

Is there a future for the Sydney Harbour HighLine?

*A comparative study of opportunities and limitations
in re-vitalisation of elevated railway corridors.*

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EXECUTIVE SUMMARY

The objective of this dissertation is a research of existing examples of former urban railway corridors defined as high lines, successfully reclaimed and transformed to become a recreational open space. Through detailed analysis of two prime examples including Parisian Promenade Plantée and New York City High Line, the aim is to investigate and define the best model for the successful delivery of recently proposed Sydney Harbour HighLine. The aim is to establish a theory that adopted urban high lines are drivers behind economic growth, provide countless benefits to the society and work in harmony with the environment and cultural heritage. This dissertation seeks answers to the following questions: Is there a future for the Sydney Harbour HighLine? Will the revitalisation of Lavender Bay railway line become an elevated challenge or an opportunity?

This dissertation has been presented in five chapters. The first chapter begins with an exploration of the unsustainable rate of rapid urbanization and its impact on the environment we live in. It also explains the latest trends in land recycling and focuses in more detail on revitalisation of disused railway infrastructure known as high lines. The introduction is followed up by a chapter, which studies Sydney's proposal for an adoption of railway infrastructure located in the suburbs of Lower North Shore and its proposed conversion into a public open space. It evaluates a proposal put forward by the members of the local community, the involvement of stakeholder groups and the support from governmental organisations for the project. The third chapter explores the strengths and limitations of comparative research methodology proposed for the evaluation of studied landscapes. The following chapter four examines examples of successful railway high line revitalisation projects and conducts comparative analysis of two outstanding models in order to establish trends for success. The last chapter draws some conclusions and recommendations for the implementation of Sydney Harbour HighLine project.

This study draws on literature research conducted over a period of 6 months from February until July 2019. The subject focused research is based on books, scholarly articles, planning and policy reports, public relations material, local newspaper articles and websites. An observation of events concerning the High Line and its impact on the community was also undertaken.

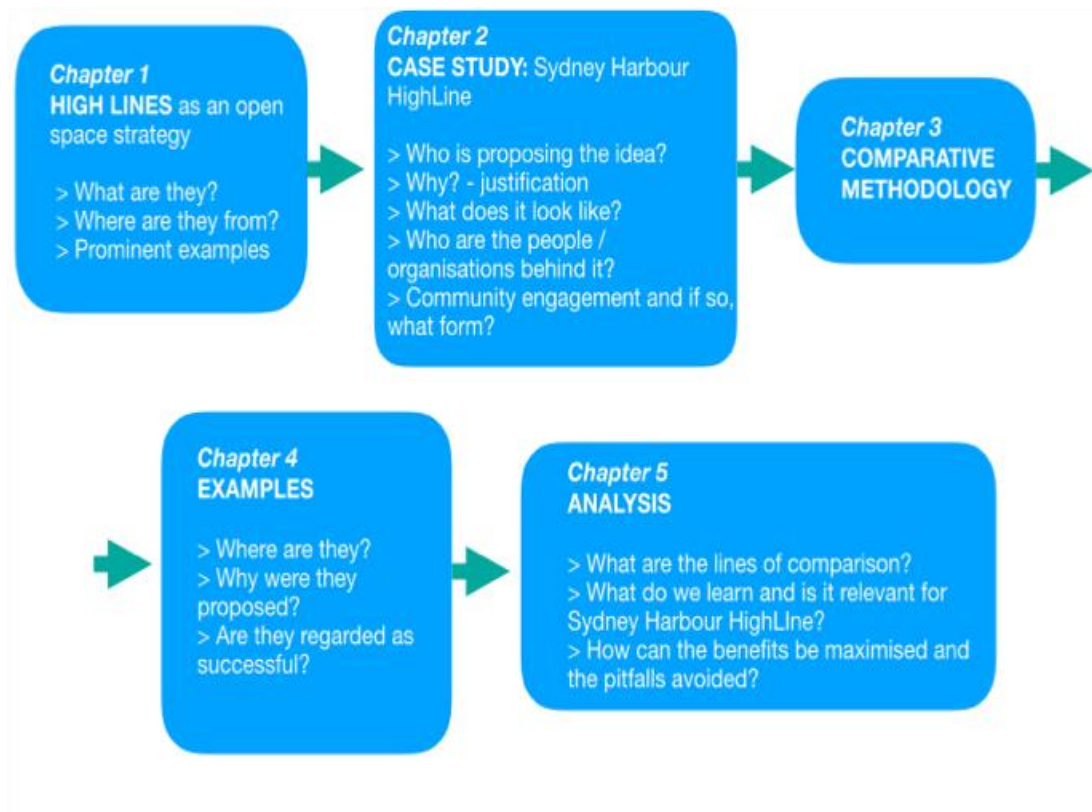


Figure 1. Dissertation summary diagram. Graphic by Bligh Grant and the author.

CHAPTER 1

HIGH-LINES AS AN OPEN SPACE STRATEGY

Since 1950 the urban population of the world has increased from 746 million to 3.9 billion, which accounts for 54% of the world's inhabitants. It is predicted that as a consequence of rapid urbanisation trends within the next three decades, a further increase will result in 66% of the world's population residing in urban areas (United Nations, 2014).

Bearing in mind, with the current trend of rapid urban expansion, it is particularly critical for the governments of today to proactively plan for necessary sustainable infrastructure and policy development to ensure that the benefits of city life are available across all communities, escape environmental degradation and, unsustainable production and consumption patterns.

The exponential population growth around the world resulted in much of the development occurring in urbanised areas being unsustainable. In order to be successful, urbanisation needs to be effectively managed and more than ever strive to achieve a broader range of environmental, economic, and social goals associated with sustainability.

There are countless detrimental and irreversible impacts of rapid urbanisation on Earth's environment, human wellbeing and global economy which have been thoroughly investigated by many scholars over recent decades. Loss of biodiversity, contribution to global warming, inadequate services or deficiency of public open space among many other key issues, all contribute to the stress associated with city living.

Relentless shortage of public open space in densely populated urban areas forces communities and local authorities to be more creative in addressing deficiencies in a green space network and accommodating demands of the increasing population. The poor quality, uneven distribution of parks and reserves and exhausted opportunities for expansion are a driving force behind countless open space provision strategies and studies.



Figure 2. Landschaftspark Park in Duisburg-Nord, Germany. Source: Landezine.

Unsurprisingly, as a result of rapid urbanisation in the recent decades, considerable proportion of industrial operations have been pushed out of central city zones to new outskirts of a town or abroad. Left behind derelict industrial sites and infrastructure offer opportunities which are accompanied by 'numerous challenges related to financing, land acquisition, soil contamination, and concern regarding long-term maintenance, just to name a few' (De Sousa, 2014, p.1049).

It has been observed that as a result of pressure resulting from shortages of public open space, more frequently transforming abandoned and often toxic industrial infrastructure into vibrant new parks and event spaces is the solution local authorities are resorting to. Reclaiming sites of de relict infrastructure and transforming them into ecologically informed and community based public space has been celebrated all over the world in recent decades.

Only three decades ago greening of post-industrial landscapes was not at the frontier for most planners, public and private developers. The earliest model example of successful re-thinking of post-industrial infrastructure includes an abandoned, in 1985, German coal and steel production plant reinvented in 1991 by Latz + Partner as a public park Landschaftspark Duisburg-Nord (Latkowska, 2014, p.205). The intention of the park's design was to 'heal and understand the industrial past, rather than trying to reject it' (Wikipedia, accessed on 22 March 2019) so as a result the reinvention is closely associated with the past use of the site (see figure 2 and figure 3).



Figure 3. Landschaftspark Park in Duisburg-Nord, Germany. Source: Landezine.

Since then, in attempt to achieve a broad range of aesthetic, infrastructure, recreational, ecological and economic development objectives post-industrial landscapes have caught the attention of activists and decision makers all over the world. Redevelopment of post-industrial sites has become a common practice offering a great mix of experiences and reflections as cities aimed to meet their needs. By now there are countless publications evoking great examples of revitalisation of post-industrial sites in urban and rural areas however, the ones which will be the focus of further investigation in this dissertation only include urban railway corridors and in particular railway high lines.

Development of railway transport, one of the greatest human inventions, significantly contributed to the success of countless cities and is perceived as one of the most significant factors in shaping evolution of urban regions. The subject of ongoing changes and the structure of the urban transportation system adopts to the trends of economy, social and spatial dimensions (Polom 2018). Ever since the introduction of iron railways in the early 19th century its primary purpose was to carry goods but soon it was rapidly adopted as the means of transport for passengers. Commercial success of the steel rail quickly became the driving force behind the world's Industrial Revolution and served countless factories, bustling industrial waterfronts and warehouses. The demand for railroads grew exponentially as contribution to the wealth and wellbeing of the population was enjoyed by many. The spread of the railway network on land owned or leased by the railway companies across all continents exceeded one million kilometres of rail road over a decade ago (The World Bank 2019).

It was already towards the end of 19th century as the monumental systems for the movement of freight and passengers by rail were built, that conflicts between trains and street traffic became significant. In 1866 a US Senate committee reported: 'The traction of freight and passenger trains by ordinary locomotive on the surface of the street is an evil which has already been endured too long

and must be speedily abated' (David & Hummond, 2011, p. viii) but years have passed before a consideration was given to elevated rail tracks or pedestrian crossings. Intensified congestion of rail, ship, and street traffic began to strangle commercial activities and was responsible for many casualties (David & Hummond, 2011).

As a measure to eliminate at-grade crossings and put an end to decades of controversy, an erection of elevated rail lines was commonly implemented in densely populated areas around the world. So called high-lines, overhead, linear railway bypasses quickly replaced street level rail infrastructure in countless locations. Railway arches, an architectural feature strongly associated with the presence of a high line or a viaduct, located underneath the main structure and designed to overcome a series of obstacles, have become an affordable refuge to a variety of creative small businesses ever since their creation.



