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ZECCA, C. and LAING, R.

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Chapter 14

Border[s]lines Between Isolation and Connection: The Disused Railway in Aberdeen

Cecilia Zecca and Richard Laing

Abstract Abandoned railways allow an interpretation of urban borders by considering different scales of connection and separation. The former railway line in Aberdeen is used as a case study to explore how urban linear connections represent a defining linear space and may postulate a socio-spatial statement. The linearity of abandoned railways as an urban design issue is recognised as a characteristic of urban isolation and connection. The contemporary city is no longer a compact and homogeneous entity; its fragmentation and diversity make it prone to rapid transformation. The fragmentation represented by urban voids results from rapid urbanisation and new modes of transportation. Urban infrastructures, particularly railways, often necessitate redesign and are subject to relocation due to urban conditions. This relocation results in abandoned lines and, later, linear voids representing new micro-borders within a city. Focussing on an urban void and a residual form of a spatial condition that resulted from an abandoned railway line in Aberdeen, its potential role in connecting historically isolated and fragmented neighbourhoods are considered through three case studies of the successful transformation of abandoned railways. These are analysed to highlight the potential to develop a methodological approach to conscious urban reuse by addressing the challenges of planning and structuring specific design methods to create a network of connections and reinforce the importance of reactivating surrounding areas and places.

Keywords Railway Reuse Greenway Urban identity Void Non-place
Transversal-ways ■ Micro-areas

14.1 Introduction

Post-industrial European cities are complex urban forms. This complexity is represented by juxtaposing multi-functional spaces with a mix of historical and contemporary urban readability (Aymonino 1977). Cities require more regeneration than expansion within this urban complexity and persistent decay. This calls for alternate solutions to conserving or replacing buildings and urban spaces. Strategies of interventions—conservation or replacement—are potentially opposing. Even though they may be fundamentally helpful for reactivating potential areas, they often highlight a complex range of issues. These issues include public expectations, new architectural challenges, loss of history, and restoration of style for which creative and planned strategic reuse might compensate.

In the European context, it is challenging to design a project on vacant land; often, every intervention is related to disused or residual spaces around the city, which have gone through demolition and require reconstruction (Cao et al. 2006).

During the second half of the twentieth century, the decommission of industrial areas became a more persistent phenomenon. As a result, infrastructures, predominantly railways that served those areas, fell into conditions of abandonment. Within the United Kingdom, a similar process of decreasing rail travel occurred. A reduction in provincial railway lines was further accelerated by the Beeching Report (British Railways Board 1963).

The industrial areas are, by urban definition, *aerial* abandoned spaces that may represent the urban city tissue in the form of voids that are out of scale and context (Secchi 1984). Likewise, the associated infrastructures, such as highways and railways, are out-of-scale linear voids. However, the term *void* is too generic to describe the city's more profound significance and landscape.

Urban aerial and linear voids are necessary for specific urban intervention and transformation strategies. The debate around the regeneration of these typologies of urban spaces involves the concept of identity and collective memory of the city's future, the relation between urbanism and architecture, the connection between large- and small-scale development, and the association between a programme of intentions and real projects.

The criteria for redesigning an abandoned space may vary radically in how the project is approached or how the intervention is addressed. Conventionally, the intervention of the existing built environment can be identified through three different macro-categories of approaches:

- Conservation
- Demolition and new construction
- Reuse

These approaches provide a way to assess the meaning of linear spaces generated by abandoning railway infrastructures and how they are transformed into greenways.

Across Europe, the old railway lines present an opportunity for investment in redevelopment (Bertolini 1996); they are a flexible and innovative conversion. However, existing tracks are evidence of a place's history and warrant a reasonable level of analysis. Urban analysis proves to be fundamental if the complexity of regenerating the linear void and its associated structures, such as abandoned stations, bridges, and tunnels, is fully addressed. It requires a careful and mastered skill to consider their full significance.

The nomenclature and the classification of elements constructed at these urban borders are incredibly helpful in analysing conditions of abandonment of the linear spaces along a railway. Accurate identification of the problems and related design solutions exemplified in three successful projects demonstrates a rigorous application of urban design in dealing with abandoned railway lines and transforming them into a viable urban project that neutralises social divergence. In addition, the reprofiling discourse surrounding void urbanism serves as a functional methodological approach to regenerate socially and environmentally responsive urban areas.

14.2 Definitions for the Abandoned Railway as Linear Space

Different approaches to understanding the complexity of urban abandoned spaces in post-industrial cities may be undertaken; many involve interdisciplinary studies.

