

Dwelling In Motion

Reinterpreting Flinders Street Station as Urban Public Landscape

by

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I hereby declare that I am the sole author of this thesis. This is a true copy of the thesis, including any required final revisions, as accepted by my examiners. **author's declaration**

I understand that my thesis may be made electronically available to the public.

abstract Flinders Street Station in Melbourne currently serves a dual purpose, providing both a transient space that links the city to its suburban roots and creating a physical barrier between the city and its watercourse. Historically, the Yarra River was a source of life and sacred feature of the Australian Aboriginal landscape. A renewed interest in the riverfront as the new focus for Melbourne, an emerging global city, has turned the area into an urban destination following years of neglect. Flinders Station stands at the new centre of Melbourne on the North Banks of the Yarra River. The geographical isolation and entrenched suburban nature of Melbourne has led to the celebration of train travel as a cultural phenomenon. Twice daily Flinders Station filters Melbourne's commuters en route between the city and suburbia. The integration of a new public space as a commuter thoroughfare into the existing rail station introduces a transitory space between the disconnected urban/suburban landscapes of the commuter experience. The train station is seen as a fascinating place of cultural significance where the world of fast movement is intermittently juxtaposed with that of dwelling and leisure. This thesis redesigns Flinders Street Station, filtering travelers through a new public landscape to activate the connection between city, river, and suburbia while heightening the sense of urban arrival and departure.

I am greatly indebted to my thesis supervisor, Marie-Paule Macdonald, **acknowledgements** for her unwavering encouragement, guidance, and engagement throughout. I have furthermore to thank Catherine Kilcoyne and Michael Elmitt for their support and inspiration and Lloyd Hunt and Adrian Blackwell for their interest and important contribution to my work. Lastly, special thanks to mt, for everything.

author's preface

This thesis explores Flinders Street Station in Melbourne, Australia, as a natural focal point for an urban transformation scheme and a reawakening of the city riverscape as a metropolitan destination. The station is seen as a fascinating and paradoxical environment of rapid and unhurried movement, soaring and grounded perspectives, and urban and rural surroundings. As an 'in-between' space, Flinders Station is considered in terms of landscape, a notion that is essential to any Australian environment. This project encompasses three Australian landscapes that collectively construct an artificial landscape, described herein as the Fluid Landscape.



The Specious Landscape describes a deceptive attachment to an environment that is ultimately foreign and uninhabitable. This relates to an assumed sense of national identity contrived from the ubiquitous Australian desert landscape where few people actually physically or psychologically reside.



The Everyday Landscape is the environment of everyday existence experienced in most modern cities. It refers specifically in this thesis to the quotidian lifestyle of ritualistic waiting and ephemeral interaction of strangers who have little in common besides a daily commute.



The Transitory Landscape relates to the urban landscape of Melbourne, seen to be in continual transition towards becoming one of the most significant global cities throughout the world. As one of the youngest modern metropolises, Melbourne has quickly developed a keen awareness and desire to nurture its exuberant cultural, artistic and architectural realms.

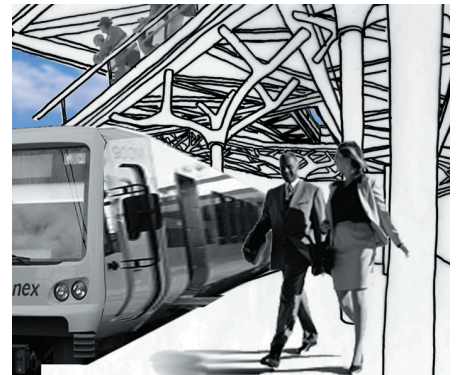
The Fluid Landscape describes the injection of an artificial landscape or extension of the urban groundscape through, around, over, and under existing elements of Flinders Street Station.

author's preface

The Melbourne climate is described as variable and is known for experiencing four seasons in one day. The summers are usually dry and prone to hot spells and the winters are crisp and damp, but the temperature rarely drops below freezing. Flinders Station provides a variety of environments simultaneously. Throughout the 24-hour day and night cycle of chaos and quiet, parts of the train station, though seemingly plausible and attractive, could remain foreign and uninhabited. The range in temperature and climate conditions will permit the use of the new landscape including the roofscape, the riverscape, and the canopied forest at varying points throughout the day and the year.



Flinders Street Station is exclusively a commuter station, connecting Melbourne's extensive suburban roots with its thriving urban centre. Inter-city train travel is made by taking any commuter train from Flinders Street Station one stop further down the line towards the west, to the newly renovated Southern Cross Station. From there, trains connect with other cities within the state of Victoria and throughout Australia.



Historically, Melbourne has consistently been a dense metropolis tightly encircled by working-class inner suburbs surrounded by an expansive blanket of sprawling suburbs and bush-land. The Fluid Landscape imagines the experience of traversing these landscapes twice daily as a pleasurable journey rather than a dreaded appendage to the working day. It seeks to embrace and enhance the disconnected and contradictory experience of the commuter.

Sited on the waterfront at the new centre of a reinvented and reimagined city, a reinterpretation of Flinders Station into a Fluid Landscape provides a key public space from which to experience and observe the spectacle of a city in transition.



This thesis proposes to transform an urban experience. The Fluid Landscape expresses an inherently fluid concept of place. The experience of place in this station landscape is constructed from a confluence of flows – the river, the trains, the history, the people, the urban imagery, and the desires of a city in a period of rapid transformation and innovation.

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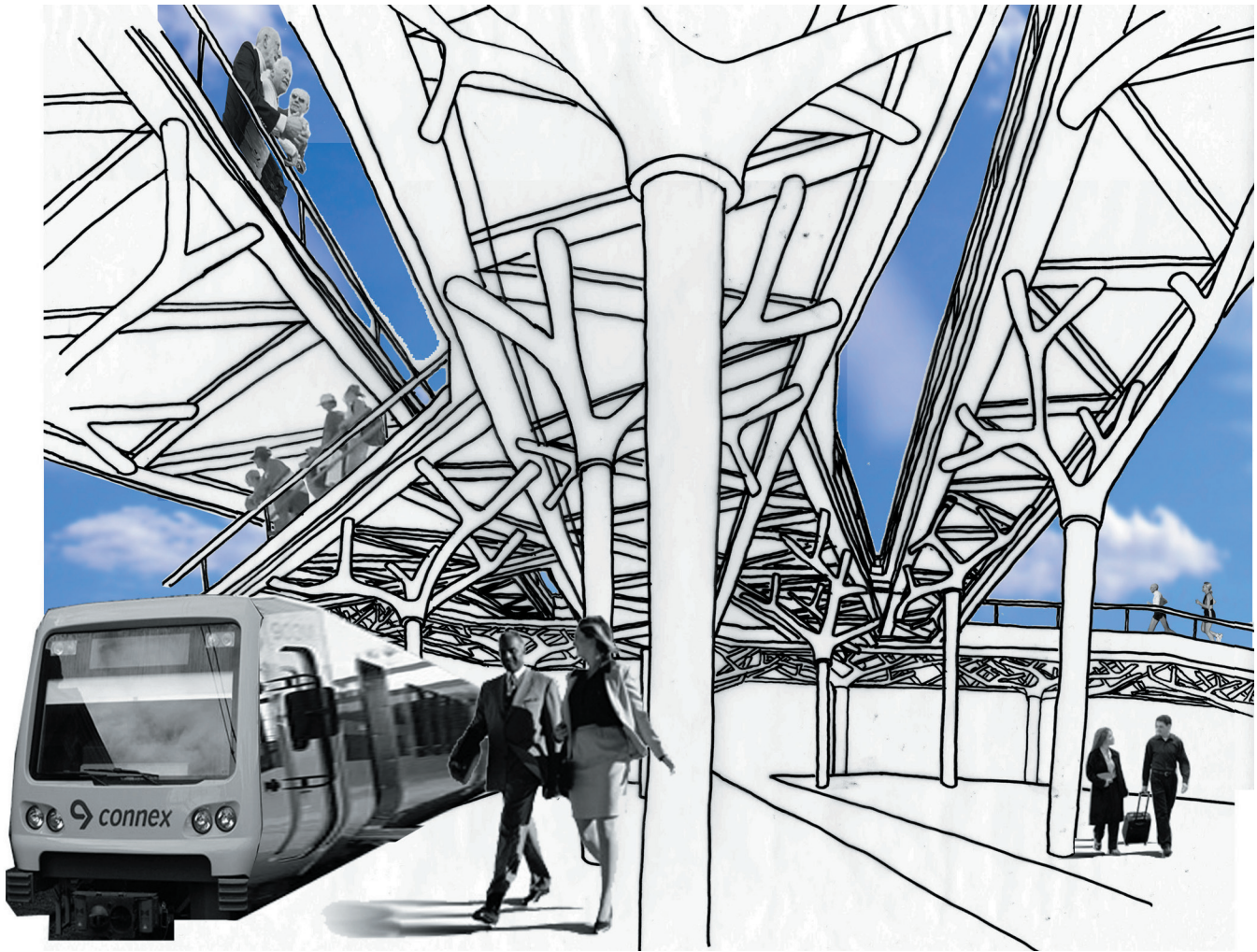
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Train stations are fundamentally places of flow. As urban portals, commuter stations mediate between the urban and suburban landscape, connecting them at a hub of intense fluidity. The train station itself is inherently fluid, spatially it is a place where people go on their way elsewhere. The convergence of so many networks at the station ensures its status as an urban gateway and significance as an urban monument.

(left) ¹ the fluid landscape

This thesis investigates Flinders Street Station in Melbourne, Australia as a site to connect disparate elements of the cityscape. Melbourne is currently emerging as a powerful global city and cultural mecca of Australia. A recent focus on facing the city to its long forgotten watercourse, the Yarra River, has been a key element in the re-imagining of the city. Flinders Station hugs the north banks of the river and faces possibly the most significant intersection in Melbourne. Currently the station acts as a physical impediment between the city and the river, halting the natural flows between the suburban and urban landscapes. Further obstacles to the development of Flinders Street Station involve the role of landscape in Australia resulting from a residual colonial condition, an incomplete break with an imported culture and a subsequent lack of attachment to the land. As Melbourne grapples with forming its identity as a global city these issues are essential to the development of a train station that occupies the site of the new centre of Melbourne. The train station is explored as a captivating and contradictory place of high-speed motion and dwelling, aerial and grounded perspectives, and urban and suburban environments. This is the realm of landscape.

The station is necessarily a monument in the urban fabric. The new design looks at monumentality as a modern issue for cities asserting themselves in the global arena as opposed to 19th Century train stations as monuments to technology and industry. The contemporary role of train stations has evolved with the increase in commuting and working habits. Increasingly more time is spent traveling between work and home and the station environment becomes a more important part of the everyday landscape. Will commuting become an increasingly outdated phenomenon as the mobile office technology becomes more widespread and more people dodge the dreaded commute with laptops, home offices and cell phones? Can we imagine a commuting experience where the journey becomes a pleasure rather than simply a dreaded adjunct to the working day?

the specious landscape

Australia is a land of intense urban concentration surrounded by suburban sprawl and expansive empty spaces. What one might describe as a spurious sense of national identity has been constructed on the idea of a specifically 'Australian Landscape' appearing as the ubiquitous Australian environment but ultimately a landscape that few Australians actually identify with. From its inception as a British penal colony to a multicultural promised land, Australia is a nation constructed by people geographically distant from their cultural roots. The obvious function of displaced peoples away from their homelands is the process of taking possession of the new land and feeling at home in it.¹ This is something that seems to have never ultimately been achieved in Australia, a country much like Canada in that it struggles to transcend the modern colonial condition.²



² map of australia

Australia is described as "one of those European colonies of settlement that developed an unfulfilled attachment to the land they settled, an inadequate peace with the peoples they displaced and an incomplete break with the cultures that gave rise to them".³ Essentially, Australian culture and identity have consistently suffered from a feeling of rootlessness in terms of its people being unable to strongly identify with the particular versions of national identity that continue to be put forth. Historically, the British Monarchy stood as the national symbol, yet its single defining characteristic in Australia was its glaring absence. Instead of inciting sentiments of pride and attachment to a nation, it became a source of feelings of inadequacy and diminutiveness.⁴ While trying to maintain ties to a geographically distant homeland, Australia developed an intense yearning for an identity to call its own. The plight of any colonial nation in a new land where a pre-nation past is not available is the assertion of an identity sufficiently distinct from the mother country so as to render recognition as an independent nation.⁵ As "the concept of nation is perhaps the most significant figure of collective emotional identification in the modern world",⁶ and with Australia failing to make a complete break from its colonial ties, it took on a particular importance.

As an island continent, Australia identified unique phenomena to provide a sense of 'Australian-ness' including rare flora and fauna and a distinctive and readily identifiable geographic profile. Paradoxically, the idea of nation forged from a concept of wholeness simply in a country occupying a single continent is an unstable concept because it anticipates a sense of community based solely on a shared habitation within common borders. Landscape, however, promises an identity essentially grounded in a specific place, thus evoking a foundation of truth on which to build the platform of

a new nation. Landscape became and remains the privileged signifier of 'Australian-ness'. The idea of landscape is essential to the forming of an attachment to place in Australia. Australian Aborigines in particular have an intricate relationship with their land, believing that their ancestors created and shaped every detail of the landscape, from the sandy hills to the riverbanks.⁷ Often, they celebrate these epic narratives at the scale of the landscape in the form of ground-paintings. According to Anne Marie Willis, the essence of Australia "is seen to spring from the land – timeless, tough, resilient – and imprint itself on [the] people who have so recently inhabited it".⁸ Repeatedly, the inimitable characteristics of the Australian landscape have provided the iconography and sense of legitimacy needed through promising something homegrown and exclusively Australian. Like many modern nations, Australia engages rhetoric suggesting that it "loom(ed) out of an immemorial past, and, still more important, (that it will) glide into a limitless future".⁹ Landscape promises this immediate link to the past and the future because although the inhabitants of the new land may be recent, the land itself somehow evokes the notion of an eternal uniqueness.

the specious landscape

³ the painted desert



the specious landscape

The natural landscape of Australia is a hostile and unforgiving environment. Inhabiting this land requires either a submission to it or a control over it. Whereas the nomadic Aboriginal occupation of Australia, going back over 40,000 years, involved lightly touching the land, the European occupation involves a complete reworking of the landscape to suit Eurocentric needs: "Europeans have always measured their claim on Australia by success in moderating the landscape".¹⁰ Since the 1890s, Australia has been one of the world's most urbanized countries, yet the familiar images of Australia are not of thriving metropolises or contemporary urban life.¹¹ The visual imagery circulated within the country and the rest of the world is generally of the ubiquitous expansive red desert, the flat pastoral vista and wide-open natural spaces. The irony of depicting an unoccupied landscape to form an invisible sense of community for the psychological occupation of a land is clear.¹²

Without people physically or psychologically residing in this unpopulated landscape, the imagery is constructed by city-dwellers who have no sense of real connectedness to it. "The enduring conflict in Australian cities...has to do with Australians' ambivalence to their land. They are daunted by its scale, its hostility."¹³ The Australian urban landscape, the centre of cultural activity, can be equally as unsettling. The vigorous pursuit of high culture in Australia was meant to compensate for a perceived absence or lacking in other areas of national maturity.¹⁴ It was not enough that the Australian culture be distinctive from British culture, but it was also important that it be taken seriously elsewhere. One of the most lasting relics of colonization in Australia is a feeling of cultural inferiority or of being a derivative and impressionable society.¹⁵ The superiority of European and American culture is continuously reinforced here, fating the country to be continuously seeking approval from abroad. The incomplete break from Australia's colonial ties give the establishment of high culture particular importance because the cultural standards have been set elsewhere, namely Britain. Anne-Marie Willis suggests that the visual language of painting expressed Australia having 'arrived' as a nation after Federation in 1901.¹⁶ As the painters became better known around the world, their artworks became recognized as the national style of painting that would be identified as particularly Australian. The general notion is that Australian artists have been exclusively obsessed with landscape, only further reinforcing its role in forming an attachment to place.¹⁷ Many artists, however, have been equally fascinated with the Australian cityscape and its distinct absence in the development of a national culture.

(right) 4 *perished: the australian landscape*

note: this painting by famed australian painter sidney nolan depicts the legendary and ill-fated expedition of robert bourke and william willis into the australian *terra incognita* for more information visit <http://www.slv.vic.gov.au/burkeandwillis/>



the specious landscape The extreme juxtaposition of urbanized sprawl-cities edging into a vastly empty and unsympathetic landscape obviously creates a sense of disconnectedness within either realm. The conflict between the two extremes in the Australian landscape and the inability to make the essential connection between either explains the intensity of suburban sprawl in Australia. It is a no-mans land, neither rural nor urban.¹⁸ Suburbia is described as a middle landscape, or an 'in-between' place that in some ways does not and does not need to possess a geographical location.¹⁹ This is not a singularly Australian phenomenon, identical suburbs proliferate in North America and parts of Europe. There is no need to develop a deep connection with the physical location of the suburban dwelling, it can exist anywhere and does not rely on an attachment to the land. In Australia it is in some ways a negation of the symbolic Australian 'bush'.²⁰ Suburban living in Australia offers a comfortable environment that people can form a relationship with and the opportunity to navigate a landscape. The relation between city and suburbia, much like city and bush, has been enmeshed in Australian cultural discourse since the rise of post-war suburban living. The relationship can be seen "as an analogy for the struggle to define an Australian identity: is that relation one of concentration/dilution, authenticity/surrogate respective? Or does the 'suburban' vision of that elusive construct 'Australianness' involve an emergence into a cultural difference beyond the closed symbiosis of colonisation, that enmeshed connection between a culture and its antecedents?"²¹

The French urban sociologist Paul Virilio describes the trend of decentralization and suburbanization as a 'pure strategic advance over terrain'.²² "The city – dark, heterogeneous and anonymous, is replaced by the suburb – open and uniform – abolishing all difference and marking out the individual as a 'citizen', with an adherent responsibility that both controls and structures individual behaviour".²³ Melbourne has successfully advanced over the surrounding terrain to become the most suburbanized Australian metropolis. With a recent focus on the renewal of its urban core the city grapples with its two disconnected landscapes: the specious landscape, the ubiquitous attachment to an environment that is ultimately foreign and inhabitable, and the fluid landscape, the urban terrain of a fast developing global city.

the specious landscape

notes

- ¹ Willis, Anne Marie. *Illusions of Identity: The Art of Nation*. New South Wales: Hale & Iremonger Pty, 1993, pg. 64.
- ² *Ibid.*, pg. 187.
- ³ *Ibid.*, pg. 31.
- ⁴ Tavan, Gwenda. "‘Good Neighbours’: Community Organisations, Migrant Assimilation and Australian Society and Culture, 1950-1961", in John Murphy and Judith Smart (Eds). *The Forgotten Fifties: Aspects of Australian Society and Culture in the 1950s*. Victoria: Australian Print Group, 1997, pg. 89.
- ⁵ Willis, *op.cit.*, pg. 32.
- ⁶ *Ibid.*, pg. 158.
- ⁷ Geraldine Brooks. "The Painted Desert", *The New Yorker*, July 28, 2003, pg.62.
- ⁸ *Ibid.*, pg. 62.
- ⁹ *Ibid.*, pg. 167.
- ¹⁰ Menghetti, Diane. "Mount Isa: A Town Like Alice?", in John Murphy and Judith Smart (Eds), pg. 27.
- ¹¹ Willis, *op. cit.*, pg. 64.
- ¹² *Ibid.*
- ¹³ Corrigan, Peter. "Learning from Suburbia", *Domus*, no.663, July-August 1985, pg. 7.
- ¹⁴ Willis, *op. cit.*, pg. 58.
- ¹⁵ Davison, Graeme. "Welcoming the World: The 1956 Olympic Games and the Representation of Melbourne", in John Murphy and Judith Smart, pg 71.
- ¹⁶ Willis, *op. cit.*, pg. 75.
- ¹⁷ *Ibid.*, pg. 62.
- ¹⁸ Sowden, Tim. "Streets of Discontent: Artists and Suburbia in the 1950s", in Sarah Ferber, Chris Healy and Chris McAuliffe (Eds). *Beasts of Suburbia: Reinterpreting Cultures in Australian Suburbs*. Malaysia: Melbourne University Press, 1994, pg.79.
- ¹⁹ Sarah Ferber, Chris Healy and Chris McAuliffe (Eds), *op. cit.*, pg. xvii.
- ²⁰ Ian Hoskins, "Constructing Time and Space in the Garden Suburb", in Sarah Ferber, Chris Healy and Chris McAuliffe (Eds), *op. cit.*, pg. 2.
- ²¹ Lucas, Rose. "‘Round the Block’: Back to the Suburb in *Return Home*", in Sarah Ferber, Chris Healy and Chris McAuliffe (Eds), *op. cit.*, pgs. 112-113.
- ²² Allon, Fiona. "The Nuclear Dream: Lucas Heights and Everyday Life in the Atomic Age", in Sarah Ferber, Chris Healy and Chris McAuliffe (Eds), *op. cit.*, pg. 48.
- ²³ *Ibid.*

the everyday landscape

For the commuter, traveling between suburb and city twice daily highlights the juxtaposition between the urban and suburban realms. The plight of the commuter has been likened to that of the prisoner, where crowds of individuals consistently share time and confined space and are thus inured to a state of conformity, anonymity, and loneliness.¹ The theme of loneliness in the overcrowding of modern industrialized cities is further enhanced for the commuter. In *The Revolution of Everyday Life*, Raoul Vaneigem is concerned with how much humanity can remain in people who are “dragged out of sleep at six every morning, jolted about in suburban trains...tossed out at the end of the day into the entrance halls of railway stations, those cathedrals of departure for the hell of weekdays and the nugatory paradise of weekends, where the crowd communes in a brutish weariness”.² It may be that the real definitive experience of the commuter train is to be found in the ephemeral interaction of strangers who have little in common besides a cramped space and a fixed daily schedule.³ Equally fascinating is the communal behaviour of the commuter, a modern phenomenon signaled by Georg Simmel in his often cited work, *Metropolis and Mental Life* from 1950. Marc Augé coins this as ‘civil inattention’ and is described as forms of social interaction in which strangers nominally acknowledge or block out each other’s presence in public places. He further notes “the ways in which commuters exchange fleeting glances, or the flickers of emotion that can sometimes be detected behind the apparently blank faces of daydreamers”.⁴ The daily social exchange between train commuters is based on a kind of peaceful co-existence and an impossibly unfulfilled desire to know anything substantial about the lives of the fellow passengers.⁵

John Brack’s well-known painting *Collins St. 5pm* focuses on the alienation of the suburban dweller. The name of the piece alone highlights the timetable that the commuter is enslaved to. The painting shows a crowd of expressionless people at the peak-hour rush all moving down Collins Street, Melbourne’s financial district, towards a single destination, the train station. Despite extreme proximity, there appears to be no exchange between the inconspicuous commuters in subdued attire. Brack’s choice of muted sepia paint emphasizes the contradictory conditions of alienation and conformity of the suburban subject and as Tim Sowden suggests, “contains his own emotional involvement, as if in ironic homage to the human condition he depicts”.⁶

(right) ⁵ collins st., 5pm



the everyday landscape

The train station is the place where the chaos of the city and the conformity of the suburbs come together. Peter Rowe suggests that suburbanites may feel a sense of estrangement and alienation when arriving in the unfamiliar environment of the urban terrain or even be repelled and disturbed by the incoherent sites and sounds.⁷ The prototypical case then, would be the commuter who negotiates between the worlds of the city and the suburbs as part of a daily routine. In the train station the commuter is in transit between these environments, enslaved to a schedule beyond his or her control where time is spent simply waiting.

Waiting is one of the most common features shared by all commuters. "Waiting is frustrating because it is both an unavoidable and marginalized experience: an absolutely essential feature of daily life that is nevertheless associated with wasted time and even shameful indolence".⁸ As more workers are commuting further distances than ever before, the daily activity of traveling between work and home becomes part of the work itself.⁹ Everyday life is increasingly composed of waiting time, or 'compulsive time', a kind of "limbo between work and leisure in which no explicit demands are made on us but we are still trapped by the necessity of waiting".¹⁰ Waiting is simply the passing of time, time that could be spent more productively in which we are left to improvise how we spend that time. With railway travel, time is tapped out in rhythms of silence, train whistles, vibrating windowpanes and momentary cries of passengers passing through a station heard over the beating of the rails. Michel de Certeau reflects on the relationship between dreams and technology experienced in railroad travel. He describes train journeys as a cross between freedom and imprisonment, a kind of 'incarceration-vacation', where people are held captive in railway cars, places of laziness and thoughtfulness, 'paradisical ships sailing between two social meeting-points (business-deals and family life)".^{11 12}

Through daily ritualistic movements, the commuter becomes immune to that which is not a part of the routine. Their senses become attuned to the clocklike passing of time, the enslavement to a schedule over which one has no control. Commuters learn to poise themselves for the exact moment when the train doors will open and they can depart from the carriage, when to quicken their pace at the sound of an incoming train whooshing past the platform, and the exact spot on the platform at which to stand in order for the train to deposit them nearest the most convenient exit at the destination platform.¹³ Siegfried Kracauer, an urban sociologist of the 1930's, wrote critically and analytically of the social behaviour of employees

and commuters of his time, recognizing and identifying patterns that are still relevant today. He attempts to understand the type of quotidian existence experienced in modern cities, with the tedious moments of waiting and the ephemeral community constructed by the daily commute.¹⁴ He suggests “the more monotony holds sway over the working day, the further away you must be transported once work ends...the true counterstroke against the office machine... is the world vibrant with colour”.¹⁵

the everyday
landscape

¹ Sowden, in Sarah Ferber, Chris Healy and Chris McAuliffe (Eds), op. cit., pg. 86.