Figure 4. A steam train travelling along a high line in New York City, 1886. Source: [The New York Times](#) Photo Archive.

Distinctively elevated railway lines aside from improving safety and traffic congestion, freed up prime real estate and provided solution to many other pressing issues including drainage, wandering animals and efficiency. However, it wasn't long before rapid urbanisation began forcing the heavy industry outside of the overcrowded cities. Unsustainable costs of real estate, high levels of particle and noise pollution forced many warehouses and factories to shut down or to relocate elsewhere and concurrently the role of goods freight diminished in highly urbanised areas. A decline in rail traffic, also partly due to the increase in freight truck traffic and improved highway system, forced railway agencies to halt some of the services, cease operation or sometimes even sell off its real estate.

Numerous strategically positioned high-lines, terminals and railway yards used for the transportation of goods and servicing of the railway infrastructure, were continuously upgraded and rebuilt but soon no longer relevant in the scheme of modern city life, became redundant and very often relinquished for decades. Colossal rail infrastructure conveniently positioned within the urban fabric of every important city suddenly became a forsaken system of linear derelict contributing to the image of the typical 20th century settlement.

For a long time, the vast array of obsolete industrial environments helped to shape the negative public perception about these spaces until in recent years, several scholars have 'contributed to evaluating, documenting and developing remnants of the industrial society, in order to emphasise the necessity of taking industrial landscapes into consideration in the planning of the city, considering industrial heritage as a resource and as an integral part of collective identity' (Loures, 2008, p 24). As the meaning and the significance of the industrial heritage was recognised to have fundamental

importance (Loures, 2008) in recent times, it increasingly presented as an opportunity to local communities and city administrations. The adoption and re-use of elevated rail lines for the public's benefit has been a solution explored in locations facing a continual shortage of public recreational space.



Figure 5. Promenade Plantée in Paris claims to be the first elevated park. Source: On The Luce Travel Blog.

One point of departure for the general discovery of the post-industrial landscape was the successful revitalisation of Landschaftspark Duisburg-Nord in early 90's. Many more projects with a similar approach have since been executed including various transformations of leftover high-lines.

The potential for the transformation of the high line was first realised in Paris in 1993. Inspired by the Parisian success, it was later followed by the widely celebrated NYC High-Line, a linear

park built on a disused overhead railway, which set a world-wide trend for elevated parks and quickly became a 'highly visible global reference point, a way of orienting or representing a variety of disparate engagements with contemporary urbanism' (Millington, 2015, p.2335). Soon it seemed that every city wanted an elevated park of their own. Although the West Side Manhattan based linear rail park wasn't the first of its kind, it serves as a template for a less polished green space offering relief from the busy streets below.

The sensible exploration of the past forms and uses, which shape the basis for the sensitive and respectful design of the revitalised landscape are a common characteristic of many successful high lines. Romantic fascination with industrial relics, seen as an integral part of many concepts, saturates new meaning into forgotten leftovers and places them in their broad historical and aesthetic context.

Recent trend for the incorporation of ecological and recreational features into redevelopment of post-industrial landscapes has become a common practice as cities struggle to meet the recreation needs of existing communities and do not have the capacity to absorb the needs and demands of future population.



Figure 6. Lettenviadukt Park in place of a former railway viaduct. Source: Landezine.

The latest successful examples of greening the redundant railway lines through adaptation of recycled railway lines include Chicago's 'The 606' Bloomingdale Trail, Rotterdam's Hofbogen, Rosa Luxemburg Garden in Paris, Lettenviadukt Park in Zurich and The Goods Line in Sydney.

CHAPTER 2

SYDNEY HARBOUR HIGHLINE: THE NEXT GREEN OPEN SPACE OF SYDNEY

North Sydney Council, a relatively small local government, covers an area of just under 11 square kilometres. Located in Sydney's inner northern suburbs, it stretches along the northern side of Sydney Harbour. The suburb of North Sydney, just a short trip across the harbour from the Sydney CBD, is its administration centre. Being the second largest commercial district in town it also has its own distinctive skyscraper skyline. The area is predominantly commercial with its shops, restaurants and bars at their busiest on weekday lunchtimes and just about everything closed on Sundays (North Sydney Council, 2010). The North Sydney foreshore is an important visual element to the views of North Sydney LGA when viewed from the harbour, the Harbour Bridge and the Dawes Point/Walsh Bay area on the opposite side of the Sydney Harbour.

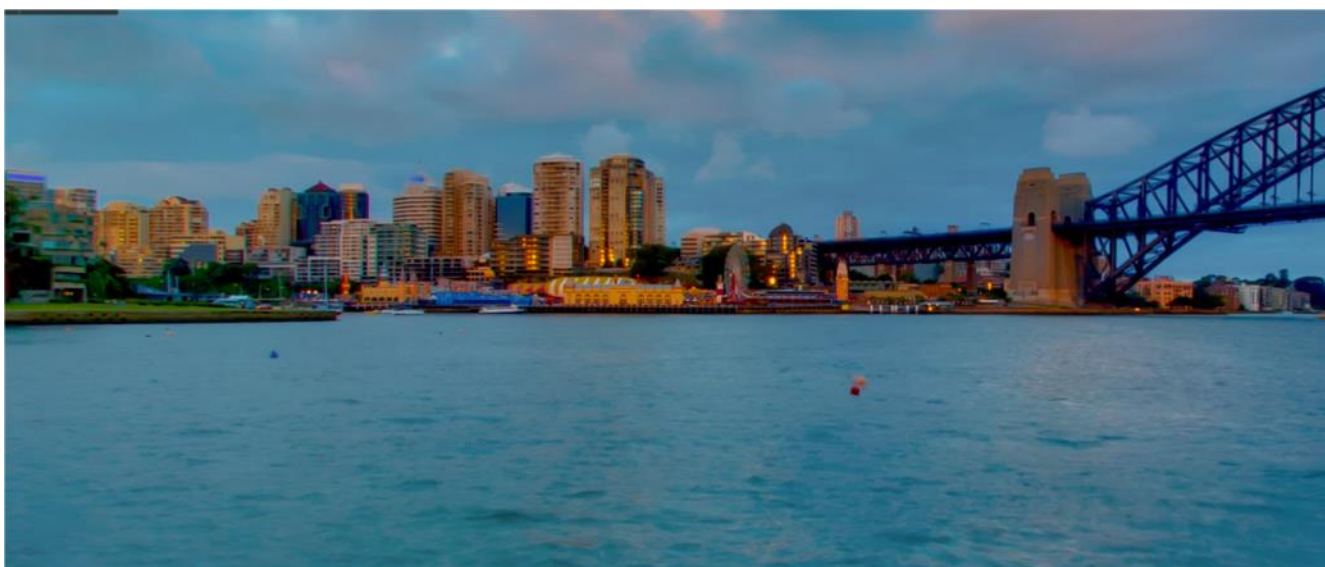


Figure 7. View of North Sydney skyline from Blues Point Reserve. Source: Google Maps

Over seventy-five thousand residents spread over diverse residential areas located in eleven suburbs have access to many parks and open spaces (North Sydney Council, 2010). Residents aged between 25-34 and 35-49 equally form 50% of the NS LGA population, which is significantly higher percentage compared to the Greater Sydney average of sixteen and twenty-one percent respectively. The young workforce group aged 25-34 is particularly attracted to North Sydney due to significant employment opportunities on offer, setting a trend for proportionally high number of single person households in the area. This trend is reflected in the composition of North Sydney property market. The dwelling density is higher in North Sydney than in other parts of Sydney with majority of residents (89%) living in medium to high density dwellings which is double compared to Greater Sydney. Almost 50% of the population is renting. According to the North Sydney community profile the largest increase in household type between 2016 and 2026 is forecasted to be in 'lone person households' (.idcommunity, 2019). The major driver of population change is the continued attractiveness of the area to young adults seeking inner city accommodation close to employment and entertainment. Recent rapid transformation of Crows Nest and St Leonards neighbourhood into high density residential hubs, resulting in the addition of a large number of new dwellings also significantly contributes to the population growth.

North Sydney LGA is an area regularly visited by a large number of people and it is estimated that the population more than doubles on weekdays. Two significant CBDs managed by North Sydney bring a daily influx of over sixty thousand workers, and a considerable education catchment with a daily influx of fifteen thousand students, all of whom have a right to council services (North Sydney Council & @ Leisure Planners, 2015) (North Sydney Council, 2018).

In addition to a large number of people, who come to North Sydney to work or study, the local area is also very attractive to visitors and tourists, fascinated by local parks, gardens, wildlife areas and nature, which results in growing demands for community infrastructure and over-utilisation of some facilities and open space reserves. Despite the challenges, according to *Liveable Sydney 2016*, a study published by Australia's leading real estate portal Domain, based on broad number of indicators determining suburbs liveability, North Sydney LGA suburbs are placed in the first seven positions consecutively with the other four suburbs following closely. Lavender Bay, McMahons Point and Waverton are amongst the top five most liveable suburbs out of 555 ranked, and are also the location for the recently proposed Sydney Harbour HighLine.



Figure 8. North Sydney Local Government Area map (North Sydney Council, 2018).

The idea of a Sydney Harbour HighLine, a linear garden connecting various parks located in the suburbs of the lower north shore, is planned to create a 'positive social, environmental and recreational experience for everyone' (Sydney Harbour High Line Inc, 2018, p.5). It will utilize an existing rail line and will extend from the northern boundary of Luna Park, along the Lavender Bay Foreshore leading into a 310 meters long tunnel located below the suburb of McMahons Point and culminating in Waverton (Sydney Harbour High Line Inc.2018).

