structures, we see the benefits of leaving a lasting legacy beyond the immediate construction works. As such, we work closely with schools and employment and training providers".
Aberdeen Western Periphery Route (AWPR)

"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".
Aberdeen Art Gallery

"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

"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

"Is an investment for the future, creating a legacy that delivers long term benefits for the city and shire economy".
Aberdeen Airport

"Stadium which will provide a lasting sporting and community legacy for the whole region".
Aberdeen Football Stadium

"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".
TECA

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.
Prime 4

Next Steps

- To complete semi –structured interviews with strategic project leaders (roles outlined to the right) to critically apprise claims and narrative of document analysis for each project.

Project Sponsor
Project Manager
Project Team Member
Project Architect

Areas of Contribution:
- One of the first legacy explorations that focuses on specific projects (rather than conceptual developments) and experienced stakeholders to provide practical insight into its understanding away from an event management context.
- Provides an understanding for how, why and what project management techniques have been applied for legacy focussed projects and how this differs from traditional project management practices.
- Explores the parameters of the conceptual legacy literature for applicability in a project environment.
- Provides unique insight for Aberdeen regional development as the first research to explore a series of recent completed / in-progress projects for their long-term ambitions and links to legacy concepts.
- Provides details for how legacy is understood, defined and practiced by regional developers and project professionals and how it has influenced their practice.

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