² Secondary Source: Moran, Joe. *Reading the Everyday*. Great Britain: Routledge, 2005. pg. 49. Original Source: Vaneigem, Raoul. *The Revolution of Everyday Life*. Trans: Donal Nicholson-Smith. London, Rebel Press/Left Bank Books, 1994, pg. 52.

³ Moran, op. cit., pg. 51.

⁴ *Ibid.*, pg. 52.

⁵ *Ibid.*

⁶ Sowden, in Sarah Ferber, Chris Healy and Chris McAuliffe (Eds), op. cit., pg. 83.

⁷ Rowe, Peter G. *Making a Middle Landscape*. United States: MIT Press, 1991, pg. 58.

⁸ Moran, op. cit., pg. 7.

⁹ Laurier, Eric. “Doing Office Work on the Motorway”, *Theory, Culture & Society*, v21, no 4/5, 2004, pg.261-277.

¹⁰ Moran, op. cit., pg. 8.

¹¹ De Certeau, Michel. *The Practice of Everyday Life*. California: University California Press, 1988, pg 114.

¹² *Ibid.*, pg. 113.

¹³ Moran, op. cit., pg. 51.

¹⁴ *Ibid.*, pg. 31.

¹⁵ Kracauer, Siegfried. *The Salaried Masses*. London: Verso, 1998, pg 92-93. Secondary Source: Moran op. cit., pg 24.

notes

the transitory landscape

"Seeing is believing. Melbourne is changing before our eyes...At long last Melbourne is really on the move".

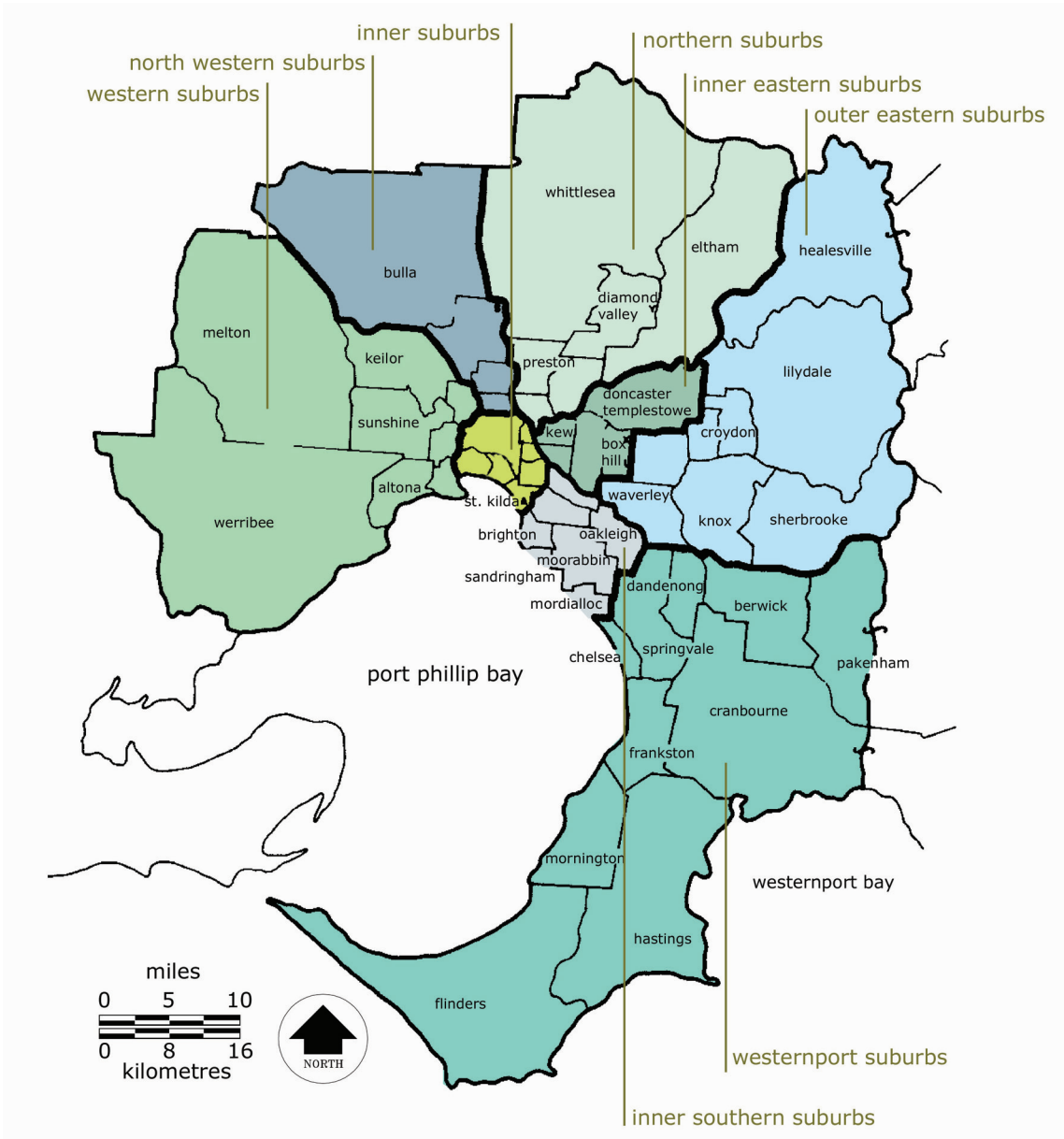
(Victorian Government brochure, 1996)

Melbourne, the state capital of Victoria, is a city of roughly 3.5 million people. Often overshadowed by the more cosmopolitan and flashy Sydney, Melbourne has recently experienced an urban face-lift in order to become a hefty player in the arena of global cities. Unlike most of the other large Australian cities, Melbourne was not built as a penal colony but rather as a sub-colony of Sydney with business in wool and manufacturing. The gold rush of 1851 to 1860 produced one third of the world's gold just in Victoria, and Melbourne exploded into a frenzy of development and urbanization.¹ Melbourne changed rapidly from a *canvas town* – that is, a town of tents – sub-colony to one of the largest and most splendid cities in the British Empire on the proceeds of the gold fields and was known during this era as 'Marvellous Melbourne'. The gold did eventually run out, but people stayed in Melbourne throughout the subsequent depression of the 1890's and invested their riches in constructing the financial capital of Australia.

When Australia federated in 1901, Melbourne was the most prevalent and grandest city in the new nation and served as the new capital until it was moved to Canberra in 1927. The wealth that flowed through Melbourne during the gold rush left the city with a legacy of grand Victorian architecture, an extensive network of railways and tramlines, and a unique city grid with abnormally wide main streets reminiscent of European boulevards interspersed with a secondary grid of narrow laneways.

Melbourne never experienced a dense and thriving urban residential population. The post-war years of the 1950s and 1960s greatly suburbanized the city. It grew laterally instead of vertically, pushing further and further out. By the 1970s Melbourne was a virtual carpet of low-density suburbs. The train and tram networks already firmly rooted in the daily cultural lives of Melbourne's inhabitants grew tentacle-like over the surrounding bush land to facilitate the 'Great Australian Dream' of suburban home ownership.² John Fiske, Bob Hodge, and Graeme Turner suggest that it is perhaps the inherent nature of Australia as a promised land for immigration that the single-family home in the suburbs became such a rampant norm. "The Australian way is, and always has been, to own a home on a plot of its own, so that the homeless immigrant is magically transformed into a man of property".³

(right) ⁶ metropolitan melbourne and surrounding suburbs





Since its glorious days as Marvellous Melbourne, when the city was alive day and night with revelry and other signs of an instantaneous and overwhelming wealth, the city has been well known for its quiet and conservative demeanor. Consistently overshadowed and outdone by the more extroverted and showy Sydney, a distinct and bitter rivalry has developed between the two major Australian cities that has been described as 'landmark envy'.⁴ The image of Sydney as a thriving harbour city framed by the infamous Sydney Opera House and Sydney Harbour Bridge generally outshines the more subdued image of Melbourne's trams, parks, boulevards and public monuments. Indeed, the iconographic image of the Sydney Opera House is firmly implanted in the minds of Australians and the rest of the world as the signifier of a confident and cosmopolitan Australia. It is one of the most distinctive and photographed buildings of the 20th Century and one of the most famous performing arts venues in the world. Before the Sydney Opera House became an important symbol, the unique flora and fauna were incorporated into a cultural, and sometimes urban, context to represent the myth of Australia, but were now rendered obsolete representatives of the Nation.⁵

For Melbourne, the cultural hub and intellectual capital of the nation, the iconic image of the Sydney Opera House with its large exterior space open for festivals and gatherings burned deep in the public mind. Melbourne has a rich and diverse cultural life, but has long suffered from the blatant absence of an outdoor urban space to be the focus of arts and civic life. Suited to the temperate and modest demeanor of Melbourne, rich and diverse aspects of the city's urban morphology are tucked away from view and can only be appreciated as they are experienced. The speculative subdivision process of the land in the city grid from the outset led to an intricate web of laneways and arcades where the cultural and artistic life that Melbourne is known for thrives. The laneways are the "errant flows of everyday life that by-pass the rigid grid and give the city so much of its urban character".⁶ This highly permeable structure can go entirely unnoticed and unexplored or can become a shortcut through the city fabric or a destination point for those who are 'in the know'.

Marooned in a sea of flat and unremarkable landscape, the single most defining aspect of the city is its River. The city was determined, and largely shaped, by the Yarra River. Several kilometers inland from Port Philip Bay, European settlers in 1830 chose a spot on a particularly alluring bend in the river to found the new city. The main axis of the city was located where some rocks forming a

the transitory landscape



⁸ the sydney opera house

(left) ⁷ melbourne city centre and inner suburbs

⁹ the opera house and monumental steps





natural waterfall created a pool below as a turning basin for ships and a source of fresh water above. According to the British doctrine of *terra nullius*, the land was claimed based on the assertion that it was uninhabited, despite the fact that Aboriginal groups collectively known as the Kulin nation continuously inhabited the landscape for over 40,000 years.⁷ The fateful collision of these two cultures was ultimately tragic and in a few short years the centuries-old Aboriginal way of life was changed forever. Although the details surrounding the appropriation and displacement of the Aborigine peoples here is not strictly relevant to this thesis, the land on which the project is situated is particularly infused with the memories of the invasion and ethnocide of the early years of Melbourne and is worth noting. The Yarra River was an important source of life and ritual for the Kulin nation who relied on an acute understanding of the unique seasonal, geographical and botanical phenomena to survive.⁸

The new settlement quickly rose on the north banks of the river, turning its back to the south bank, notoriously prone to substantial flooding by the moody and temperamental Yarra. “The city has long had an ambivalent relationship to its river landscape, both turning away from and yet facing the river”.⁹ Although the river was the main port and front door to the city and the gate between the colony and the empire, the riverscape soon became lined with factories, noxious trades and the river itself was reduced to an industrial sewer. The wharves eventually moved downstream and the railways took hold of the land along the north bank, essentially severing the river from the city both visually and functionally. The once vibrant waterfront activity disappeared and the northern riverbank became overgrown and unused.

Increased development near the river’s catchment basin began to contribute to the already brownish colour of the industrially polluted water. Particles of clay are suspended by the gentle turbulence, only sinking after attaching to salt particles at the mouth of the Bay. This produces a muddy, sepia colour at the surface of the water with clearer waters flowing underneath, characterizing the Yarra as the ‘upside-down river’. The neglected watercourse was widened and rerouted in places to alleviate the flooding to the south bank, but the river frontage remained a forgotten piece of real estate at the doorstep to the city. Subsequent development of Melbourne further consigned the Yarra to being the abandoned backdoor of the city.

the transitory landscape

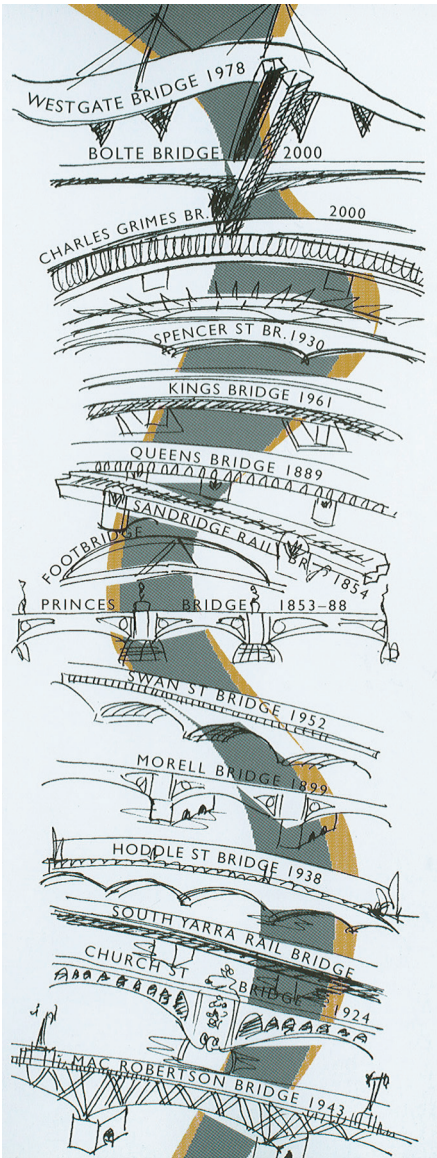


¹¹ the yarra river course

(left) ¹⁰ melbourne laneways

the transitory landscape

No wonder then, that the river became the focus of an urban face-lift scheme to put Melbourne on the global map in the 1990s. After an economic depression during the 1980s, Melbourne emerged wanting to re-image and re-imagine itself. As an architectural and urban researcher focusing on phenomenology of place and spatial analysis, Kim Dovey has written extensively about the recent transformation of Melbourne's urban waterfront. He has described this transformation as "repositioning the city in the national and international economy, with a focus on the river as a landscape designed to capture both the flows of desire and of global capital".¹⁰ Already with the richest discourse and practice of architecture and urbanism, the new architectural style for Melbourne shed its conservative shell and a flashier and often highly contentious new style emerged. Several of these new projects took position along the re-established river frontage. A new arts precinct including a concert hall, national art museum, and performing arts centre anchored the newly developed south bank precinct at the edge of the city. A public promenade was constructed for the length of the city along the south bank, with the river forming a stage and the city skyline forming a backdrop. A new pedestrian bridge attempted to create a better link across the river after being sealed off for years. The main attractions of the new precinct were restaurants, retail, and the Crown Casino. Intended to have the same effect for Melbourne that the Opera House did for Sydney, the casino runs over 450 metres of waterfront and is an appalling agglomeration of cinema, retail, restaurant, nightclub and hotel space, with the second largest gaming floor in the world.¹¹ A row of gas fireballs explode hourly along the river announcing the unabashed spectacle that awaits inside. The project was overwhelmingly successful in reawakening the riverscape as an urban destination and diverting large numbers of consumers from the downtown to the other side of the river.



the transitory landscape

arts and culture



¹⁵ site analysis: arts and culture

(left outside) ¹² yarra river crossings

(left middle) ¹³ southbank river promenade

(left inside) ¹⁴ crown casino

the transitory landscape

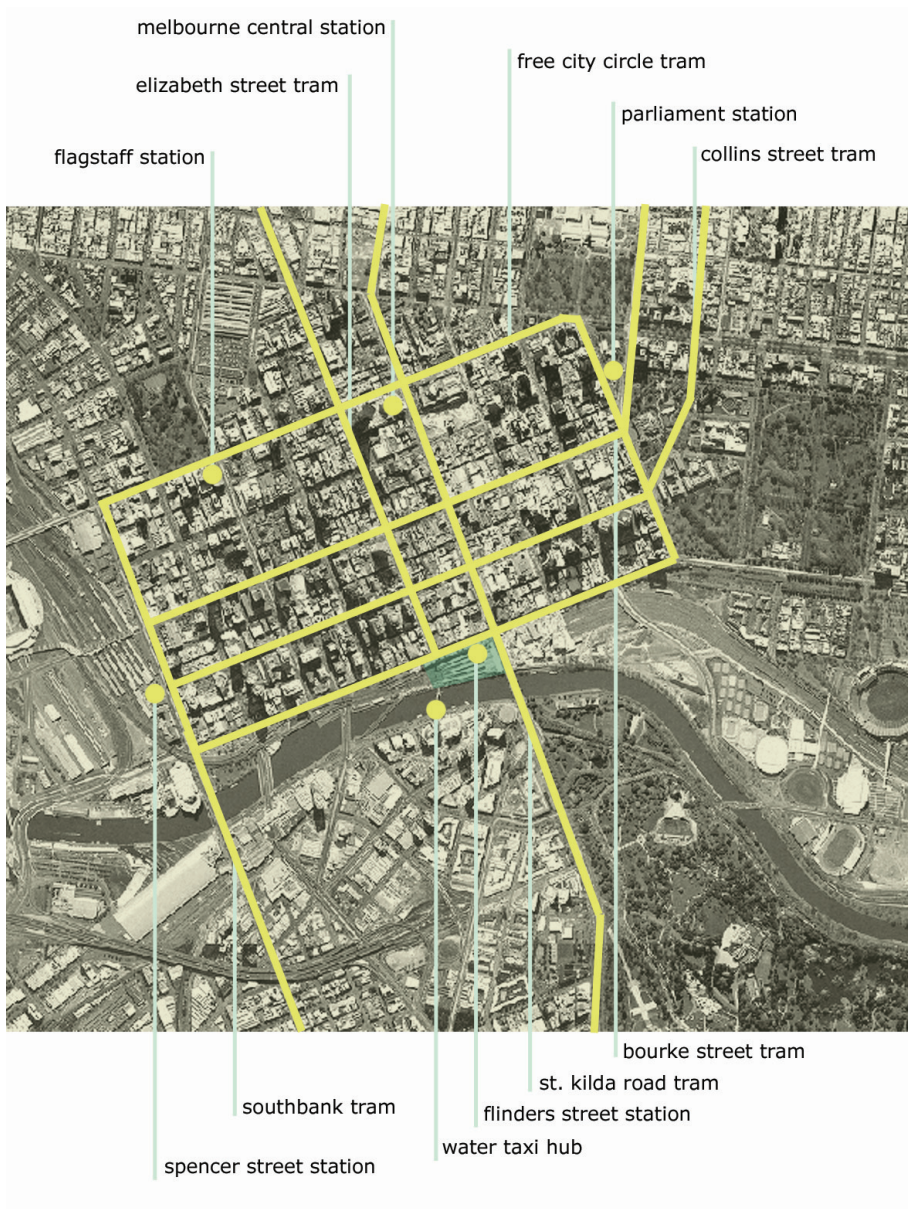
central shopping

¹⁶ site analysis: central shopping



the transitory landscape

major transportation



¹⁷ site analysis: major transportation

the transitory landscape

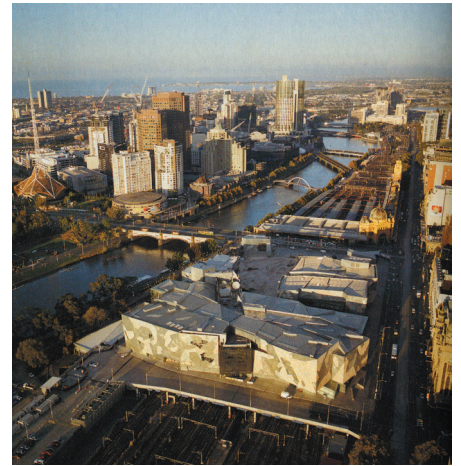
parks and recreation

¹⁸ site analysis: parks and recreation



the transitory landscape

The north bank of the Yarra, not having received significant attention in the development of the seductive new image of Melbourne, remains burdened with the railyards. As the centenary celebrations of the 1901 Australian Federation loomed, Melbourne received federal funding for a major urban project to be completed by 2001, duly named 'Federation Square'. The program was loose, but the imperatives of the competition design brief stated clearly that it must "be geared to Melbourne's new global role, transform the image of the city, celebrate the ideals of federation and independence, and connect the city to the river".¹² The chosen site for the project was on the north bank at the key intersection of Swanston Street and Flinders Street where Princes Bridge connects the major north-south axis of St. Kilda Boulevard on the south bank with the city centre. This location is the primary urban entrance of Melbourne. Sharing this crucial node point of entry to the city with Federation Square is the historic St. Paul's cathedral, a prominent building known as the 'face' of the city from the southern axis, the infamous Young and Jackson, the oldest pub in Melbourne, and Flinders Street Station, the gateway between the city and the surrounding suburbs. The project was hailed to become the "landmark Melbourne 'lacked', meeting a global market, helping to define the city and nation".¹³



¹⁹ aerial view of federation square

The winning entry by LAB Architecture Studio in conjunction with BatesSmart Architects comprised an intricate complex of building 'shards' and residual spaces intended to pick up and extend the city lanes while extending "the city floor...out to the river's edge".¹⁴ Tragically, the potential of this prime waterfront site was not fully realized, and although it is hugely successful as an urban destination and public gathering space, there are obvious shortcomings. The extensions of the labyrinthine laneways do not actually lead through the project as they do through the city. A continuous flow of people through the square and to the railways and the river is absent, or at best, stilted and difficult to navigate. This is partly due to the fact that the architects were required to maintain some heritage bluestone vaults along the river. In response, the project repeats the traditional mistake of Melbourne architecture in turning its back to the river.¹⁵ The quest to turn the city to the waterfront and in turn to present this waterfront to the world is one of the ongoing urban strategies in which the riverscape plays a vital role in transforming Melbourne from a staid and conservative 'second-city' to a global fluid city.

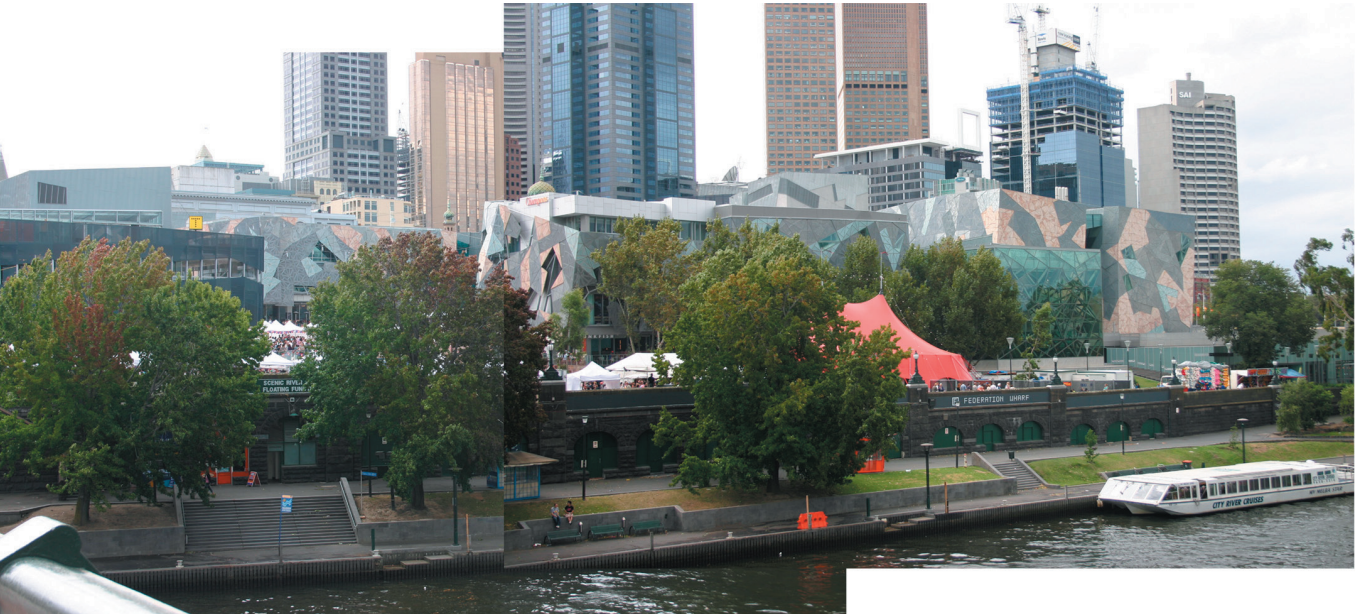


²⁰ federation square plaza

the transitory
landscape

²¹ federation square: open to flinders
street

(below) ²² federation square: backing onto
the yarra





the transitory
landscape

²³ federation square: closed-off at the
yarra river

- ¹ Coote, Maree. *The Melbourne Book: A History of Now*. Victoria: Hardie Grant Books, 2003, pg. 51.
- ² Dovey, Kim. *Fluid City: Transforming Melbourne's Urban Waterfront*. Sydney: UNSW Press, 2005, pg. 32.
- ³ John Fiske, Bob Hodge, Graeme Turner. *Myths of Oz: Reading Australian Popular Culture*. Sydney: Allen and Unwin, 1987, pg. 27.
- ⁴ Dovey, Kim, op. cit., pg. 32.
- ⁵ John Fiske, Bob Hodge, Graeme Turner, op. cit., pgs. 159-160.
- ⁶ Dovey, Kim, op. cit., pg. 112.
- ⁷ Coote, Maree, op. cit., pg. 28.
- ⁸ *Ibid.*, pg. 29.
- ⁹ Dovey, Kim, op. cit., pg. 93.
- ¹⁰ *Ibid.*, pg. 40.
- ¹¹ *Ibid.*, pgs. 60-61.
- ¹² *Ibid.*, pg. 96.
- ¹³ *Ibid.*, pg. 100.
- ¹⁴ *Ibid.*, pg. 112.
- ¹⁵ *Ibid.*, pg. 111.

notes

the fluid landscape

site

Flinders Station is one of the busiest urban entraceways in Melbourne. Begun in 1901 and completed in 1909, the existing station is an imposing piece of Federation Style architecture planted firmly at the most prominent location in Melbourne. The American architect WS Richardson suggested in 1912 that stations should always be placed at one of the most pivotal sites in the urban fabric.¹ Flinders Street Station is located such that it has the potential to fulfill an urgent need for centrality in Melbourne. Flinders Station serves as the central train station for an extensive suburban rail service extending as far as 2 hours by train from the city centre. The blanket of suburban sprawl assures that the station consistently remains a central focus of activity. Beyond its utilitarian function, Flinders Station is a popular and well-appreciated Melbourne landmark. The shortcomings of Flinders Station are not in its ability to serve as a train station or as an icon. The problems are in the way that the building and the railway fail to connect the city to its re-discovered watercourse and its inability to relate with the surrounding urban fabric and to provide a public urban space at one of the most engaging sites in the city.