Lavender Bay rated as the most liveable suburb in Sydney, despite being marked as an affluent oasis of perfection, has a brutal, rugged and intriguing past. Referred to by its indigenous inhabitants as Gooweabahree (now known as Quibaree, believed to be the Aboriginal name for fresh water), during the time of British colonisation it 'began its life under the ugly name of Hulk Bay' (Pollon, 1996), after the convict hulk Phoenix was moored there. Later renamed after George Lavender, the boatswain in charge of Phoenix.

In the late 19th century the mix of beautiful houses and working waterfront established in Lavender Bay, were reshaped to make way for the railway. In 1893 the North Shore railway line was extended south from St Leonards through Wollstonecraft and Waverton to Milsons Point. According to Frances Pollon (1996) in 1915 a station also opened in Lavender Bay in preparation for the construction of the Harbour Bridge but only operated for 7 weeks. The railway infrastructure in Lavender Bay includes a multiple track sections of Marshalling Yards that extend westwards from Luna Park along the south eastern shore of Lavender Bay (Spackman & Mossop, 2007). The land fill behind the redundant Lavender Bay rail line, an unofficial dumping ground for 100 years, was transformed by a local resident Wendy Whitley into a 'huge harbour side guerrilla garden' (Wendy's Secret Garden Inc website).

The stretch of the North Sydney foreshore from Lavender Bay through McMahons Point to Berry's Bay and beyond has a rich maritime history and was once home to many boat builders and master mariners from the 1870s to 1930s (Sydney Harbour High Line Inc, 2018). Ever since the inhabitation in the area the residents had an intimate relationship with the harbour, which was dramatically changed by the emerge of the industry, the construction of the railway and the Harbour Bridge. Growing demand for accommodation near transport led to successive land subdivision and lifting of height restrictions, which resulted in construction of countless blocks of apartments.



Figure 9. View of Lavender Bay (includes Gentleman's and Woman's Baths) c. 1900-1927. Source: Mitchell Library.

By the 1920s three significant industrial sites wrapped the visually prominent Waverton Peninsula and overshadowed its landscape for many decades. The Coal Loader, Caltex and BP sites dominated with monumental industrial structures, were decommissioned in late twentieth century and made way for public open space and working waterfront land uses. Following years of lobbying all three post-industrial sites have been now dedicated as public open space and the ownership formally transferred to North Sydney Council.

North Sydney Council has been well known for its commitment to re-vitalisation and conservation of industrial heritage and successful adaptation of post-industrial sites. The idea for Sydney Harbour HighLine originated with a group of passionate locals from the lower North Shore area residents, a group of like-minded people who saw an opportunity for a new way to experience their city and created a vision for the future of the old low-speed track section that had nowadays diminished in its usefulness. This highly valuable land is still owned by the NSW Government as part

of its railway land and the rail line is used only for parking of trains and the training of railway personnel.

On 7 April 2016, the first official community meeting was held and attended by 153 including local Member of Parliament, The Hon Mrs Jillian Skinner and North Sydney Mayor, Ms Jilly Gibson, at which the initial concept for the SHHL was presented. Support for the initiative grew exponentially with further encouragement from federal Members of Parliament and local residents within weeks of first meeting. Four months later, established by the steering committee, Sydney Harbour HighLine Association, was formed to secure a walking path between the present northern boundary of Luna Park and Union Street located near Waverton Station for the community and visitors to the area. The intention of the proposed linear park is to be constructed and operated in parallel with Sydney Train's diminishing use of the current rail corridor. The rapid development of events in 2016 and incredibly dedicated stewardship led to several meetings being held with Mr Howard Collins, Chief Executive Sydney Trains, Mr Chris Muir, Chief of Staff for the office of Minister for Transport & Infrastructure and the community to discuss the progress of the proposal (Bowman, 2018).

Official backing for the concept needed to be considered and acted on in order for the city to protect and secure the area as an open space and create an opportunity for a bold new public park. In February 2017 SHHL Association put forward a solid proposal to Mr Chris Muir. One month later the Premier of NSW, the Hon Gladys Berejiklian MP made an official announcement (Bowman, 2018):

'I can give an iron clad guarantee that a NSW Liberals & National Government will never sell off the land and ensure it remains a community asset in the event it is not needed for the railway use. I can also announce that NSW Government will establish a committee to investigate creating a scenic walking track along this unique stretch of railway land' (Sydney Harbour HighLine Inc, 2018, p.3).

Within few days from Premier's announcement, positive preliminary discussions led to Mr Chris Muir advising the following (Bowman, 2018):

'I can confirm that the (Transport) Minister and Sydney Trains have agreed that work to create a walking path along the Lavender Bay Spur can commence in the side where tracks have been removed before the active rail line is closed on the other side of the spur' (Sydney Harbour HighLine Inc, 2018, p.3).

In August 2017, the first meeting of the SHHL Association was chaired by Ms Felicity Wilson MP for North Shore who assembled the committee that comprised relevant State Government Departments and key community spokesman. During that meeting, the extent of the proposed HighLine project was officially confirmed. Throughout this year the Association developed two websites: Sydney Harbour HighLine and Wendy's Secret Garden. Both great sources of information, provide abundance of context data relating to the heritage, project evolution and design, and regular news and updates (Bowman, 2018).

Extensive investigations, which were undertaken by the Association’s consultants and Sydney Trains’ team resulted in development of a preliminary design and costing for the project, which was presented to the NSW Government, other relevant decision makers and the engaged community. Following the request from the Minister for Transport & Infrastructure the concept was further developed and presented in a form of a report, which included ‘recommendation on how the project should be delivered’ (Bowman, 2018, p.2). The report confirmed the extent of the strategic link between Waverton and Lavender Bay and that the proposal will meet relevant safety requirements and it can be operated in conjunction with the ongoing operation of Sydney Trains (Bowman 2018). The construction plan put forward by Sydney Trains allows for staged delivery of proposed works. Stage 1 extending from Waverton to Wendy’s Garden and Stage 2 from Wendy’s Garden to Luna Park is to eventuate once the use of railway line Sydney Trains is terminated.



Figure 10. Map of proposed route for Sydney Harbour HighLine. Source: Sydney Harbour High Line Inc. Report.

A proposal for a bold new legacy park, pitched by the local community, would link several local parks and neighbourhoods and provide much needed open space. It is proposed to extend along a site where many paths of history intersect. A 3.3 km long linear park, separated from the still active railway line by a safety fence, will be starting in the shadow of the Harbour Bridge. Extending from the northern boundary of Luna Park, the Sydney Harbour HighLine would pass through the Lavender Bay Parklands from where it would lead into an underground tunnel offering a contrasting visual experience of artificial light captured by cathedral ceilings. The tunnel terminates in Sawmillers Reserve, a former site of a sawmill, a hidden gem, which offers generous views to Pyrmont, Balmain, west Balls Head Reserve and remains of an old shipwreck which lies at the foreshore of Berrys Bay.

Located at the head of Berrys Bay is Waverton Park, which forms part of an extensive open space network on the Waverton peninsula connecting with three former re-vitalised industrial sites including the BP Parklands, Balls Head Reserve and the former Coal Loader/Caltex site. Balls Head Reserve offers panoramic views toward the CBD and is one of the most significant areas of urban bushland in North Sydney LGA.

The journey can begin at any of the entry points, with no design intention to formulate the beginning or the end of the experience. The establishment of the continuous walking route stretching through several ex-industrial sites would also link with the proposed 80 km walk from Bondi to Manly and Seven Bridges Walk, 27 km trail around Sydney Harbour.

Although the local community made its intentions clear there are still many unknowns as the project is still in its early stages. Most critical is how to pay for the construction estimated at over \$50 million and maintenance of such a significant space with looming budget pressures ahead, and formalise the leasing agreement between NSW Government and RailCorp.



Figure 11. Concept illustration of Sydney Harbour High Line at Luna Park end rejected by RailCorp. Source: Sydney Harbour High Line Inc. Report.

With a total area of approximately 3.5 football fields, the proposed park would contribute about 2% towards overall open space available in NSC LGA. Equivalent to a medium size park, it would significantly benefit St Leonards and Crows Nest, suburbs which are experiencing unprecedented residential growth and ones that are also the most deficient in open space.

CHAPTER 3

COMPARATIVE METHODOLOGY

Comparative research method, commonly used in social science, evolved in 6th century in Greece (Wikipedia, 16 April 2019) and has a long tradition in being used for analysing aspects of local government (Lidstrom, 1998). According to online encyclopaedia Wikipedia, comparative research 'is an act of comparing two or more things with a view to discovering something about one or all of the things being compared' (16 April 2019). The method is designed to allow for better understanding and viewing of the subject system, the definition of deficiencies and strengths, when compared against assortment of similar structures (for example, Steytler, 2009 or Park et al. 2014).

In his article, 'The Comparative Study of Local Government Systems – A Research Agenda', Lidstrom considers three comparative approaches to research in the local government, which allow for an evaluation of 'how position of local authorities vary between states' (p.98). A discussion of three major approaches including 'inductive, deductive and ideal based analyses' provides an overview of potential and constrains of each method, and for each formula it defines 'the starting-point for a study and indicates what end to expect' (Lidstrom, 1999, p.97). The choice of the approach to comparative research has a strict relationship with how the testing of theories will be developed and implication for the research strategy.

Historically a more commonly used inductive method is defined by the author as 'a movement from specific empirical observations and theoretical generalization' (Lidstrom, 1999, p.97). Infrequent deductive approaches to research use theory as a starting point, 'from which hypothesis are generated, and then subjected to empirical testing' (Lidstrom, 1999, p.97). According to Lidstrom, the distinction between both theories is often blurred with approaches taking responsibility for different stages in the research process and both being 'highly concerned with existing empirical conditions' (1999, p.109). A further alternative to comparative research is the ideal model in which 'certain features of reality have been exaggerated' (Lidstrom, 1999, p. 109). It has been noted by the author that this format is particularly reliable in an 'analysis of the dynamics of change' (1999, p. 110) and used in studies focusing on analysing advantages and disadvantages relating to religion, leadership and economic systems. An ideal method can also be used as a tool in empirical studies to support concepts for which empirical data does not exist.