The abandonment or closure of an aerial or linear space with a specific function generates various configurations and variations of the concept of *absence*. In terms of the city's urbanity and form, the *absence* may be described as the opposite of the *presence* and the *Rossi permanence* (Rossi and Eisenman 1982). Rossi argued that permanence in space exists where the past can still be experienced, whilst an abandoned space within the city no longer encapsulates or allows such experiences. Thus, in investigating the nature of abandoned spaces, it is particularly relevant to address innovative and strategic ways of redesigning them.

It is necessary to introduce the concept and the use of the term *place*, which can reflect the morphological and typological natures of the abandoned spaces. The idea of place is closely connected with beauty, which is both valuable and beautiful in the urban and landscaping context (Turner 1990). In addition, having a *good place* helps consider and create archetypes (Turner 1995). A set of archetypes can provide better landscape planning processes than the vacuous open space concept (Turner 1995, pg. 276). Turner (1995) observed that both Alexander et al. (1977) and Lynch (1960) studied landscape and urbanity more profoundly than *indoor* architecture itself.

This is relevant to linear spaces and exterior spaces. In fact that both, Alexander and Lynch, explored the spaces in between the architecture not only because defining the "indoor space is easier" (Lynch 1960; Alexander et al. 1977) but because the

indoor spaces would not have any *raison d'être* without relationships and connectivity with the outdoor spaces.

Gehl (1987) investigated the spaces between the buildings by analysing social activities, the factors influencing their uses and forms, and the relations generated between the people and the spaces. Relationships and connectivity and archetypes or Rossi's urban artefacts (Rossi and Eisenman 1982) are fundamental to the concept of place. According to this, the lack of relationships and significant urban and social elements generate placelessness. Conversely, exaggerating the dimension of a place generates an opposite concept: a non-place. Thus, it is possible to individuate two functional relationship categories to explore the meaning of abandoned railways and their regeneration methods. Relation means that presences have effectively taken place.

Regarding urbanity and landscape, relationships can be with the surrounding made through paths that emphasise particular points of view and through social functions between users.

Quoting from *Clément*:

You do not look at the landscape as an object of human activities, discovering a quantity of informal spaces with no purpose, of which it is difficult to give a name (Clement 2005).

An etymological study suggests that the opposite concept of place can be investigated through two different but similar words that originated from Greek, ἀτοπία or *atopia* and French, *non-lieu* or non-place (Augé 1995; Rotenberg 2011).

Atopia (from Greek ἀτοπία, *atopía*—placelessness, unclassifiable where *a* is the privative of *topos* or place) represents a condition of non-belonging and describes all parts of the city which determine a variation. That variation is provided by the lapsing of its function and, therefore, by its abandonment. It could be said that *atopy* is the absence of meaning in the territory and environment (Acuto and Bonfante 2015). The relationship between the concept of *atopy* and non-place resides in the concept of absence. On the one hand, it is the absence of relationships with the environment, and on the other, it is the absence of social function relations. Manzione (2012) argued that the concept of non-place should be sought in the infrastructure spaces of the city and its periphery, which are already territories of *Atopia*. The neologism of the *non-place* defines a space thought to exist independently without any relation to context and only specific functions (Medori 2011).

Railways are geometrically linear spaces appropriate for a specific purpose. These long elements' primary morphological and typological character is defined by the directional flow of humans and goods; this differs entirely from the aerial geometry of a space such as a park (Fig. 14.1).

The intertwined concepts of *atopy* and non-places help to establish that old railway presents two issues of relationships: (i) they do not relate to the surrounding area; the only exception might be the stations, which would require reuse to have a relationship to the area, and (ii) they do not have particular social functions.

An aspect contributing to the lack of social function relates to different rhythms demonstrated by past and contemporary functions. Rhythm is an approach to analyse



Fig. 14.1 Human flows within spatial configurations. *Source* Zecca, C

the relationships between space, time, and society (Smith and Hetherington 2013). The concept of rhythm is provided by repetition, which regulates and reproduces the sense of urban space and its relational aspects of place life. Lefebvre (2004) argues that analysis of rhythm offers the possibility to understand the complexity of the spaces, their interactions, mobility, and the connections between particular and universal.

A railway is an extended linear infrastructure designed for intercommunications and mobility; these characteristics are often geopolitics and national. The relation between spatial dimensions, speed, time, and tempo connects two distant points. Urbanity is a technology-driven, strongly geometric line that indistinctly crosses different landscapes and places. It is indifferent to the porosity and variety of spatial micro-localisms (Lobefaro 2006).

A railway conversion often assumes the form of a long path for walking or cycling. It seems to be a more rhythmic transformation rather than a functional transformation. The spatial dimensions are still the same, but speed, time, and tempo change. Considering only the over-expanded linear object, the line, and overlooking the observation of the various contexts that the line transgresses is one of the most challenging tasks for reprofiling an abandoned railway.