(right) ²⁵ flinders street station: urban entranceway





²⁴ melbourne suburban rail network

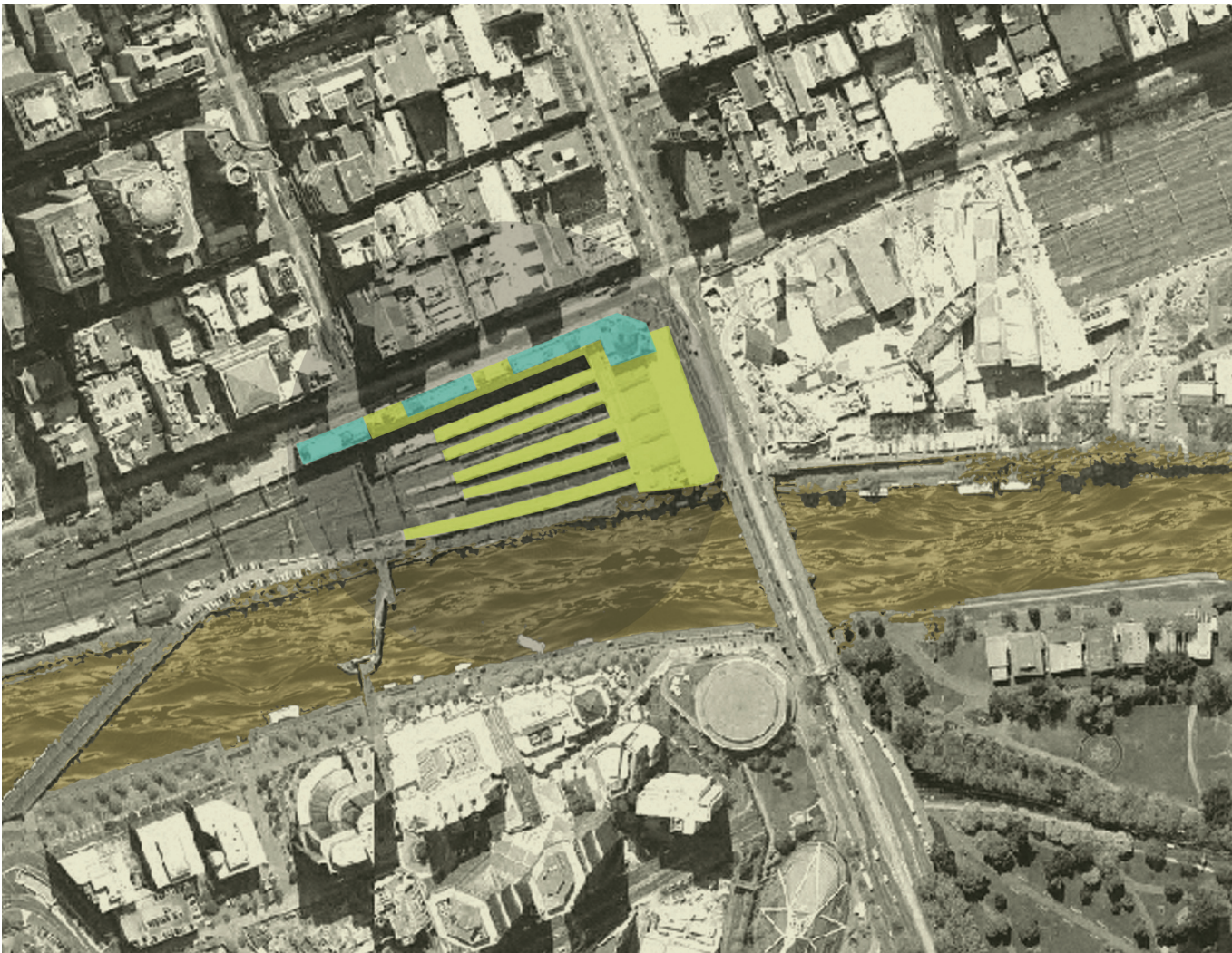


the fluid landscape

The project boundaries edge up to the main existing Flinders Street Station building. An existing roof structure over the concourse and the platform canopies are to be removed and replaced with the proposed roofscape and urban park. The existing railway lines have been maintained, with the focus of the project on the roofscape and the riverscape. Instead of demolishing the existing building, the project is anchored by it. Only small, precise incisions are proposed

site

- existing construction to remain 
- existing construction to be removed 



²⁶ existing construction

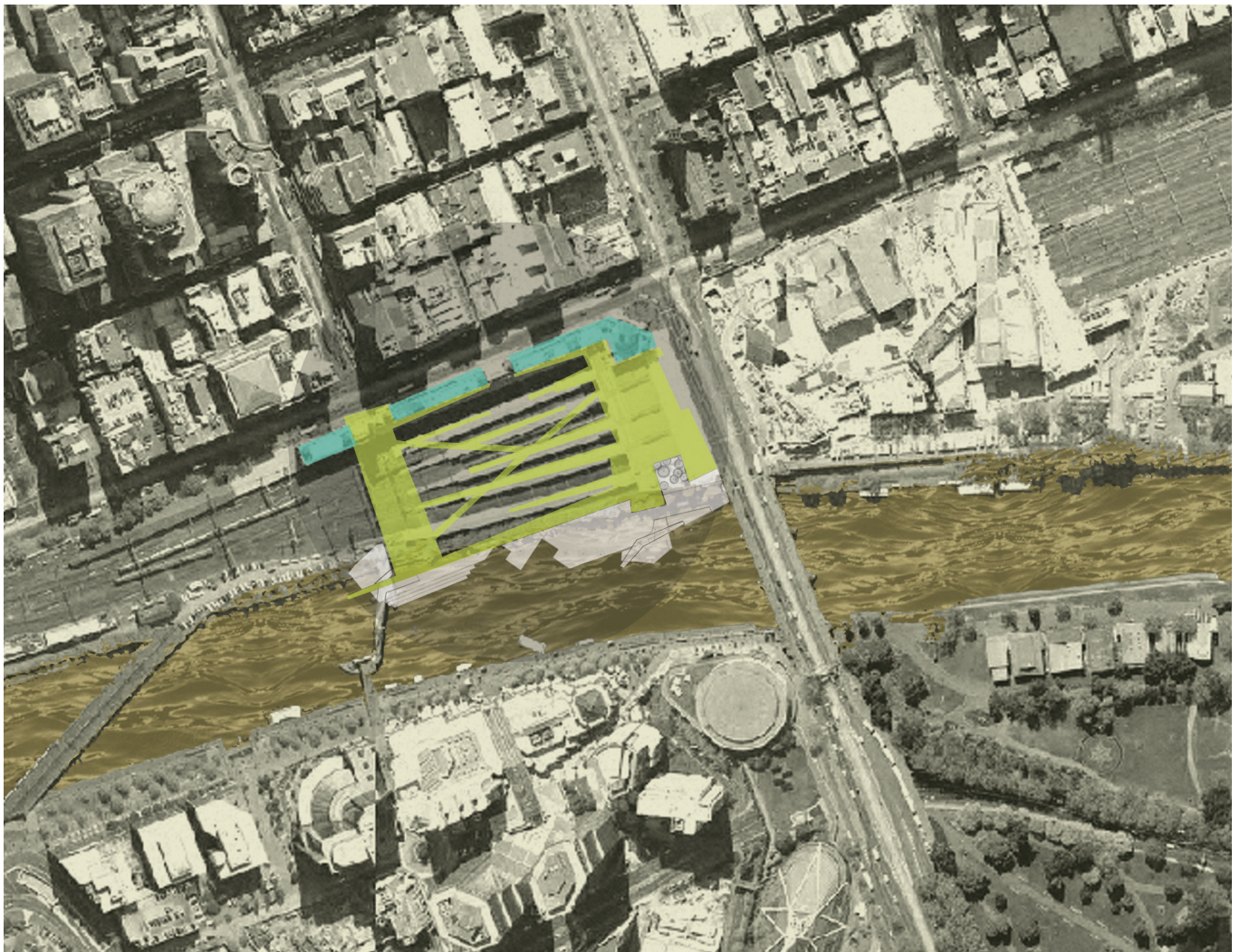
in the imposing façade along Flinders Street. Like most great train stations, Flinders Station contains elements that position it as a readily identifiable building typology and a representation of the symbolic power of the city centre. The existing architecture is at a figurative and literal crossroads architecturally and historically. The juxtaposition of old and new buildings at this intersection only stands to reinforce its prominence and significance in Melbourne.

the fluid landscape

site

existing construction

new construction

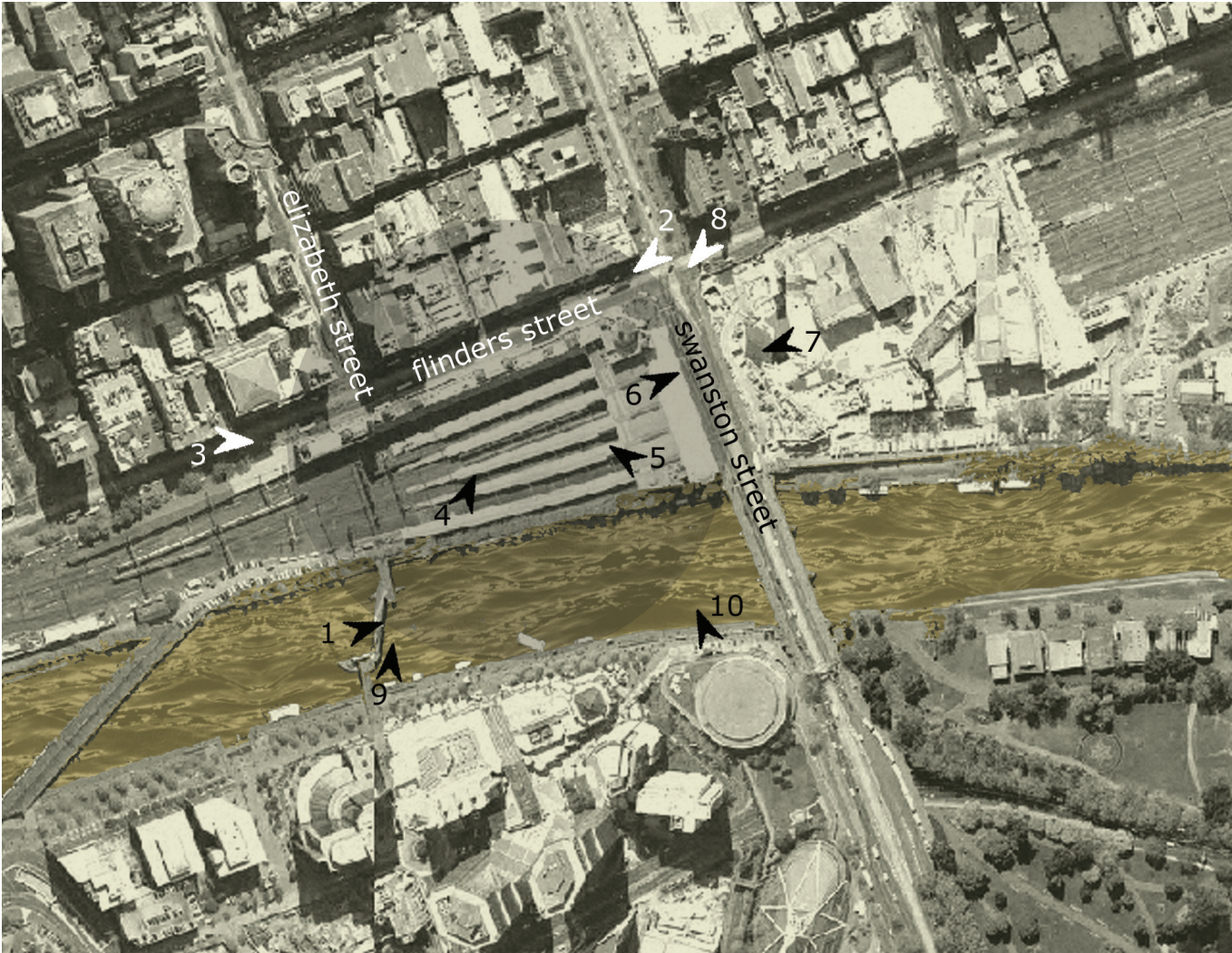


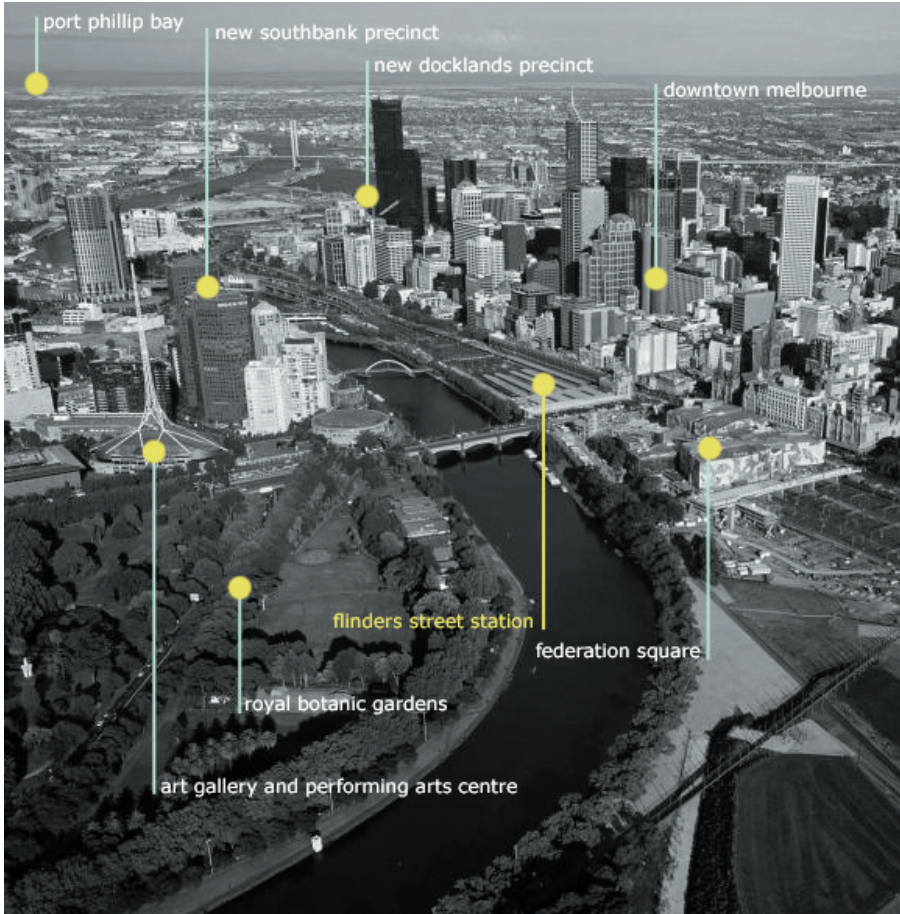
²⁷ proposed construction

the fluid landscape

site

28 site context





the fluid landscape

site

²⁹ bird's eye view of melbourne

(below) ³⁰ yarra river panorama



the fluid landscape

site



31 flinders street elevation - east end



32 flinders street elevation - west end



33 on platforms looking towards concourse



34 inside concourse overlooking platforms



35 federation square from inside concourse



36 swanston street elevation from federation square





the fluid landscape

site

37 flinders street main entrance



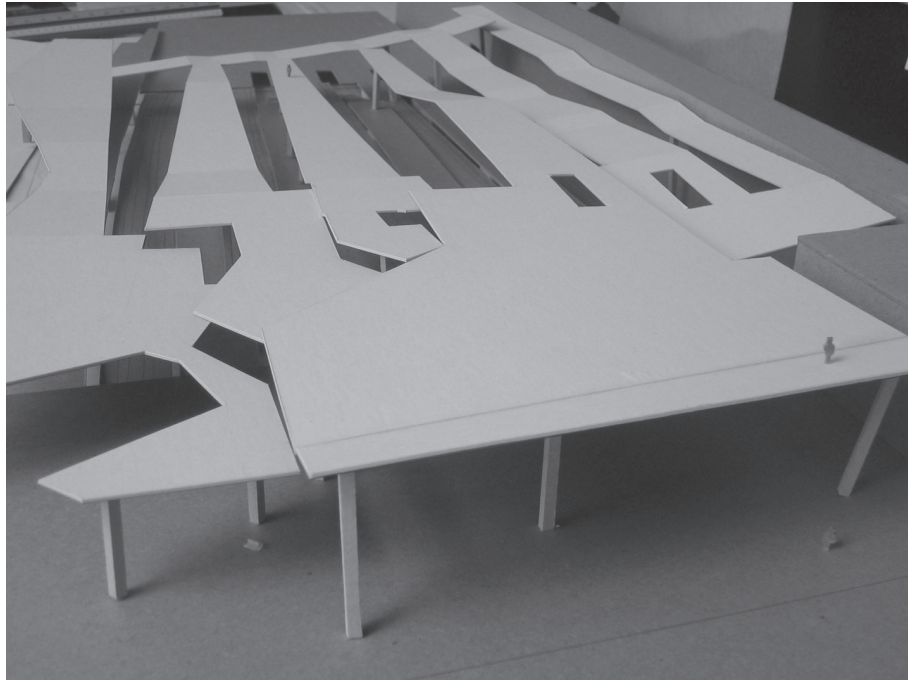
38 view from underneath pedestrian bridge



