Recovering the Experience of Place and Nature in Contemporary Cities

Design Research Project APG5058S

Submitted in partial fulfilment of the requirements for the degree

Master of Architecture (Professional)

By

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Illustration of the site at the mouth of the Baakens River

(H. Duker 2012)

1. Introduction

This project has its origin in my interest in the relationship of nature and sense of place to contemporary cities, and it is informed by the idea that the process of settlement making over time has disengaged these elements from urban life.

Hajer and Reijndorp (2001: 36) define place as being a space within nature or settlement that has been attributed special qualities related to myth, history, memories and events. Norberg-Schulz (1971: 27) uses the term 'genius loci' to describe the unique characteristics associated with a place, and suggests that this phenomenon can become so deeply embedded in a site

that it will be able to weather the passing of time and social, political and cultural changes in the surrounding environment.

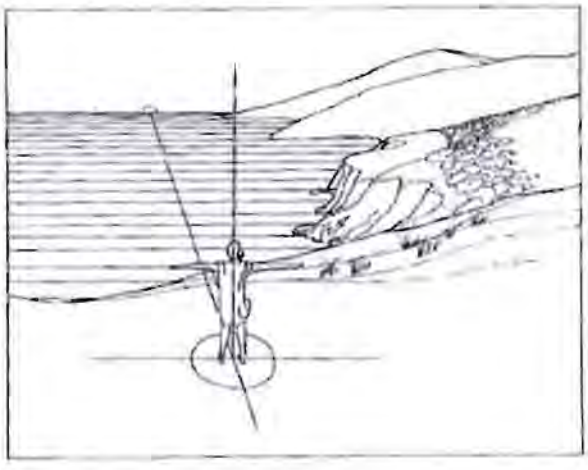
I became intrigued by a specific site in my home town of Port Elizabeth at an early stage of my research process. Located at the mouth of the canalised Baakens River, this site comprises a layering of elements that relate directly to my interest. Here the hard lines and constructed surfaces of the growing city meet with natural place in a manner that speaks of loss – loss of habitat, loss of dynamic estuarine function, and loss of human awareness of the natural processes and unique qualities of the area. Forced boundaries between the city and the site were constructed in an attempt to restrain the flooding patterns of the river and to facilitate the flow of movement across the spreading city. However natural processes continue to prevail and the river sporadically bursts the banks of the canal during the 1 in 100 year flood cycle, causing damage to the structures built within the flood plain.

The characteristics of this place attracted human inhabitation for centuries. Nomadic Khoisan tribes frequented the area before it was occupied by the settlers who founded the port, and the first permanent dwellings of Port

Elizabeth were constructed around this place (Harradine, 1996: 9). The site is considered to be significant because of its history of inhabitation as well as the built traces that have accumulated on it over time as a result of this process, the derelict heritage building on the site being a good example. Crowe (1995: 114) suggests that 'the precise place of a city's origin is often the most poignant reminder of the past.' It is ironic that the growth of the city around this site has caused the severance from an experience of the unique qualities that originally made it stand out in the landscape as an appropriate place for settlement.

This document outlines the stages of uncovering and understanding the various layers of the site at the Baakens River mouth, as this process guided the development of the thesis. An analysis of the area and its urban surroundings was conducted in conjunction with a series of theoretical enquiries into place, nature and settlement. This investigation into site and theory led to the formulation of the following question: How can design be used to remake sites in an attempt to recover the experience of place and nature in cities, and thus improve the quality of urban life? And furthermore how can space be rewritten in order to positively add to the accumulated layers of place, rather than eradicating the history of human inhabitation that has given meaning to urban space?

The intention of this thesis is to explore this question through a site intervention at the mouth of the Baakens River, with the goal of reprogramming and reconfiguring the existing layers of the site in order to celebrate its unique qualities.



One experiences place in the landscape through the body and its proportions

(Crowe, 1995: 50

2. Uncovering the Layers of Site

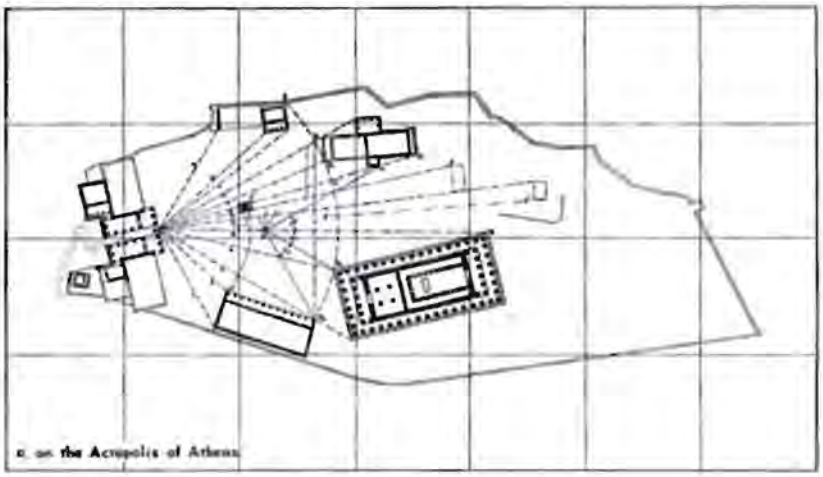
2. 1 Contextualising the Site within the 'Urban Field' and Understanding the Physical Experience of Place in the City

The intention of the first stage of theoretical enquiry was to unpack the relationship between place, nature and settlement. This research has been summarised as follows:

Crowe (1995: 72) suggests that the tendency of people to assign meaning to place is an evolved trait that originated from the relationship between early humans and nature, as survival then depended on their ability to recognise and order spaces in the landscape. This behaviour has been transferred to contemporary urban settings as people create a hierarchy of meaningful places to structure their lives within the city. Thus place is an important component of contemporary settlements.

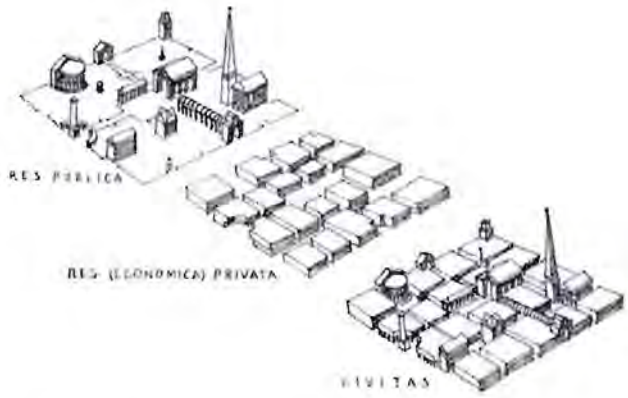
Doxiades, (1968: 299) suggests that the perception of place is usually initiated in the volume of space that is required for people to move, and is related to the scale of the human body. Similarly, Norberg-Schulz (1971: 14) describes the process of experiencing place, as occurring along movement paths between points of attraction and departure. Textures, boundaries, social activities and natural properties contribute to the legibility of space along these paths.

Traditional cities were often designed to present a clear reading of place for their inhabitants. A network of streets and public spaces set up a route along which pedestrians were able to 'comprehend, assimilate and become integrated' as they walked the city (Doxiadis, 1968: 44). The texture of the urban fabric was consistent and provided a clear definition between nature and the beginning and end of the city. Historically the role of architecture in settlements has been to mediate between



The Acropolis of Athens is an example of architecture that has been designed based on the principles of bodily perception

(Doxiades, 1968: 421)



Above: An illustration of the clear network of streets and public spaces that existed in traditional settlements

(Crowe, 1995: 226)

Right: Old photographs of Port Elizabeths main shoppint street (now Govan Mbeki Avenue) and the Town Hall

(Harradine, 1996: 48)
(Harradine, 1996: 80).

man and nature, and to provide a level of control over unpredictable natural processes (Norberg-Shulz, 1971: 9). Thus the relationship between settlement and nature has been directly affected by the evolution of permanent structures over time.

Hajer and Reijndorp (2001: 29) have theorised the workings of contemporary cities with regards to place, public space and consumer culture: they describe the contemporary city as an 'urban field' where the old traditional fabric of the inner city and the new fabric of the sprawling city form an unbroken network that is characterised by 'non-place.' Consumer culture governs the way that the urban field functions – it has lead to the creation of enclaves (private and semi-private places) that revolve around the consumption of events (Hajer&Reijndorp, 2001: 24). These places detract from the unique qualities of cities, as they celebrate global culture and discard the character of the local (Hajer&Reijndorp, 2001: 60). 'Non-place' is the non territorial public space that occurs between these enclaves. It is often related to transport infrastructure and is an 'expression of the super modern condition – marked with loneliness and constant change' (Hajer&Reijndorp, 2001:9). The structure of the network city has allowed entire sections of the city to be circumnavigated by individuals travelling to their selected enclaves (Hajer&Reijndorp, 2001: 57). This has contributed to the decay of areas of the city that have lost their attraction as a destination. The dominance of high speed transport also means that people no longer touch the ground and experience the quality of the urban environment lying between enclaves. The exponential growth of the dynamic network city and the manner in which design and planning have evolved, has led to a dislocation from the experience of nature, and to the physical destruction of the environment.

With the ideas gained from this theoretical investigation, I embarked upon a process of mapping Port Elizabeth. The purpose of this was to develop an understanding of the manner

Above: Govan Mbeki Avenue as it exists today in Port Elizabeth. Commerce has become dispersed across the city and this street (which used to house the business district) now functions as a working class retail hub, because of its proximity to the train station and bus and taxi ranks.

(H.Duker, 2012).

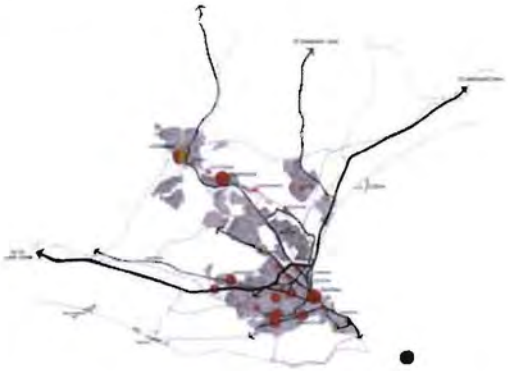
Above:
Some of the derelict buildings that exist in the inner city of Port Elizabeth.

Residents of the inner city. Oscar (standing in the doorway) is a african immigrant who is surviving in Port Elizabeth by running a hair salon from the grage of the apartment block he inhabits.

-(H. Duker 2012)

Below: A mapping of the commercial centres of port Elizabeth connected by transport routes, and a series of mappings that illustrate the destruction of nature as the city developed

(H. Duker 2012)



Below: Mappings of the public open space, major transport routes and commercial activity around the Baakens River Area. The historical inner city has been indicated using dark grey, and is situated to the north of the River. Govan Mbeki Avenue runs northwards, and is visible from the retail (indicatd in red) that runs along it.

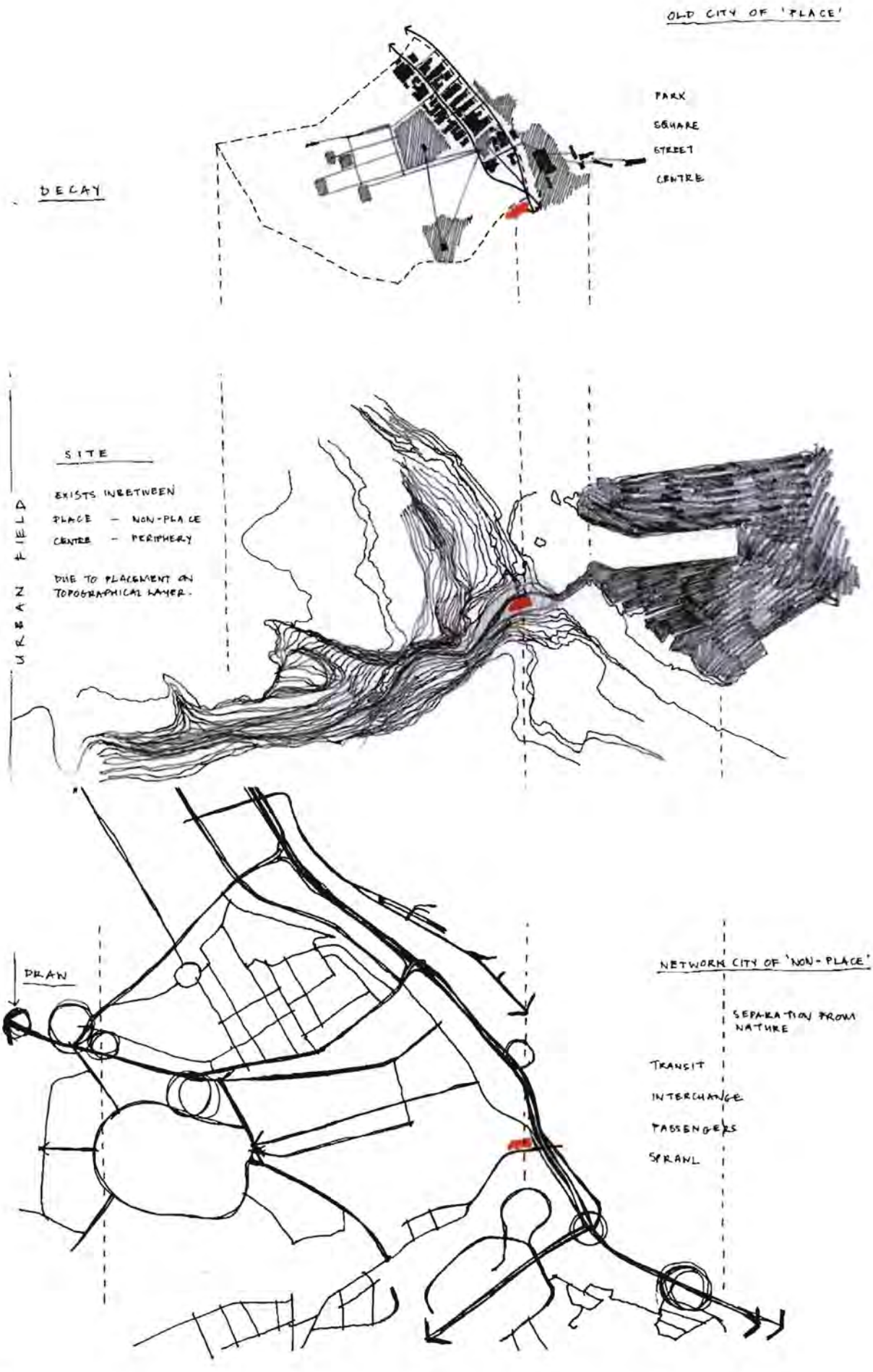
(H. Duker 2012)

in which the city had grown over time, the relationship of the built fabric to nature, as well as workings of public space, movement routes and economic attraction.