Inhabiting an open public space is entirely different from the rhythm of linearity represented by rail lines. Various relationships between spaces, dimensions, speed, time, and tempo characterise an open and linear space. The length of a railway, in particular, is substantially incompatible with the walking speed and time required for walking unless more entrances and activities are provided at its borders.

In this sense, the “track-vector” (Lobefaro 2008) is a remote element that isolates the spaces along its sides. Thus, the rhythm missed is the intensity of relations with micro-localisms and compresences. In other words, there is no composition of the rhythmicity elements, spaces-dimension-speed-time-tempo; composition in the Latin meaning of *ponere cum*, namely put together, juxtaposing different elements (ibid).

Therefore, the closure of a railway is related to the line itself and all context and micro-spaces around it, which belong to a specific functional logic—the linear space of travelling long distances. In this regard, the surrounding decommissioned elements at the borders become strategic spaces within the process of conversion.

Borders have historically defined the linear void/space as a closed urban system or a country through an imaginary margin line. These lines draw the character of a place, providing its identity as a sum of different times and forms.

At borders, paradoxically, the identity of the place is generated by two opposite situations: it can be the image created by someone outside the place and the image built by the sense of belonging possessed by users inside the place. Thus, the configuration of the spaces is a tangible element of identity, but the border itself is not considered a criterion of space definition.

In this sense, there are constant distinct spatial elements along unused railways: stations, platforms, tunnels, bridges it passes under, engine spaces, and various landscapes that border the linear space.

Spatiality Definitions

Stations

The term *station* can be defined as where passenger trains stop (Oxford 2010) and are characterised by the twofold connotation of localism and globalism. Stations are local entities on a micro-scale; however, they have a connective role on a macro- scale. Since the railways became a new form of mobility, many towns became more significant due to their railway junction purpose. This ambivalence rooted in Castells' concept (1989) of "space of flows", or global connections, and "space of places", or local connections, leads Bertolini (1996) to the definition of the stations as both "nodes and places". They are, respectively, nodes of the network and places in the city.

If Bertolini defines the station as permanently and temporarily inhabited by people within the city, Augè, with an anthropologic eye, individuates the lack of human interactions and defines the station as a non-place (Augè 1995).

Given the redevelopment of the stations, Bertolini proposes addressing their characteristics as nodes and places with a project of transformation where the station becomes active poles within the urban system (Bertolini 1996). It can be argued that the terms *node*, *place*, and *non-place* are accurate descriptions. Regarding the design to reuse an abandoned station, it is essential to consider its historical meaning as a node of interconnections, place as a recognisable element within the city and a non-place for its lack of social functions. The non-place interpretation is also present in the abandonment condition of the station itself.

Platforms

The platform is an appealing differentiation of the walkway level and height. However, it is generally closed physically and in terms of access to the station. For this reason, the latter two are not separable regarding analysis and design reconversion. The platform can be read in its long sections and explored in its relationship with human height and its way of disappearing within the terrain in the long section. Because of this, the landscape analysis of the platforms is a critical interpretation of sections rather than plan views (Figs. 14.2 and 14.3).



Fig. 14.2 Two points of view of platforms, Deeside way from the East side. Scotland. *Source* geograph.org.uk



Fig. 14.3 Two points of view of platforms, Deeside way from the West side. Scotland. *Source* geograph.org.uk

Tunnels

The tunnel belongs to another structure different from a proper building, even if enclosed only on two sides. Within the tunnel, the walkway may vary and become slower or faster as the external and surrounding conditions differ from the pathway itself. In this sense, borders become solid and material walls; space reveals its nature as a corridor in its geometrical and functional connotations.

Bridges

Bridges are elements that re-connect two points, overpassing a barrier along its borders. Overall, bridges have a symbolic significance in the history of architecture. Most railway crossings are juxtaposed by roads and bridges, often by bridges. Thus, the spaces that warrant investigation are the vertical connections between the railway underneath and the bridge itself. A bridge over a railway is an infrastructural node that generates an interstitial space beneath it, representing an occasion of newly designed functions.

Observed from below, these nodes are, as Gisela Erlacher (2016) titled her exposition, spaces under “skies of concrete”. There are walls, pillars, and roofs, but another connection is above. The dialogue of the vertical-horizontal axis may be interpreted in the two forms of mobility.

Abandonment of the Deeside Way—The History

The Deeside Way was 43¼ miles of railway from Aberdeen to Ballater that was patronised by royalty to visit Balmoral Castle (Holland 2015). The line was used to pass the royal trains and the modern battery-operated railcar. It was introduced in conjunction with steam power, and the level of passengers was anticipated to increase. However, despite introducing battery-operated railcars in 1958, the railway closed in 1966; battery railcars are now preserved as museum pieces (Fig. 14.4).