Comparative studies, which provide researchers with an opportunity to identify major characteristics of the studied systems, have two major disadvantages. The system can lead to a substantial research strategy and is based on generalisations so as a result it often provides a broad overview on the subject and lacks depth. It also has tendency to be descriptive and have no means of theory development resulting in a more mainstream inductive structure of research (Lidstrom 1999).

A comparative case study is an approach widely used in the design profession and found to be effective particularly when comparing two different landscapes (Park et al. 2014). In the studied precedent, 'Influence of urban form on landscape pattern and connectivity in metropolitan regions: a comparative case study of Phoenix, AZ, USA and Izmir, Turkey', authors of the paper look at two geographical areas using the comparative approach combined with quantitative method 'to understand similarities and differences of various urban and natural characteristics' of the subject land (Park et al., 2014, p.3). Although their study is based on comparable set of characteristics and

elements, authors warn that generalisations have been drawn and in order to reach the conclusion more evidence would have needed to be observed.

This study will use a comparative research method in its attempt to critically analyse and explore a relationship between two successful high line projects. It will examine both cases' challenges and successes in the view of formulating a recipe for the success of Sydney Harbour HighLine. The investigation will include an analysis of basic and specific objectives related to two case studies, Parisian Promenade Plantée and High Line located in New York City. Analysing and understanding the processes involved in the transformation of railway land into a successful public space is integral to the development of sustainable proposal for the recently proposed elevated park in North Sydney LGA. The selection of case studies for this thesis was dependant on the perceived and measured success of the implementation of the project and the sites popularity as a public open space within the local and global community.

The interest for this dissertation is also to headline the importance of landscape revitalisation of railway high line sites located within urban environment and to show a variety of possibilities for the implementation of such projects. The objective is to establish a theory that adopted urban high lines can become a strategy for the shortage of open space and are beneficial to the society, economy and the environment respecting the model of urban recycling.

This study uses data collected from scholarly and newspaper articles, minutes of meetings and reports related to the subject of revitalisation of post-industrial landscapes including rail infrastructure, Sydney Harbour HighLine, comparative research methodology, Promenade Plantée and High Line.

CHAPTER 4

PARKS OF THE HIGH LINE

In an attempt to achieve a broad range of recreational, aesthetic, ecological, infrastructure and economic development targets, communities, public and government organisations are increasingly occupied in re-vitalisation of post-industrial landscapes. While the greening of abandoned industrial landscapes was considered a less obvious solution to most planners and economic development officials only two decades ago, the imagination of many citizens and designers has been sparked by one of the first conversions of abandoned railway line into a linear park in Paris. The most successful and well-known adoption of this strategy is the New York City High Line (David and Hammond 2011). By now there are many examples of similar reclamation of obsolete freight railway around the world but it cannot be disputed that Paris and New York are the leaders in the creation of elevated urban garden paths. Much needed respite from the busy city streets in a form of an elevated park is also given to the residents of Helsinki, Singapore, Rotterdam, Toronto, Philadelphia, Atlanta, Sydney and Chicago. In many countries around the world there is a surplus of abandoned elevated, underground or street level rail corridors. Fixed to the landscape, the adamant reminder of 'a broader process of capital disinvestment, where tens of thousands of industrial age artefacts have fallen into obsolescence and disuse' (Heathcott, 2013, p.280) are often associated with manufacturing regions of world's Industrial Revolution era. As Heathcott correctly observed, 'many of these structures are too expensive to tear down, so they decline in situ, accumulating the patina of age and abandonment as well as the antique allure of ruins' (2013, p.281).

Despite the current increased level of attractiveness of terrain vogue sites, these projects are commonly facing significant parallel challenges relating to stakeholder relationships, land acquisition, soil contamination, structural stability, financing and concerns regarding long-term maintenance. Several linear open spaces were investigated but only two were studied in detail because of their similarities to the proposed Sydney Harbour HighLine. The observed similarities include a long linear nature of the space, uninterrupted length throughout, location in a large dense city, presence of rail lines with existing infrastructure and focus on ecological design. In order to illustrate the planning processes, benefits and challenges involved in the remediation and development of such sites, this chapter examines the nature of the revitalisation of railway high lines that have taken place in Paris and New York.

In his comparative essay *Prospect park: Walking the Promenade Plantée and the High Line* Gastil establishes, that although the Manhattan example, the High Line is the 'most visited, celebrated and criticised ... the Parisian one got there first' (2013, p.280). Opening its first stage over two decades prior to the inauguration of the initial segment of High Line, Paris's Promenade Plantée will always be known as the inspirator. In his analysis Gastil points out, that 'even before the first stroke of design intent' is communicated, obsolete elevated railway lines already have a distinctive personality, 'they are both disengaged and urban, a place apart and a place connected' (2013, p.280) so when complemented with conveniently placed access points, furniture, plants and sensitive restoration their functionality is enhanced.

Promenade Plantée and Viaduc des Arts

Despite a significant shift in the global economy following the Second World War, resulting in an uneven investment of capital and circulation of wealth, the French economy was kept afloat. Construction of new cultural facilities in the most prominent metropolitan areas, peripheral housing estates and social programs dominated the figures in redistribution of state funds for many decades. However, in the early 1970s destructive shortage of resources dedicated towards maintenance of ageing industrial complexes, urban neighbourhoods and bridges resulted in shift of population, abandoned districts and underused industrial infrastructure. In an effort to revitalise the city Parisian planners transformed nearly a quarter of low-density central city districts into modern residential and commercial environments (Heathcott, 2013).

In 1968 the efforts of city planners to decentralise the urban core resulting in excessive demolition and redevelopment of the old city as well as loss of small commercial and artisanal activity in core districts, were fiercely opposed by the massive worker and student unrest. The change of planning ambition came in 1977 with the 'resurrection of Paris mayoralty' by Jacques Chirac and 'shifting the locus of urban redevelopment from central state authority to public-private partnership' (Heathcott p.282) with the aim to restore the 'city of lights' position on the national and world arena. Chirac's successor, Francois Mitterrand in continuation with the grand plan for transformation of capital and 'economy of cultural production' committed to a series of projects which would bring back 'monumental grandeur to Paris' and increase property values in Parisian suburbs (Heathcott, 2013, p.282). The majority of the Grand Projects were created on sites that were no longer used as originally intended and included abandoned track lines, rail rights-of-way and industrial areas. These works added 172 hectares to the city of Paris and included a list of thirteen green spaces and gardens amongst which, was the Promenade Plantée (Patchowsky, 2018).

Since the late 1970s in an effort to recalibrate the city, much of the development of infrastructure and facilities took place in earlier defined areas – *zones d'aménagement concerté* (ZAC), 'where planners sought to leverage private investments through intensive public capital expenditure' in hope to influence the fate of many urban spaces and successfully transform Eastern Paris (Heathcott, 2013, p.282) (Patchowsky, 2018, Heathcott, 2013).

Through the 1980s and 1990s the relationship between urban regeneration, environment and heritage became a topic of many international debates and serious concern for the Parisian community. Residents of Eastern Paris engaged with politicians and planners in discussions over remaking of urban spaces and revitalising railway corridors, forced by shift in freight and passenger redistribution into decline. As a result of this collaboration the transformation of neglected railway line slicing its way across ZAC Reuilly in the 12th district (refer to figure 12 for location details) and creation of new green spaces were amongst the objectives in an effort to transform Eastern Paris into a high-end, dominated by professionals, city hub (Heathcott, 2013).

The Promenade Plantée (French for *tree-lined walkway*) also known in French as *Coulée verte René-Dumont* or *Coulée verte* (*green course*) once disused and decaying 19th century railway corridor is now a repurposed 4.7 km linear urban park. In its past time a magnificent urban connector, reflects the rapid industrialisation of France and an impressive example of modern civil engineering. A strip of green which follows the old train bed of Bastille-Vincennes line runs first along the top of the arches, that support the once scheduled to be demolished Viaduc des Arts, and then at ground level. Located in an area not necessarily highlighted on all tourist maps, the 12th arrondissement of Eastern Paris, this extensive green belt launches along the elevated Viaduc located east of the Opéra Bastille and culminates with a staircase leading to the boulevard Périphérique (refer to figure 12 and 14 for layout and location) (Campbell, 2002 and Heathcott, 2013). The superstructure that rises the parkway 10 m above the surrounding streets, converted as part of the upgrade to house in its dozens of archways as



Figure 12. The Promenade Plantée route (dashed line) through the 12th arrondissement, showing (1) Opéra Bastille, (2) the ZAC Reuilly boundaries, and (3) the Boulevard Périphérique. Source: Heathcott, 2013, p.284.

were quickly converted into workshops, restaurants and studios (refer to figure 13). Meanwhile, agitated by the neglected of the railway infrastructure and deconstruction of several major Parisian landmarks, residents of the 12th arrondissement endeavoured to look for a solution. Frustration over the official's obsessions with the 'grandiose megaprojects' and increased 'environmental consciousness, anti-establishment politics, and nostalgia for a partly imagined pre-capitalist Paris of artisans, shopkeepers and *petit quartiers*' motivated local community to oppose the demolition of the rail line and address lack of open space in the city's redevelopment scheme (Heathcott p.285). City planners willing to consider the proposal to convert the abandoned, historically significant railway into a public park quickly gained the support of a wide range of influential players from the political, non-profit and business circles. In mid 1980s the plans for the residential and commercial development of ZAC Reuilly were reconceptualized transforming the Eastern Paris by brilliantly reusing much of the ageing infrastructure and linking the green belt to the existing ZACs (Patchowsky, 2018, Heathcott, 2013 & Amelar, 1997).