I came to the realisation that the site exists at the interstice between the historical inner city of Port Elizabeth, with its underutilised archetypal public spaces, and the spreading network city of 'non –place' and private enclave. The gradual movement of commercial and business activity from the centre to the outskirts has caused the inner city to decay. The derelict heritage building on the site is a symptom of this urban condition. 'Non-place' borders the site in the form of a vast freeway belt. It connects the old city to the new city by bridging the river mouth that forms the breach between them. In doing so it has severed the historical visual connection between settlement and harbour and has constricted the estuary that once formed the mouth of the river. This barren, transitory space has also ensured the circumnavigation of the site, as it has monopolised the ground space for the purposes of vehicular circulation and has left little room for pause or slow paced pedestrian movement.

This process of mapping the city helped me to realize the potentials of the interstitial location of the site. Its proximity to the vibrant shopping streets of the inner city, as well as the civic centre, public transport hub and dense population of African immigrants and students in this area, provides the ingredients for an intervention here to be easily accessible and well utilised. An intervention at this location would also be able to impact the growing network city, and provide a response to its 'non-place' qualities.

Research into the workings of Port Elizabeth made me aware of a current municipal initiative to regenerate the inner city through


OLD CITY OF 'PLACE'
PARK
SQUARE
STREET
CENTRE
DECAY
URBAN FIELD
SITE
EXISTS INBETWEEN
PLACE – NON-PLACE
CENTRE – PERIPHERY
DUE TO PLACEMENT ON TOPOGRAPHICAL LAYER.
DRAW
NETWORK CITY OF 'NON-PLACE'
SEPARATION FROM NATURE
TRANSIT
INTERCHANGE
PASSENGERS
SPRAWL

Left:
A mapping of Port Elizabeth which shows the functioning of the city as an 'urban field.'

Right:
A mapping showing the location of the site at the interstice between the decaying inner city and sprawling network city. Derelict Heritage buildings are shown in red.

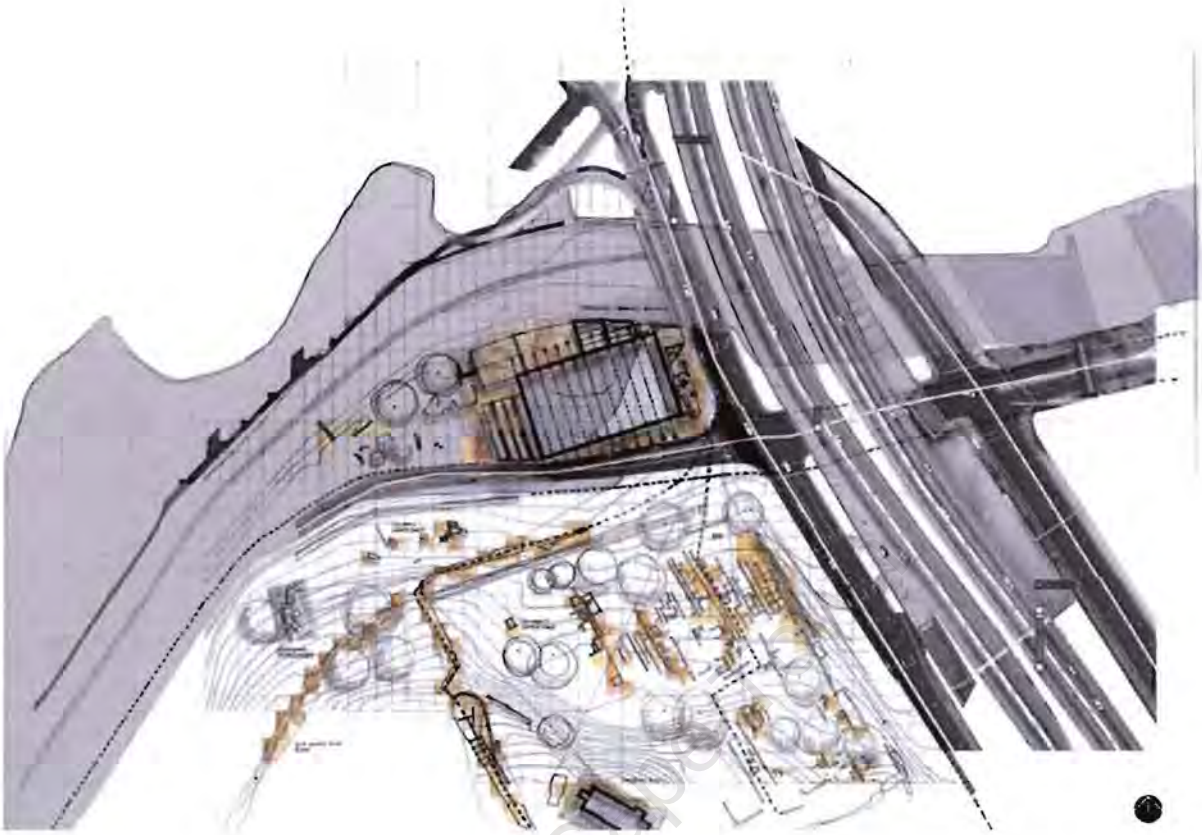
(H. Duker 2012)

A mapping of the historical layers of the site.

(H. Duker 2012)

the Mandela Bay Development Agency (MBDA). They propose to make the historical centre an asset both as a tourist attraction and as attractive place for the metros inhabitants through a phased development strategy. This plan includes the future design of a public waterfront at the harbour, the restoration of the decaying heritage buildings in the centre and the celebration of civic space through public space and art and culture projects. This discovery allowed me to locate the ideas around a site intervention within the realistic context of this urban renewal initiative.

At this stage of the process I made the choice to explore an intervention that dealt with the design of a public destination, which would serve to attract people back to this area. I also decided that the design of a movement route articulated by textures, nature, public space and boundaries would play a major role in the intervention. The intention was to use this route to tie together the elements of the site in an attempt to recover an experience of the qualities and history of this place, and to give it an active and relevant role in the functioning of the present and future city.



2.2 Developing an Attitude Towards the Layers of History on Site and Exploring Technical Ways to Assimilate them into the Experience of Place through a Movement Route

One of the most interesting characteristics of the site is the accretion of historical artefacts that has occurred over time. These provide insight into the past inhabitation of this area by people. These layers include two graveyards where the early citizens of Port Elizabeth were buried, the ruin of an old stone church and the derelict Tramways Company Building which is considered to have heritage significance. Built traces of the community known as 'South End' also stretch throughout the valley – these dwellings were demolished during the forced removals of apartheid.

At this stage I realised that the presence of the derelict Tramways building on the banks of the river presented an exciting opportunity in that it could be physically re-used and assimilated into the intervention as a layer of history. In order to formulate a position on heritage, and an appropriate method of re-use, I set about researching the history and structure of the building, as well as architectural examples of adaptive reuse that have explored the idea of experiencing historical layering through route. This research can be summarised as follows:

The Port Elizabeth Tramways Company Building was constructed on the south bank of the Baakens River in 1897 with the function of housing tram cars. Although this building came many years before the freeway infrastructure

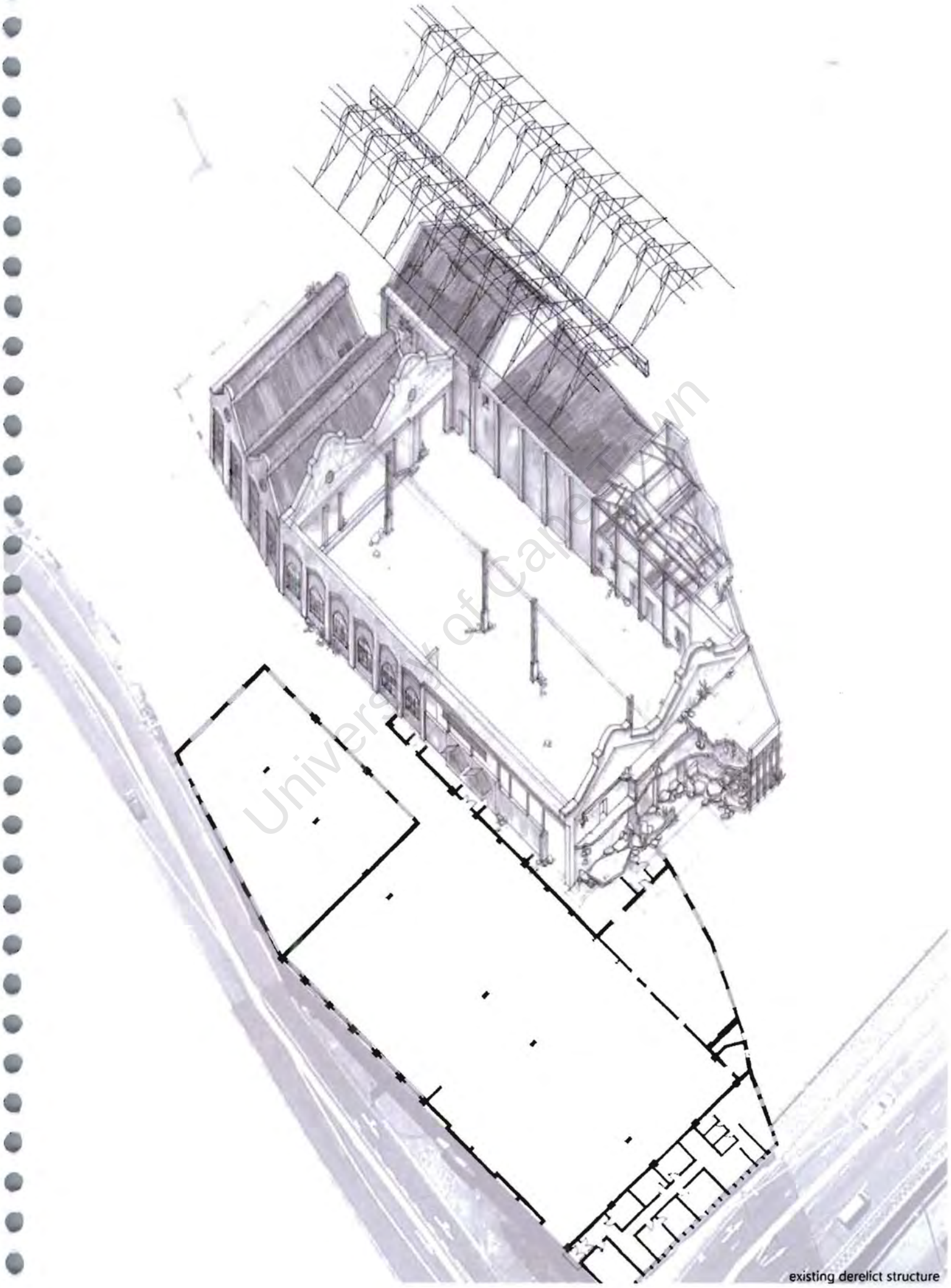
discussed in the last chapter, the decision to construct it in this location signifies the early stages of an urban planning approach that prioritised man-made settlement over the natural qualities of the site. Today the abandoned Tramways building exists as a weathered skeleton on the constructed river bank, and has been inhabited by plant life and the urban homeless. The passing of time has opened up the warehouse volume to the landscape, as the doors and windows have decayed and the roof sheeting has been stripped away. The interior has been vandalised and burnt in areas, and some of the exterior alterations to the original building have been demolished over time.

In a Heritage Impact Assessment, conducted by The Matrix Urban Designers and Architects (2008: 9) it was suggested that the Tramways Building be given a Grade III(b) heritage rating. This rating would classify this architecture as being of significant social, historical and aesthetic value, and requires that care be taken in any demolitions or additional construction. This was suggested for the following reasons: The original design of the building resembled that of a typical Victorian warehouse, with equally spaced windows and a face brick skin that had detailing at the gables. Also, it

Right:
Photographs which depict the historical layers of the site.

Opposite page:
A structural study of the Tramways Building

(H. Duker 2012)



existing derelict structure

Left:
Photographs showing the inhabitation of the urban ruin by plant life and homeless people

(H. Duker 2012)

was the only building of its function to have ever been constructed in Port Elizabeth and it acted as a landmark in the finely grained early city. In addition, it played an important role in the settlement as it physically connected the harbour to the city via the tramlines (The Matrix, 2008: 14).

The building was constructed on a level platform of sandy soil that was retained by the concrete wall of the river canal. A concrete ring beam with pile supports provides the footing for the structure. The shell of the building comprises of a steel frame that has been in filled with brick masonry, whilst the roof structure consists of a series of steel trusses and tension rods (The Matrix, 2008: 16). It has survived six floods in a one hundred year time period, yet a survey conducted for the MBDA by engineers has found that the steelwork, brickwork and foundations have remained structurally sound.

The original design was added to over time as the ownership and program of the building changed - It has been used as a bus shed, ice-rink, homeless shelter, and orphanage. These adaptations negatively contributed to the spatial quality of the building and the site. Awkward volumes were created in an attempt to utilise as much of the constructed

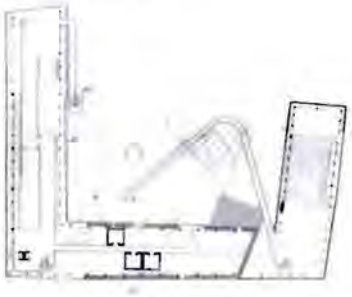
Below:

Plans that illustate the autonomous route of exprience that runs through the Hamar Museum

(Yoshida, 1998: 119)

A photograph illustating the volumetric experience of castellvecchio from a point along the route

(D. Fraser, 2008).



river bank as possible. The series of additions also detracted from the original aesthetic of the warehouse – during its function as an ice rink the southern facade of the building was altered to incorporate large industrial doors, and the brickwork was painted white, with blue trimmings (The Matrix, 2008: 22). The MBDA now has possession of the building and has made plans to restore it and adapt it for use as their headquarters.

Sverre Fehn's Museum of Hamar and Carlo Scarpa's Castelvecchio are exceptional examples of architectural interventions on heritage sites that allow the user to experience the layers of the past and present, whilst moving through space. Fehn approached the reprogramming of the 18th century ruin in Hamar by allowing the existing building to remain in its decayed state, and by designing a structurally autonomous route that passed through it. This route allowed the users of the museum to experience the different strata of old and new construction throughout the intervention and created different relationships between their bodies and the existing building as they moved through space (Norberg-Shulz & Postiglione, 1997: 14).

Because a series of renovations over time had detracted from the original quality of Castelvecchio, Carlo Scarpa attempted to clarify its history by removing some of these alterations (Murphy, 1990: 8). He used a movement route through the building to provide a volumetric experience of the castle from different bodily positions, and pulled apart the tectonics of the existing structure in areas to reveal the layers and textures that made up its solid surfaces. The new

architectural interventions were not structurally independent of the existing, but he used void and layering to emphasize the difference between the materiality of the old and new architecture (Murphy, 1990: 15).