The Aberdeen to Ballater railway had three construction phases: Aberdeen to Banchory in 1853, Banchory to Aboyne in 1859, and finally, from Aboyne to Ballater in 1866 (Holland 2015). The Beeching Report (British Railways Board 1963) recommended the closure of those underused railways as the UK

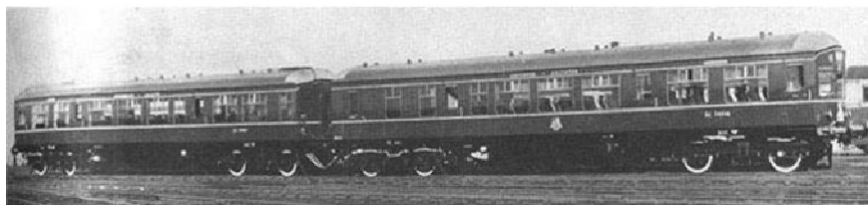


Fig. 14.4 2-car battery set on the Deeside line, Scotland *Source* Courtesy of S. MacKay, railcar.co.uk

considered uneconomic routes. Between 1963 and 1970, around 4500 miles of railways and stations were closed (ibid). The decommissioning of the Deeside line in Scotland happened as a consequence.

The transformation into a pedestrian and cycle path generated deviations from the original route. Today, the conversion offers different views of the natural landscapes and historic castles from the Western side. The presence of the royal castle at Balmoral, even just as a tourism attraction, ensured that the surrounding spaces at the borders of the railway were preserved and contributed to the restoration of characteristic historic elements related to the railway, such as the Milton of Crathes steam carriage.

The first section of the Deeside line runs from Duthie Park in Aberdeen to Banchory. The first significant trace of the old railway and stations appears at Peterculter station. The length from Aberdeen to Peterculter circa is analysed because it is the most urban line compared to more rural segments of the Deeside line (Fig. 14.5).

Border[s]lines in Aberdeen

A railway takes people from an origin to a new destination by train. However, a new redrawn way along the previous railway, generally a walkway, cannot be rapidly and quickly transported along the historic route. Its paradoxical isolation and connection are presented at different scales. The Aberdeen Deeside line connects two far points that separate two lateral areas. It is, indeed, at once, an element of connection and isolation.



Fig. 14.5 First section of the Deeside line, Scotland. Source Digimap

The nature and history of the Deeside railway are essential to this line and represent a significant aspect of the city's identity. The identity of the place means the main image of the city's positive growth, and its recognisability demonstrates the sum of different ages. Therefore, reconstructing and redrawing the railway are time-sensitive before disappearing within the landscape.

Along the Aberdeen segment of the line, there are many examples of the construction-oriented away from the line. The greenway, therefore, can still be considered a back and not a *new frontage*. The eastern part of the old railway, close to Aberdeen, is less considered a natural heritage. Unfortunately, some recent interventions have weakened the open spaces at the border of the path (Figs. 14.6 and 14.7).

The life of the line in Aberdeen is sharply defined by the seasons. In summer, citizen and tourist trade helps transform the line; however, there is little activity in winter. Even with some deviations, the Aberdeen greenway still connects points A and B, Aberdeen and Ballater. However, various nodes and points have been forgotten in the reconversion of this long-distance route. The secondary stations, in some cases, are in abandonment apart from the historical and listed station of Pitfodels, built-in 1894. One of these has been redeveloped as a private house. This intervention has entirely removed that building's historical and social sense, erasing the connection between the Pitfodels place and the railway (Figs. 14.8 and 14.9).

The original conversion of the Deeside railway sought to recreate a natural wildlife environment, and this objective has been successfully achieved. Nevertheless, the path itself has been poorly replaced with tarmac, erasing the nature of that space, and it remains in its isolation, although it still connects two far points, A and B. It is



Fig. 14.6 Recent housing intervention along the greenway. Lack of visual relations between the houses and the greenway, Scotland. *Source* Zecca, C



Fig. 14.7 Recent housing intervention along the greenway, Scotland. *Source* Zecca, C



Fig. 14.8 Pitfodels station before the restoration, Aberdeen. *Source* P. Ward geograph.org.uk

not evident that a person can walk or cycle long distances; the function of the path for moving between two places is not apparent.

Generally, the greenway is a walkway; people use it without interacting with the surrounding green places, towns, or archetypes. Thus, how to reconvert the pathway and reactivate the marginal areas, destinations, and nodes at the borders of a linear straight idea, still running from A to B, requires consideration of numerous issues and factors.