39 yarra river elevation

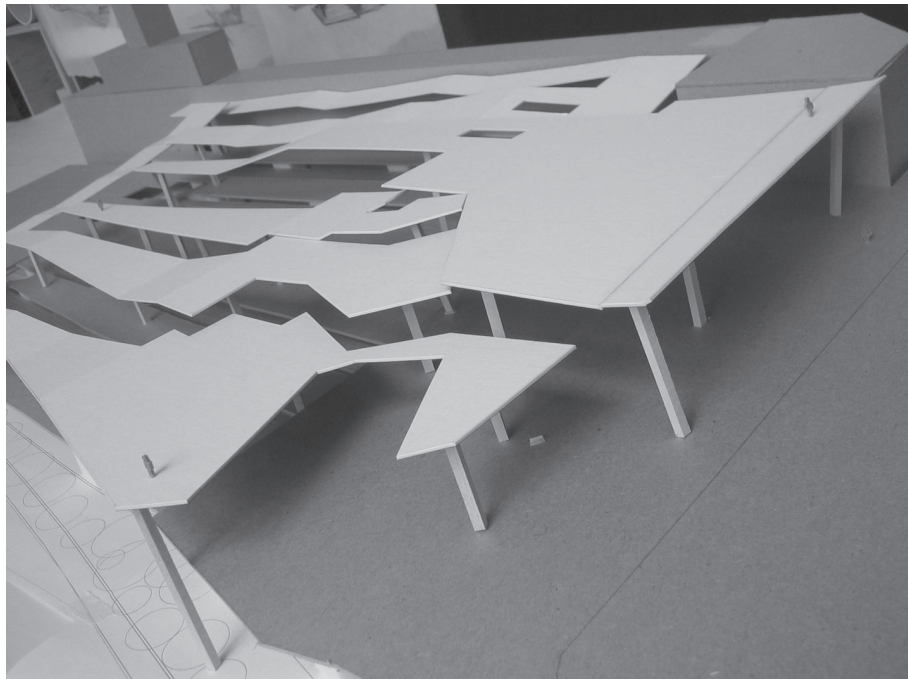
the fluid landscape

design development



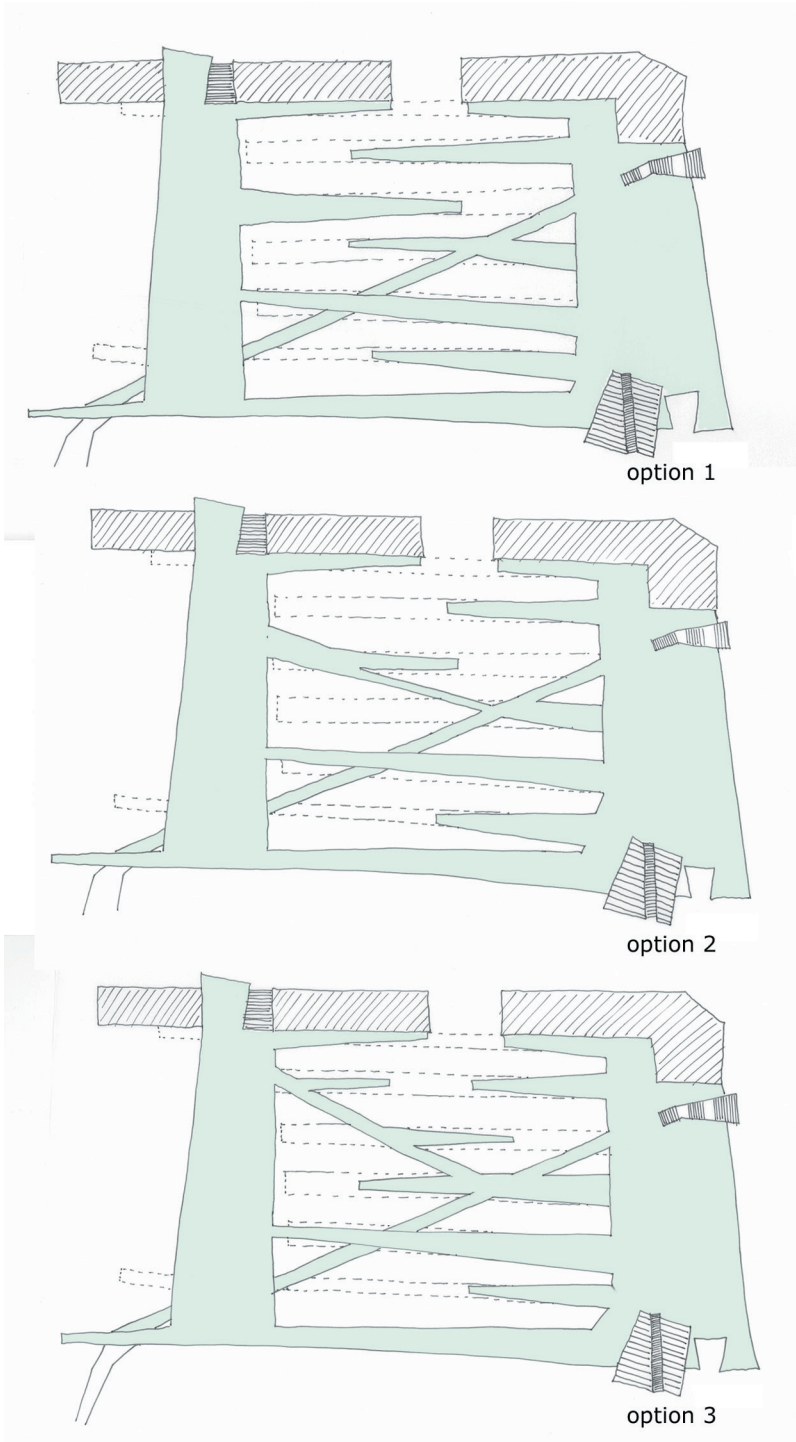
⁴⁰ early sketch model - roof plaza

⁴¹ early sketch model - multidirectional landscape



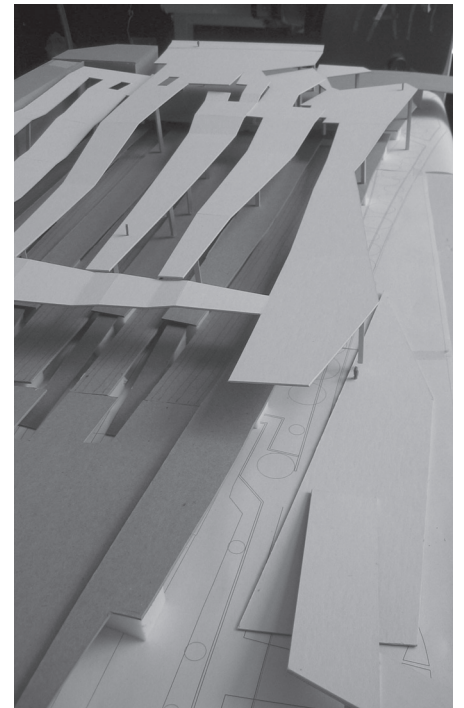
the fluid landscape

design development



⁴² roofscape sketch design options

(below) ⁴³ early sketch model - public space overlooking river



the fluid landscape

design development



⁴⁴ sketch model - landscaped and hardscape plazas

⁴⁵ sketch model - building incision and circulation

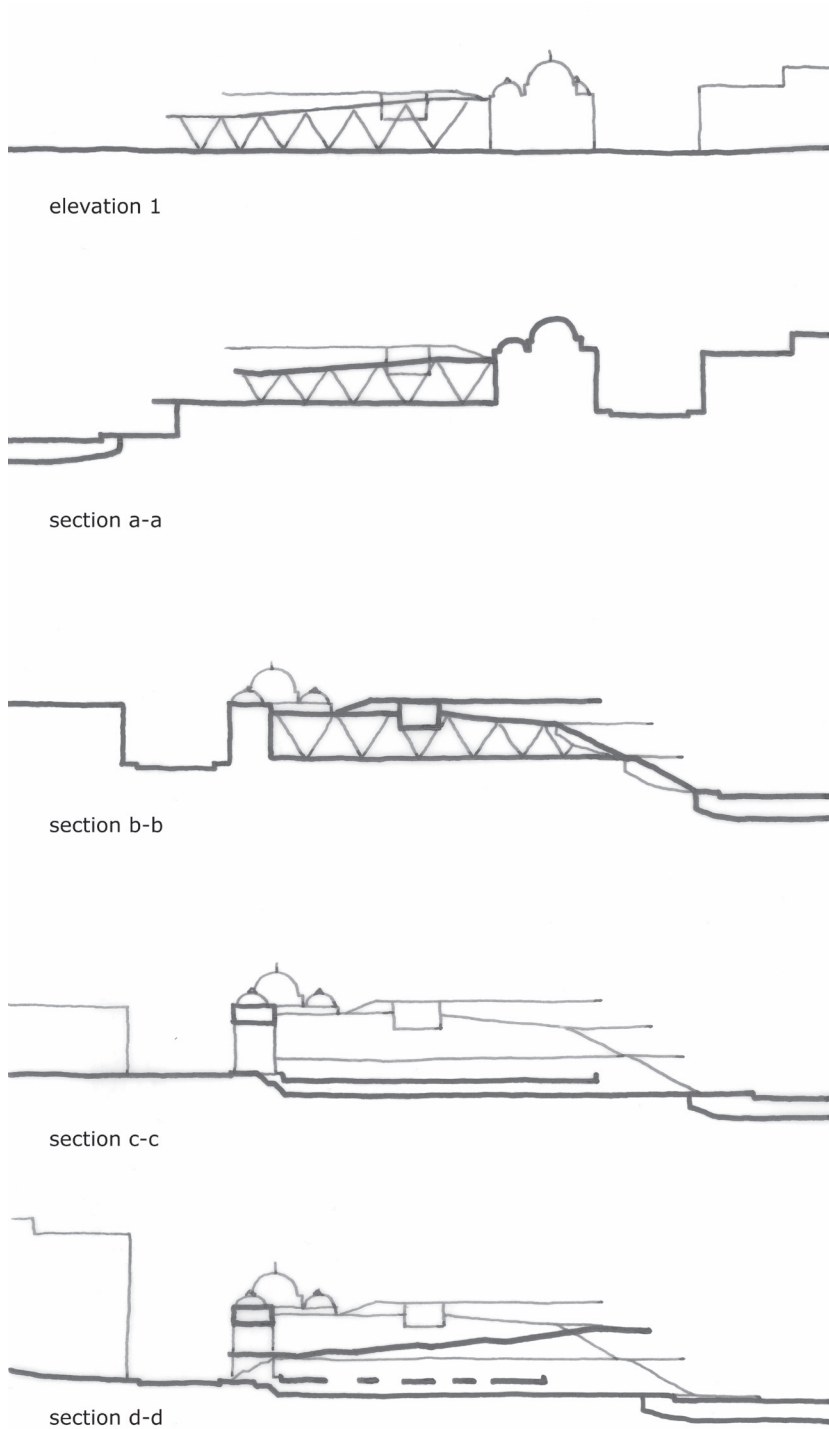


(right, this page) ⁴⁶ sketch model - connections through station



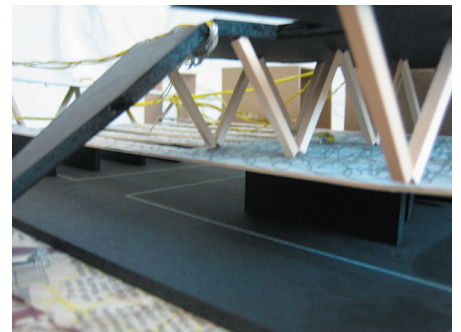
the fluid landscape

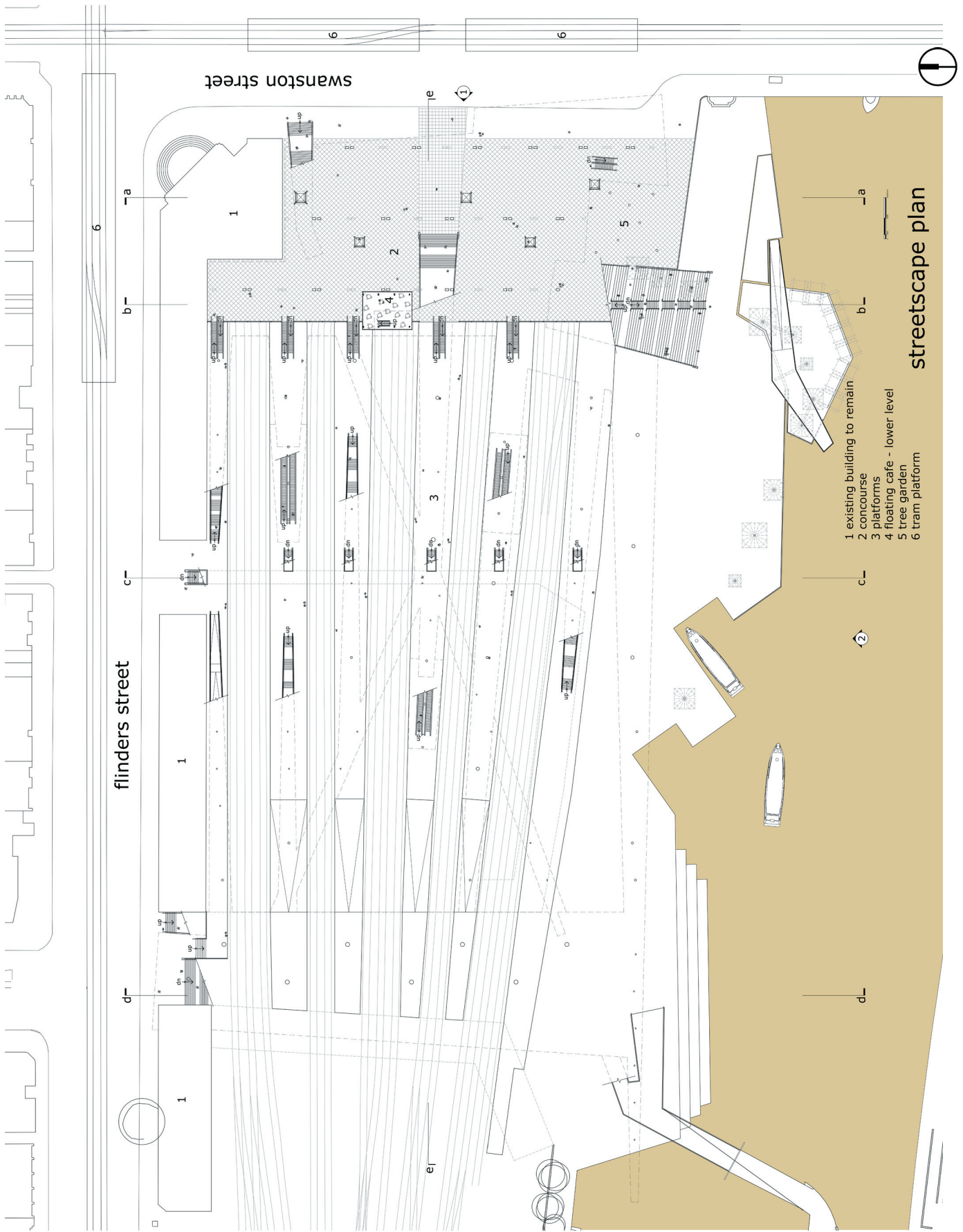
design development



⁴⁷ street section sketches

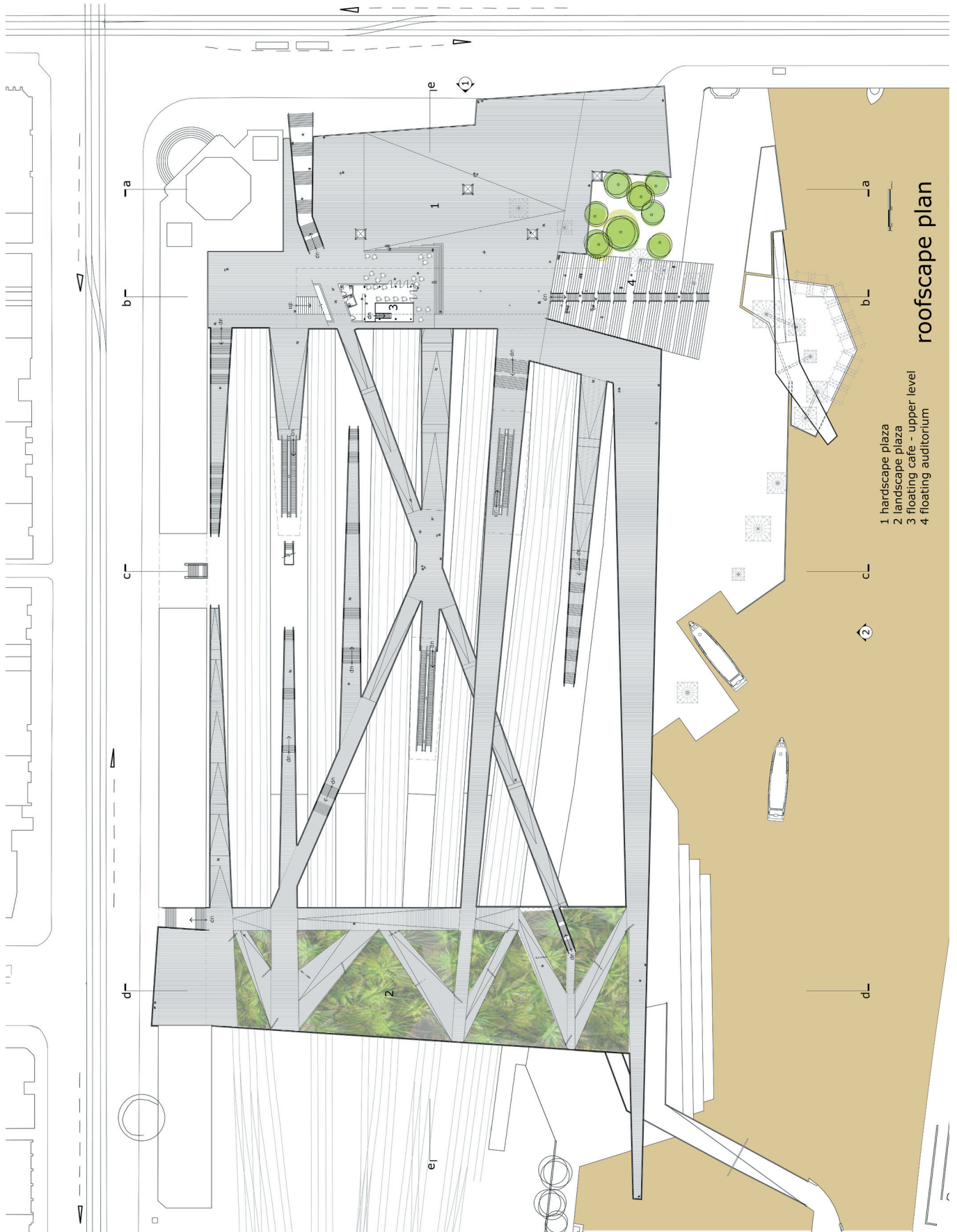
(below) ⁴⁸ sketch model - folding roofdeck over concourse





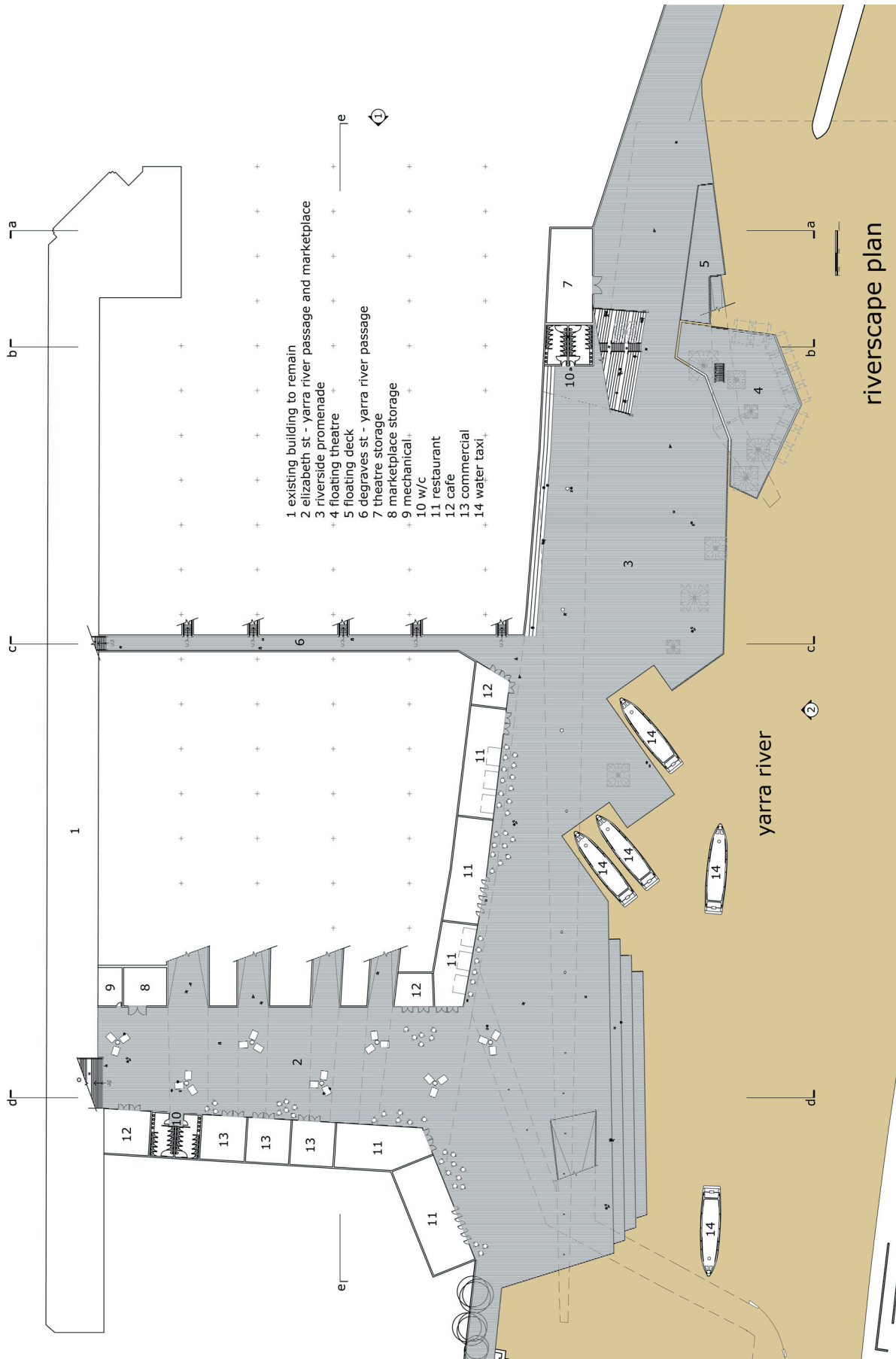
- 1 existing building to remain
- 2 concourse
- 3 platforms
- 4 floating cafe - lower level
- 5 tree garden
- 6 tram platform

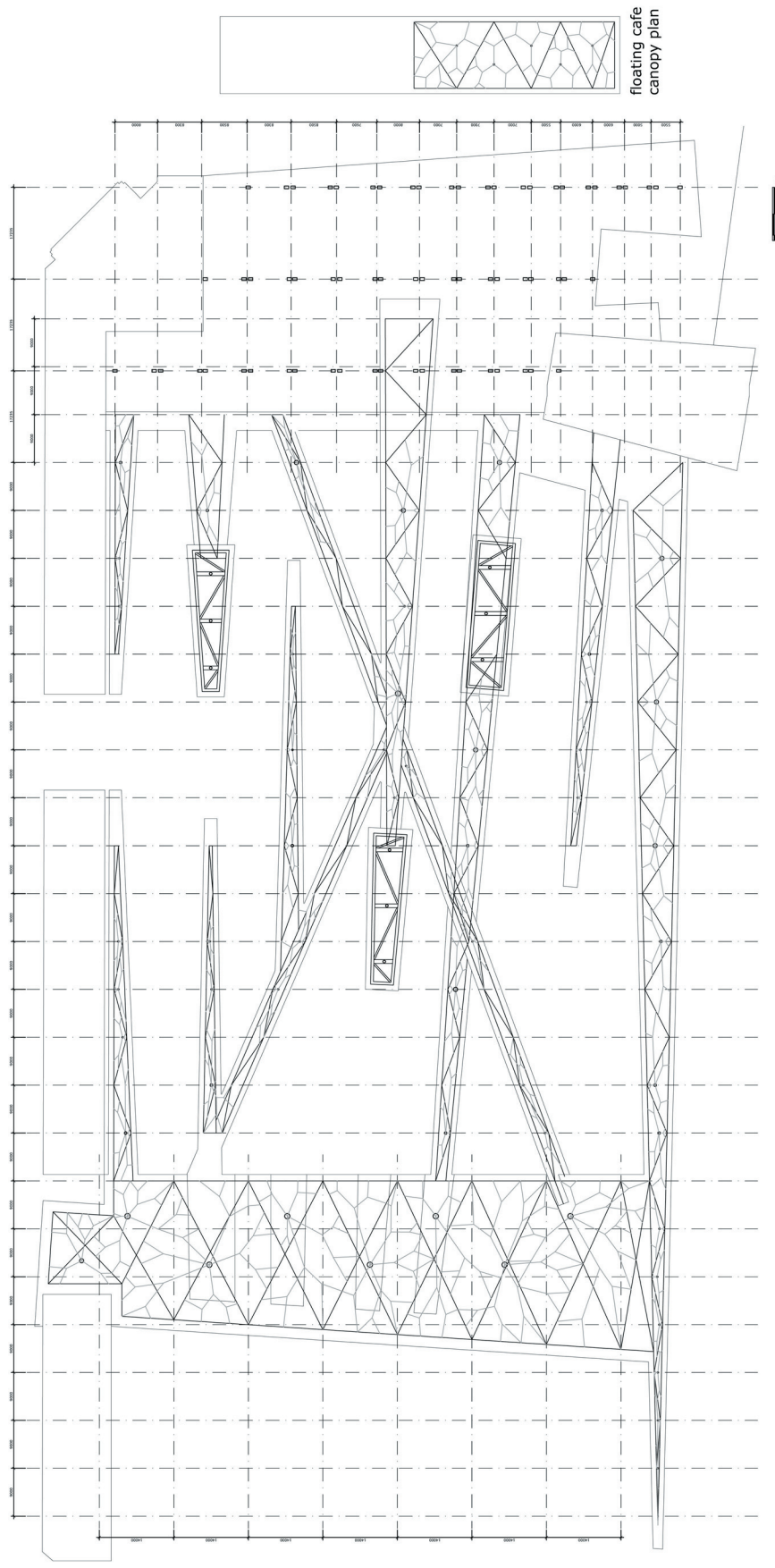
streetscape plan



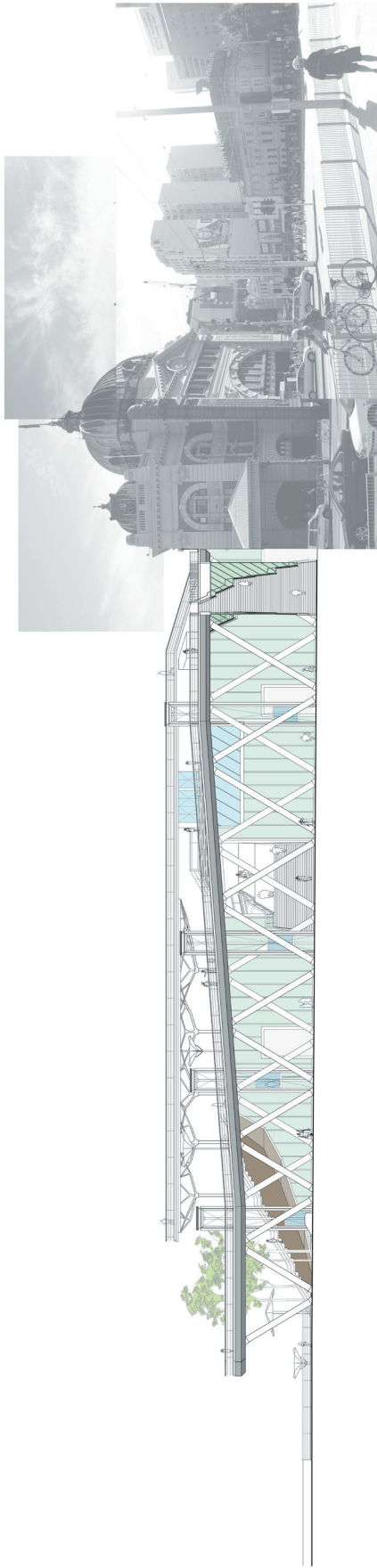
- 1 hardscape plaza
- 2 landscape plaza
- 3 floating cafe - upper level
- 4 floating auditorium