After conducting this research I came to the conclusion that the Tramways building should be respected for its cultural and historical significance. However, the way that this building negatively impacts the site needs to be taken into account – the building envelope was designed to be introverted, and its position within the floodplain of the river on a concrete retaining structure was dismissive of natural processes. Because the historical importance of this building makes up only one of the many qualities of the site, it is important that it be reused in a manner that makes it part of a coherent experience of these qualities as a whole, and that is more responsive to the natural processes of the river.

Learning from Scarpa's intervention at Castelvecchio, I decided to remove the extensions that were made to the Tramways building, so that its original aesthetic qualities would be more pronounced.

These case studies also highlighted the opportunities in the design of the tectonic relationship between old and new, and how the differences between the past and the present could be made more noticeable by allowing for a level of separation between the two structures. At this stage I began to consider the idea of leaving the Tramways building in its existing skeletal condition, and creating an autonomous architectural intervention that would run through it. I also considered the potential for the warehouse enclosure to provide an armature for social activity along this route.

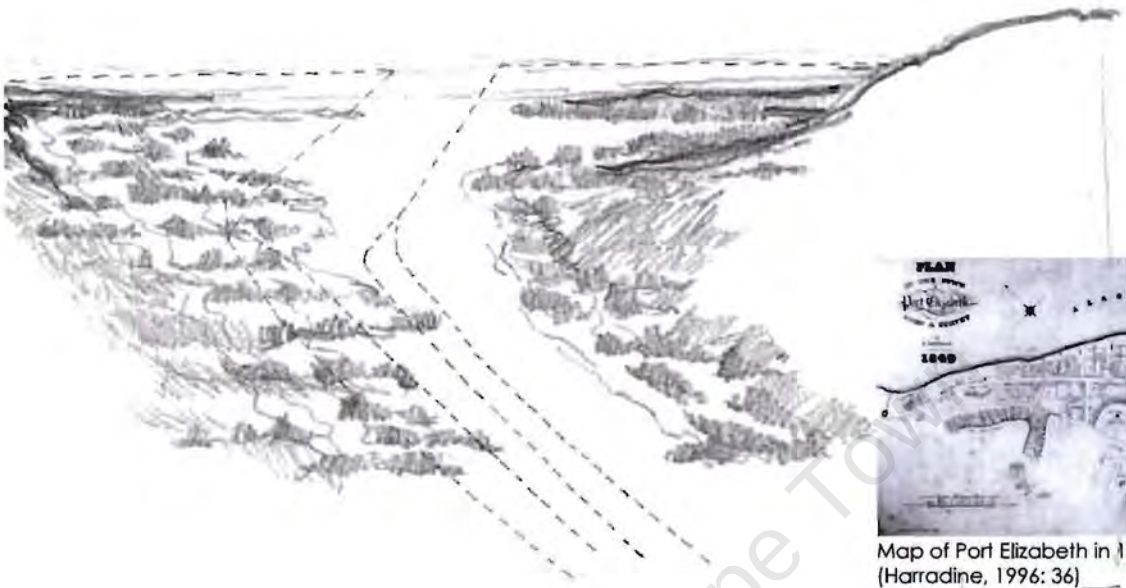
2. 3 Understanding the Constructed Boundaries on the Site Through the 'Lens of Flood' and Considering their Remaking

An important stage of the research process was the discovery of the theory of Anuradha Mathur and Dilip da Cunha, which questions conventional design and planning responses to the natural processes associated with rivers, using the example of the Mithi River estuary in Mumbai.

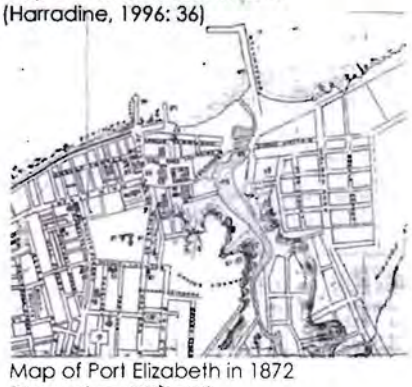
They describe an estuary as a'constantly changing site of negotiations between land and sea' where the distinction between what is wet and what is dry is unclear (Appadurai & Breckenridge, 2009: viii). The relationship between land and water here is characterised by 'analogical tension'that is based on 'momentary contacts and transactions between land and water' (Mathur& da Cunha, 2009: 47).The condition of flooding goes hand in hand with this kind of terrain.

They suggest that the conventional planning response to estuary conditions has been governed by the 'lens of flood,' which 'calls attention to water crossing a boundary, as a truant defying its place' and treats the unpredictability of river processes as a hindrance to the smooth functioning of human settlement (Mathur& da Cuhna, 2009: x). This lens has resulted in the development of the belief that land and water can be separated in estuaries, and natural processes restrained through the use of technology. It has 'encouraged a landscape of hard edges and clear and distinct entities, and fostered a spirit predisposed to privileging land over water, firmly held property lines over open terrains, and defined land uses over fluid occupancies' (Mathur & da Cunha, 2009: 4).

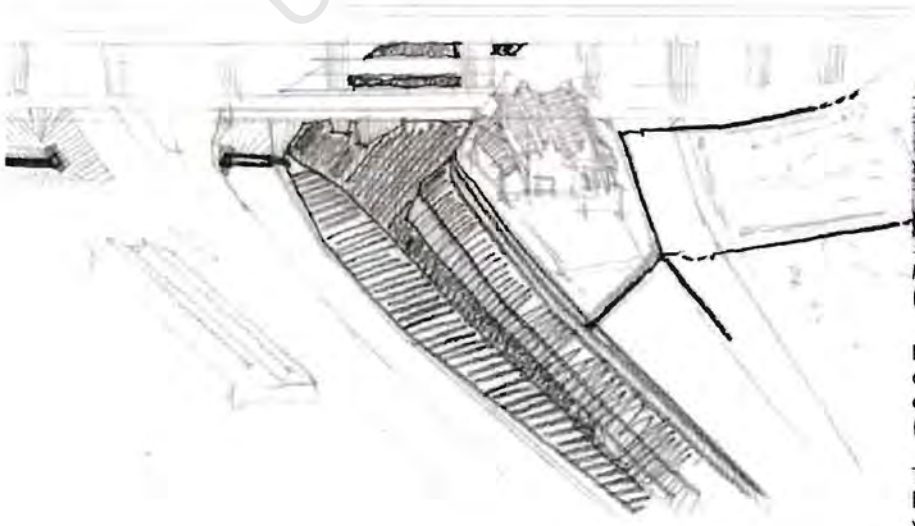
Mathur and da Cunha (2009: viii) suggest that the hard edges designed around the Mithi River estuary are 'the historical product of a determined effort to imagine lines where none exist and then to make them survive in the face

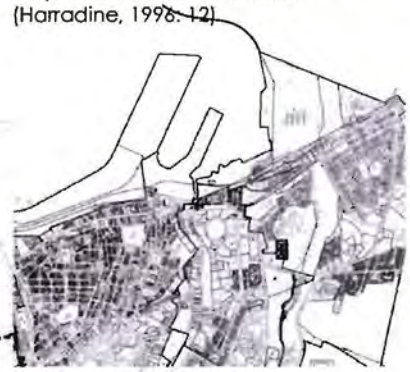


Map of Port Elizabeth in 1849
(Harradine, 1996: 36)



Map of Port Elizabeth in 1872
(Harradine, 1998: 12)





Map of Port Elizabeth in 2010
(NMMM, 2012)

Illustrations imagining the original Baakens River estuary, in comparison to its existing canalised condition,
(H. Duker, 2012)

The series of mappings which show how land around the Baakens River mouth was reclaimed over time

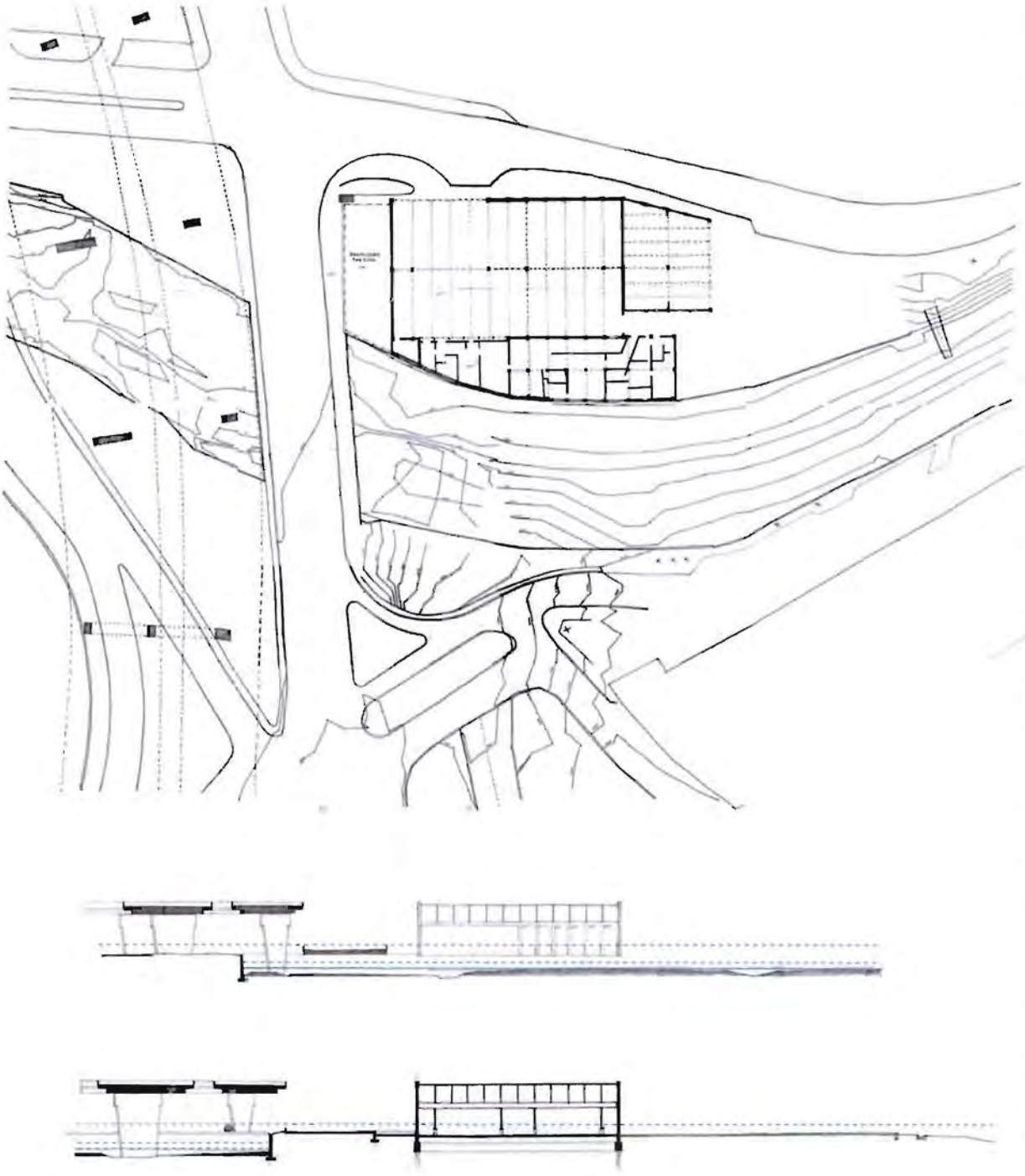
of an aqueous terrain which constantly defeats their materiality.' Here they are referring to the mapping techniques employed by European colonialists that made use of the simple line, in the surveying of the landscape, to clearly divide land and water in areas that, in reality, had a complex gradient and a fluid wet/ dry relationship. It was this process of imagining boundaries that gave priority to dry land over water, and was transferred into the design of settlement around areas such as estuaries. The act of creating dry edges where they were wanted, as opposed to where they naturally existed, became common practice (Mathur and da Cunha, 2009: 6). They argue that the desire to channel water off land as quickly as possible through the creation of hard surfaces will actually exacerbate the flooding condition when rain fall patterns exceed predictable levels, as the landscape has been disabled from processing water through absorption and collection. They use the Mithi River flooding

Above: The Tramways Building shortly after its construction

(Harradine, 2004: 12)

Left: The Tramways Building during a major flood in 1908

(Harradine, 1996: 124)



Above:
A plan of the site showing the levels of the engineered canal, and the plan of the Tramways Building

Sections showing the water levels of the river

(H. Duker, 2012).

disaster of 2005 as an example of this condition.

Mathur and da Cunha (2009: xiii) suggest that conventional design practices need to be challenged, and that the lens of flood should be replaced with a 'lens of resilience.' They advise that attempts to create permanence in estuaries should be discontinued, and that ways of design that cater to local processes and the natural conditions of negotiation, fluidity, uncertainty, flux, flow and blurred boundaries, should be explored instead (Mathur& da Cunha, 2009: xii).

This theory interested me because of the fact that the mouth of the Baakens River once existed as a vast estuary. The dynamic relationship between land and water in this place has been lost as a result of land reclamation, the canalisation of the river and the construction of transport infrastructure across the river mouth. The river is now treated as a water channelling system that works with a series of storm water drains to move rain water out into the ocean as quickly as possible. An opportunity to make the water processes of this site part of the life of the city has been lost in the design of this system. .

At this stage I realised that one of the challenges of recovering the experience of place and nature on this site, would be the re-imagining of the relationship between land and water. It would be impossible to completely restore the original estuarine quality of this place without removing vast tracts of urban infrastructure. Instead the hard surfaces of site can be re-made in a way that represents the complex gradient of the lost estuary, but is also relevant to contemporary urban life. At this point I made the decision to treat the flooding patterns of the Baakens River as a gift, and design the site intervention in a way that incorporated changing water levels into the experience of place.

Top left:
The constructd wetland of the Herman Miller Factory, with a ground plane articulated by soft and hard surfaces

(www.mvvainc.com)

Bottom Left:
The Mill Race Park embraces flooding through the use of durable materials, and a hierarchy of spaces on different levels

(www.mvvainc.com)

Right:

Mappings that show the current plan of the harbour, the proposed plan for a waterfront at the harbour, the reclaimed land around the Baakens River, and the land ownership along its banks

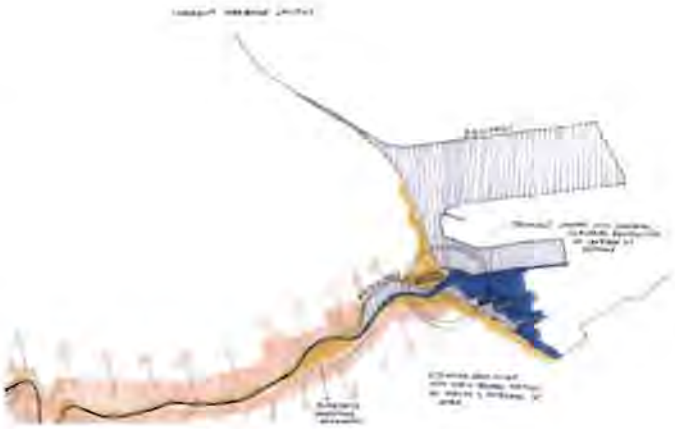
(H. Duker, 2012).