In an attempt to secure an inventive solution and best support in

a combination of high-end arts and craft artisanal style shops and boutiques, also constitutes 'a central element of the commercial reconfiguration of East Paris' (Heathcott, 2013, p. 288). Elegantly detailed in glass, wood and metal, minimalist shop fronts successfully 'recall the history of the neighbourhood, which was once the blue-collar home of artisans, craftspersons, and antique shops' (Turner, 2003, p.64) before over several decades it became a decaying eyesore (Campbell, 2002).

For two decades following the abandonment of the railway line in 1969, the high line became a haven for illegal activities, bird watchers and urban explorers while archways



Figure 13. The viaduct de Bastille prior to the restoration. Source:

<http://laparisienneetsphotos.eklablog.com/le-viaduc-des-arts-paris-12eme-a105894012>

realising the enormous potential of the Promenade Plantée, a design competition was held and the project was awarded to a team of already well-established professionals, two architects Patrick Berger and Philippe Matthieu, and a landscape architect – Jacques Vergely. Berger, the lead designer, was also responsible for the redevelopment of Viaduc des Arts with its seventy-one grand arches (Heathcott, 2013). The other two collaborators were in charge of defining the new elevated park on either side of the ZAC Reuilly.

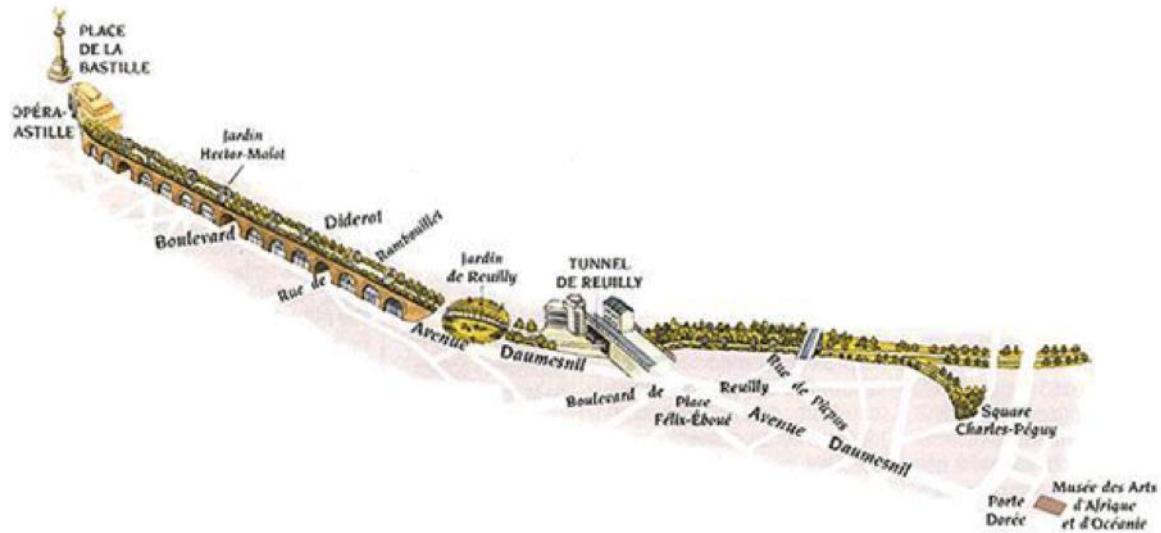


Figure 14. Artist's aerial impression of Promenade Plantée. Source: <https://www.thegoodlifeFrance.com/the-promenade-plantee-paris-the-most-unusual-park-in-the-city/>

Transformation of the elevated railway line was achieved in three stages between 1988 and 1994. Elevated over structurally fit viaduct, the western portion of the promenade amounting to over 30% of the entire park length, was delivered first (Heathcott, 2013). Vergely and Matthieu reconfigured the railway line to create an aerial organic garden, an elevated woodland inspired by wild forests on the outskirts of Paris. Offering extensive views and broken up with arbours, outdoor furniture and water features (refer to figure 15 and 16) it provides a perfect setting for the slow traffic and enhancing people's experience of the once highly engineered nineteenth century industrial infrastructure overtaking the landscape at ever-greater speeds.



Figure 15. Elevated over a viaduct Paris's Promenade Plantée. Source: <http://www.traveller.com.au/rise-above-the->



Figure 16. Arched trellises capped with climbing ivy frame the view of lush garden. Source: <http://www.leviaducdesarts.com/fr/viaduc-361.html>

The restoration of the viaduct laying beneath the elevated portion of the park and defined by an elegant rhythm of seventy-one arches was the second stage of the visions' delivery. The implementation of ideas both above and below the viaduct also successfully engaged avenue Dausmenil running alongside its base (Gastil, 2013). As Amelar and Heathcott correctly observed, Berger's proposition for the redefinition of multiple openings and re-evaluation of the disorderly commercial spaces was pivotal to the establishment of the artisan neighbourhood vibe (Heathcott, 2013 & Amelar, 1997) and the re-invention of Eastern Paris. The sixty shops recall the craftsman history



Figure 17. Elegant shops set back in the archways of Viaduct des Arts. Source: <http://www.leviaducdesarts.com/fr/viaduc-361.html>

of the neighbourhood and are a display of the arts and crafts of today with some being made on site. The architects desire to stray away from the idea of replicating the authentic look while still using original building materials, achieved a dramatic contrast of modernist approach to redefinition of handsome heritage arches (refer to figure 17). While eleven of the arches are dedicated to through traffic, the remaining sixty are dedicated to commercial use. Set back in the arches, modern steel and glass shopfronts create individual shadow lines and define the splendour of each space.

In the third stage of the project, the designers coordinated the delivery of remaining portion of Promenade with the ongoing redevelopment of the ZAC Reuilly site. Arching over the panoramic Jardin de Reuilly, once an old rail yard and the largest space attached to the Promenade, is a suspension footbridge (refer to figure 18) carrying the Promenade over the very popular picnic space. Very different from stage one in design and function, classic linear park defined with trees and

plantings, intersected with multiple landscape elements, eventually came down to the street level and extended further East where it terminated at Boulevard Périphérique (Heathcott, 2013).

The Parisian high line, defined by tight architecture to the north and then opened up to its generous surroundings is complemented by low and high plantings on both sides of the pathway intersected with two long ponds. Accessed by a number of, not always so obvious, entrances dressed with easily missed signage, it offers an extraordinary range of experiences and opportunities for unique urban exploration. It gives pedestrians an option of being elevated ten meters above or dropping ten meters below into a railroad cut (Patchowsky, 2018, Gastil, 2013).



Figure 18. Pedestrian bridge over Jardin de Reuilly.

Source: <http://everintransit.com/paris-park-promenade-plantee/>

In his article *Rise above the tourist traps on Paris' original 'High Line'*, journalist Hugh Biggar claims, that the Promenade Plantée, since its inauguration as one of the world's first high line projects 'provided an innovative example of Paris' ongoing efforts to reimagine its past in the form of a stylish present'(2015). Gastil, who inquisitively walked every step of both wildly celebrated high lines, confirms that the Promenade is a fine example of 'the Parisian capacity to reinvent its urbanism and develop new ways to incorporate the infrastructure of its past in implementing the green, sustainable aspirations for the future at the heart of much of today's urban design' (2013, p.284). Gastil writes that 'the Promenade is inspiring imitators around the world' and defines it as a 'path-finding path' (2013, p.284). From the moment it opened the Viaduc des Arts and the Promenade Plantée enjoyed critical and popular success. But there is no doubt that its positive energy instantly radiated to the surrounding streets influencing further private and public investments in the area and that it provides much needed respite to many city dwellers.

New York City High Line



Figure 19. Congestion and chaos along the Death Avenue (West Side Street) were the cause of many accidents before the High Line was built. Source: David & Hammond, 2011, p.136.

Robert Hammond and Joshua David, attended a community consultation meeting focused on the proposed elimination of the derelict railway line from the Manhattan's landscape and managed to turn its destiny around. It was when a pair of young local preservationists fell in love with the contrast of 'hard and the soft, the wild grasses and billboards, the industrial relics and natural landscape, the views of both wildflowers and the Empire State Building' (Darke & Oudolf, 2017, p.11). In order to preserve the magic of the weedy rail bed, Hammond and David joined forces with an objective to put a stop to further demolition and to save the structure. Within months they cofounded the non for profit 'Friends of the High Line' (FHL) group which aimed to spread awareness and gain greater support for their vision from a wider group of Chelsea residents, New York elite, elected officials and political influencers, members of local council, professionals, business owners, celebrities and community organisations (Patchowsky, 2018) and as a result eventually won over Mayor Bloomberg and members of his administration. A captivating book portraying images of wild

The 2.4 km long, stretching along the industrial waterfront on the western side of Manhattan, New York City High Line (NYC HL) is half of the size of Promenade Plantée. Elevated three storeys above the street level the High Line was a derelict line of the New York Central Railroad, once a busy freight rail system which was a response to decades of congestion of rail, ship and street traffic which strangled commercial activity on the West Side in the early twentieth century. Street protests against the dangerous conditions of 'Death Avenue' were attended by hundreds of people. The line itself opened in 1933 and was officially heralded by the New York Times as 'one of the greatest public improvements in the history of New York' (David & Hummond, 2011, p. ix). Fully operational between West 34th Street and St. John's Park Terminal for twenty-six years, it was partially demolished due to a decline in traffic and delivered last load of frozen turkeys in 1980 before its operation ceased completely.

It wasn't long before the structure became an eyesore to underlying owners who eventually formed Chelsea Property Owners group lobbying for its demolition. However, in early 1999 two local residents,



Figure 20. High Line in its early years of operation. Source: <https://www.new-york-city-travel-tips.com/go-walk-discover-high-line-new-york/> accessed on 26 May 2019.

meadows, the honesty and the uniqueness of the space is believed to have been the key element in gaining such wide support. NYCHL philanthropists played a pivotal role in further spreading the awareness, fundraising and contributing their professional skills and time to the development of the project. The Promenade Plantée project was the model for the proposal put forward by the Friends of the High Line.