roofscape plan

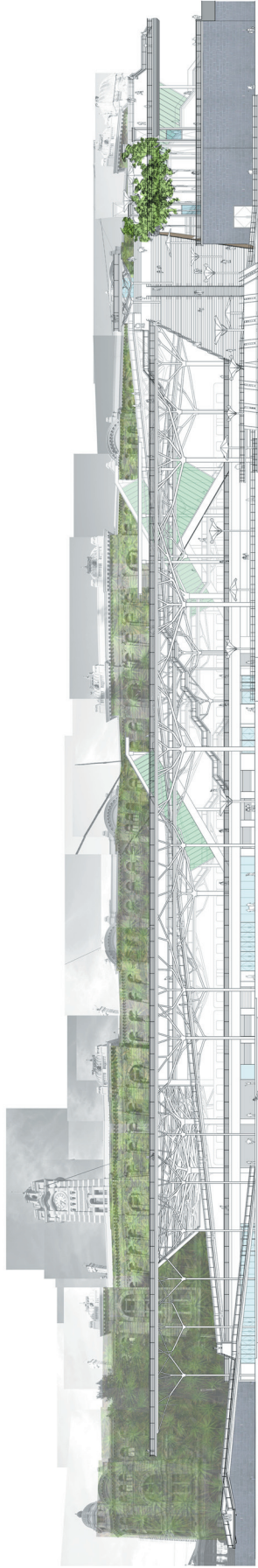




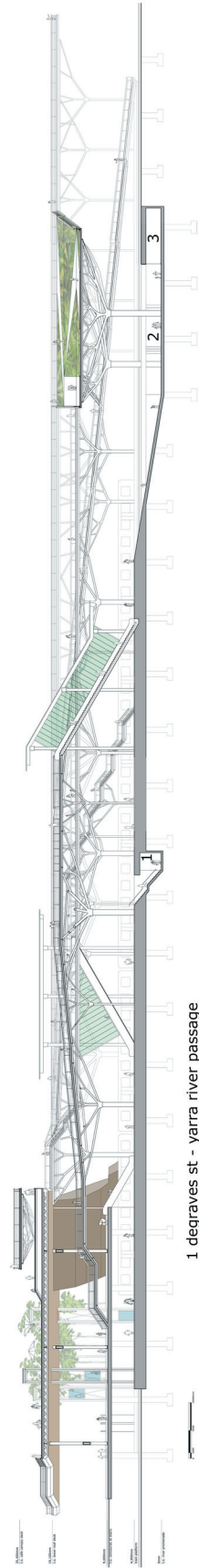
reflected structural plan



elevation 1

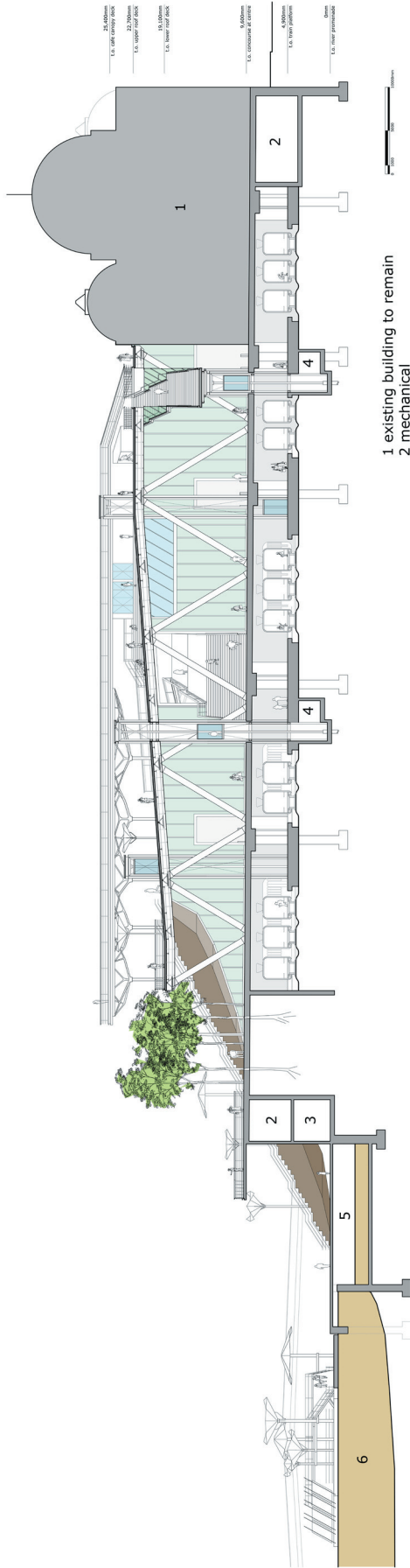


elevation 2

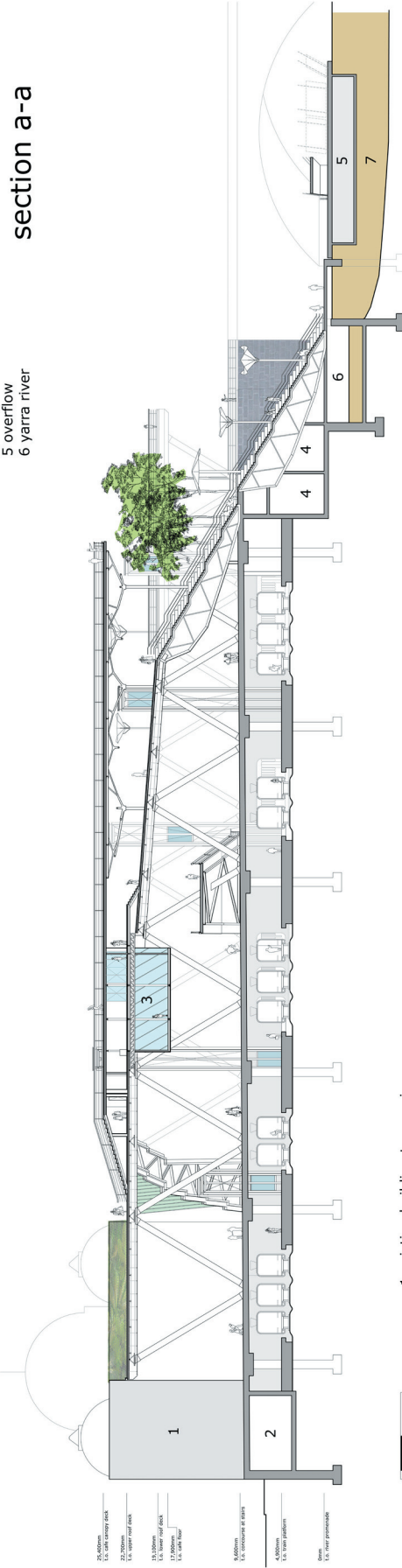


- 1 degraves st - yarra river passage
- 2 elizabeth st - yarra river passage and marketplace
- 3 commercial

section e-e

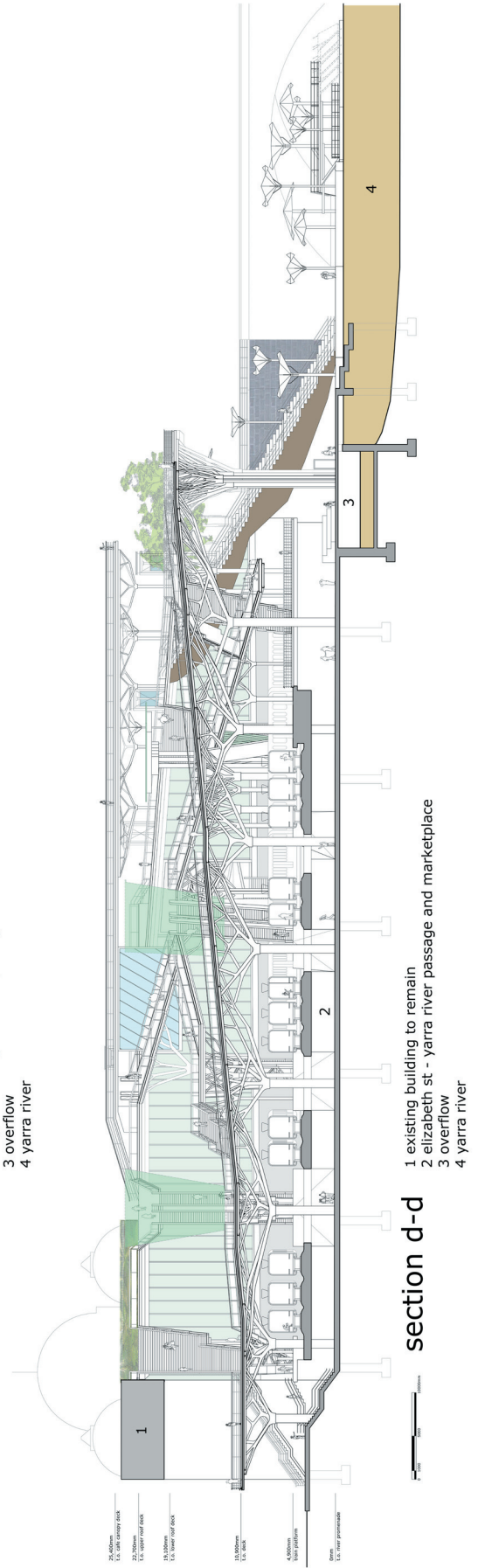
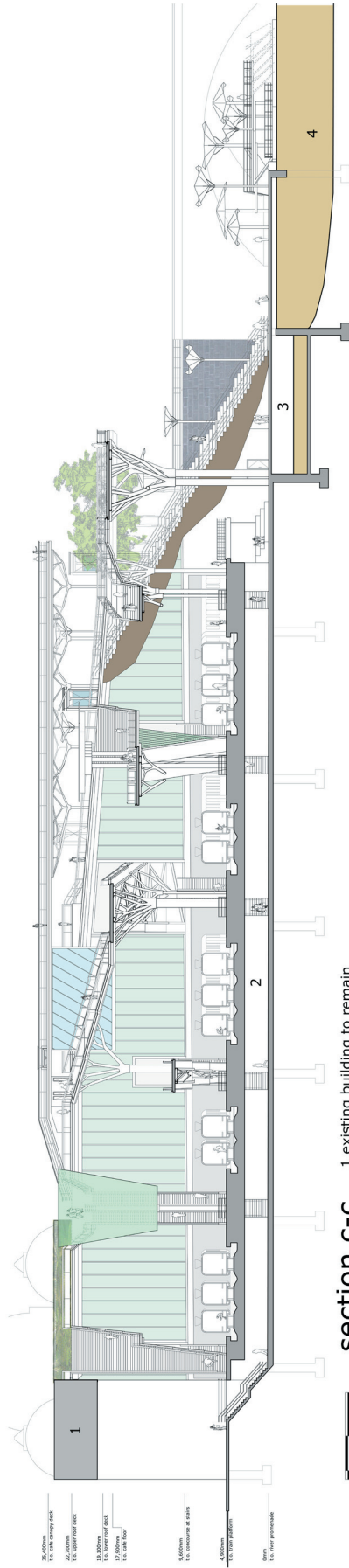


- 1 existing building to remain
- 2 mechanical
- 3 theatre storage
- 4 elevator machine room
- 5 overflow
- 6 yarra river



- 1 existing building to remain
- 2 mechanical
- 3 floating cafe
- 4 w/c
- 5 floating theatre
- 6 overflow
- 7 yarra river

section b-b



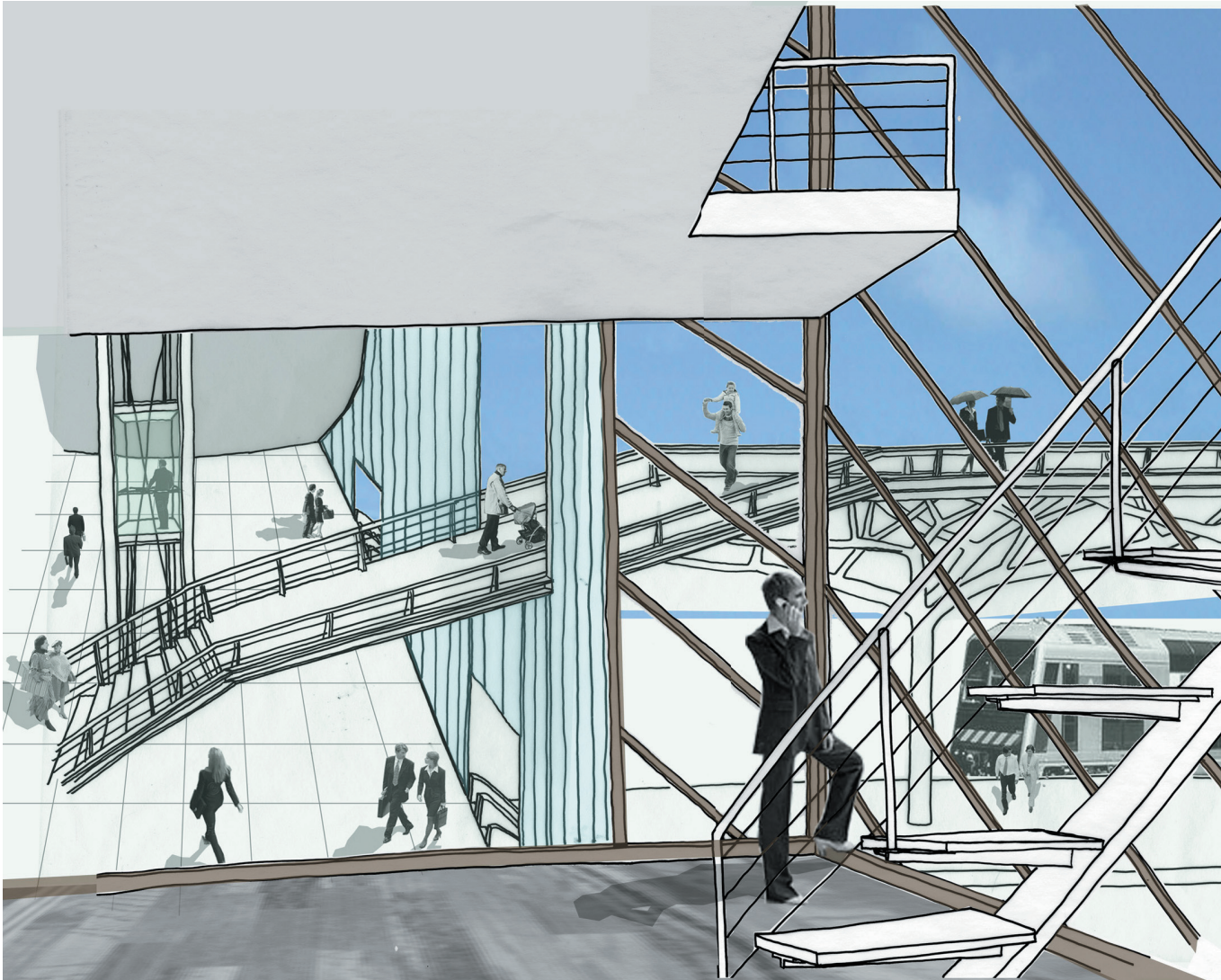
the fluid landscape

movement

This thesis envisions Flinders Station as a new hybrid public urban park at the core of Melbourne at the confluence of river, transit, laneways, and boulevards. Train stations are inherently gateways, and intermittently points of chaos and quiet during the 24-hour day and night cycle. The new design establishes this inherent busyness as the basis for a landscape designed to enhance and intensify this quality. The journey through the station is intended to be a varying and captivating experience. The nature of large transit facilities often requires that passengers traverse long distances by foot. Great train stations of the past have recognized that this journey can be heightened with a spectacular physical setting, the walk through Penn Station in New York City for example was often described as a "magnificent distance"².

The through-movement circulation of the train station is juxtaposed with the introduction of programmatic elements intended to encourage dwelling. These pockets of rest are enticing places from which to observe the hectic choreography of metropolitan life. Trains connect you to the ground as you fly through the landscape. The fingers extruding from the rooftop landscape and touching down to the platforms suggest a connection with the sky, the river, and the greater urban fabric of Melbourne. The station is seen as a place of cultural life, where trains are like moving piazzas rolling by and watching contemporary life in the city.³

(right) 60 dwelling in motion



the fluid landscape

movement

Train stations are environments of continual movement interspersed with spaces of waiting and leisure. The form for the roofscape of Flinders Station is intended to give the impression of freedom of movement and was inspired by Yokohama Pier by Foreign Office Architects and the Maritime Youth House by Plot. Like Flinders Station, these are two examples of hybrid exterior public spaces using form and surface to inspire a feeling of continuous movement and give a sense of access. Both projects utilize a smooth-skin surface to facilitate uninterrupted flow over an artificial landscape. This form of fluid, multidirectional public space transforms the ground into an active surface, essentially an extension of the urban ground.



⁶¹ maritime youth centre by PLOT

(right) ⁶³ yokohama pier

⁶² maritime youth centre public space

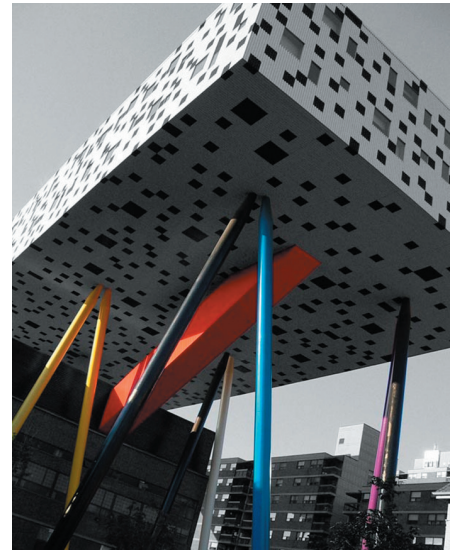


Vertical circulation through the artificial landscape of Flinders Street Station is one of the most significant experiences in the project. Staircases, escalators, and elevators are designed to heighten the experience of moving through this busy environment at the centre of Melbourne. Expansive staircases are periodically broken with large landings to offer points of rest and moments of pause as the user climbs between the platforms and the roofscape. Views from the station alternate between the city skyline to the northeast and the Yarra River with Port Phillip Bay beyond to the southwest. For this reason, the staircases are left open in order to enhance the visual spectacle of the train station scene playing out below. A stair of similar size connecting the new addition and existing portion of the Ontario College of Art and Design project in Toronto by Will Alsop highlights the potential that can be lost from fully enclosing such dramatic circulation elements. Circulating between the two OCAD buildings via one grand exterior stairway should be one of the most interesting moments in the project, but unfortunately the user cannot see clearly through the pink glazing to appreciate the significance of the experience. The view of the city, the streetscape below, and shadow of the mass hovering overhead is regrettably wasted.

Escalators glazed with vision glass in three locations provide a moving element to further enhance the juxtaposition of slow and fast spaces in the station. The hurried commuter can plan a route that includes an escalator to speed up travel and waiting times. The leisured pedestrian is offered a moment of respite to observe what is going on within the station and the area beyond passing between the timely environment of the train platforms and the wandering nature of the urban park above. The vision of travelers gliding up and down behind the glass is a similar feature to the iconic central core of Terminal 1 in the Charles-de-Gaulle Airport by Paul Andreu. The inner courtyard of the airport is crisscrossed by six moving walkways hanging above a large fountain, reinforcing the airport, like a train station, as an environment of travel, animating the space and facilitating movement.⁴

the fluid landscape

movement



⁶⁴ OCAD connecting stairway

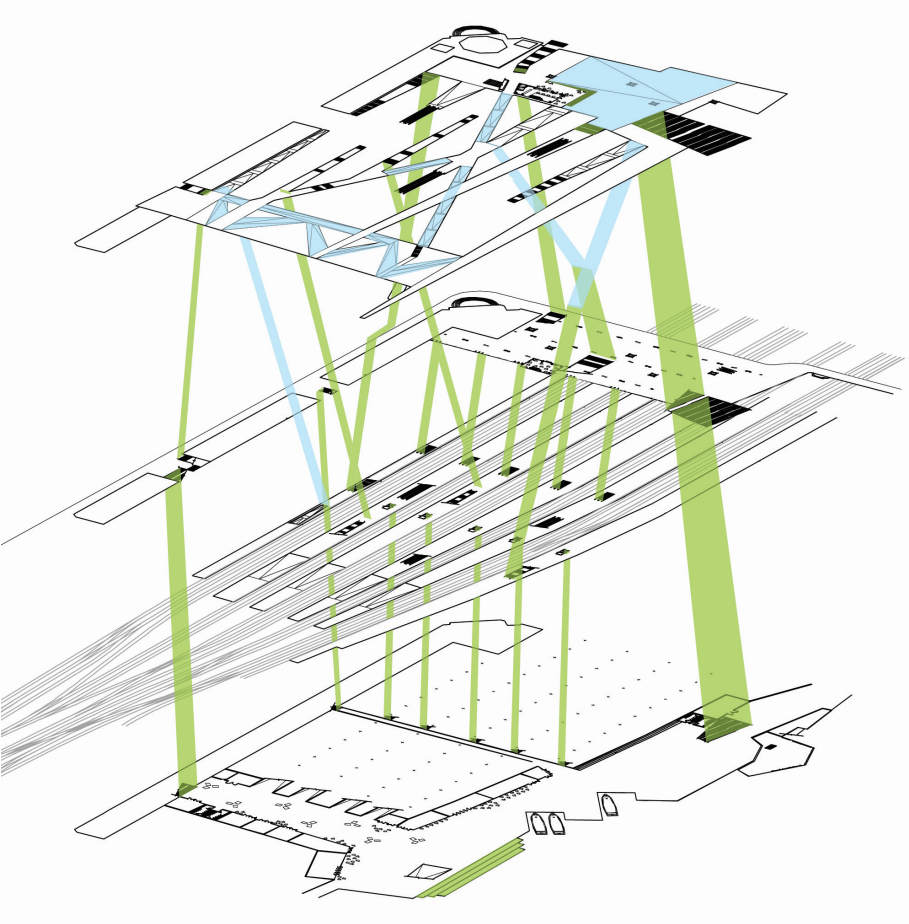
⁶⁵ terminal 1, charles de galle airport, central core



the fluid landscape

movement

- ramps
- stairs

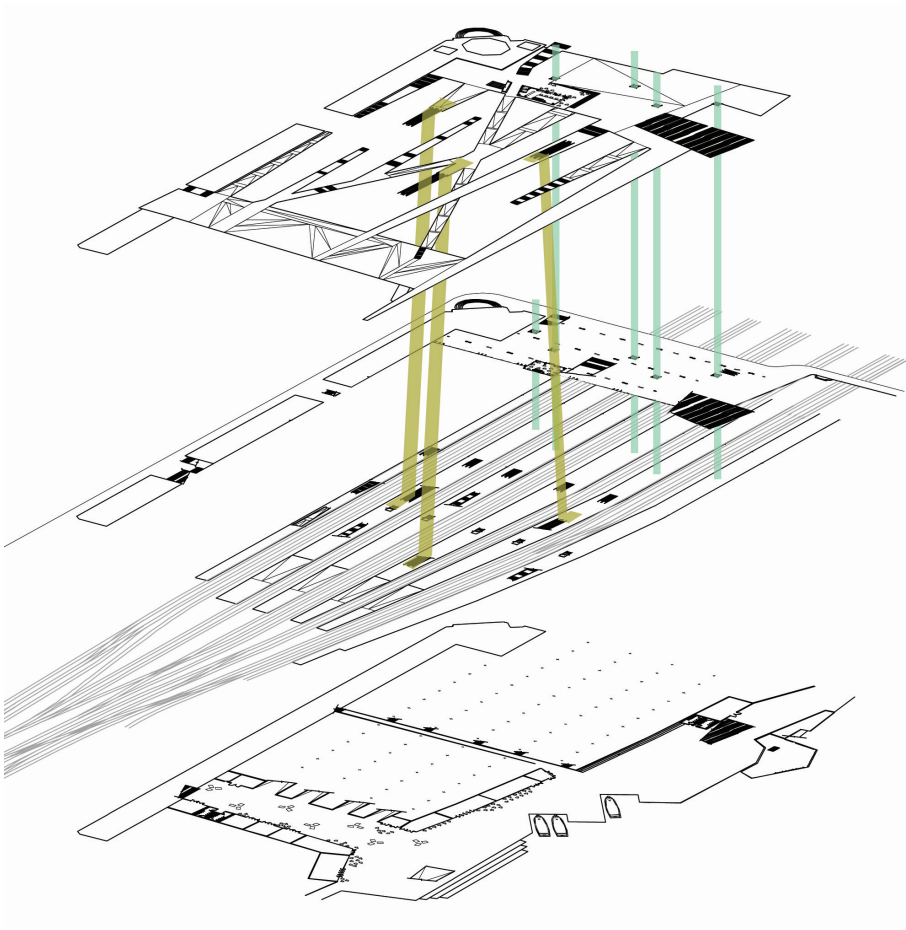


66 circulation: stairs and ramps

the fluid landscape

movement

-  elevators
-  escalators



⁶⁷ circulation: elevators and escalators

the fluid landscape

The complexity of user groups in the new station will increase the effervescence and excitement both as an urban destination and as an urban entrance. Commuters filtering twice daily through the station will become learned navigators of the new landscape, timing their train departures with the most efficient route through the site, or lingering in the compulsive time between work and home where increasing amounts of everyday life will be spent.⁵ The person for whom the river or roofscape is the destination point for leisurely activities will find an extension of the riverside promenade stretching

movement

⁶⁸ existing movement through site



across the station with viewpoints and places of dwelling. The city-dweller and pedestrian will have access to a new central park where now parkland clings only to the fringes of the city centre. New circulation routes provide access throughout and beyond the site. Visitors to the station for arts and cultural events can arrive by train and attend a theatre presentation right on the rivers edge or stroll through an art exhibit on the landscaped roof. The project essentially provides unimpeded flow between the city and the river, opening the backdoor of the city to a fluid landscape of pleasure.