2. 4 Uncovering Site Systems and Processes and Exploring Technical Approaches to the Recovery of the Natural Landscape

After reaching the decision to rework the ground surface of the site I set about exploring theory that dealt with the recovery of sites, and expanded on the relationship between architecture and the landscape. I also investigated the work of Michael van Valkenburgh Associates, because of their use of an articulated ground plane in the reclamation of sites.

Allen (2011: 197) states that 'Architecture is always, in the first instance, a transformation of the landscape: a prima act of marking out a defined precinct within a larger territory.' However, the bounded character of architecture, which often operates on the vertical plane, differs from nature in that ecologies operate across borders and at different scales. Allen (2011: 22) suggests that architecture needs to evolve to extend across boundaries on the horizontal plane in order for it to be relevant in contemporary cities. He suggests that the purpose of architecture should be to construct sites, rather than just occupy them, and that when a building is interrelated with the artificial terrain around it, it can 'be expansive, claiming space beyond its limits and transforming a larger ecology' (Allen, 2011: 193). Here he is referring to nature, but also to the ecology of the expanding contemporary city and its evolving set of needs. He describes architecture that seeks to do this as 'landform buildings.'

Frampton (2011: 248) suggests that landform buildings have the potential to create place in cities that are privatised, 'process-oriented' and characterised by 'the "ad hoc" proliferation of ill-related, relatively isolated, free-standing objects.' They do this because they are able



to operate at the level of infrastructure, by extending program into the constructed landscape around them, interconnecting surfaces horizontally, and creating fluidity between interior and exterior space. They allow for the simultaneous experience on nature and the man-made city (Allen, 2011: 24).

Berrizbeitia (2009: 20) expands on the idea of constructing terrain that intermeshes with buildings, by illustrating the importance of the design of the ground plane. He suggests that the ground plane needs to be articulated through the use of technology to support both human and natural operations, such as social activity, the structure of architecture, habitat, and the conduction, storage and absorption of water. This will allow the site to become reconnected to greater natural systems, and allow it to evolve over time to serve a role in the future city. The use of technology to make natural processes more visible will also foster an experience of nature on sites (Berrizbeitia, 2009: 17).

I looked at the Mill Race Park and the Herman Miller Factory by Michael van Valkenburg Associates, as these projects explore the relationship between land and water in the construction of terrain around buildings. The Mill Race Park Project dealt with a site that flooded cyclically and had architecture on it that remained from its previous industrial function. Human activity was facilitated through the creation of 'dry program' areas in the landscape, and the ground surfaces was moulded to deal with the channelling of water in 'wet program' areas. The architectural remains were used to create purpose along pedestrian routes, and durable materials were used so that the ground would withstand flooding (Amidon, 2009: 47).

In the case of the Herman Miller Factory, a landscape aesthetic was developed from a set of hydrological principles - the ground was shaped to slow down storm water run-off and

A mapped analysis of the valley between the Harbour and Settlers Park Nature Reserve, that is the proposed macro intervention area

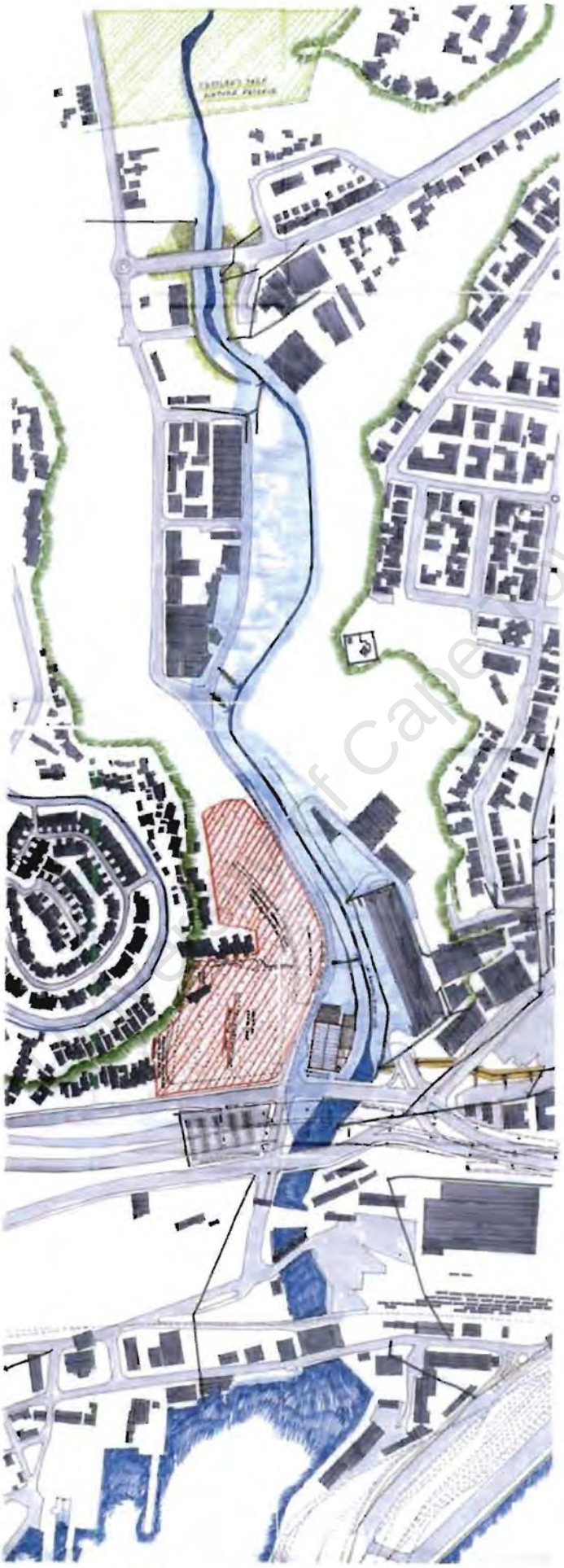
(H. Duker, 2012)

conduct it into a constructed wetland, where it could recharge the ground water system. The factory building acted as a stopping point in the dynamic landscape of contrasting hard and absorbent surfaces around it (Berrizbeitia, 2009: 18).

This theoretical research guided a final stage of site analysis. This analysis provided me with an understanding of the natural processes and systems underlying the site, and allowed me to create a framework for design. The key findings of this analysis are as follows:

The area of the Baakens River valley that runs between the Harbour and Settlers Park Nature Reserve is the natural habitat of the critically endangered plant species named Baakens Grassy Fynbos. This site has been ranked as number six on a priority list of twenty nine sites in Port Elizabeth that will be rehabilitated as part of a conservation plan. 87% of the fynbos habitat has been lost in this area. The initial aim of the conservation plan is to increase the current amount of plants here from 317.6ha to 427.8ha (SRK Consulting, 2007: 49). The fact that my site of interest exists within this area presented the opportunity of making the rehabilitation of plants a focus in the re-working of the landscape.

The implications for design in a Critically Endangered Area are that no further loss of natural land is allowed, all undeveloped land will be used for the rehabilitation of vegetation, and that land may only be disturbed for development if this development will have a positive impact on the environment (SRK Consulting, 2007: 52). I made the decision to work within these guidelines, and set up boundaries for the site intervention based on the re-working of the developed surfaces around



Critcally endangered vegetation

Soil type and reclaimed land

Man-made surfaces

Points of attraction and historical remains

Storm water system

the Tramways Building and canal, and with the intention of not disturbing the remaining natural land.

The conservation plan for the site forms part of a biodiversity network that runs up the length of the river. However, this network stops where the valley meets the belt of transport infrastructure to the seawards side of the Tramways Building, as this area has been classified as a 'non-restorable land' (SRK Consulting, 2007: iii). This discovery highlighted the potential for the reworking of the ground plane on the site to act as a mediator between non-place and the proposed rehabilitation area.

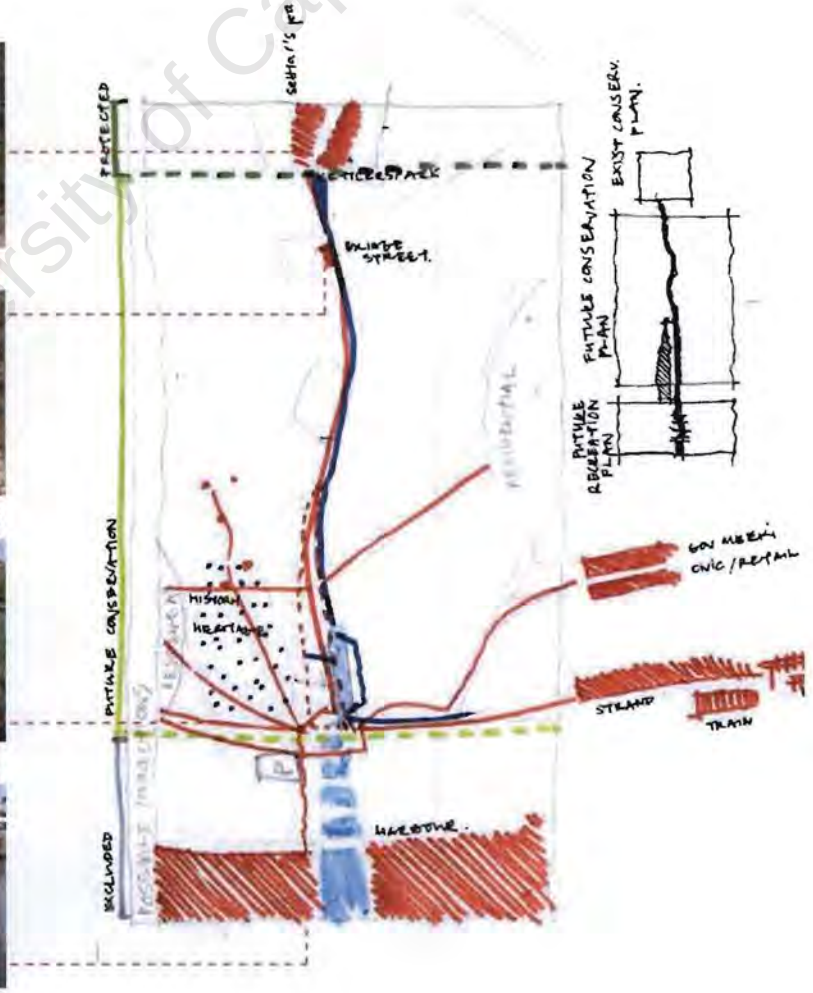
The location of the storm water drains that channel rain water into the river canal was mapped between the harbour and Settlers Park Nature Reserve. It revealed a concentration of water channels around the site at the mouth, and one primary channel that directed water from Govan Mbeki Avenue (the civic centre) into the part of the canal opposite the Tramways Building. At this point I developed the idea of de–canalising the river and creating a constructed wetland that would slow down the flow of storm water and allow it to be cleansed in reed beds, and absorbed into the ground. I also considered creating a wetland route that would direct people (and water) from the civic centre to the site.

The Settlers Park Natue reserve

The Bridge Street Brewery Building

The Tramways Company Building

The Harbour



3. Synthesis of Ideas

The ideas that came from the process of researching theory and site, in the exploration of the possibility of recovering experience of place and nature through design, can be synthesised in the following proposals for macro and micro scale interventions along the Baakens River.

3.1 Macro Design - Reconnecting the Site to the City and Re-establishing Natural Connections

An idea for an intervention at an urban scale was developed, that had the intention of re-connecting the greater natural site to the city, and allowing people to experience the unique qualities of the area between the harbour and the Settlers Park Nature Reserve.

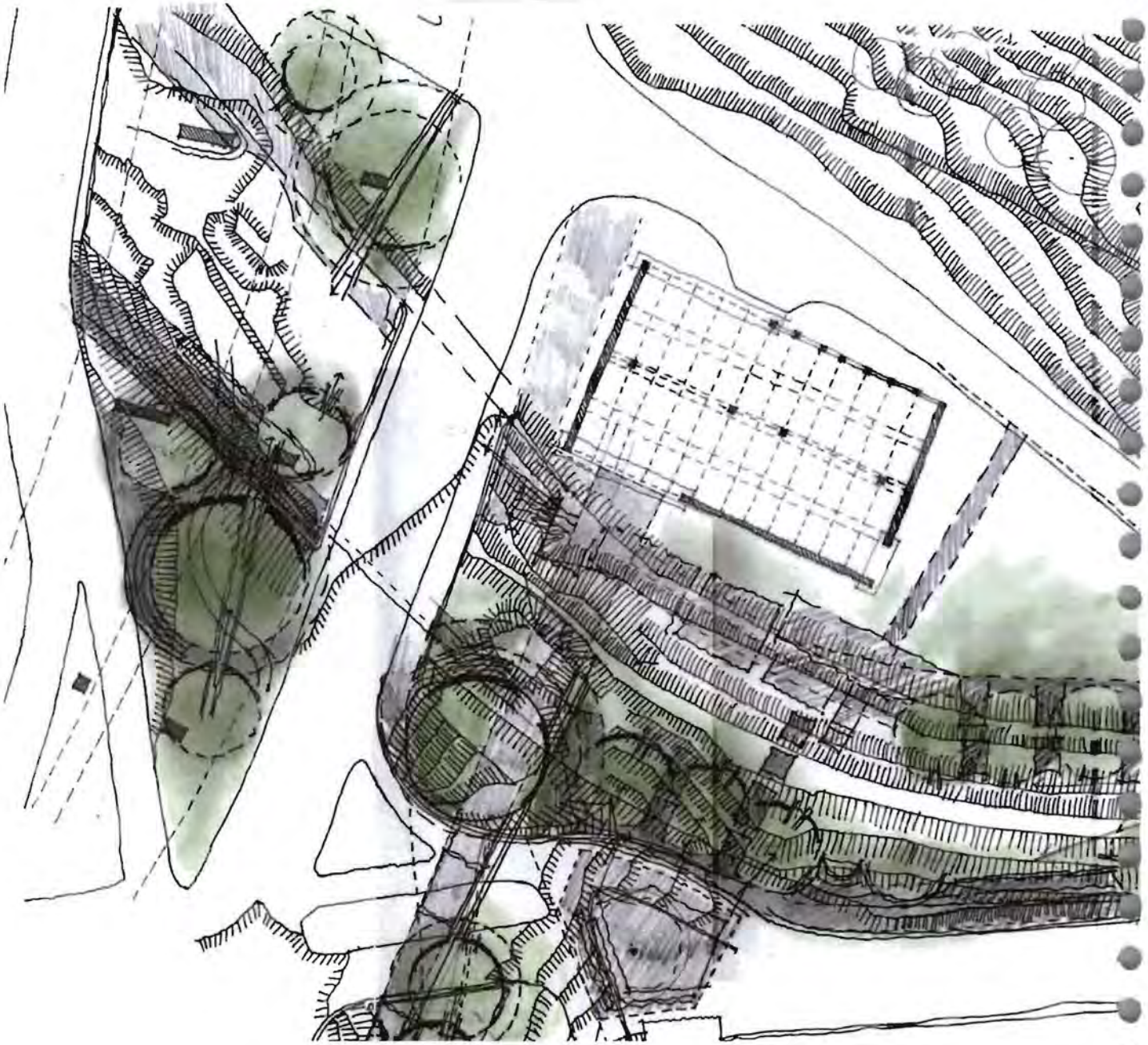
This intervention proposes the design of a public recreational route that connects the harbour to the nature reserve. This proposal will allow the site to support future densification of the harbour and city by providing public open space. Nodular development will occur along the public route, and will work on the basis of enhancing existing sites and making them attractive destinations to the public. The harbour will constitute the first node, and will be the starting point of the route. The site of the Tramways building will be developed to house the program of an Indigenous Learning Centre, as the second node on the route (this intervention forms the focus of the thesis). The third node is the Bridge Street Brewery Building, which is already performing as a recreational hub in the valley. It has been functioning since 2011, when an old industrial building was re-used to house a restaurant, a brewery and an advertising/ graphic design agency. The final node on the route will be the destination of Settlers Park nature Reserve.