Despite the fact that the NYC HL was not yet secured for park use, in 2003 FHL held its first design ideas competition which attracted 720 entries from all over the world. The aim of the competition was to provoke the dialog about the structure's future rather than secure a realistic or practical design (David & Hammond, 2011). Only a year later FHL in partnership with the City of New York 'released a Request for Qualifications seeking interdisciplinary design teams of architects, landscape architects, engineers, horticulturalists, lighting designers, and professionals from many other disciplines' (David & Hammond, 2011, p.170) for then already secured public space.

Davidson (2019) writes in his cynical article in New York Magazine, that Hammond and David 'took the notion of grassroots quite literally' and so their original vision for the site was to leave the space untouched and simply thread a pathway through the railway tracks. But it wasn't long before the romantic notion was abolished due to structural and environmental constraints of the derelict structure. However, winners of the design competition James Corner Field Operations (project lead) with Diller Scofidio + Renfro and Piet Oudolf still managed to successfully 'revive the romance of industrial brawn' by rearranging nature through the design to 'simulate neglect' and at the same time to reflect the original vision of the passionate activists (Davidson <http://nymag.com/arts/architecture/features/57176/> accessed on 19 April 2019).



In their book, *The Inside Story of New York City's Park in the Sky*, a passionate story of High Line's creation, David and Hammond (2011) reflect that the design process was strongly influenced by the community and allowed supporters, local residents and any other interested parties an opportunity to provide input to the project team or FHL directly. Founders of the FHL and their supporters were also responsible for raising over US\$150 million for the establishment of the proposed park. Their work to save the network eventually resulted in the control over the easement being transferred by rail giants CSX Transportation Inc to the city (Real Estate Weekly, 2005) and changing neighbourhood zoning from primarily manufacturing to mixed use, commercial and residential which allowed to build higher than originally permitted. When lobbying the city officials for support, it was argued right from the project's conception, that the conversion of the derelict rail line would have an exponential impact on the revenue from property, sales and income taxes, which would exceed the cost of adaptation. In 2002 when Mayor Bloomberg came to power the idea of an overhead park gained official's support as it was seen as a tool to Manhattan's recovery from the 9/11 terror attack and complement the development plans for the area (Smalley, Bowen & Stepan, 2014).



Figure 22. Pedestrians enjoying a break at the wooden seating behind a large picture window of Gansevoort Overlook. Source: <https://www.lonelyplanet.com/usa/new-york-city/travel-tips-and-articles/the-high-line-highlights-and-local-tips-on-nycs-elevated-park/40625c8c-8a11-5710-a052-1479d2779662> accessed on 25 June 2019.

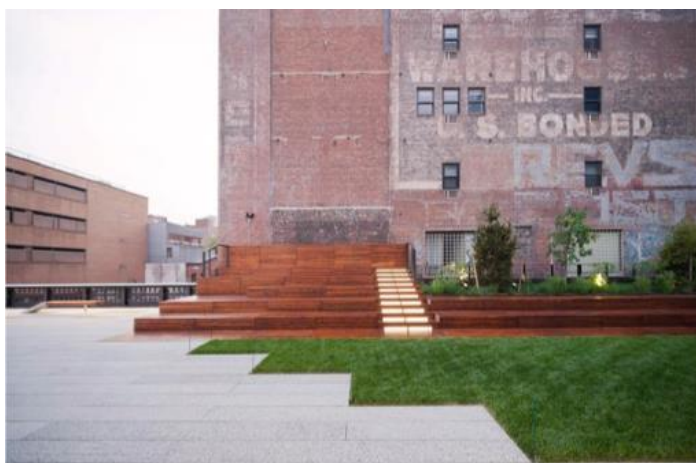


Figure 23. 23rd Street Lawn and wooden amphitheatre. Source: https://www.archdaily.com/141990/141990?ad_medium=gallery accessed on 17 June 2019.

The full extent of the High Line dedicated to public open space was designed in its entirety, however the delivery of the project was realised in four stages (Refer to figure 21 for details) with total cost adding up to over US\$200 million. A decade in planning, the long anticipated first stage, nine blocks segment of levitating parkland stretching above the streets of West Chelsea and the meatpacking district opened in 2009. Immediately heralded as an architectural triumph, it was acclaimed by critics as, "one of the most thoughtful, sensitively designed public space built in New York in years"



Figure 24 and 25. The High Line's newest section, The Spur is home to 'The Plinth' dedicated to a rotating series of contemporary art commissions. First Plinth contemporary art commission towering over 10th Avenue is 'Brick House' by Simone Leigh. Source: <https://www.6sqft.com/the-high-lines-final-section-the-spur-is-open/> accessed on 17 June 2019.

(Ouroussoff, 2009). Around the same time began the construction of the longest section of the park, second stage, which also took almost ten years in planning. It was handed over to the public in 2011, followed by the third stage opening three years later. The third section of elevated truck wraps around and connects to the largest private real estate development in the USA, Hudson Yards Redevelopment Project, partially completed in March this year (https://en.wikipedia.org/wiki/High_Line accessed on 10 June 2019). The last section of the original blue print of the project, The Spur, which opened twenty years on since the project was first initiated, at the beginning of June this year. Promenade Plantée was one of the carefully studied precedents for an overhead park and although its construction was very different, it demonstrated what was possible to achieve. The High Line's design inspired by the rails of train tracks is emphasised with the use of the tapered concrete pavers which reinforce linear nature of the space and guide the visitors through the site. The space in which design, art and functionality come together, is dotted with benches and a variety of places to rest, fourteen access points including five lifts and two ramps as well as access to public amenities in three locations (https://en.wikipedia.org/wiki/High_Line accessed on 10 June 2019). A popular gathering spot, lawn section and a wooden amphitheatre at 23rd Street, Gansevoort Overlook, overlooking the Hudson River sun deck, a miniature forest – the Chelsea Thicket (Friends of the High Line website accessed on 16 June 2019, Patchowsky, 2018) and recently added public square decorated with 'The Plinth', which at the moment is showcasing the 16-foot tall 'Brick House', a sculpture monumentally towering over 10th Avenue, are amongst many highlights of this popular public space.

Ever since its inauguration over two decades ago, the High Line has been receiving countless praises from the press and design professionals all over the world. University of Kentucky scholar, Nate Millington, writes that High Line is a prime example of 'contemporary mode of urban intervention that brings together the aesthetics of natural reclamation and imaginative interests in post-industrial landscapes' (2015, p.2324). In Leon Morenas's article *Critiquing Landscape Urbanism, A view on New York's High Line*, while analysing the landscape urbanism author admits, that High Line is 'a quintessential example' of the movement with two linked and captivating design features including 'the intelligent use of the train tracks that carved meandering pathways through the planting beds and flora' and 'the creative use of the changing urban context' (2012, p.19), which successfully convey a large and complicated story of West Side Manhattan. In their book dedicated to a meaningful

portrayal of the High Line's gardens, Oudolf and Darke write that the High Line is an illustration of revolutionary 'urban aesthetics, horticulture and ecology that led to the creation of an unprecedented urban landscape' (2017, p.9). The park in the sky, which instantly became one of the top tourist attractions in New York City, has been attracting nearly five million visitors annually (https://en.wikipedia.org/wiki/High_Line accessed on 17 June 2019).



Figure 26. The southernmost entrance to the NYCHL dubbed by The New York Times real estate column writer Jake Mooney as 'the Corner of High Life'. The stairs provide a link from the street level to the middle of the viaduct. Source: <http://fepimgas.pw/urban-design-nyc.html> accessed on 25 June 2019.

According to Broader, slim park responsible for the monumental metamorphosis of the Manhattan's West Side, restored the confidence in the forgotten part of the city and inspired fresh development in adjacent neighbourhoods, instantly became an iconic landmark, 'act of civic boldness, engine of economic growth and breathtaking artistic vision' (2012, p.245). In his early article on stage one works Davidson (2009) reports, that almost instantly 'Developers use the little park to leverage their most wild-eyed ambitions. City officials rewrite the zoning, values climb, and architects arrive from the far corners of the realm.' It quickly becomes apparent, that the success of the High Line

has a unique and revolutionary resonance not only locally but also globally. It inspires other cities around the world to revitalise forgotten derelict sites as public space.

Very quickly two faces of the floating in the air triumph of urban salvage become a contentious topic covered by many publications and debates. In attempt to undermine the extensively marketed romantic motive behind this trendy initiative, countless scholars thoroughly analyse every step of the widely celebrated conversion from an eyesore to an amenity. Labelling it as a 'growth machine' failing to address issues of income inequality, public housing and private influence over public space (Davidson, 2009). This free public space came at a cost to the local community and slow crowds of tourists made it difficult to enjoy most of the year.

NYC HL initiative is a prime example of the true private-public partnership, which really worked. Local authorities invested into people and organisations driving the project. It took a lot of public support to build this amazing space on the rusty old rail line and due to FHL continuous efforts it remains great. Owned by the City of New York, the High Line is now a public park programmed, maintained, and operated by the Friends of the High Line, in partnership with the New York City Department of Parks and Recreation. The FHL team are responsible for raising about US\$18 million per year which is about 90% of its annual operational budget. Even that HL has become an international symbol of what is possible, it still remains true to its roots. The team of the High Line dedicates a lot of time towards putting together educational programs and initiatives involving and supporting local community, schools and organisations, caring deeply about the strong partnership with city council and its benefits for the locals.

Analysis

Both railway lines converted into public spaces are successful in transporting individuals from point A to point B without being disturbed by the presence of vehicular traffic. The comfort of an uninterrupted journey along both of the high lines allows visitors a peace of mind and a sense of safety.