Design Approaches

Whatever their location, railway conversion represents a challenge related to the natural isolation of the old tracks and their narrow size. Moreover, the complexity



Fig. 14.9 Deeside way today, Aberdeen. *Source* Zecca, C

of dealing with a reconversion of a linear element designed in the past for speedy mobility and connecting distant points has to consider many intertwined aspects both at a large scale, between two towns, and small scale, people walking and cycling.

Three successful projects of converting railway lines to linear green spaces provide precedent for how design strategies have arrived at new solutions and mobility means. They are the abandoned railway from Albisola to Celle Ligure in Italy, the Highline in the US, and La Petite Ceinture in France. All three cases have generated potential and new activity networks by acting and designing the lines' borders to relaunch spontaneous surrounding redevelopment initiatives.

These three cases are instrumentally used to introduce possible interpretations in different urban and landscaping contexts. Finally, an interpretation and summary of all possible practices to be adopted are considered a possible methodological approach for re-converting a line from high-railway mobility to slow-green-place mobility. The solution presented is a design project proposed in 2012 to regenerate the S. Vito railway: from abandoned to rebirth in Italy.

Savona—From Albisola to Celle Ligure Railway

In this project, a railway's collective memory and identity character are maintained and interpreted through significant timber elements that simulate and exaggerate the old platform shapes and places people occupied (Figs. 14.10 and 14.11).

The old track is re-interpreted in its section: the sitting areas become renewed elegant citations of the history of the place and the platforms, and divide the width, allowing in specific areas two different forms of mobility, walking and cycling. Close to the tunnel, this wood segment adds to the original width. It is a suspended



Fig. 14.10 Albisola ex-railway, Italy. Arch 3S Studio. *Source* Courtesy of 3S Studio

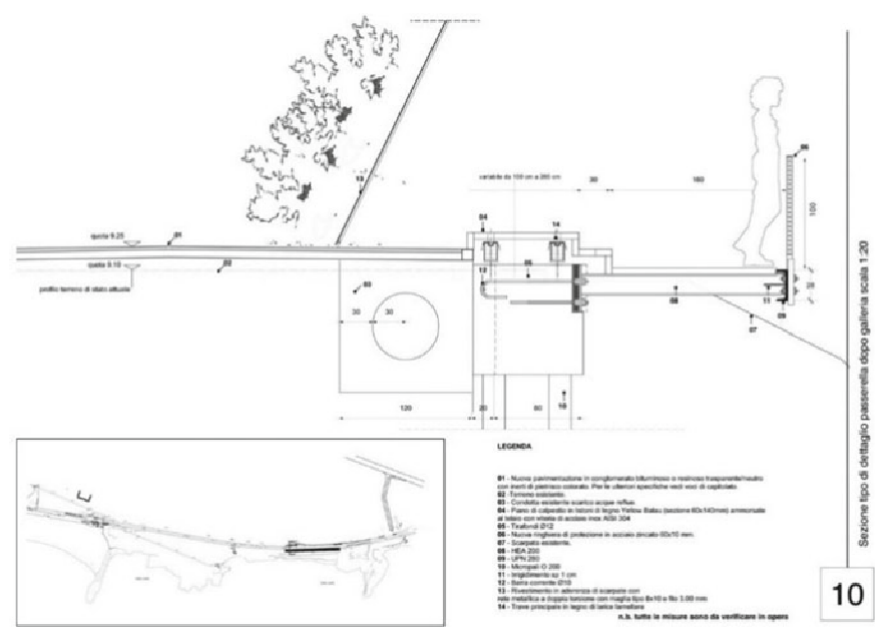


Fig. 14.11 Albisola suspended footway, Italy. Arch. 3S Studio. *Source* Courtesy of 3S Studio

footway that provides a better view of the sea. The pavement is an eco-friendly material in resin with various colours that respond to the surrounding context.

The primary strategy of this successful project aims to change the conditions at the borders of the old railway, activating virtuous circles of micro-economy, social places, and particular points of view of the marine landscape. The old railway is evoked through a linear and constant pavement, emphasising the borders with local vegetation and alluding to the rails through the scenic and dimmed streetlights at the level of the pavements positioned in a linear sequence simulating the old mobility speed. The tunnel is artfully reinforced with a system of corten steel panels strategically distributed along the walls. The gaps between panels expose the original brick and stone walls and their old and fascinating appearance.

Paris—Le Petite Ceinture

The case of Le Petite Ceinture in Paris is not an ordinary work of regeneration but rather a more complex case of re-appropriation and natural hybridisation between tracks, histories, biodiversity, and forestation. The old belt runs around Paris and is divided into not all public segments. Segment number 18 is an example of spontaneous reuse. At this location, the old station of Ornano has been reused and transformed into a café restaurant. In addition, the owners cleaned the entire area to create flower beds and allotments and organise art events.