Tied into this public route, is the proposal to rehabilitate the critically endangered Baakens Grassy Fynbos through planting, and the design of a constructed wetland that works to cleanse storm water and recharge the ground water. The strategic placement of borehole points along the river will allow this ground water to be harvested for use in the valley, and in the city.

This proposal is intended to provide a route of experience, where people are able to experience this previously underutilised site and its layers of history and nature, and observe natural processes through the water channelling infrastructure of the constructed wetland.

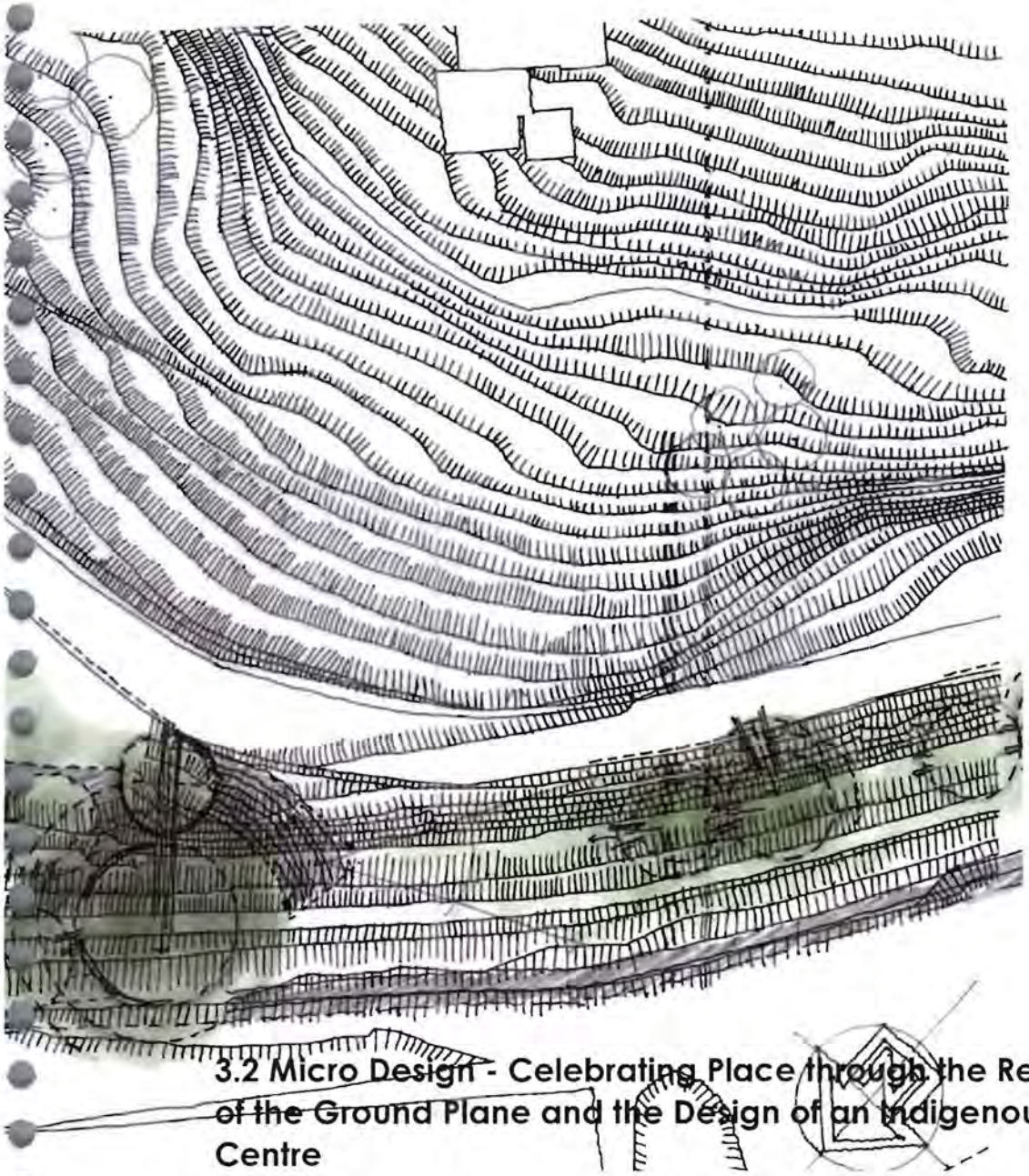
Left:
A sketch which illustates the proposed public route in the intervention area, and photographs of the proposed nodes of development.

(H. Duker, 2012)



Above:
The initial exploation of the design of the constructed wetland, experimenting with the form of reed beds to create public space

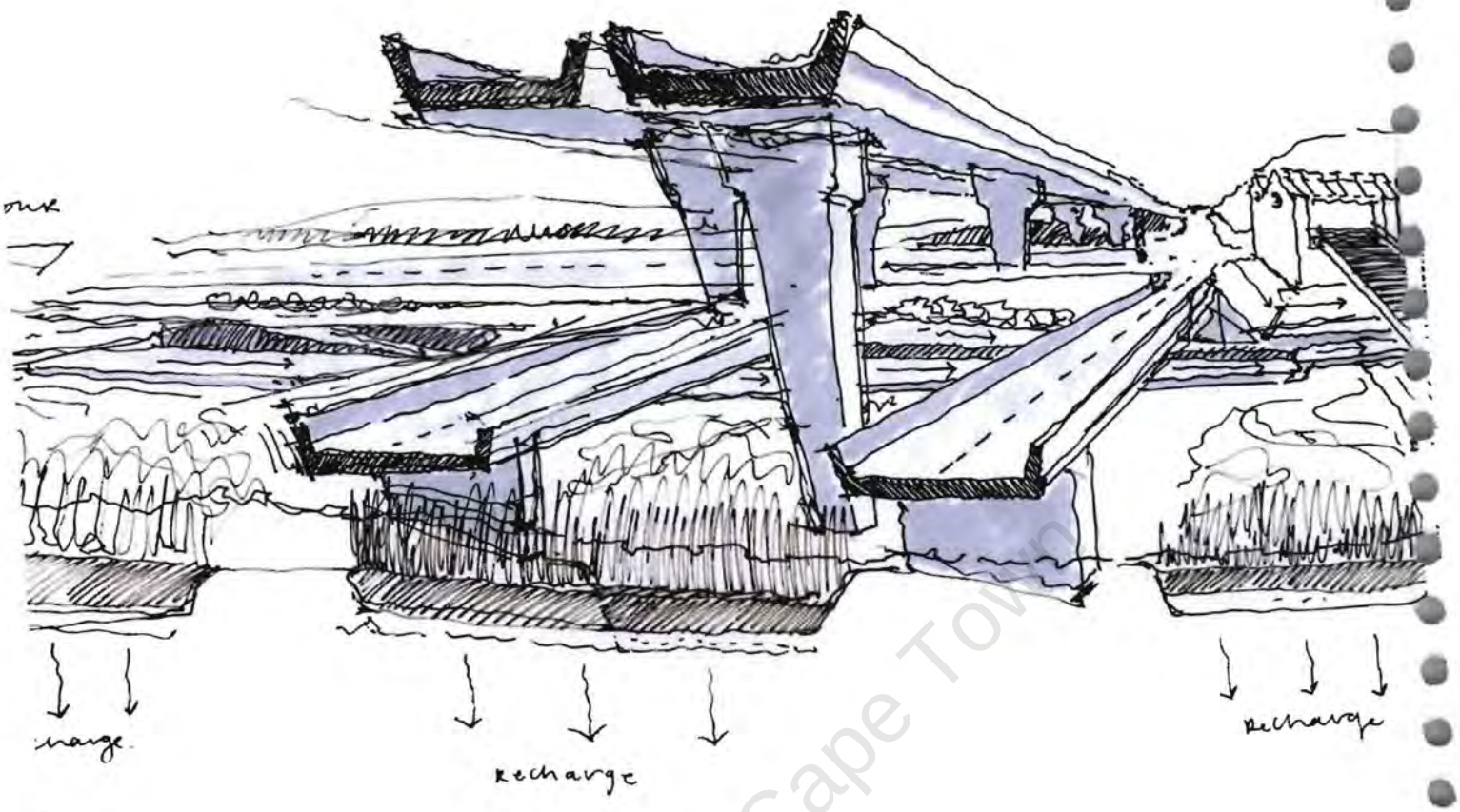
(H. Duker, 2012)



3.2 Micro Design - Celebrating Place through the Re-making of the Ground Plane and the Design of an Indigenous Learning Centre

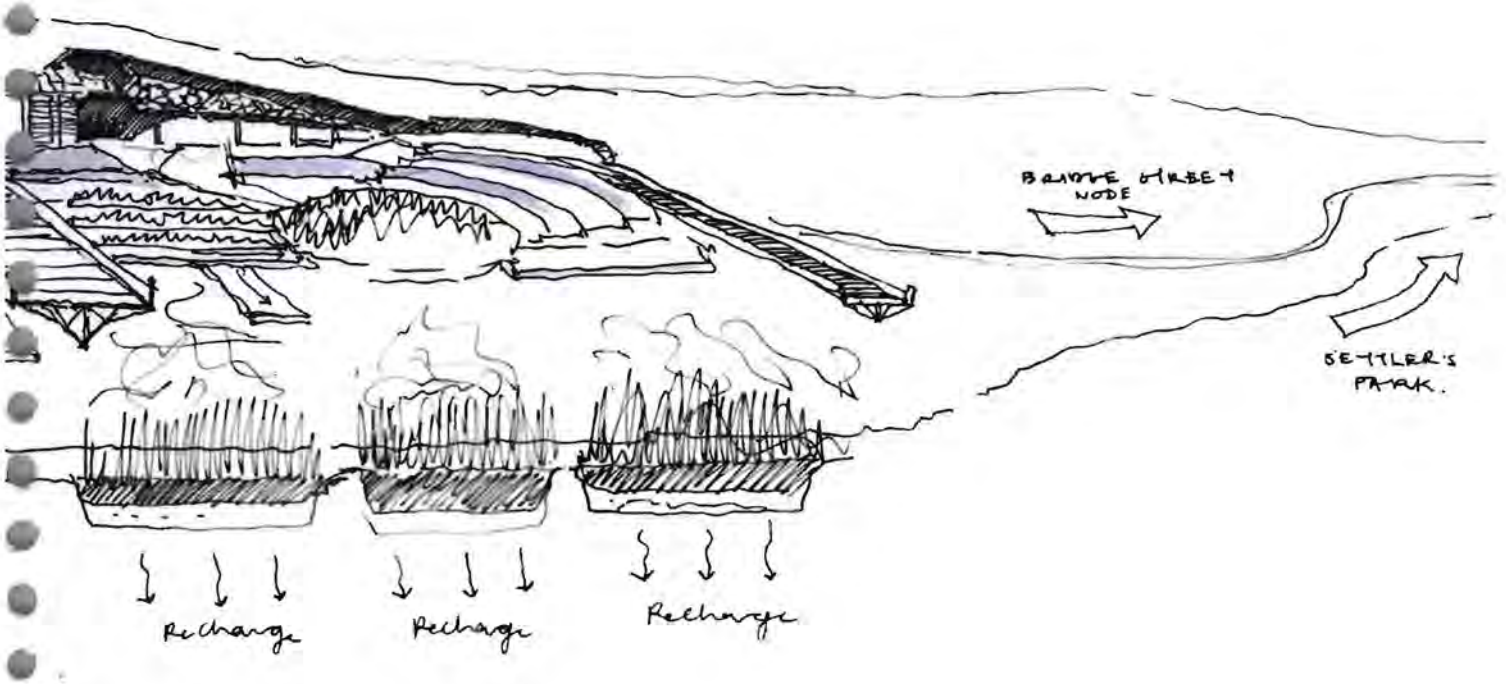
When contemplating the local appreciation of the Mithi River estuary in Mumbai Mathur and da Cunhu (2009: xiii) suggest that 'schools teach children about the big things that fit into geographic categories with little doubt rather than the small things that do not. This is probably true of children in Mumbai as well. They learn about the Indus and the Ganga and the 'great civilisations' that these big rivers spawned, before, if at all, they learn about the uniqueness and particularity of their own place.'

With this in mind I have proposed the design of an Indigenous Learning Centre to constitute the second node along the public route. This centre will be a destination where the public can come to learn about the history and ecology of the site, and participate in the making and buying of crafts. It will also house a research facility that is connected to the proposed conservation area, and will have the potential to operate as a satellite research facility for Nelson Mandela Metropolitan University. The centre will also activate the



Above:
An early sketch of the micro intervention

(H. Duker, 2012)



proposed route with a purely public restaurant component.