the fluid landscape

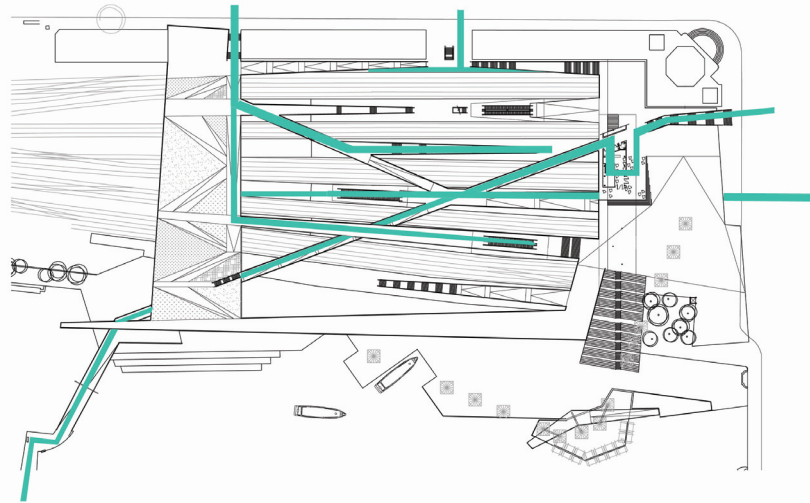
movement

⁶⁹ proposed movement through site



the fluid landscape

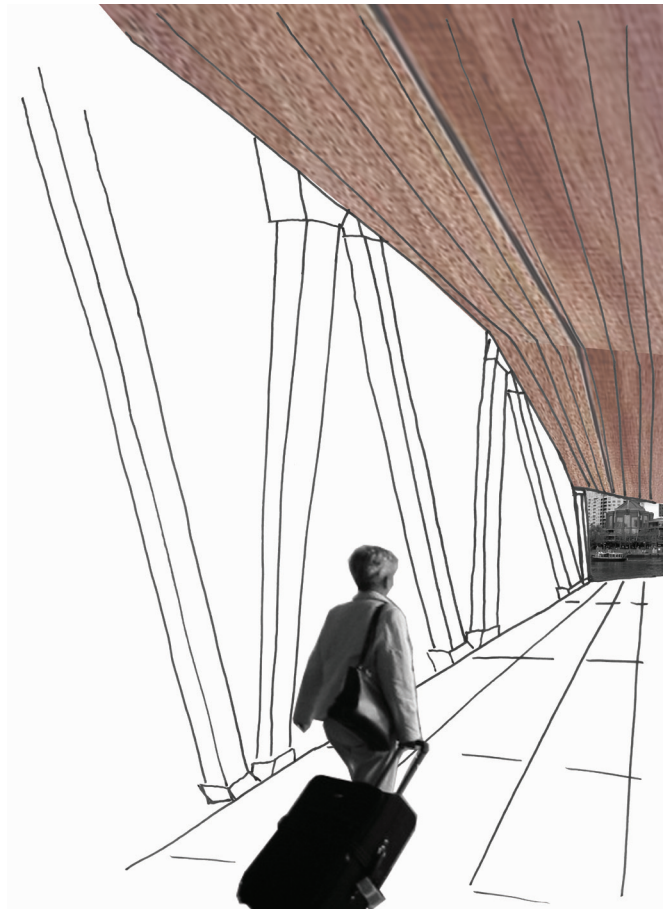
movement
possible commuter circulation

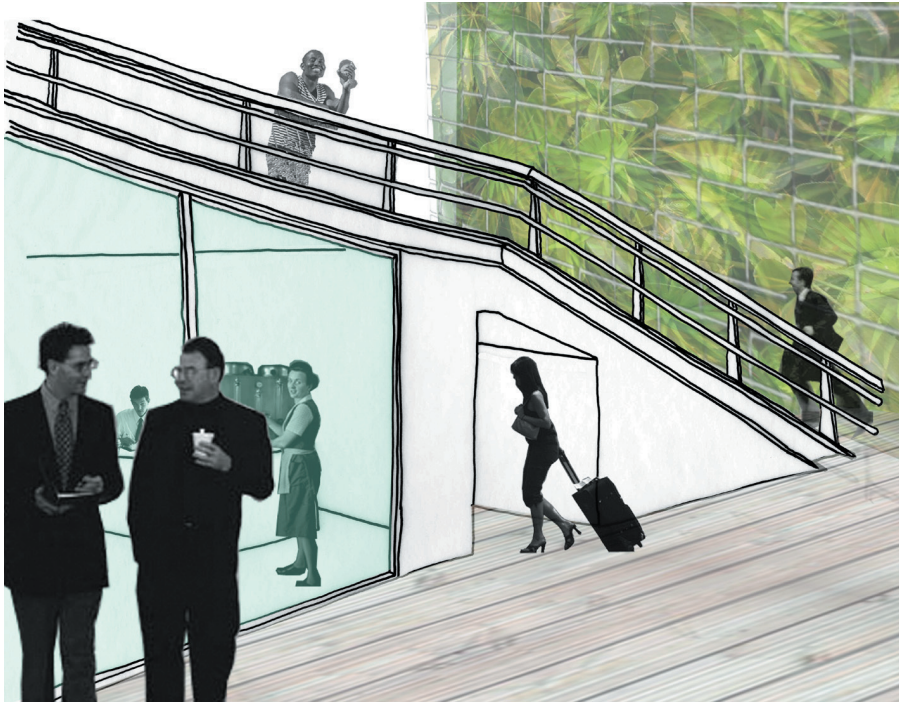


(top) 70 commuter circulation diagram

(right) 71 walking through concourse

(bottom) 72 arrival by train



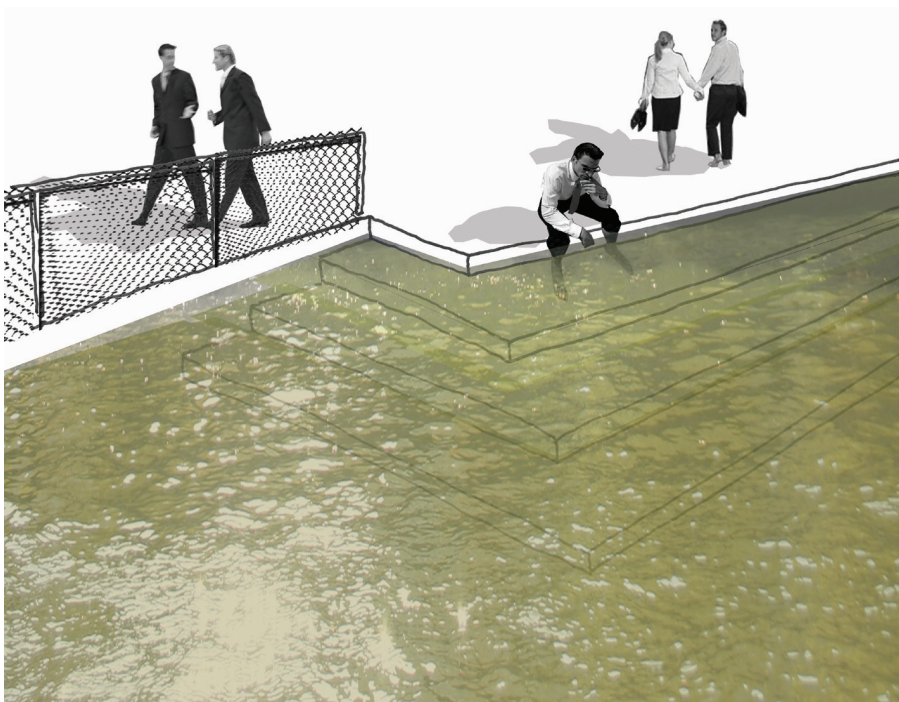


the fluid landscape

(top) 73 grabbing a coffee

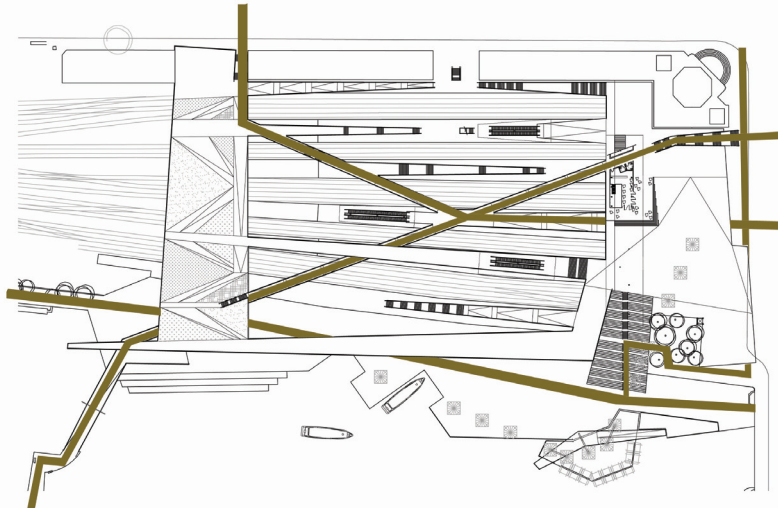
(bottom left) 74 resting by the yarra

(bottom right) 75 waiting



the fluid landscape

movement
possible pedestrian circulation

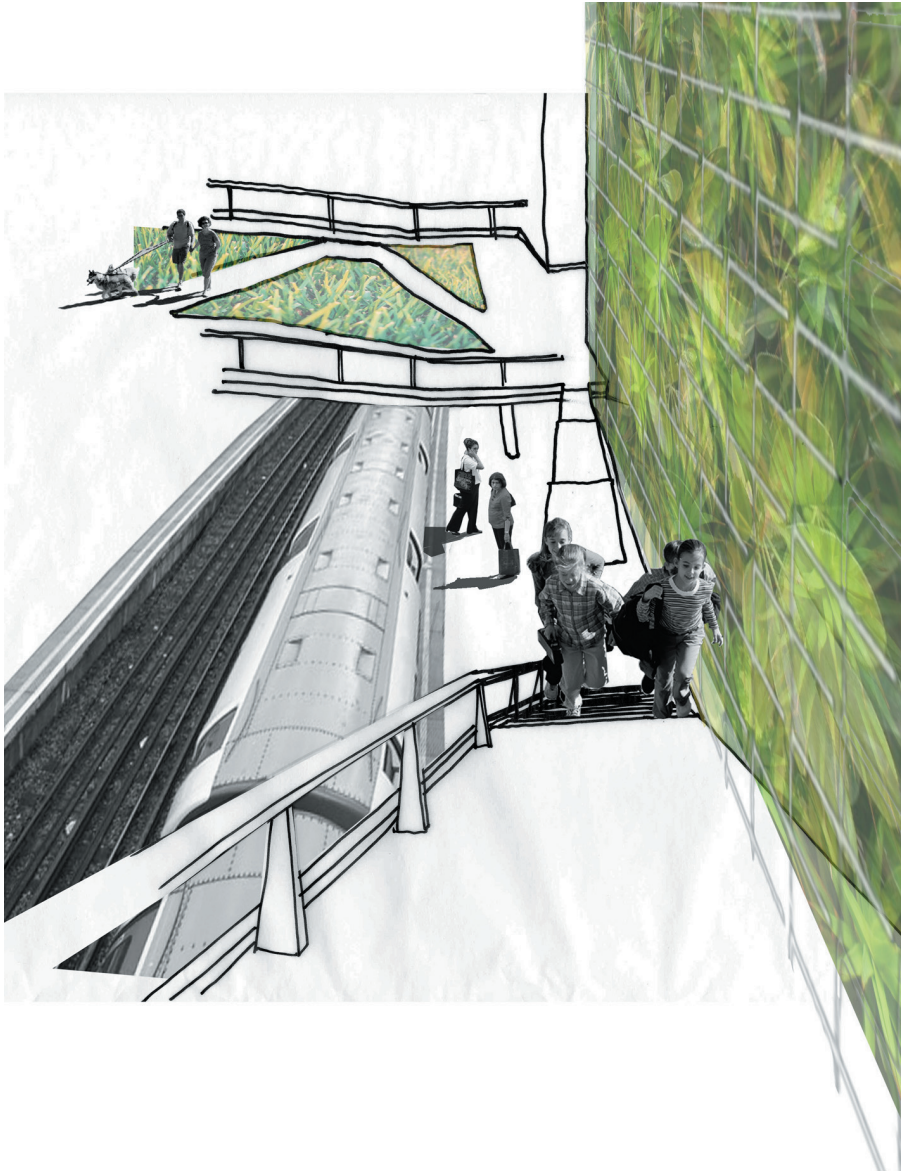


(top) 76 pedestrian circulation diagram

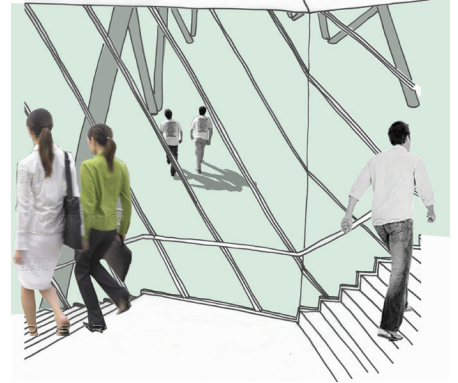
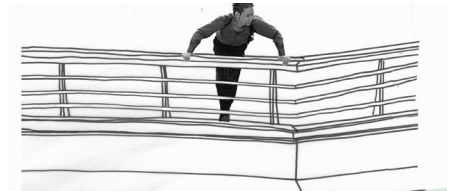
(bottom left) 77 walking through - day

(bottom right) 78 strolling





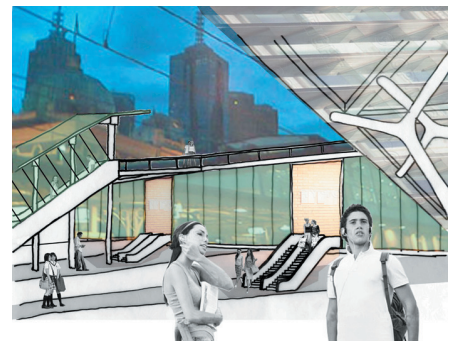
the fluid landscape



(top left) 79 cutting through

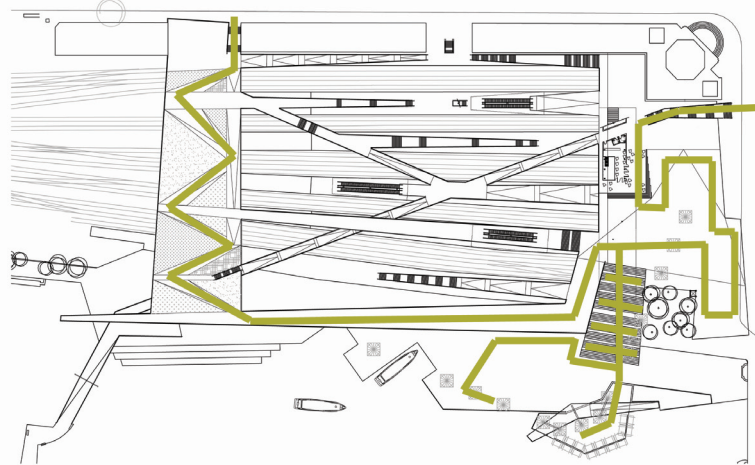
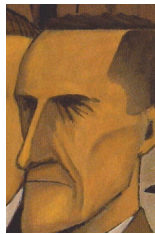
(top right) 80 taking the stairs to fed square

(below) 81 walking through - night



the fluid landscape

movement
possible arts/culture circulation



(top) 82 arts and culture circulation diagram

(above) 83 outdoor festival at fed square

(right) 84 morning tai chi

the fluid landscape



(left) 85 marketplace

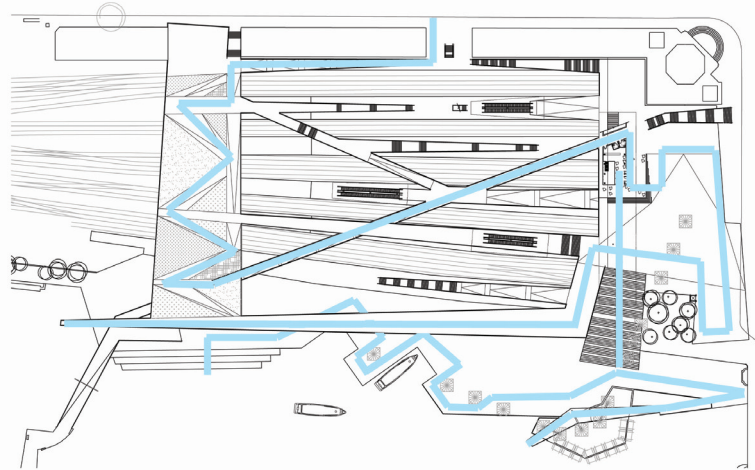
(below) 86 theatre on the yarra

(bottom) 87 dance performance on the yarra



the fluid landscape

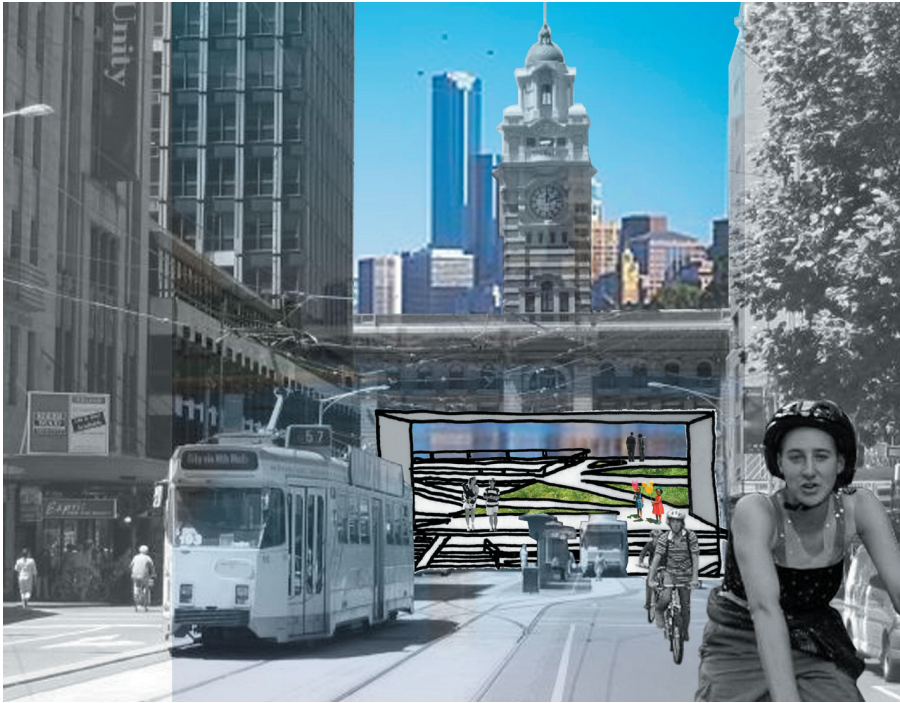
movement
possible leisure circulation



(top) 88 leisure circulation diagram

(above) 89 yarra river viewpoint - day

(right) 90 evening in the plaza

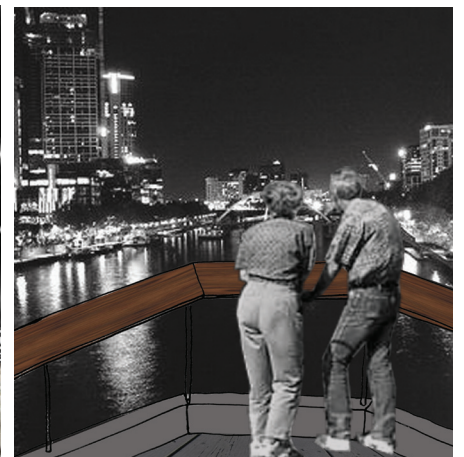


the fluid landscape

(right) 91 approaching from elizabeth street

(bottom left) 92 watching fed square

(bottom right) 93 yarra river viewpoint - night



the fluid landscape

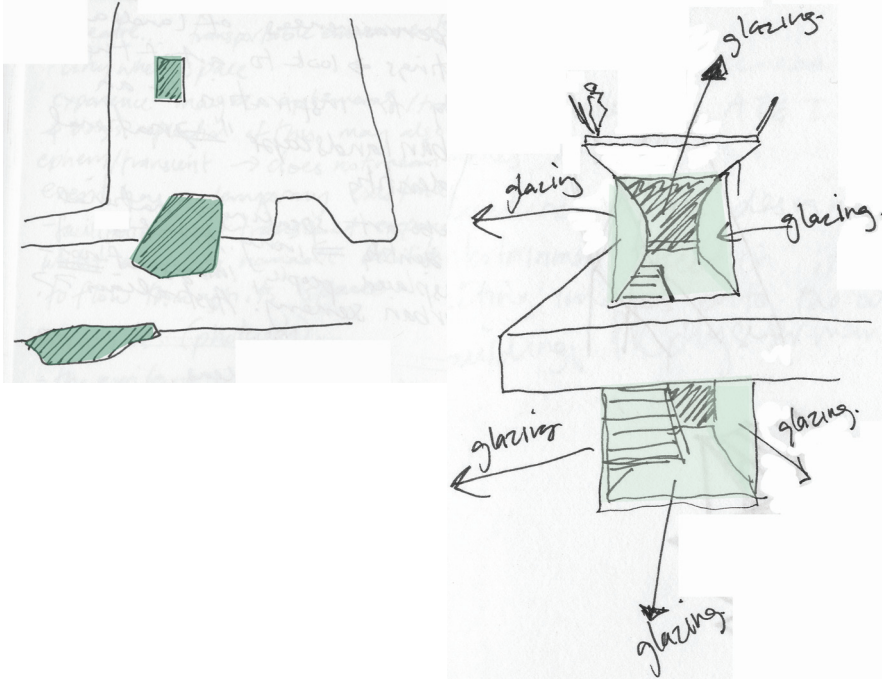
elements:
floating objects and structure

Suspended in this urban parkland are three 'floating objects': A café, an outdoor auditorium, and a theatre on the Yarra River. Injected in an otherwise uninterrupted fluid landscape, the essence of these objects plays with the spirit of the permanent transience of the train station environment. In keeping with the tradition of many great train stations by having a signature restaurant or café that becomes a well-known destination point in itself, such as the legendary Oyster Bar in Grand Central Station, New York, the café at Flinders Station is intended to act as a station centrepiece. The café hovers between the roofscape and the concourse, hanging from the ceiling and poking up from the ground. Glazed on three sides, this aerie overlooks all parts of the station. The scale of this space is intended to provide a place of juxtaposition with the vastness of the concourse and platform waiting area from where people can watch the trains rolling by and the people rushing through. Whether killing time before the next train, grabbing a coffee on the way to the office, or meeting friends for a drink, the café provides a crucial element of any urban public space: an enticing and comfortable environment from which to see and be seen.