The New York City elevated park, constructed on the nine metres high trestle, floats above the busy city streets. The steel structure was originally designed to separate rail traffic from pedestrians and cars and to avoid frequent collisions. The Parisian Promenade Plantée is carried by a stone viaduct, which separates it from the street traffic ten meters below. The Coulee Verte, the eastern extension of the linear park is mostly located at street or below street level. Both parks don't permit bicycles due to physical limitations of the space although it has been noted by Patchowsky (2018, p.102) that Coulee Verte is known for attracting casual cyclists. Both parks heavily rely on stair structures as primary access points. The linear and narrow in width nature of both parks encourages visitors to experience the space at a slower pace. Just like the Promenade Plantée, the High Line was designed with the view to save and take advantage of the existing rail infrastructure.

Characterised by its own unique design, both parks have rail heritage but only NYC High Line uses rail theme as an inspiration portrayed by the use of design elements like narrow tapered pavers and retention of fragments of the original rail tracks. These design elements create an illusion of curving paths and visually move the observer from side to side between the spaces. Seating niches and benches positioned throughout the site also take advantage of the original trestle structure and offer framed views within the park as well as to the surrounding vistas.

At the risk of an awkward comparison of two incredible projects the High Line design seems to be more moving and successful in providing unexpected elevated experience of surrounding streets and the skyline while the Parisian Promenade sees more value in artfully framing linear perceptions and landscapes. By the repeated use of defining landscape elements like arbours, arches and horizontal planting, Parisian designers force the perspective to be framed and contained within the garden. However, both Promenade Plantée and the High Line successfully conduct the walker along an elevated above the busy streets adventure, which offers a different to a traditional park experience, away from the cars and bikes. Intensely built-up context of Manhattan sees the High Line constantly cutting between the buildings offering new views, angles and perception at every corner in contrast to Promenade Plantée being complemented mostly by unobstructed surrounding, broad sidewalk and a generous avenue running alongside its base. In both cases the linear elevation provokes a new urban experience directing the pedestrian to observe the architecture and details not so obvious from the street level. Hovering above the street pedestrians have a unique, intentionally framed and never before experienced relationship with urban perspective elevated meters off the ground rather than along the street.

Like with any urban park there is a risk of novelty and surprise wearing out and high line landscape getting old. However, chances are that because of the unique nature of these projects is the use of everchanging city as a backdrop effect rather than reliance on its own frame, it will likely retain its cheerful effectiveness for a very long time.

Urban parks, in order to be successful, need the ongoing presence of people. Human presence, routines, memories are all essential to the success of the space. Both Promenade Plantée and High Line have provided ideal settings for locals and other urban dwellers, an attraction for tourists, a precedent to landscape architects and a world of specimens for horticulturalist.

High line, compared to a 'long thin spine with thick edges' by Heathcott (2013, p. 287), in both cases proved to offer far beyond being an elevated park, it provides a framework to complex programs, development that radiates from it, spreads into many avenues and benefits many. In both cases the revitalisation of the high line, revitalised the neighbourhood. In Paris intentionally while in New York not so obvious to some at first but appreciated by many eventually. According to Gastil both sites inevitably became a 'powerful tool for reframing the view of city at large and a district within it' (2013, p.280).

The intention for an improvement of the local ecology was one of the driving forces behind the implementation of both projects. Planting along the Promenade Plantée and the High Line follows a carefully prepared layout allowing for view framing, definition of spaces and requires high levels of maintenance in order to maintain the original intent. Vegetation is successfully used to guide the visitor along the journey, revealing and concealing the city as envisioned by the designers. The planting along the eastern extension of the Promenade Plantée, Coulée Verte, is mainly located along the periphery of the space, encouraged to take its own turn and requires a minimal maintenance regime.

Unlike the High Line, the Promenade Plantée right from its conception benefited from a strong public support. However, eventually in both cases the community's aspiration to preserve, exploit and reinvent existing infrastructure resulted in delivery of successful linear parks. Each of the visions was documented with a master plan translating a long-term vision into several stages aimed to be delivered as construction budgets become available. Right from the beginning both community groups were heavily involved in fundraising activities which provided funds for further community engagement, master plan development, sustaining awareness and popularity of each space, upkeep and further improvements of the parks.

Depending on one's perspective, improved ecology, commercial development, community satisfaction and reduction in crime are some amongst many attributes which can be used to measure the success of the park. However, one of the most convincing attributes is the number of visitors each park receives during the year. Friends of the High Line actively document number of visitors since High Line's opening while Promenade Plantée does not have an official count. Both spaces however are utilised by millions of visitors each year.

CHAPTER 5

ANALYSIS

The intention of this dissertation was to review and assess the opportunities and limitations in re-vitalisation of two prime examples of elevated railway corridors, which would provide an answer to 'Is there a future for the Sydney Harbour HighLine?' question. The objective was to examine how leading world cities have managed a delivery of projects similar in scale or complexity to the proposed development of the Sydney Harbour HighLine. Although the original use of the SHHL is still practical and required, the proposed concept of a connecting green belt between several Lower North Shore suburbs, contributes to the discussion of the city's future vision.

In North Sydney LGA, the existence of vacant or undeveloped lots are minimal to none. As the city's need for open space grows, we must use our existing stock of land more effectively. Redundant Railway corridors represent one of NSC's best opportunities to engage with the local community and reclaim land for recreational needs in the city. It also offers an opportunity to simultaneously benefit the environment, improve the health of the neighbourhoods and attain more sustainable economic development. North Sydney Council planners are actively conducting studies with a goal to identify areas suitable for a potential development of green open space or transformation of aging existing public parks and plazas. The reinvention of an existing railway line cutting through the suburbs of the Lower North Shore has a potential to make a significant contribution. Sydney Harbour HighLine also has a potential to become a precedent for other Australian cities, and be the resource planners are searching for. The HighLine has 3.3 kilometres of currently occupied by RailCorp open space, which has a capacity to be soon travelled by Sydney siders. As demonstrated in Chapter 2, the number of local villages, parks and gardens this green ribbon could connect to is significant. As it would be passing through several neighbourhoods, it would not only connect communities but further enhance the spaces it links. This is a unique opportunity not to be missed by local community, local and state authorities. The perspective of the amount of green space that proposed HighLine is connecting without any vehicular intervention would be treasured in any modern city.

Looking at other precedents is a good way to start the process so Sydney Harbour HighLine Association community focused on Paris and New York in search for ideas, inspiration and answers to many posed questions. The selected parks have been studied in detail because of their similarities to SHHL including long linear and uninterrupted nature of the space, similar typologies (refer to figure 27 for detailed analysis), location in a large city and presence of existing rail infrastructure.

Equally to both studied parks, SHHL has been designed to become a connecting link through the city and to exist without any traffic interruption due to the above or below the street level position. SHHL's proposed generous length, presents a great variety of different typologies, which will make the experience of being in the space incredibly interesting. At grade, an embankment, a viaduct, an open trench and a tunnel are all perfectly suited to fulfil the requirements of a successful high line park.

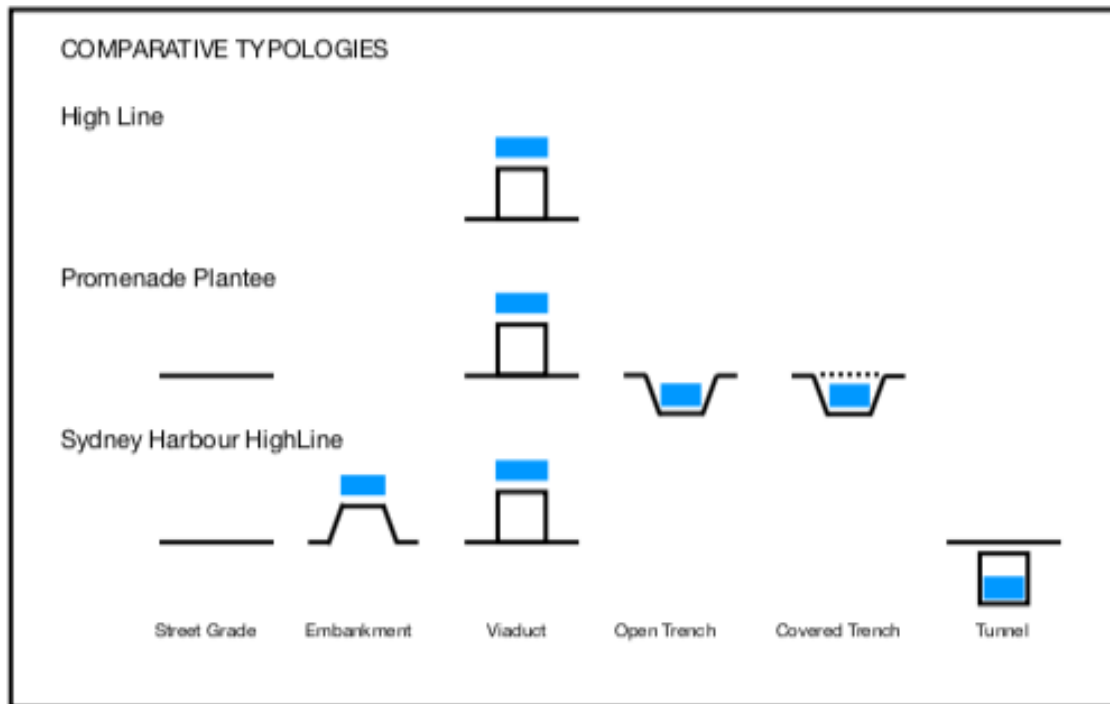


Figure 27. An illustrative comparison of different typologies present in the Promenade Plantée, High Line and Sydney Harbour HighLine. Graphic by author.

In the case of NYC HL and PP, extensive preservation work and strengthening of a large part of the structure was required prior to design execution. However, according to structural condition reports, Sydney Harbour HighLine is in a good and usable condition as it has been regularly maintained by its current owner RailCorp. Its great condition will have a positive impact on the duration of project implementation and reduction of the initial cost.