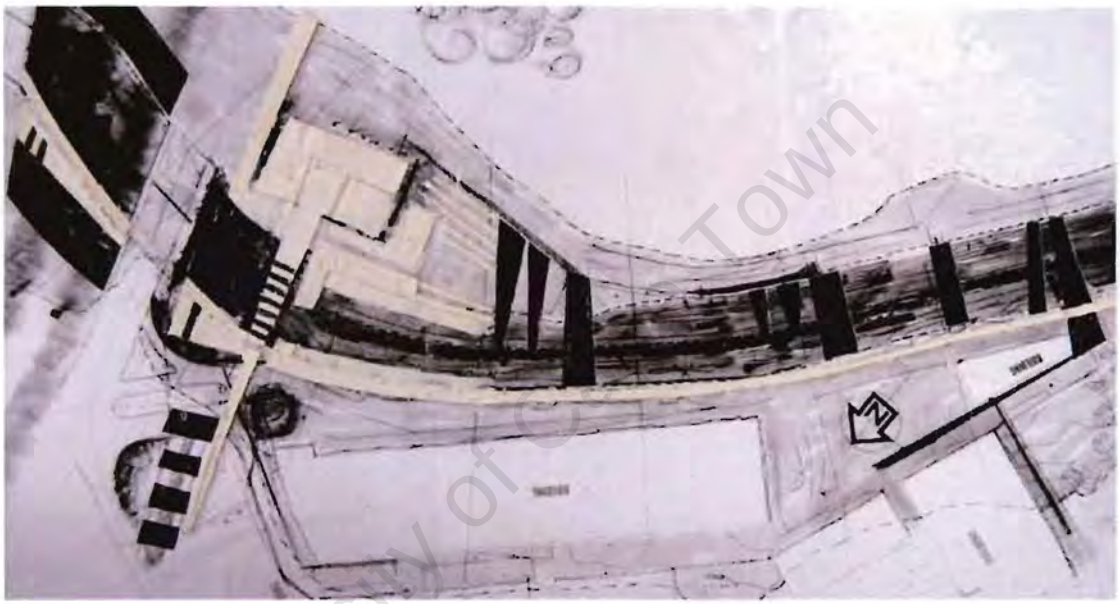
The principles that have guided the development of the design of this intervention are as follows:

A route of experience will tie together the layers of constructed wetland, indigenous vegetation, moulded ground surface, heritage ruin and new architecture to allow for a holistic experience of place.

The ground plane will be re-made to establish a more fluid and negotiated relationship between land and water. It will channel the people through the various spaces in the landscape, as well as conduct storm water into the wetland system. The ground plane will function as a wet area, where the use of space is governed by the water level of the river.

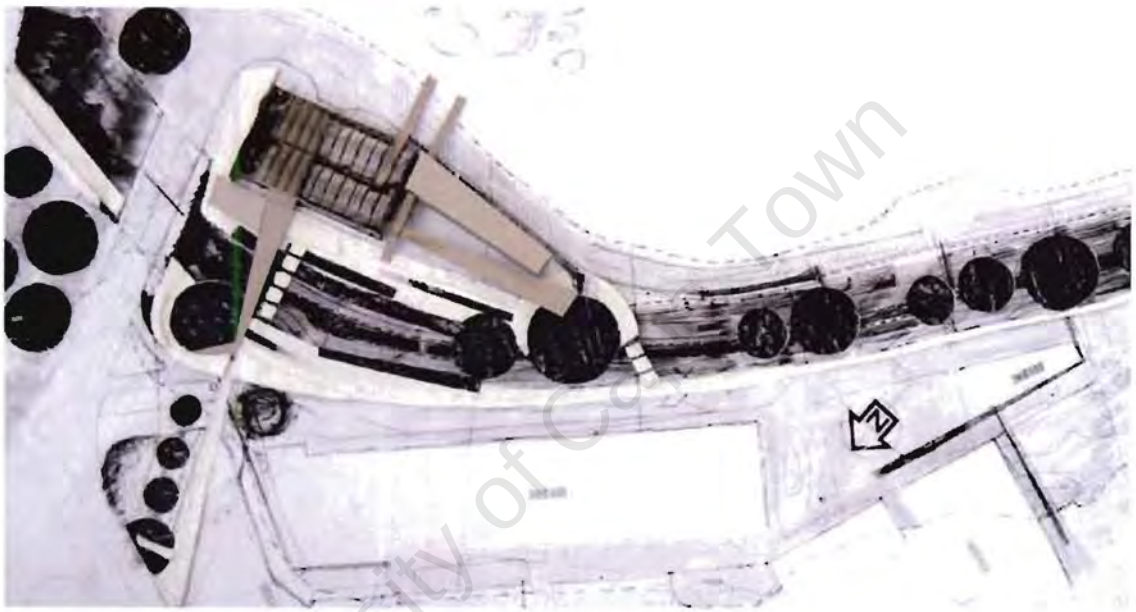
The derelict shell of the Tramways building will act as an armature for public space in the constructed landscape around it. Alterations will be made to this building to interconnect it with the site. Like the ground plane, it will be allowed to continue to flood. It will house flexible activities related to the learning centre, for example crafting.

The Indigenous Learning centre will exist on a dry level, as an autonomous structure that weaves through the heritage ruin and the landscape. The route of experience that channels people on the ground plane will be continued through this structure to provide and experience of views, tectonics and layering.



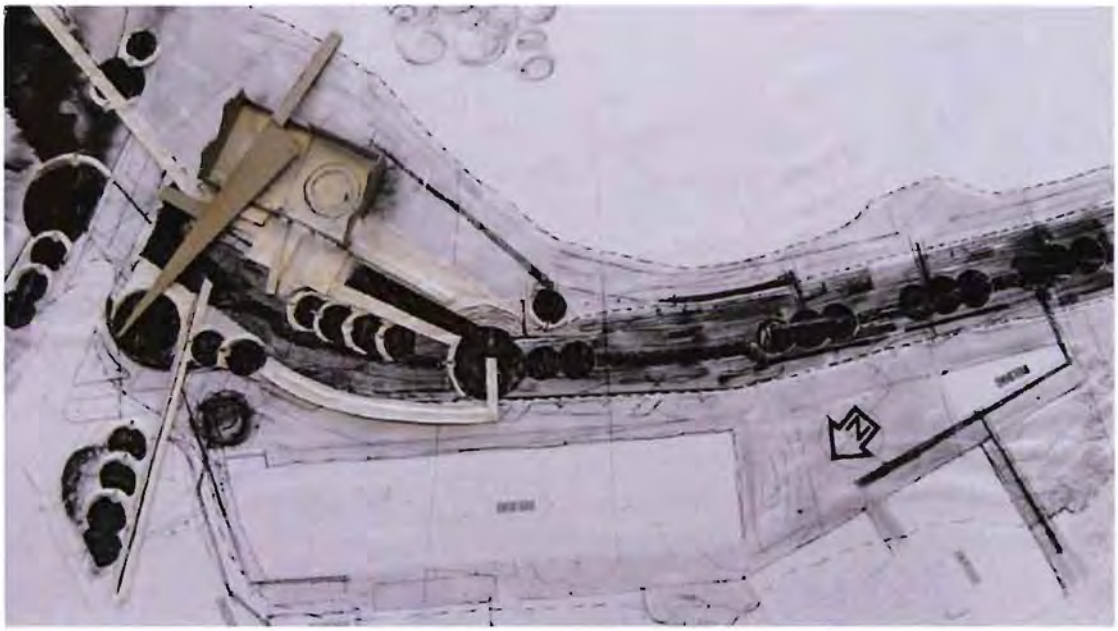
Above:
Concept model dealing with the moulding of the ground plane to channel water, and create public spce and route

(H. Duker, 2012)



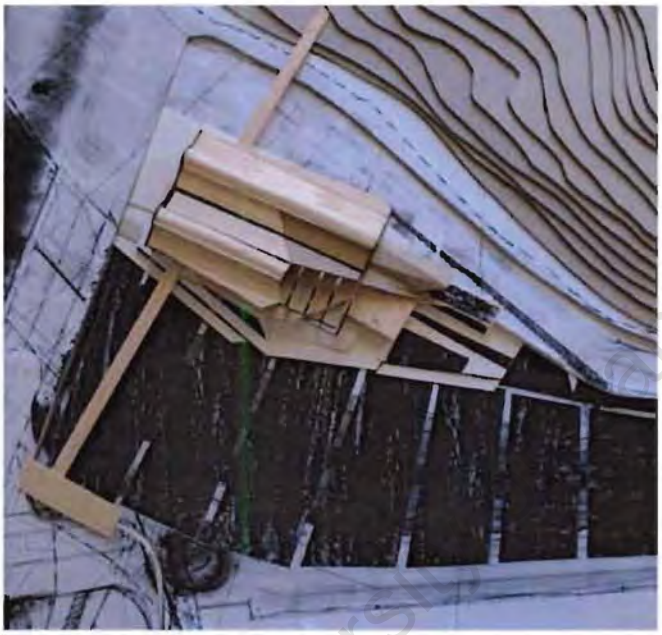
Above:
Concept model that further explores the ground plan and design on reed beds, and introduces the idea of a dry route through the existing structure

(H. Duker, 2012)



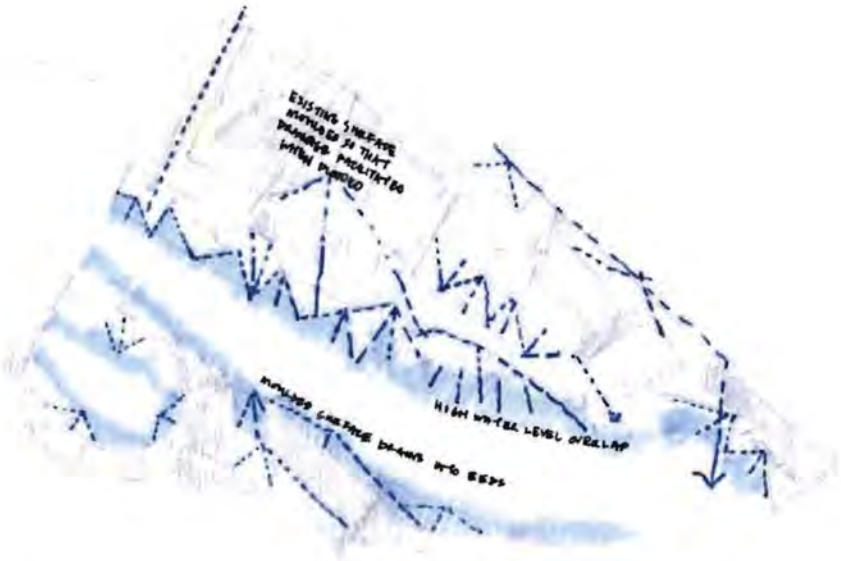
Above:
Further exploration of the idea of route, wetland and moulded ground plane

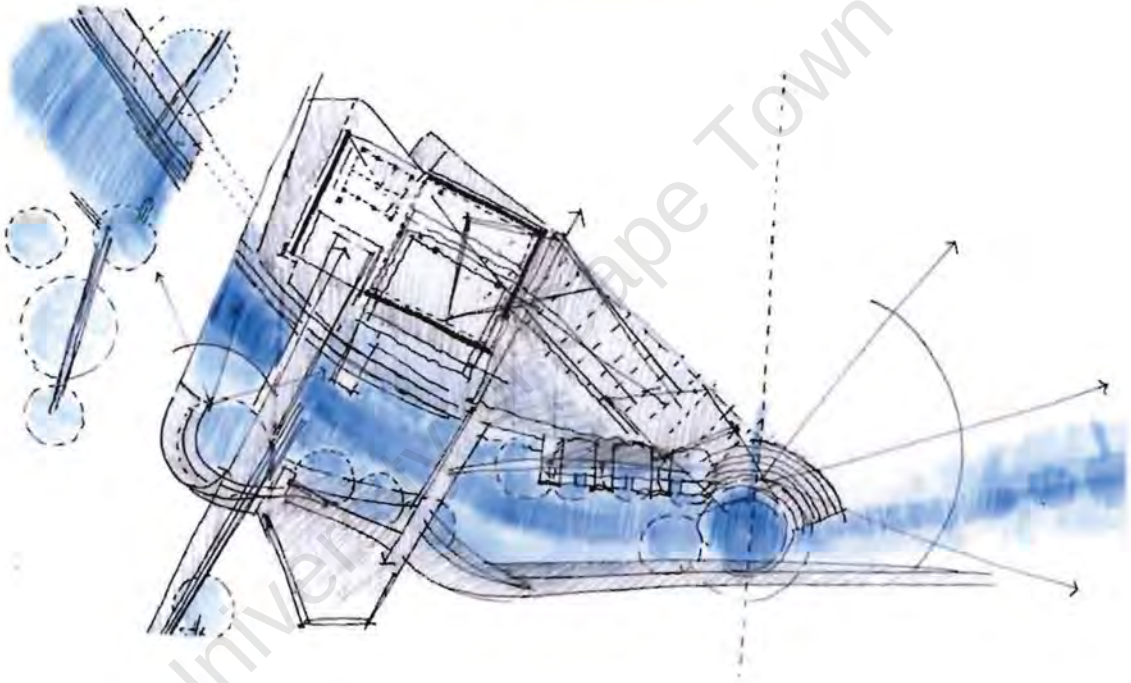
(H. Duker, 2012)

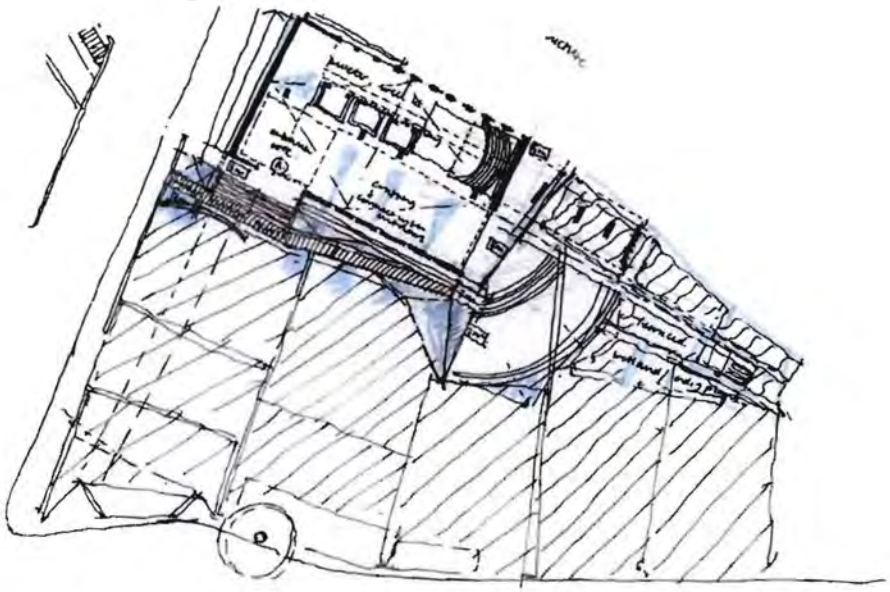


Above:
A concept model
for the fist sketch
plan design

(H. Duker, 2012)