The Association Sauvegarde Petite Ceinture, together with schools and communities, care for the entire borders of the old railway. Their principal aim is to recycle every material and equipment in a spirit of ecology that goes beyond the building itself and includes an urban goat and chicken farm on the platform. These activities and initiatives have been able to reactivate the neighbourhoods at the edges of the line generating a strong social impact (Figs. 14.12 and 14.13).



Fig. 14.12 Albisola tunnel, Italy. Arch. 3S Studio. *Source* Courtesy of 3S Studio

Fig. 14.13 Reuse of the
Ornano station, France.
Source J. Menjoulet,
commons.wikimedia.org



This spontaneous and non-designed project represents renewed urbanity at the borders. Although still abandoned and closed to the public, the old track can catalyse social events raising curiosity and re-appropriation. This may demonstrate that the borders are potential elements of urban relationships.



Fig. 14.14 Highline walkway, US. Arch. Diller Scofidio + Renfro, J. Corner, P. Oudolf. *Source* Courtesy of Diller + Scofidio

Manhattan—The Highline

The old railway in Manhattan, New York, is an ideal example of railway line reuse in which plants and landscapes have been used to transform the raised line into a *suspended forest* above the city. It remains in the collective imagery (Fig. 14.14).

The rails have been retained and reused with a new idea of mobility; rails are used for mobile deckchairs, and their presence is highlighted with the pavement that simulates the idea of movements. However, it does not destroy the Highline's memory and past function and purpose. Instead, it demonstrates that the old urban elements can be reactivated through new functions and design languages.

It is easy to overlook that interconnections can determine the design concept. The Highline reuse project is based on rehabilitating the line and the spaces between it and the city. Many stairs, elevators, and lateral connections are the heart of the project itself (Figs. 14.15 and 14.16).

A micro-economy and different functions have been generated around the Highline. Whilst the line remains constant in length, the spaces around it and its borders have been elevated to social places.



Fig. 14.15 Vertical connections, highline, US. Arch. Diller Scofidio + Renfro, J. Corner, P. Oudolf.
Source Courtesy of Diller + Scofidio



Fig. 14.16 Micro-activities underneath the highline, US. Arch. Diller Scofidio + Renfro, J. Corner, P. Oudolf. *Source* <http://www.flickr.com>



Fig. 14.17 Project proposal for S. Vito ex-railway. Masterplan, Italy. . *Source* Zecca, C

An Interpretation

These cases are considered for their design principles and theories. They have been re-adopted and re-interpreted to test the effectiveness of the design principles through a project that theorised and designed a possible solution for the old railway in Italy along the Adriatic coast. The abandonment of the old railway generated uncertainty; now, it does not serve any purpose to the urban environment and divides the town from the coastal area (Fig. 14.17).

The transformation of the transversal connections with the old line is at the project's heart. The proposal starts with design elements that allow people to enter and leave the railway at different points. These elements have been called in a second step, faults and terraces. Physically, they are ramps, steps, and transversal paths and accesses.

The station piazza provides a uniform space where new architectural elements and small temporary shop units vary in scale but are similar in appearance; the stations and platforms are reused as community meetings and social places as the original conceptual purpose was. Even the tunnel is redesigned as a space to stay or vary the footprint through temporary activities and expositions.

The railway is segmented into smaller tranches and transformed into a new pedestrian thoroughfare and cycle lanes. The design of urban furniture, greenery, street-lights, and pavement imitates the movement of the trains and rails maintained and embedded in the new pavement. The terrain is steep, and there are constructed sun terraces and places to stop and visit, such as an archaeological site. The steep section allowed us to think and design a hypogeal nautical club in front of the sea and new quays (Fig. 14.18).

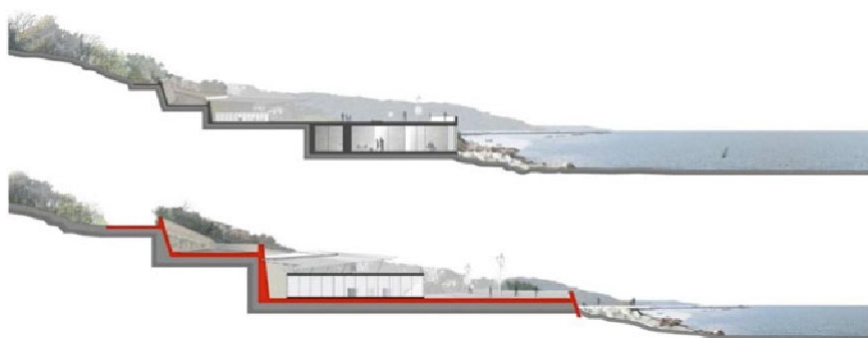


Fig. 14.18 Project proposal for S. Vito ex-railway. Sections, Italy. *Source* Zecca, C

14.3 Conclusions

Three main ideas related to reusing railways, particularly the Deeside line in Aberdeen, have been raised through this research. First, these concepts have apparent implications for reconversion, which requires methodological reading of the historical urban significances of the lines and specific design approaches to recreating interconnections.