Summarised in the table below, the analysis of the two most successful examples of high line parks and the proposal for SHHL provides plenty of valuable information Sydney could take advantage of. Starting with the most important aspect of the project being the land ownership, in both precedents the community managed to eventually secure the land transfer to the public, which gave them greater control of the site and the project. There is no question that North Sydney Council will eventually be maintaining the surface of the HighLine and therefore should own the run and be actively engaged in its design and delivery. So far, the Sydney Harbour HighLine project received a crucial federal authorisation, effectively allowing for detailed design and the implementation of stage one of one of the State's most exciting and unique urban planning projects on the northern side of Sydney. But the SHHL Association is yet to successfully negotiate a use agreement with the state government. An agreement or a long-term lease, which would transfer control of the subject land from RailCorp to the city for the use as an open space and green promenade and give North Sydney Council the upper hand in the future negotiations.

	Promenade Plantée	High Line	Sydney Harbour HighLine
Location	Paris, 12 th arrondissement, between Opéra Bastille and Boulevard Périphérique	West side of Manhattan, New York City	North Sydney LGA, between Luna Park and Union Street, Waverton
Land ownership / ownership transfer	Land sold by French National Railway Company (SNCF) to the city	Land donated to the public by CSX Transportation	RailCorp
Linear dimension	4.7 km	2.4 km	3.3 km
Area in hectares	6.5	2.7	1.75 (author's calculations)
Completion date	1994	2019	N/A
Driving force behind the project	Local community and city planners	Friends of the High Line – local community supported by influential citizens	Local community
Community / government relations	Community supported by influential citizens and local government	Community supported by influential citizens and local government	Community backed up by local MPs and Council
Initial design process	Public design competition	Public design competition	Concepts prepared by a design company selected by SHHL Association and RailCorp
Delivery timing	3 stages over 6 years (1988-1994)	4 stages completed to date: 2009, 2011, 2014, 2019	Delivery proposed in 2 stages
Construction cost	Not confirmed	Over US\$200 million at the time of delivery. Currently estimated at over US \$1 billion.	Estimated at \$50 ml for stage 1 works.
Funding of the project	City of Paris	New York government and FHL fundraising	TBC
Keep-up costs	City of Paris	Almost entirely supported by commercial activities on HL and private donations to FHL.	Information not yet available
Supervision of design / delivery	City planners	Friends of the High Line and City of New York	RailCorp
Vegetation	Designers encouraged a woodland planting scheme through initial plantation. Scheme inspired by wild forests of peripheral Paris. Wild and varied plant palette of over 400 species.	Inspired by planting within the site	Information not yet available
Real estate value	City authorities intentionally invested in eastern Paris to increase the property value and influence the shift in demographics of the area	Dramatic increase in real estate value in surrounding areas believed to be caused unintentionally but questioned by many.	Although the project is still in a planning phase, it can be assumed that once implemented it will have a positive impact on the value of local real estate.
After hours security	Closed at night	Closed at night	Partially closed at night (section from Dumbarton Street to Wendy's Secret Garden)
Intended purpose	Pedestrian only path	Pedestrian only path	Information not yet available
Access points	6	14 (5 lifts & 2 ramps)	4 (3 accessible)
Tree canopy cover	8.8% Paris	13.5% NYC	19% across NS LGA

Figure 28. A comparison of characteristics specific to Promenade Plantée, High Line and Sydney Harbour HighLine. Table prepared by author.

Comprehensive planning is a subject of the next lesson. Understanding of the intertwining nature of successful open space and activities that make it to be so. Commerce, parking, culture and housing are all activities that live off each other, fuel the space with energy and have played an important role in the success of both Paris' PP and NYC HL. Successful public open space always draws from the life and activities surrounding it. SHHL being situated in one of the most densely populated areas in the city suffering from a shortage of open space, should have no concerns with lack of visitors but should carefully explore opportunities presented within the site i.e. architectural archways located below the viaduct in Quibaree Park, which the proposal neglects to address the future of. Similar arches were successfully used in PP to recall the history of the neighbourhood but at the same time introduce commercial activity. Commercial activities in both PP and NYC HL are the main sources of income for the ongoing activities associated with the up-keeping and operation of the site.

Another aspect of this analysis relates to the subject of financing. Inspired by NYC HL's success, many cities around the world are replicating the concept with the hope to raise similar benefits for their communities. However, securing the necessary funds seems to be the biggest obstacle that these cities are facing. Without a doubt SHHL Association needs a leverage of influential people and organisations and adequate budget to deliver this great public vision and to maintain it afterwards. Similarly, to the High Line in NYC, SHHL's initial work was executed with the help of funds being raised within the community and help of professionals offering pro bono services and expertise in a variety of relevant fields. However, it is obvious that it is not going to be easy to match the fund-raising abilities as one could in Manhattan. Absence of adequate committed budget is the main reason behind the current lack of progress in shaping the HighLine.

While PP and NYC HL projects triumphantly allow the public to walk above roadways without sealing them within metal cages typical to our risk-averse times, the proposed design for Sydney Harbour HighLine appears to be a result of guidelines and minimum requirements set out by Sydney Trains for the site. Not surprisingly, based on the recommendations the designers are proposing a 3.3 km long fenced walking route accessible only via four entry points as a solution for the first stage scope. But along with a design being a response to minimum requirements, consideration should be given to other exciting opportunities for such a prominent site. The site has a potential of striking and engaging views, which are impossible to be experience any other way, it offers a great variety of typologies and opportunities for economic and community initiatives. SHHL has a potential to become a useful connecting link between iconic locations in Sydney and a stage for creative expression of urban life. Creating something fresh and inventive for 1.75 hectares of land, which is currently dominated by the industrial activity, is a challenge but can be effectively explored through a process of a public design competition. As anticipated, one day when the RailCorp's operation terminates, Sydney will receive a remarkable gift of prime real estate, which should not only be successfully transformed into an urban landscape but also be strongly linked to other broader sustainable initiatives in the area in order to remain successful post-delivery. As demonstrated in the case of PP and NYC HL, design competition was deliberately used not only to define the best layout for the site but also to attract positive attention from politicians, philanthropists, investors and the broader community.

There is also an issue of preserving the past in order to make the city interesting. A great relationship between memory and invention will add character, meaning and depth to the project. Aboriginal inhabitation, British settlement, boating, industrial past, swimming baths, Harbour Bridge,

the pool and Luna Park could be almost viewed as a microcosm of the Sydney Harbour history and should all find its way into the layers of the proposed innovative design. It should ensure that the vanished past of first inhabitants and past activities will be evoked through the design and find its presence in a new purpose and new life for the site. It is crucial that the viaduct and the elegant archways – old piece of graceful infrastructure – should find a purposeful meaning beyond its current life. The vision for SHHL's urban future have drawn on models proposed by New York and Paris and just like these two locations, Sydney's Lower North Shore is already characterised by distributing trends and increasing evidence of the city's poor experiencing growing spatial and social justice. In both cases, the land value will increase following the reincarnation of derelict spaces was achieved at the expense of the poorer and quickly redefined demographics of the area. It is however unlikely that such a dramatic effect will follow closure of RailCorp operation and delivery of the project as Sydney Lower North Shore is already defined as an affluent area.

Conclusion

The urban recycling of the Lower North Shore railway line is crucial for the sustainable city development. A commitment to the transformation and conservation of the valuable historic infrastructure, and its environment will create a much needed open space and economic development opportunities for the future. The objective of this essay was to analyse the strategies used in the delivery of two similar and successful revitalisation projects. As demonstrated throughout the analysis, models of high lines in Paris and New York are not precisely replicable, however, there is a lot to learn from the approaches and attitudes of decision makers, designers and the community involved in making these projects a global success. The examined precedents cannot be copied directly as these cities and circumstances surrounding the projects were different to those experienced by the activists standing behind the Sydney Harbour HighLine. However, looking at other precedents is a good way to start the process.

Just like the analysed precedents, Sydney Harbour HighLine is an essential resource with a potential to provide much needed respite from the density and the intensity of urban life. Beyond the significance of public health and the environmental benefits, Sydney Harbour HighLine will also become an ideal democratic space, promoting civic and cultural engagement and strengthening social bonds that will make the suburbs of the Lower North Shore more vibrant and cohesive. The proposed harbour side park also presents an opportunity for making the North Sydney's parks system more equitable and accessible, and offering an increase in the rate of the population leaving within walking distance to an open space.

As identified earlier, currently the proposal is facing challenges associated with the issue of land ownership and financing. It is most likely that the issue of land ownership will not be fully dealt with until RailCorp ceases its operation of still active railway lines. However, it is the Association's role to ensure that, the HighLine walkway is ultimately extended to include the remaining railway lines once they become available for adoption. It is also predictable, that for the project of this calibre, financing will be an ongoing battle. The Sydney Harbour HighLine Association with the involvement of the local community and Council will need to find a way to continue with the momentum post-delivery of stage one works as an implementation of future stages will depend on it. As demonstrated, successful land ownership transfer and the delivery of all stages of NYC High Line were only made possible due to the unprecedented involvement and support demonstrated by the local authorities, politicians, activists and the community. Structure and the role of the non-for-profit advocacy organisation standing behind the success, 'Friends of the High Line' is worth investigating further by the makers of the Sydney Harbour HighLine. It is also very important to note, that both studied precedents were supported by a strong design analysis and a design proposal resulting from a public design competition. In order for the Sydney Harbour HighLine to become the next generation of urban park with the capacity to significantly enhance the quality of life in urban setting, full potential of the site needs to be investigated through the creative testing of local and global trends for revitalisation of similar post-industrial landscapes.

Although the original use of the Sydney Harbour HighLine is still practical and required, the proposed vision for a connecting greenway contributes to the discussion of Sydney's future vision. With its interesting topography, the site has a potential to become a narrow but highly diverse and a well connected, unique urban recycling project of monumental significance.

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