On a much larger scale, the outdoor auditorium is open to the air and looks out over the river promenade and Southbank precinct. Visually, from the roof, it is an extension of the ground surface folding down to connect the roofscape with the riverscape. From within the concourse however, it appears as a large, shapely object bulging out from the ceiling and seemingly hovering just off the ground. The ceiling finish material stops just short of connecting with the suspended object in order to reinforce the impression of an object floating within a vast space. Functionally, the outdoor auditorium provides seating for the theatre floating at the river's edge. At first glance, this theatre seems to be no more than an extension of the riverside promenade. However, in the spirit of the river to which it belongs, it is in a state of permanent transience, always resting at a point from which it can break from terra firma and float into the unknown. Like the café and the auditorium, the theatre visually refrains from disappearing into the station environment and instead slips away from the smooth, fluid landscape to hover in space. The station provides an anchoring point for this drifting stage, which can freely navigate the Yarra River to cater to Melbourne's abundance of cultural events and riverside festivities.

the fluid landscape

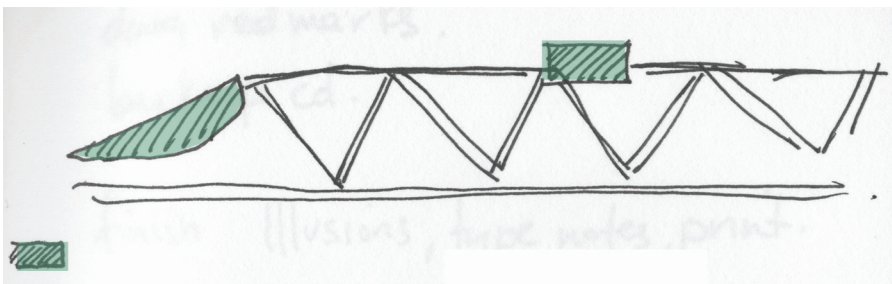
elements:
floating objects and structure



(top left) 94 floating objects - plan

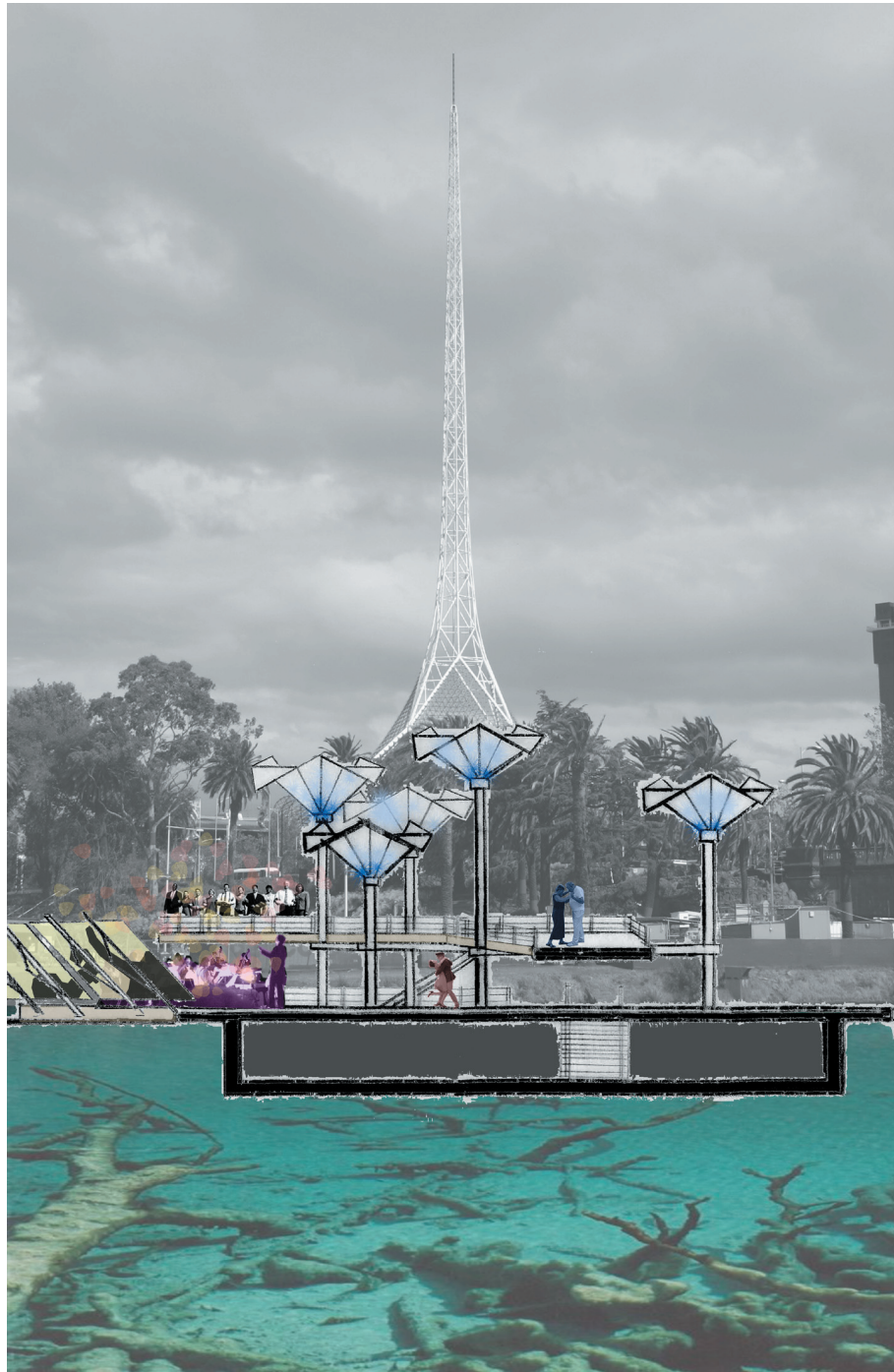
(top right) 96 suspended café

(bottom) 95 floating objects - section



the fluid landscape

elements:
floating objects and structure



the fluid landscape

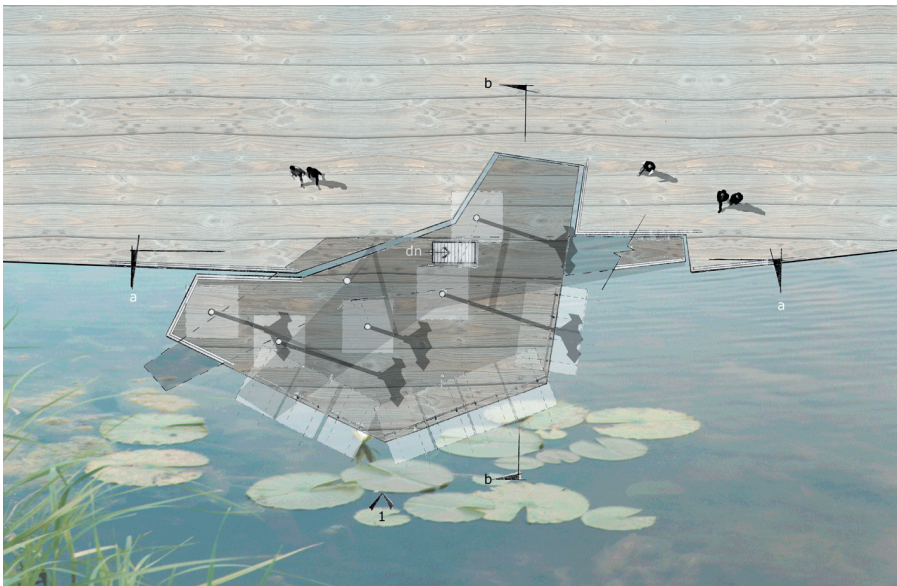
elements:
floating objects and structure



(top) 97 floating market on the yarra

(bottom) 98 floating theatre - plan

(left) 99 symphony on the yarra



the fluid landscape

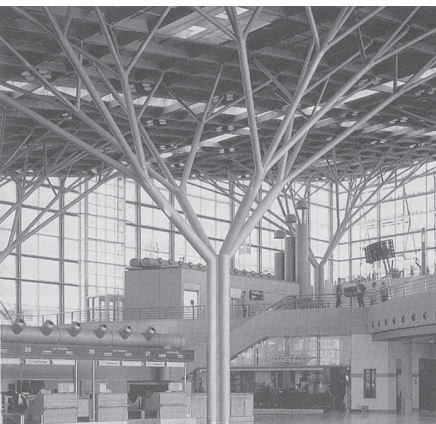
elements:
floating objects and structure

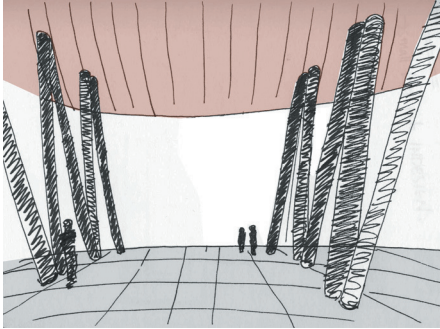
(top) 100 stuttgart airport terminal

(bottom) 101 stuttgart airport 'forest'

Traditionally, train station architecture is a platform for the celebration of structural innovation and technological advances. Certainly, during the Industrial Revolution, a revolution that took place before the creation of the Australian Nation, the breathtaking interior spans of station architecture embodied physical proof of the leaps and bounds made by science and the modernization of cities afforded by the machine. As urban gateways, the structural feats accomplished in grandiose railway architecture reinforce the importance of the city entrance point. Two main structural systems are utilized for interior and exterior spaces at Flinders Station. A grid constructed of slanted steel columns support the roof in the concourse area. These large members hold the roofscape high above the urban ground plane, keeping with the tradition of grand train station entry halls. This diagonal strut structure is echoed in the long-span staircases and escalators, similarly acting as large diagonal structural struts.

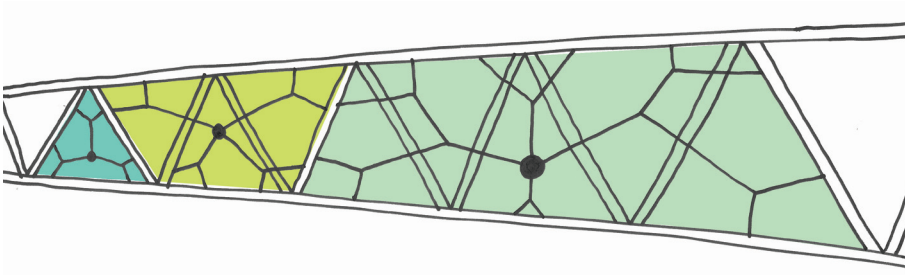
In the exterior, the finger-like extensions of the roofscape stretch over the platforms acting as canopies and touch down lightly to the ground. Tree-columns support these exterior canopies in a semi-random pattern creating a 'forest' in the urban park. A relevant precedent for this project is the Stuttgart Airport by Von Gerkan, Marg & Partner Architects, similarly a large open space that uses giant steel tree-columns. A regular grid is laid over the plan of Flinders Station and then crisscrossed to form a triangulated grid pattern. A triangular grid offers more structural strength and stability than a square grid would for the long, slender forms of the canopies. Three sizes of tree-columns are alternatively rotated and unevenly spaced throughout the grid. The tree branches split as they rise and eventually connect to points on the triangulated grid forming a scattered system of steel trees. The intricate structure of this forest is fully exposed, with the complexity lending to the chaotic, yet timely nature of the platform area. In the concourse, the overhead structure is hidden behind a smooth dropped ceiling of Tasmanian red gum wood planking running perpendicular to the river and reinforcing freedom of movement towards it.





the fluid landscape

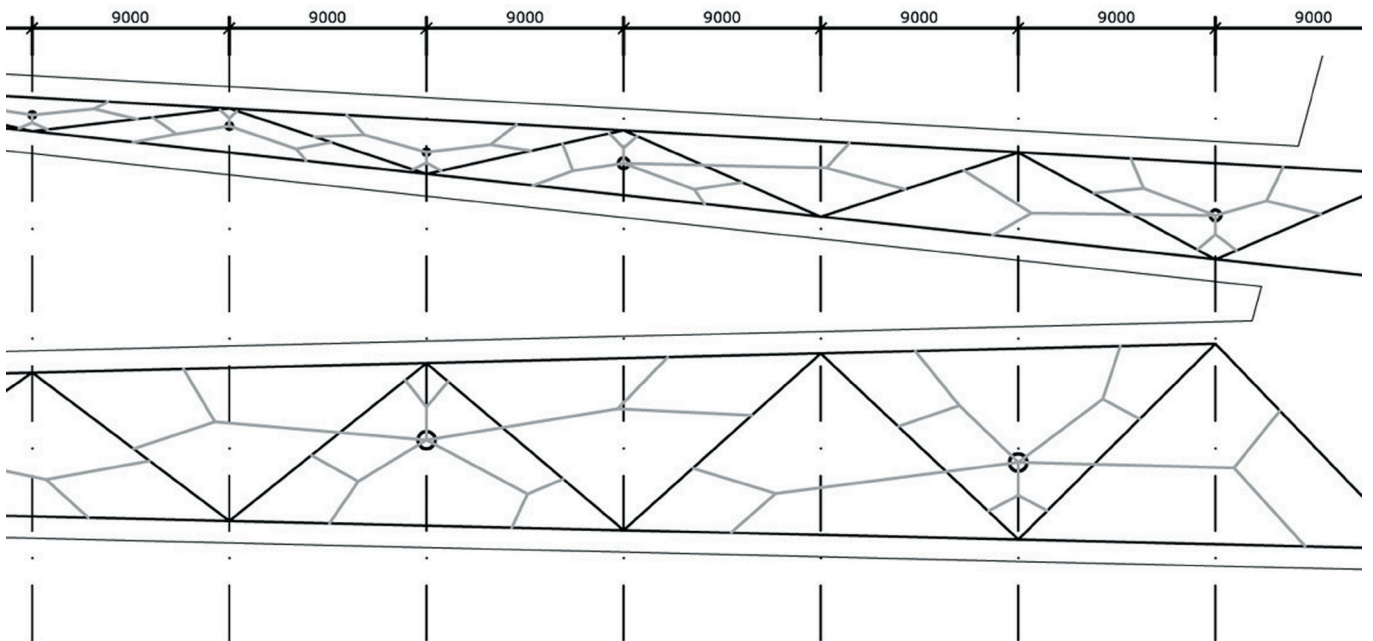
elements:
floating objects and structure



(top) 102 concourse structural sketch

(middle) 103 three tree column sizes sketch

(bottom) 104 platform structural grid detail

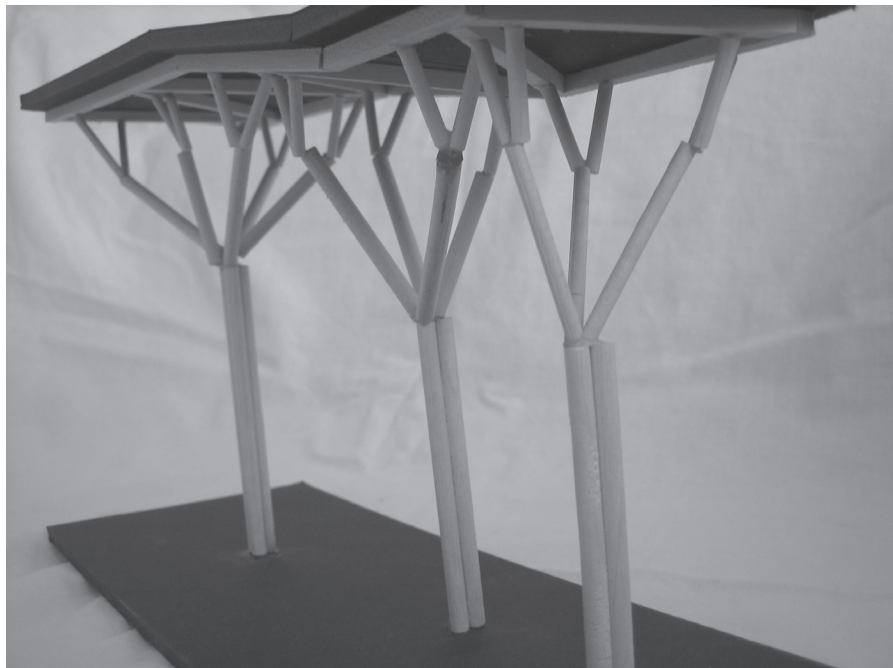


the fluid landscape

elements:
floating objects and structure



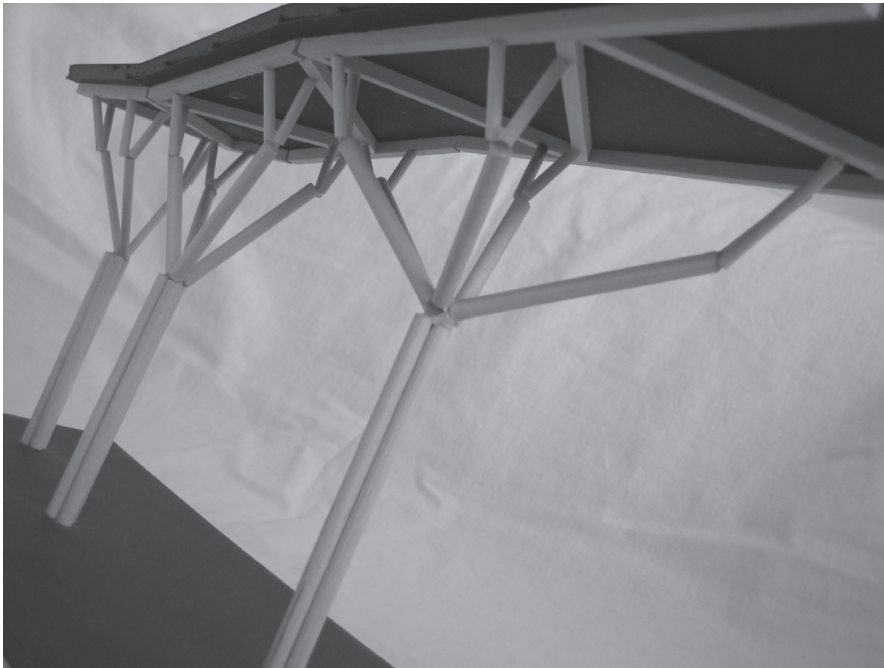
105, 106, 107, 108 structural tree sketch model





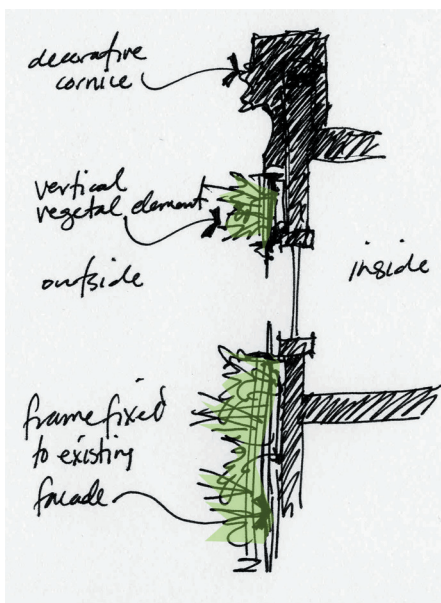
the fluid landscape

elements:
floating objects and structure



the fluid landscape

details: vegetal wall and materiality



109 vegetal wall sketch

As part of the parkland for the project, a porous vegetal wall is fixed to the south side of the existing station administration building. This screen of vegetation provides a vertical green element to the park and a natural buffer between the existing and new construction. The wall is constructed of a structural steel skeleton and a soil substrate fixed to the existing building wall. This structure allows a space between the existing building and the vegetative layer so that stresses applying to the building structure do not affect the vegetal wall. The wall requires minimum maintenance due to water and air networks running through the substrate, making irrigation and fertilization functions automatic. Vegetal wall technology developed in France for the vertical garden at the Musée du Quai Branly innovatively filters and treats air pollution through the introduction of specific bacteria to the wall substrate. When combined with selected plantings, the wall thus acts as a “biofilter that fixes pollutants through physicochemical phenomena”.⁶ The leafy surface and absorbent substrate of the wall will act as a phonic insulator to the inherently loud environment of the station. Drainage from the roof to the vegetal wall supports an urban infrastructure quality essential in a city plighted with drought as often as Melbourne. The wall is a living, breathing component of the project and will grow and change with the infamous Melbourne climate, known to see four seasons all in one day. Through the use of different substrates, a large variety of native plants and flowers can grow, offering a changing display of natural colours and textures throughout the seasons and the year.

Two wall sections have been developed to a high level of detail, outlining the two typical structural conditions in the project. Wall section 1 is cut through the roof deck and train concourse with the large truss columns and concealed super structure. A suspended ceiling of Tasmanian red gum timber slats forms a smooth ceiling finish running towards the river. The typical roof deck is finished with natural teak decking, also running perpendicular to the river. Exterior lighting elements are sunk into the built up roof deck and sit in the horizontal C-channels, continuing around the edges of the roofscape. Wall section 2 shows a typical tree column condition in the platform area or at the landscaped roof deck. Lighting elements in the tree branches shine upwards to the underside of the canopies, illuminating and reflecting off corrugated steel sheeting. At the base of the trees the structure is cut away to provide electrical access for the market stalls under the landscaped deck and to conceal ground lighting. Finish materials are to be natural and native to Australia wherever possible, with a high level of durability suitable for the busy train station environment.

110 musée de quai branly, paris





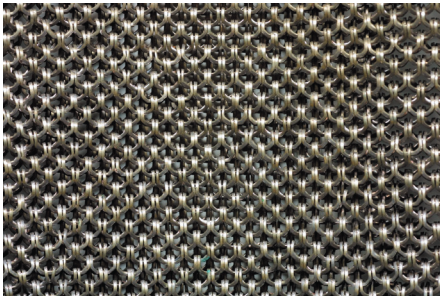
greenery



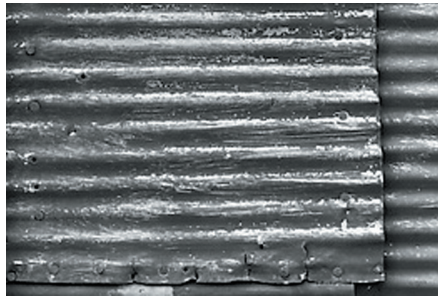
tasmanian red gum

the fluid landscape

details:
vegetal wall and materiality



steel mesh



corrugated aluminum

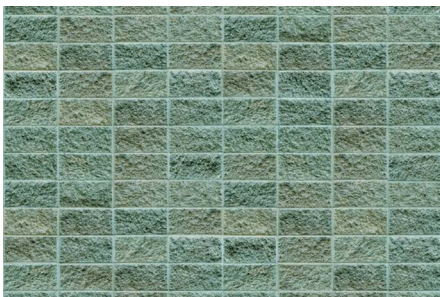
¹¹¹ material palette



green tinted glass



teak decking



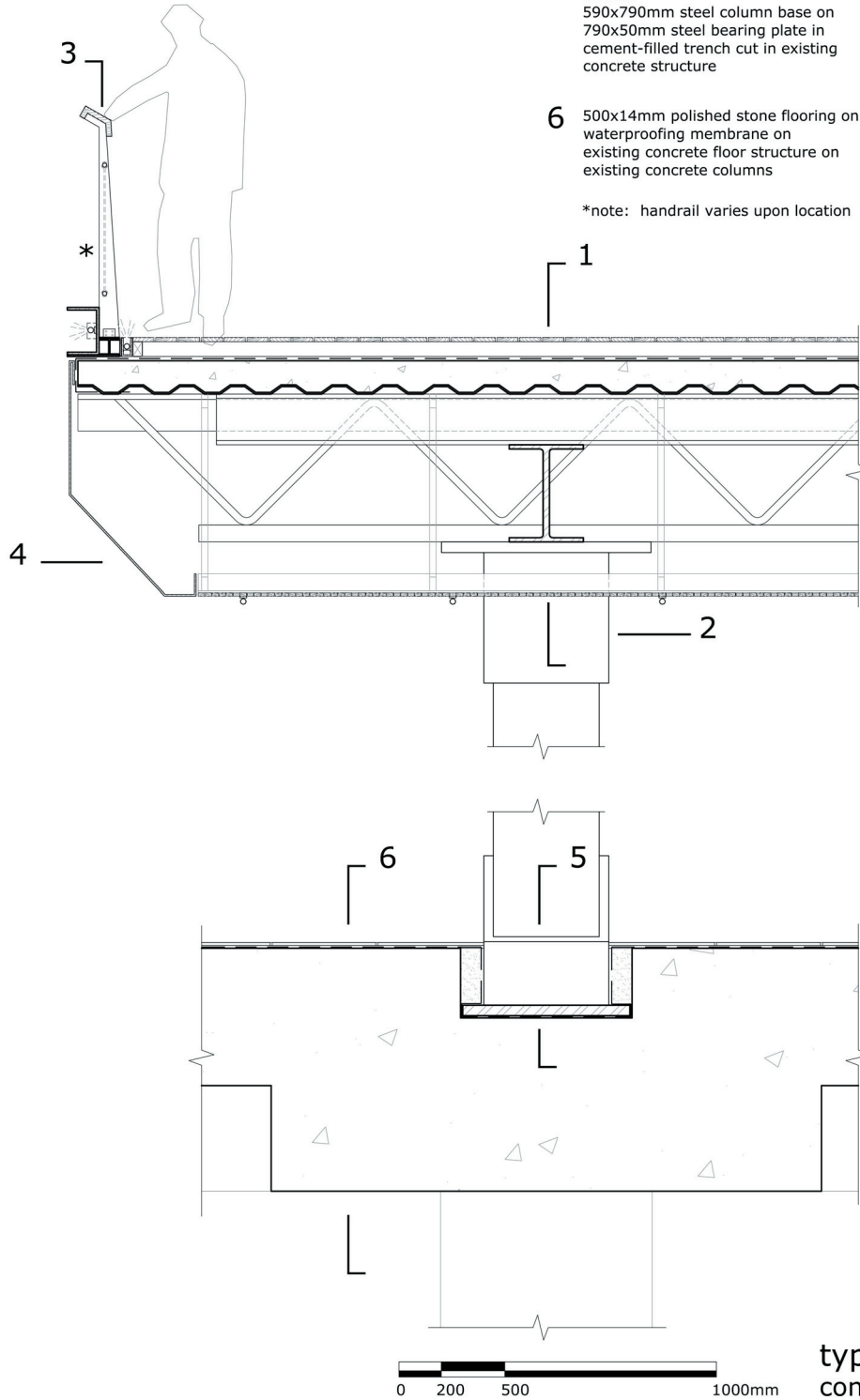
australian sandstone tiling



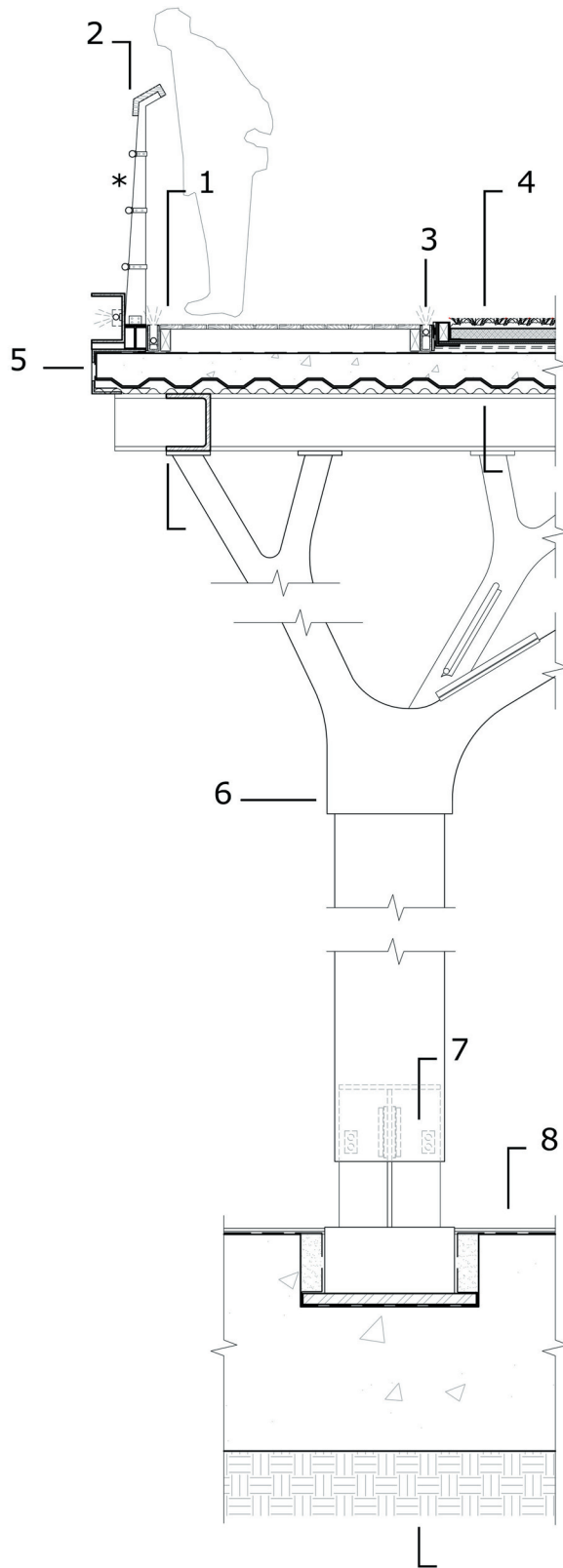
painted steel

- 1 20x100mm timber planking on 70mm wood bearings on waterproof membrane on 150mm concrete and steel composite decking on 240mm deep steel section on 460mm deep steel section 700mm deep light guage steel truss on 990x50mm steel bearing plate 90x90mm steel angle suspended from ceiling 30x15mm finished timber slats horizontal lighting element
- 2 590x790mm steel column cap 500x700mm angled hollow steel column
- 3 25mm thick wooden handrail on steel balustrade supports with metal mesh fabric on 8mm bent steel plate on 96x80mm wide flange section with 150x130mm steel C-channel c/w lighting element on 130x8mm steel plate
- 4 bent perforated metal sheet
- 5 500x700mm angled hollow steel column 590x790mm steel column base on 790x50mm steel bearing plate in cement-filled trench cut in existing concrete structure
- 6 500x14mm polished stone flooring on waterproofing membrane on existing concrete floor structure on existing concrete columns