Reading the Lines

Projects of conversion involve a higher level of urban and landscaping analysis that explicitly investigates the urban context, the existing objects to be redeveloped, and the interrelated connections between the existing elements and the surrounding areas. This research demonstrated methodological and rigorous analysis to deeply understand the complex urban, landscaping, and architectural systems of the disused railways. Considering the movements in the past and nowadays, the connection functions of these lines and the urban meaning of abandonment, all associated functional spaces built at the borders of tracks are classified. Following a rigorous analysis will help individuate the specific issues related to connection and isolation to find the specific reuse solution.

Rethinking the Borders

From a symbolic perspective, decommissioning an old rail track represents the re-appropriation of particular urban and collective spaces. Being away in the past automatically allows us to use it as a new green path suitable for cycling and walking. The gentle slope, longitudinal configuration, and isolation are safe conditions for new users. The automatic idea of using this natural corridor as a new functional “way” in its various declination, green-natural-walk-cycle-way for new forms of mobility represents, at the same time, innovation and a limitation. It is innovation in terms of renewed interpretations of the past through different possible mobility; it is a limitation in its length and non-variation, immediately affecting slow mobility.

The analysis underpinned suggests investigating and exploring reconversion, what the borders are, and what type of architectural objects and landscapes are there at the borders.

All elements should be transformed in places of memory of the old identity of the line and, on occasion, to better connect the primary way with the surrounding contexts. In this regard, the line itself may become a multi-functional line connected with different micro-spaces. The result would transition from the apathetic concept of renewed “way” to historical-touristic-green-natural-“place”.

By enhancing new and variegated mobility, the functions of the old building and constructed elements along the tracks can assume various configurations:

Stations

The reuse project should reactivate the station as a node through a social programme, meeting activities and functions, and enhancing the connections with the city’s main-line and micro-areas. This will be possible by laying aside the mono-directional idea of human flows and improving the principle of perpendicular and more aerial flows and interactions.

From a perspective of new mobility, the station may become a “new” station for coming and going, for instance, serving the recent sharing transportation initiatives.

Platforms

Platforms are part of the station and should evolve regarding architectural choices and details. However, looking at the platforms from the old railway instead, they are naturally and already suitable in their dimensions for resting, staying and sitting.

Tunnel

Reusing tunnels is an important moment within the project because it is already an architectural work, is underground, and has poetic relations with its materiality. In this regard, looking at other languages using tunnel and corridor is helpful. For example, the literal translation from Italian is “galleria”; in French “, galerie”, is a gallery.

This concept suggests that a corridor or a “galleria” was a narrow and long space within a building connecting different spaces. Furthermore, those long corridors used to be decorated within the buildings.

Following this concept, rather than just functionally connecting two spaces, a tunnel may be designed as an open-covered long gallery where the transition from outside and inside modifies the footstep. The surface of the walls can be used to reinforce the collective memory related to that space.

Bridges

Exploring the relations between two infrastructures defines the basis for interpreting and exploring two different typologies of mobility; in this respect, how can the vertical path between a car way above and a cycle path below? The architectural elements considered, such as the existing walls and pillars, may be exaggerated and

intensified to activate and reuse the spaces underneath, making vertical connections possible for different uses.

Strategy

The urban and landscaping analysis has proved to be fundamental for a coherent project of reuse, especially in dealing with particular extended infrastructures and lines of the territory. The ability to name those abandoned or underused spaces and its related ability to find declinations and different meanings in the context appears fundamental.

All regeneration projects described demonstrated the importance of the borders as a moment of relations and dialogue between different social and functional places. Nevertheless, they also recognise a shift between the lines being used for linear high-speed mobility and newly discovered uses which can benefit from the soft border of the lines and reuse of the existing nodes. In this sense, the projects can be considered conservation-led only if the lines are reused. Finding new uses for the abandoned infrastructure has influenced urban development and demonstrates that positive change can be realised whilst still recognising a legacy and industrial heritage.

The analytical process could be transferred to the practice through more synergic and collaborative work that may involve various expertise. Analysing the territory critically and its elements is a more theoretical and intellectual approach that may positively influence and accompany the preliminary and feasibility study of the project as a starting point of the entire reconversion.