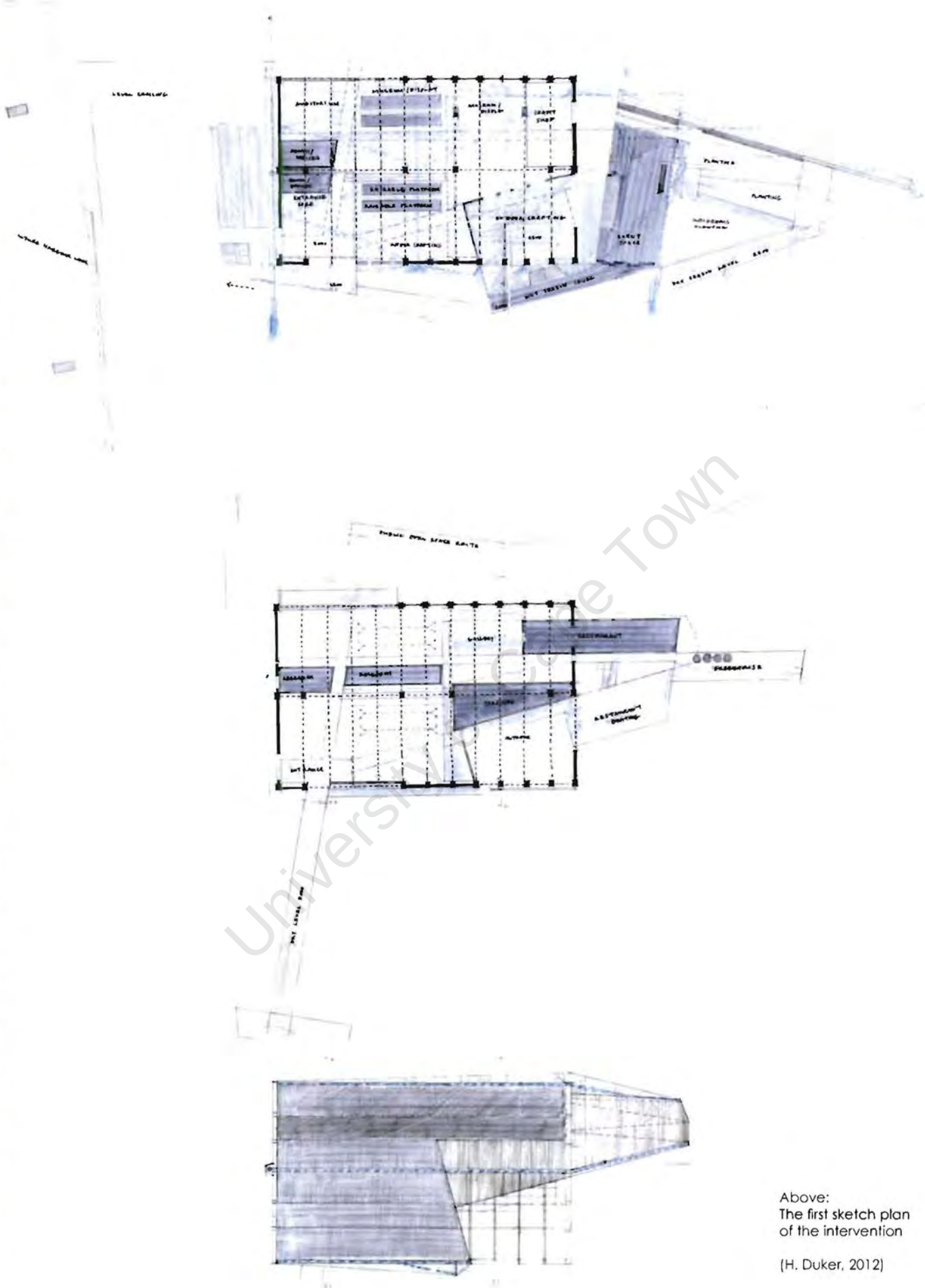






Above:
A series of development sketches exploring the channeling of water on the ground plane

(H. Duker, 2012)

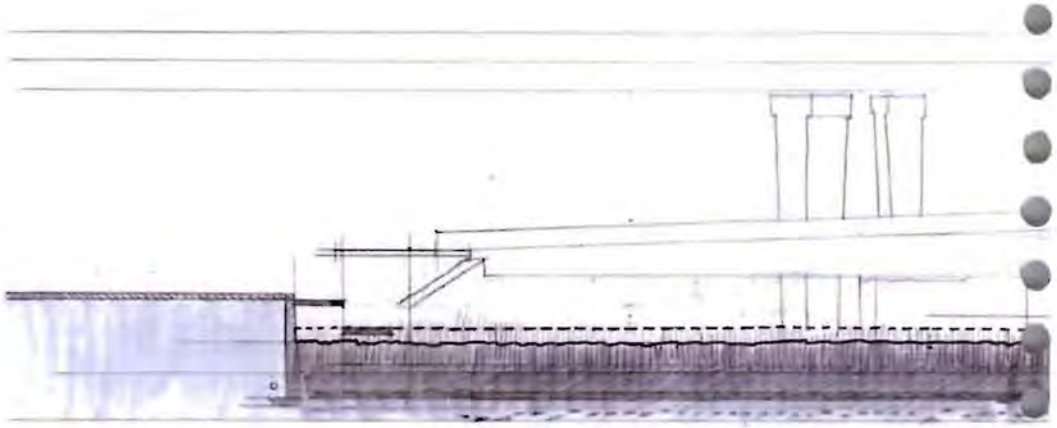


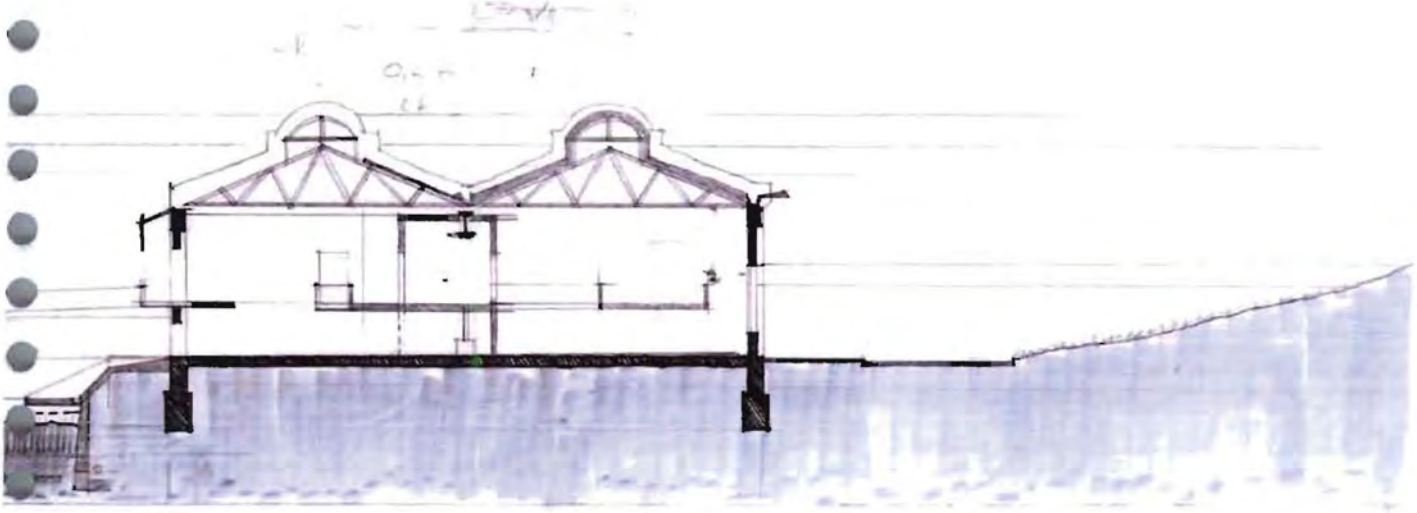
Above:
The first sketch plan of the intervention

(H. Duker, 2012)

A section of the sketch plan showing how the additions to the existing structurehav been removed on the river bank, the design of new structure within the exiting shell, and the construction of a wetland to replace the canal.

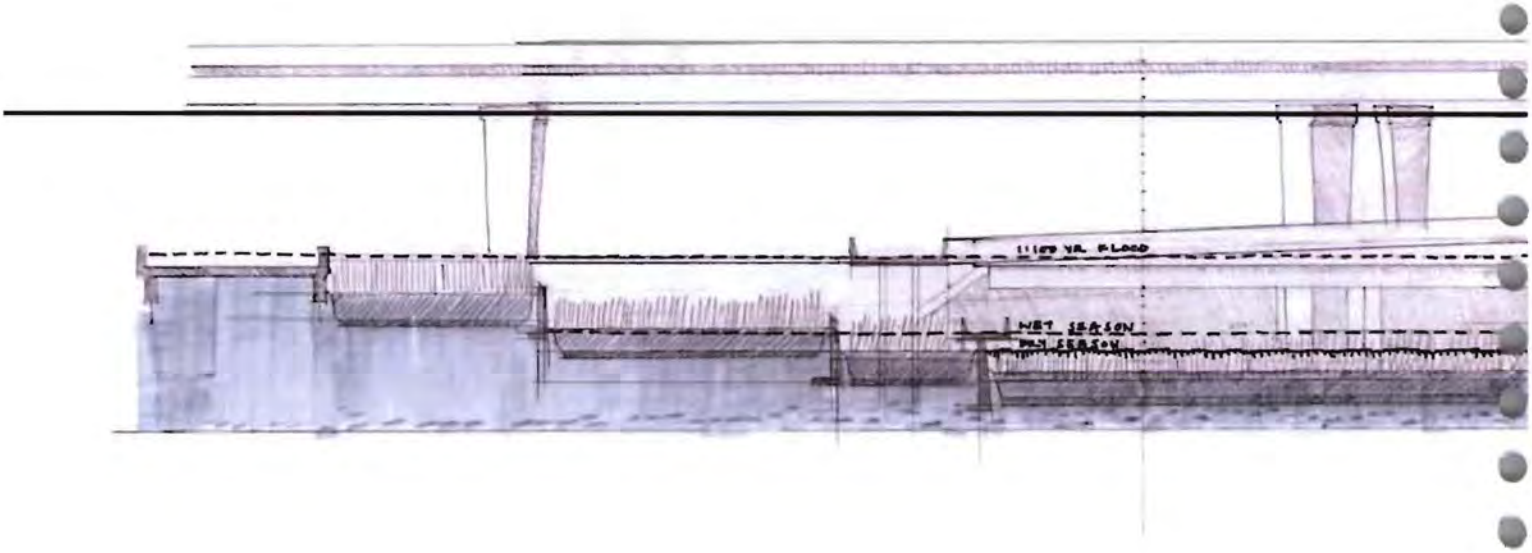
(H. Duker, 2012)

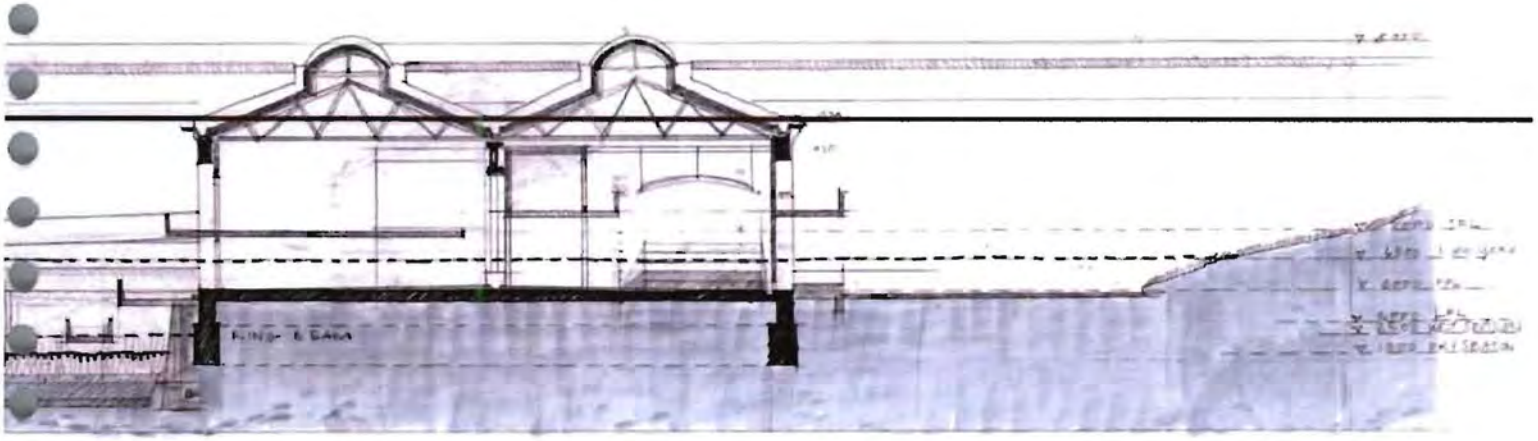


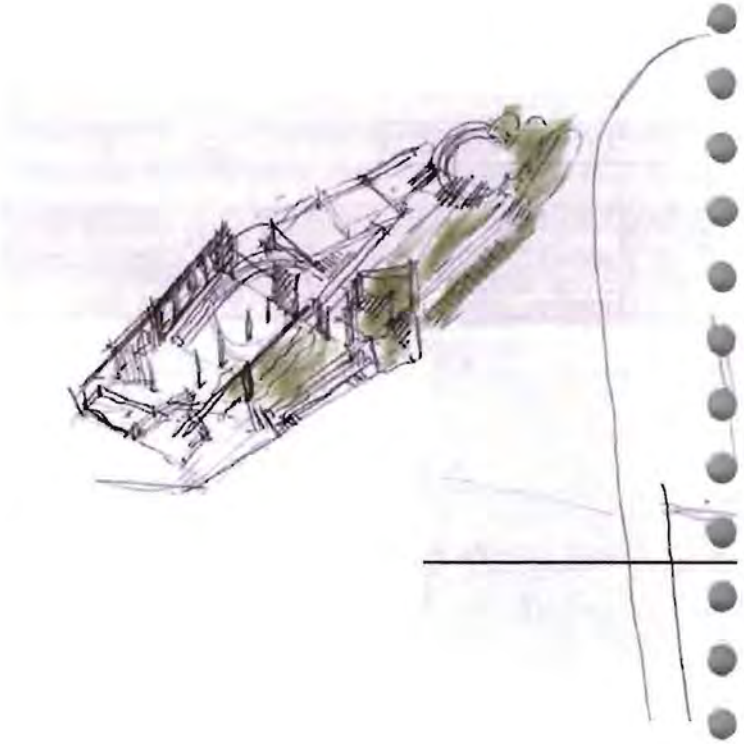


A second section through the intervention, which illustrates the idea of the ground plane interacting with a number of water levels

(H. Duker, 2012)