*note: handrail varies upon location



typical wall section
concourse



- 1 20x100mm timber planking on 100mm wood bearings on waterproof membrane on 150mm concrete and steel composite decking on corrugated steel sheeting on 200x260mm steel C-channel beam system
- 2 180x25mm wooden handrail on 8mm bent steel plate on steel balustrade supports with (3) 30mmØ steel bars 96x80mm wide flange section with 150x130mm steel C-channel c/w lighting element on 130x8mm steel plate
- 3 bent aluminum mesh over steel channel c/w lighting element
- 4 native vegetation on Sopraflor growing medium on Aquamat Jardin on Sopradrain on cap sheet membrane on base sheet membrane on waterproof membrane on 150mm concrete and steel composite decking on corrugated steel sheeting on steel beam support system
- 5 bent aluminum edge sheet c/w steel angles at corners
- 6 hollow steel column cap, size varies hollow steel 'branches', size varies c/w up-lighting elements on hollow steel column, size varies
- 7 welded steel plates in cruciform shape c/w electrical provisions and lighting elements in steel column base, size varies on 790x50mm steel bearing plate in cement-filled trench cut in existing concrete structure on existing earth
- 8 300x19mm stone flooring on waterproofing membrane on existing concrete floor structure

*note: handrail varies upon location

typical wall section platforms

the fluid landscape

- notes** ¹ Parissien, Steven. *Station To Station*. Hong Kong: Phaidon Press Limited, 1997, pg. 8.
- ² Griffin, Kenneth W. *Building Type Basics for Transit Facilities*. New Jersey: John Wiley & Sons, Inc., 2004, pg. 3.
- ³ Edwards, Brian. *The Modern Station: New Approaches to Railway Architecture*. Great Britain: Alden Press, 1997, pg. 3.
- ⁴ Jodido, Philip. *Paul Andreu, Architect*. Germany: Birkhäuser, 2004, pg. 39-40.
- ⁵ Moran, op. cit., pg. 8.
- ⁶ *Innovative, Ecological, Decorative and De-polluting Vertical Vegetation Walls*.
http://www.tekes.fi/partner/fin/search/nayta_haku.asp?hakuid=23115

Train stations are inherently vital nexus points within the urban fabric. The commuter station connects suburbia with the city, filtering commuters twice daily through an environment that negotiates the disparate worlds of work and home. As cities strive to become key global players they grapple with ways to develop and maintain a competitive edge. In this struggle, recognizing, creating, and reinforcing viable public spaces becomes essential. The train station is traditionally a great gathering space through which people flow, alternatively a quiet and chaotic environment throughout the day. Reinterpreting Flinders Street Station as a public space equips this hub of activity at the centre of gravity in Melbourne with the juxtaposition of slow and fast spaces. This renews traditional ideas of urban public spaces, offering a place where people can feel equally comfortable whether loitering or rushing through. Imperatively, Flinders Station feeds into Melbourne's existing and emerging network of public spaces with unimpeded access to the Yarra Riverscape, Federation Square, and complex of central boulevards and laneways. For commuters, the station is part of their everyday landscape, and becomes an extension of their multi-tasking lifestyle instead of an environment simply for waiting and watching time pass by on schedule. The station can either enhance the inherent disconnection of the commuter lifestyle by relating neither to the city nor the suburbs, or as this thesis exhibits, it can embrace this lifestyle of perpetual sameness by imagining the 'in-between' as a fascinating place.

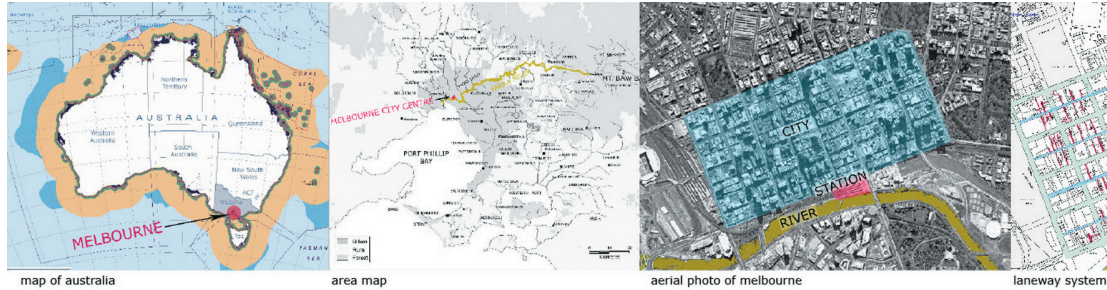
conclusion

appendix

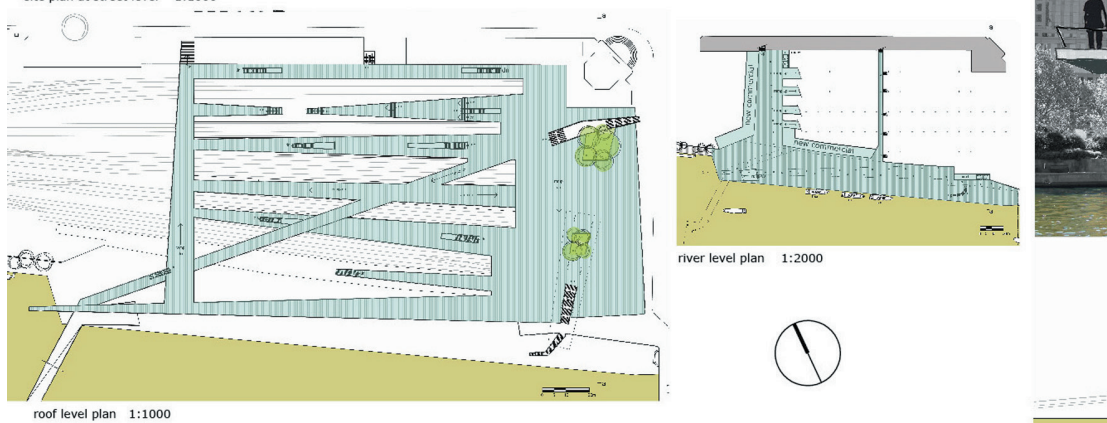
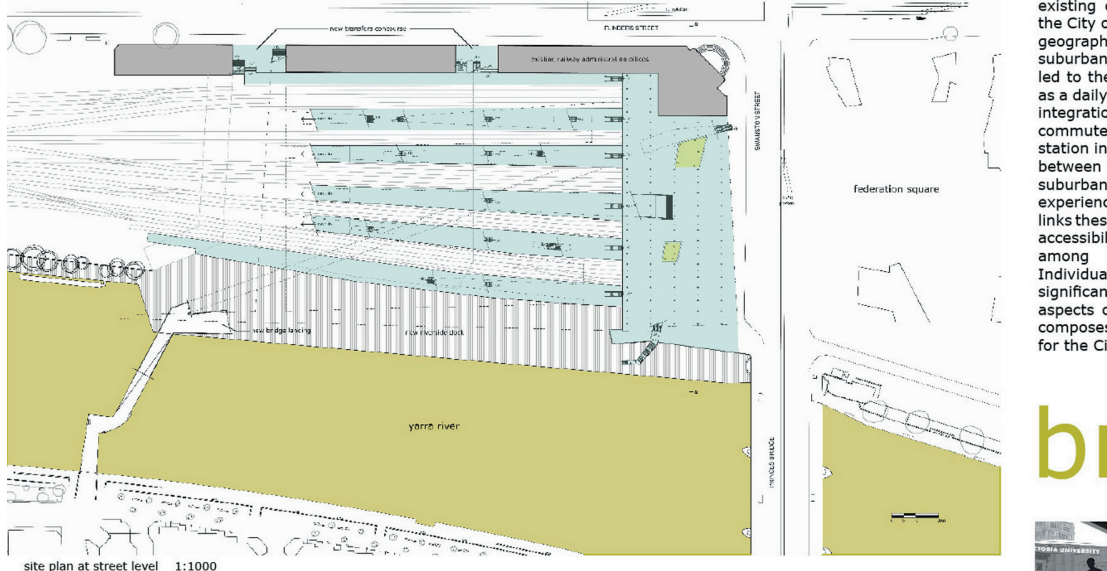
landmark competition

114 bridging landmarks

note: this panel was entered in the central glass company landmark competition, july 2005



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appendix

landmark competition

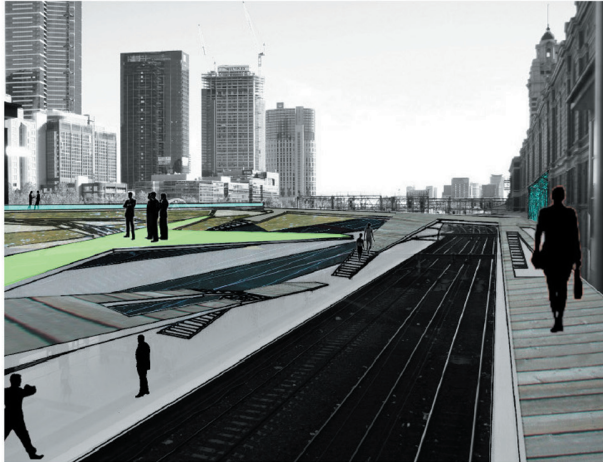


laneway system diagram



flinders street railway station

The gently flowing Yarra River, the iconic Flinders Street Railway Station and the intricate network of laneways are identified as three existing disconnected landmarks in the City of Melbourne, Australia. The geographical isolation and entrenched suburban nature of Melbourne has led to the celebration of train travel as a daily cultural phenomenon. The integration of a new public space as a commuter filter into the existing rail station introduces a transitory space between the juxtaposed urban/suburban realities of the commuter experience. This space physically links these urban features, increasing accessibility, continuity, and discourse among Melbourne's landmarks. Individually this reinforces their significance as uniquely identifiable aspects of the city, and collectively composes an interstitial landmark for the City of Melbourne.



bridging landmarks

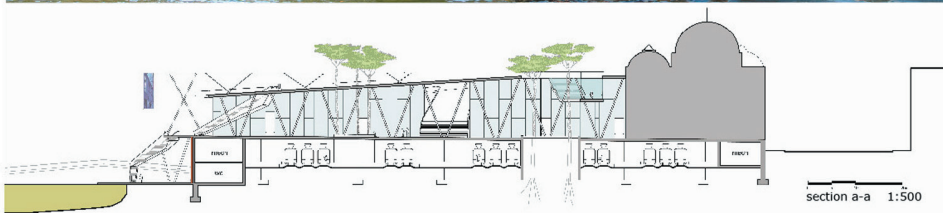
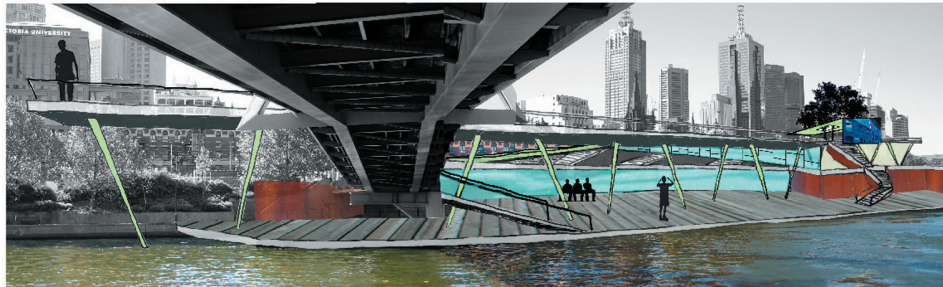


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australia's maritime boundaries
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<http://www.ga.gov.au/map/>
- 3 *the painted desert*
Geraldine Brooks. "The Painted Desert", The New Yorker, July 28, 2003, pg. 61.
- 5 *perished*
SIDNEY NOLAN, 1949
Clark, Jane. *Sidney Nolan: Landscapes and Legends*. Cambridge: Cambridge University Press, 1987, pg. 107.
- 9 *collins st., 5pm*
JOHN BRACK, 1955
Smith, Bernard. *Two Centuries of Australian Art*. Victoria, Australia: Thames and Hudson, 2003, PG. 119.
- 13 *metropolitan melbourne and surrounding suburbs*
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<http://www.maclester.edu/courses/geog61/melbourne/MelbourneAreaMap.html>
- 14 *melbourne city centre and inner suburbs*
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- 15 *the sydney opera house*
http://en.wikipedia.org/wiki/Image:Sydney_Opera_House_Sails.jpg
- 15 *the opera house and monumental steps*
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- 16 *melbourne laneways*
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- 17 *the yarra river course*
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<i>southbank river promenade</i> 18 http://www.travelvictoria.com.au/images/southbank/photos/22.jpg		
<i>crown casino</i> 18 http://members.optusnet.com.au/~markus_h/34.jpg		
<i>aerial view of federation square</i> 23 Bates, Donald. "The Diagram - Donald Bates", <i>The Architectural Review</i> , vCCXIX, no. 1307, January 2006, pg.38.		
<i>federation square plaza</i> 23 http://www.aila.org.au/victoria/awards2003/images/fed%20square/plaza_dog_sm.jpg		
<i>melbourne suburban rail network</i> 26 http://www.connexmelbourne.com.au/trip_maps/images/networkmap.jpg		
<i>bird's eye view of melbourne</i> 31 www.bcl.com.au/melbourne/views/m001.htm		
<i>yarra river panorama</i> 31 http://en.wikipedia.org/wiki/Yarra_River		
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<i>terminal 1, charles de galle airport, central core</i> 49 Jodido, Philip. <i>Paul Andreu, Architect</i> . Germany: Birkhäuser, 2004, pg. 38.		

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| 66 | <i>stuttgart airport terminal</i>
Asensio Cerver, Francisco. <i>The Architecture of Stations and Terminals</i> . Spain: Hearst Books Int., 1997, pg. 67. |
| 66 | <i>stuttgart airport 'forest'</i>
Edwards, Brian. <i>The Modern Airport Terminal: New Approaches to Airport Architecture</i> . Great Britain: Alden Press, 1998, pg. 264. |
| 70 | <i>musée de quai branly</i>
http://www.frenchgardening.com/visitez.tmpl |

Asensio Cerver, Francisco. ***The Architecture of Stations and Terminals.*** Spain: Hearst Books Int., 1997.

bibliography

Augé, Marc. ***In the Metro.*** America: University of Minnesota Press, 2002.

Balmond, Cecil. ***Informal.*** Germany: Prestel Verlag, 2002.

Bedwell, Steve. ***Suburban Icons: A Celebration of the Everyday.*** Sydney: ABC Enterprises for the Australian Broadcasting Corporation, 1992.

books

Bertolini, Luca and Spit, Tejo. ***Cites on Rails: The Redevelopment of Railway Station Areas.*** London, 1998.

Boyd, Robin. ***The Australian Ugliness.*** Australia: Hawthorn Press, 1960.

Calvino, Italo. ***Invisible Cities.*** Great Britain: Vintage, 1997, 1974.

Clark, Jane. ***Sidney Nolan: Landscapes and Legends.*** Cambridge: Cambridge University Press, 1987.

Coote, Maree. ***The Melbourne Book: A History of Now.*** Victoria: Hardie Grant Books, 2003.

Davison, Graeme. ***The Rise and Fall of Marvellous Melbourne.*** Melbourne: Melbourne University Press, 1978.

De Certeau, Michel. ***The Practice of Everyday Life.*** California: University California Press, 1988.

Dixson, Miriam. ***The Imaginary Australian.*** Sydney: UNSW Press, 1999.

Dovey, Kim. ***Fluid City: Transforming Melbourne's Urban Waterfront.*** Sydney: UNSW Press, 2005.

Dovey, Kim. ***Framing Places: Mediating Power in Built Form.*** Great Britain: Routledge, 1999.

Edwards, Brian. ***The Modern Station: New Approaches to Railway Architecture.*** Great Britain: Alden Press, 1997.

- bibliography Edwards, Brian. ***The Modern Airport Terminal: New Approaches to Airport Architecture.*** Great Britain: Alden Press, 1998.
- Foreign Office Architects. ***The Yokohama Project.*** Barcelona: Actar, 2002.
- Foss, Paul. ***Island in the Stream: Myths of Place in Australian Culture.*** New South Wales: Pluto Press, 1988.
- Francine Houben, Luisa Maria Calabrese (ed.). ***Mobility: A Room with a View.*** Belgium: NAI, 2003.
- Griffin, Kenneth W. ***Building Type Basics for Transit Facilities.*** New Jersey: John Wiley & Sons, Inc., 2004.
- Goad, Philip. ***Melbourne Architecture.*** New South Wales: The Watermark Press, 1998.
- International Architecture Workshop in Sommieres. ***Easily Flooded Architecture.*** Bordeaux: Association Champ Libre, 2004.
- Jacobs, Jane. ***The Death and Life of Great American Cities.*** United States: Vintage Books, 1995, 1961.
- James Bryan and Rolf Sauer. ***Structures Implicit and Explicit.*** Philadelphia: The Falcon Press, 1973.
- Jodido, Philip. ***Paul Andreu, Architect.*** Germany: Birkhäuser, 2004.
- John Fiske, Bob Hodge, Graeme Turner. ***Myths of Oz: Reading Australian Popular Culture.*** Sydney: Allen and Unwin, 1987.
- John Murphy and Judith Smart (Eds). ***The Forgotten Fifties: Aspects of Australian Society and Culture in the 1950s.*** Victoria: Australian Print Group, 1997.
- Kracauer, Siegfried. ***The Salaried Masses.*** London: Verso, 1998.
- Kronenburg, Robert (Ed). ***Transportable Environments.*** United Kingdom: Spon Press, 1998.

- Kronenburg, Robert (Ed). ***Transportable Environments 2.*** United Kingdom: Spon Press, 2003.
- Lees, Loretta. ***The Emancipatory City? Paradoxes and Possibilities.*** India: Sage, 2004.
- Lefebvre, Henri. ***Everyday Life in the Modern World.*** Trans: Sacha Rabinovitch. London: Allen Lane, 1971.
- Lefebvre, Henri. ***Critique of Everyday Life Volume II: Foundations for a Sociology of the Everyday.*** Trans: John Moore. London: Verso, 2002.
- Lefebvre, Henri. ***Writings on Cities.*** Trans: Eleonore Kofman and Elizabeth Lebas. Great Britain: Blackwell Publishers, 1995.
- Lewis, Miles. ***Melbourne: The City's History and Development.*** Melbourne: Impact Printing Pty, 1995.
- Mitchell, William, J. ***E-topia: "Urban Life, Jim – But Not As We Know It".*** United States: MIT Press, 2000.
- Moran, Joe. ***Reading the Everyday.*** Great Britain: Routledge, 2005.
- Paetzold, Heinz. ***City Life: Essays on Urban Culture.*** Amsterdam: Jan van Eyck Akademie, 1997.
- Parissien, Steven. ***Station To Station.*** Hong Kong: Phaidon Press Limited, 1997.
- The Photographers' Gallery. ***Airport.*** Great Britain: Colour House, 1997.
- Rowe, Peter G. ***Making a Middle Landscape.*** United States: MIT Press, 1991.
- Sarah Ferber, Chris Healy and Chris McAuliffe (Eds). ***Beasts of Suburbia: Reinterpreting Cultures in Australian Suburbs.*** Malaysia: Melbourne University Press, 1994.
- Seigal, Jennifer (Ed). ***Mobile: The Art of Portable Architecture.*** Hong Kong: Princeton Architectural Press, 2002.

- bibliography Simmel, Georg. **"The Metropolis and Mental Life"**, in: **The Sociology of Georg Simmel**. Illinois: Free Press, 1950.
- Slater, John. **Through Artists' Eyes: Australian Suburbs and Their Cities 1919-1945**. Carlton, Victoria: The Miegunyah Press, 2004.
- Smith, Bernard. **Two Centuries of Australian Art**. Victoria, Australia: Thames and Hudson, 2003.
- Sparrow, Jill and Jeff. **Radical Melbourne 2: The Enemy Within**. Victoria: The Vulgar Press, 2004.
- Vaneigem, Raoul. **The Revolution of Everyday Life**. Trans: Donal Nicholson-Smith. London, Rebel Press/Left Bank Books, 1994.
- Voigt, Anna and Drury, Nevill. **Wisdom from the Earth**. Boston: Shambhala Publications, 1997.
- Willis, Anne-Marie. **Illusions of Identity: The Art of Nation**. Marrickville, NSW: Southwood Press, 1993.
- Wilson, Elizabeth. **"The Café: The Ultimate Bohemian Space"**, in: **Strangely Familiar: Narratives of Architecture in the City**. Great Britain: Routledge, 1996.
- periodicals Allan, Alex J. "The Story of the Yarra", *The Victorian Historical Magazine*, v18, no. 72, Dec. 1940, pg. 91-112.
- Bates, Donald. "The Diagram - Donald Bates", *The Architectural Review*, vCCXIX, no. 1307, January 2006, pg.38-39.
- Corrigan, Peter. "Learning from Suburbia", *Domus*, no.663, July-August 1985, pg. 6-7.
- Dynan, Catherine. "The 1899 Design of Flinders St. Station: James Fawcett, Henry Ashworth & the Arts and Crafts Movement", *Melbourne Art Journal*, no. 1,1997, pg.32-42.
- Engberg, Juliana. "Collins St., 5pm", *Art and Australia*, v.34, no.4, 1997, pg.513-517.

Geraldine Brooks. "The Painted Desert", *The New Yorker*, July 28, 2003, pg.60-67. bibliography

Laurier, Eric. "Doing Office Work on the Motorway", *Theory, Culture & Society*, v21, no 4/5, 2004, pg.261-277.

Rowse, Tim. "Heaven and a Hills Hoist: Australian Critics on Suburbia", *Meanjin*, v37, no 1, 1978, pg. 3-13.

History of Flinders Street Station. A publication provided by Connex Railways in Melbourne, Australia.

Paul L. Knox and Peter J. Taylor. "Toward a Geography of the Globalization of Architecture Office Networks", *Journal of Architectural Education*, 2005, pg. 23-32.

The River that Sculpted a City
http://www.melbournewater.com.au/content/rivers_and_creeks/yarra_river/yarra_river.asp

internet resources

The Yarra River – A Natural History
<http://www.yarrariver.info/history.htm>

Federation Square
<http://www.fedsquare.com.au/>

City of Melbourne Info
<http://www.melbourne.vic.gov.au/info.cfm?top=66&pg=777>

Australian Government Maps
<http://www.ga.gov.au/map/>

Maps of Melbourne
<http://www.macalester.edu/courses/geog61/melbourne/maps.html>

Innovative, Ecological, Decorative and De-polluting Vertical Vegetation Walls http://www.tekes.fi/partner/fin/search/nayta_haku.asp?hakuid=23115

The Vertical Garden at the Musée de Quai Branly
<http://www.frenchgardening.com/visitez.tmpl>

Connex Railways Melbourne
<http://www.connexmelbourne.com.au>