By interrelating the expertise and following specific methods of analysis and multi-scale design approaches, it would be possible to configure other and new ideas of renewed “individual” mobility within a no longer longitudinal way.

References

- Acuto F, Bonfante F (2015) The concept of heritage and its possible operational nature. Notes on the Italian case. In: Gospodini A (ed) *Changing cities II. Spatial, design, landscape and socio-economic dimensions*. Accessed on 10 May 2020 at <https://re.public.polimi.it/handle/11311/964460?mode=full.432#.XsFecWj0mUI>
- Alexander C, Ishikawa S, Silverstein M, Jacobson M, Fiksdahlking I, Angel S (1977) *A pattern language: towns, buildings, construction*. Oxford University Press, New York
- Augè M (1995) *Non-places: introduction to an anthropology of supermodernity*. Verso, London
- Association Sauvergarde Petite Ceinture. Accessed on 23 July 2018 at <https://www.petiteceinture.org>
- Aymonino C (1977) *Lo studio dei fenomeni urbani*. Officina edizioni, Roma
- Bell S, Herlin IS, Stiles R (2012) *Exploring the boundaries of landscape architecture*. Routledge, London
- Bertolini L (1996) Nodes and places: complexities of railway station redevelopment. *Eur Plan Stud* 4(3):331–345
- British Railways Board (1963) *The reshaping of British railways*. HMSO

- Cao U, Romagni L, Foti G (2006) Grandi aree industriali dismesse e progetto urbano. fronte in OP_adriatico 1 “Temi e ricerche per la qualificazione dei progetti urbani e territoriali nella città adriatica” PRIN
- Castells M (1989) The informational city. Information technology, economic restructuring and the urban-regional process. Blackwell, Oxford
- Clément G (2005) Manifesto of the third landscape. MIT Press forthcoming
- Deeside Way A2B2C the Dee. Accessed on 23 July 2018 at <http://www.deesideway.org>
- Domus Journal (2017) Gli spazi di sotto. Accessed on 21 July 2018 at <https://www.domusweb.it>
- Erlacher G, Licka L, Lodermeier P (2016) Skies of concrete. Park Books
- Gehl J (1987) Life between building: using public space. Van Nostrand Reinhold, New York
- Holland J (2015) Exploring Britain’s lost railways. Collins, Glasgow
- Lefebvre H (2004) Rhythmanalysis. Space, time and everyday life. Continuum, New York
- Lobefaro D (2006) Un retro fronte in OP_adriatico 1 “Temi e ricerche per la qualificazione dei progetti urbani e territoriali nella città adriatica” PRIN
- Lobefaro D (2008) Mettere a Sistema in Hiper Adriatica OP_2 Opere Pubbliche e città adriatica Indirizzi per la qualificazione dei progetti urbani e territoriali PRIN
- Lynch KA (1960) The image of the city. MIT Press
- Manzione L (2012). *Eutopics descrivere il resto. altri sguardi sulla città*. Accessed on 25 July 2018 at <https://eutopics.wordpress.com/2012/05/25/non-luoghi-Figure-dellassenza-Figure-dellincognit/> [2015]
- Medori S (2011) Aree industriali dismesse: Quale tema di Architettura? Conservare, ri-fare, ri- formare: riprogettare la dismissione industriale. PhD thesis, University of Camerino, Ascoli Piceno
- (2010) Oxford English dictionary. University Press, Oxford
- Railcar. Accessed on 16 July 2018 at <http://www.railcar.co.uk>
- Railways archive. Accessed on 21 July 2018 at <http://www.railwaysarchive.co.uk>
- Rossi A, Eisenman P (1982) The architecture of the city. Graham Foundation for Advanced Studies in the Fine Arts, London. American ed. revised by Aldo Rossi and Peter Eisenman
- Rossi PH, Lipsey MW, Freeman HE (1998) Evaluation: a systematic approach. Sage Publications, Thousand Oaks
- Rotenberg R (2011) Space, place, site and locality: the study of landscape in cultural anthropology. In: Bell S et al (eds) Exploring the boundaries of landscape architecture. Routledge Edition
- Secchi B (1984) Un problema urbano: l’occasione dei vuoti. Casabella 503:18–21
- Smith RJ, Hetherington K (2013) Urban rhythms: mobilities, space and interaction in the contemporary city. The Sociological Review, Oxford
- Turner T (1995) Greenways, blueways, skyways and other ways to a better London. University of Greenwich, Press, Kent
- Turner T (1986) English garden design: history and styles since 1650. Antique Collectors Club, Woodbridge, Suffolk
- Turner T (1987) Landscape planning. Hutchinson Education, London