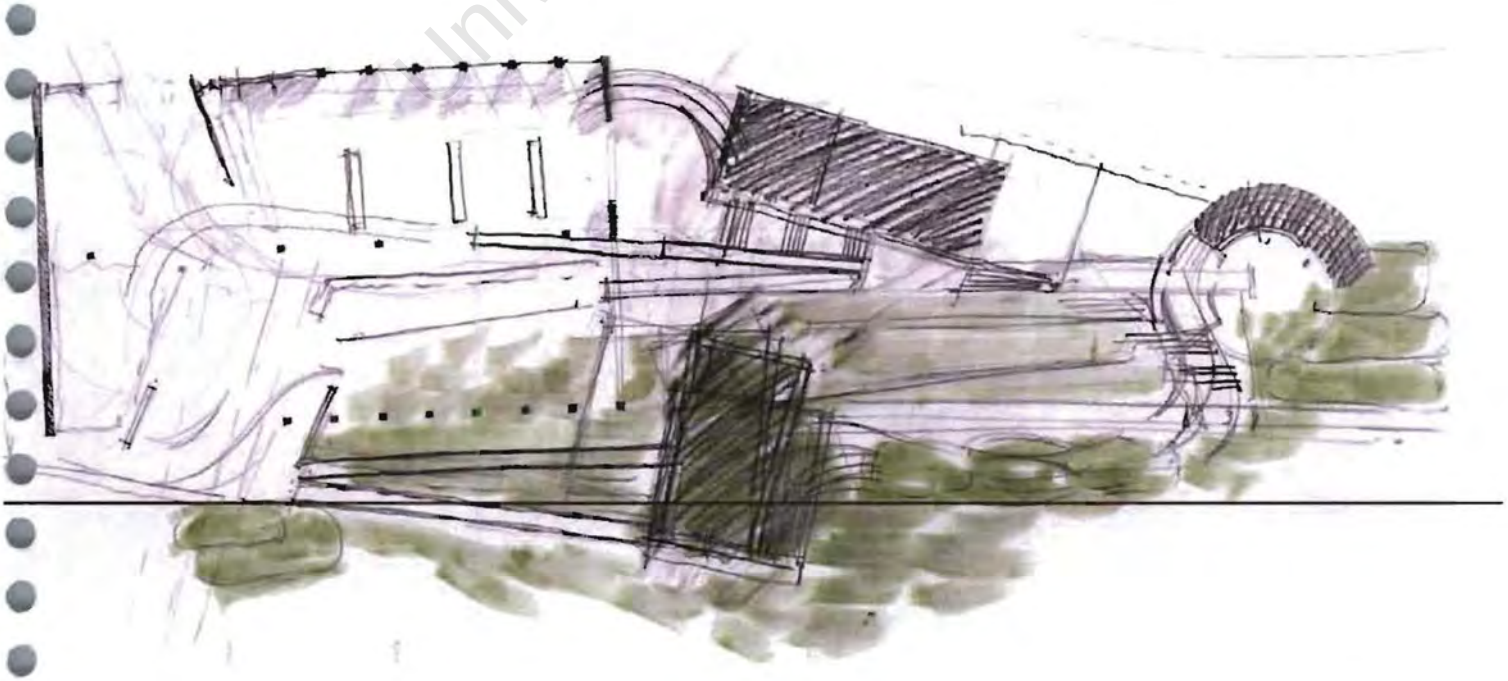


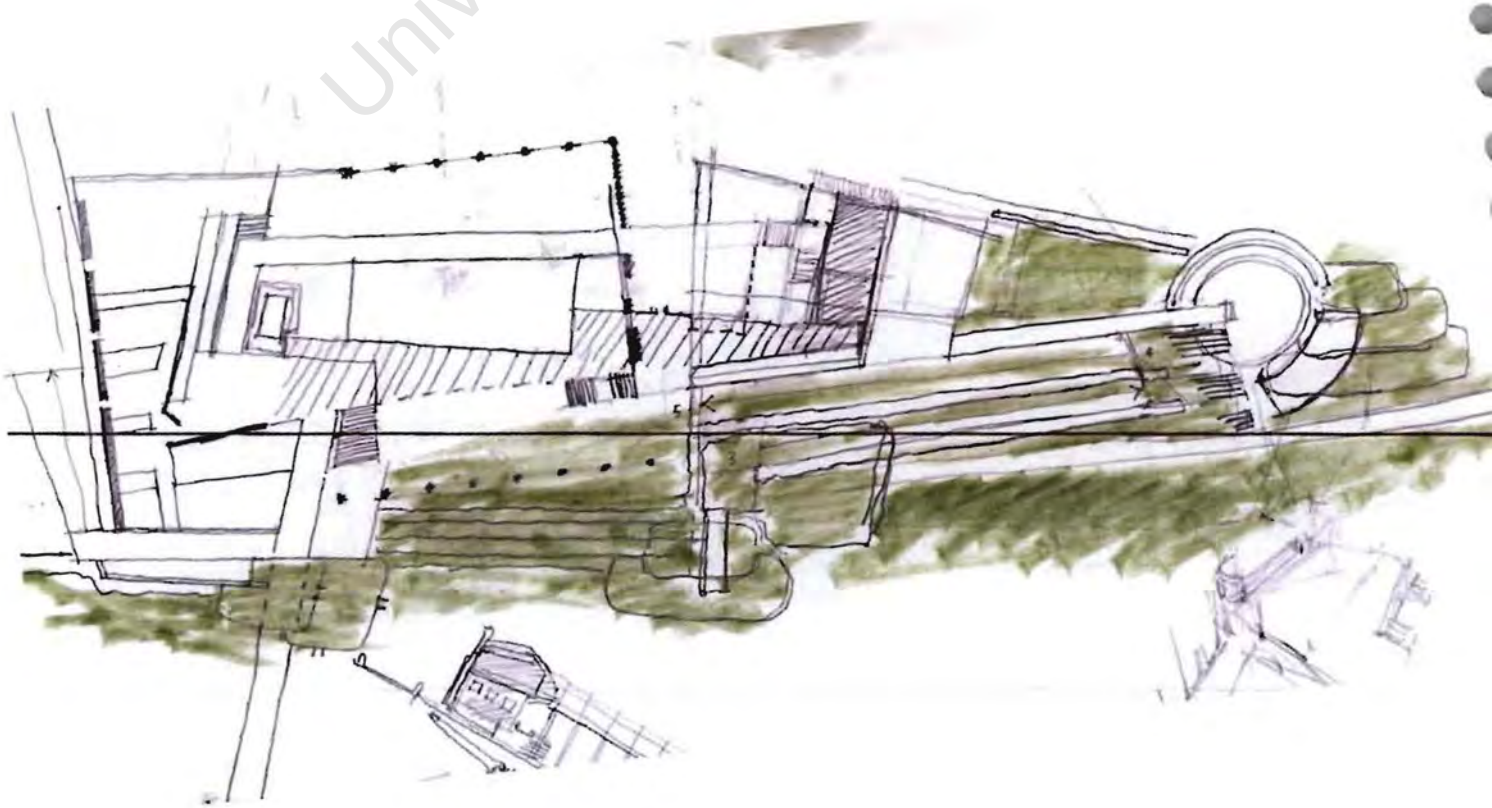




A process sketch that pushes the sketch plan further, exploring the existing structure as an armiture in the landscape, and ways to bring the landscape into this structure

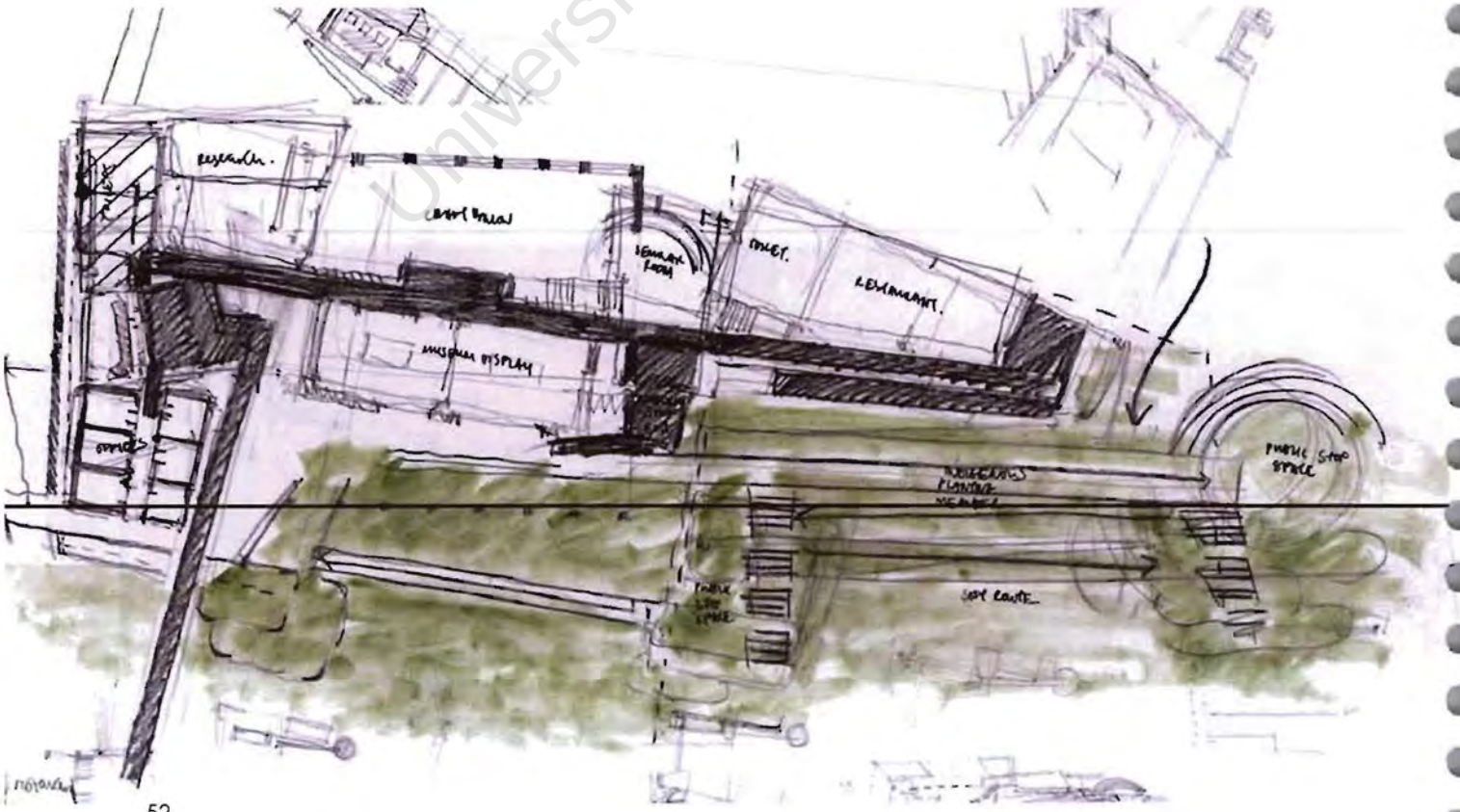
(H. Duker, 2012)





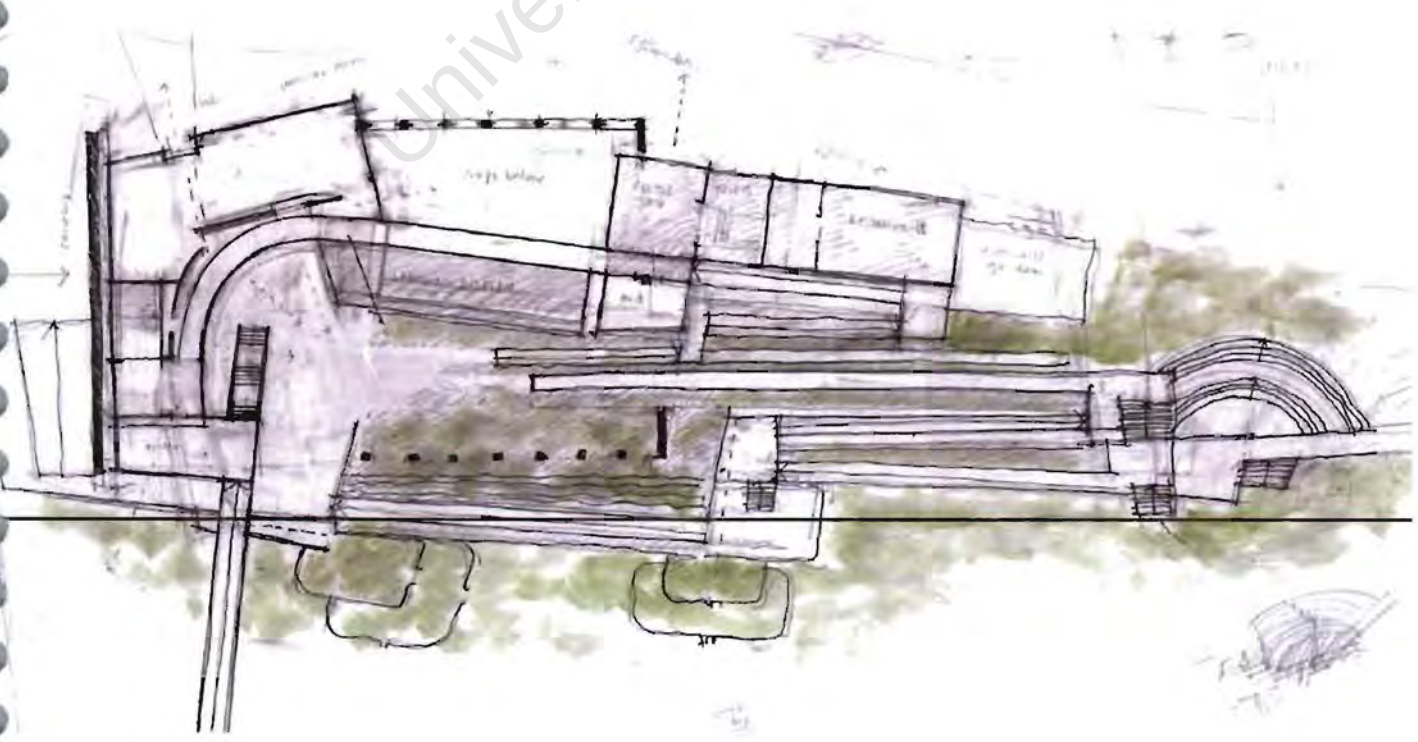
Sketches showng the development of the geometry of the new structure in relation to that of the existing building, and the idea of a terraced landscape with specific stopping points

(H. Duker, 2012)



This process resulted in a diagram for the inetrvention that consists of a slowly curving route that runs through the existing structure as a dry level, and tapers back down into the landscape. The existing structure encloses the new building, and becomes shelter for crafting space in the landscape. Its program extends out into the constructed terrain, and the public route that links the spaces of the intevention together is terminated in a circlar resting spot.

(H. Duker, 2012)



4. Conclusion:

This thesis exploration has forever changed my attitude towards place and nature in the city, and I have uncovered a personal passion for the relationship between the landscape and architecture. In a contemporary environment where researchers are placing emphasis on the need for humans to respect and work within their natural environments, architecture can play an important role in helping to re-establish some form of balance between settlements and nature. Cities can no longer continue to sprawl out into the landscape. Instead the emphasis should fall on the creation of better places within malfunctioning cities, through the recycling of existing sites. Architecture should become intertwined with landscape and nature, to provide a positive urban experience.

Having engaged in this process of investigation I am fortunate enough to complete my final year as a student feeling inspired about the possibilities of design in cities

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