

Making Roughness:
Shaping site at Granger Bay

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Design Research Project APG5058S
October 2012

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Shaping site at Granger Bay

Design Research Project APG5058S

Submitted in partial fulfillment for the degree Master of
Architecture (Professional)

by
Emma Reid
October 2012

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Introduction

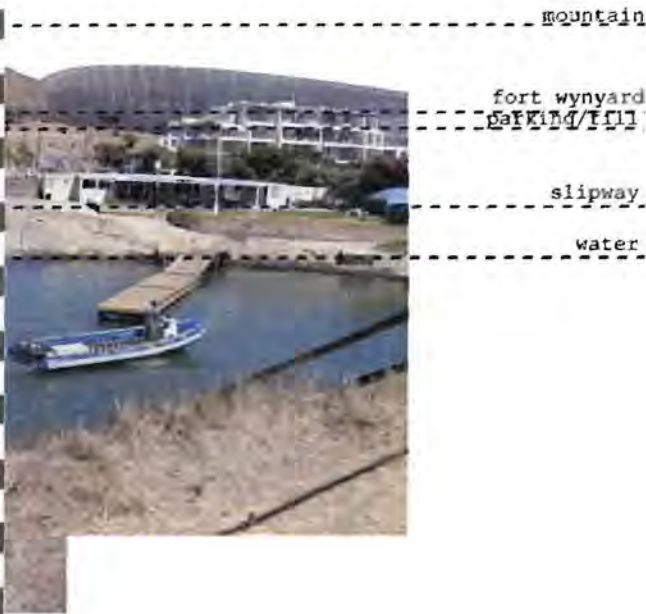
This project is about "roughness" at all scales. It is about Landings: land and sea and Granger Bay. It is about deposition and erosion; heaving rubble and anchored shale. It is about a working "landschaft" of multiple overlapping contested uses. It is about abstracting natural forces to create architecture.

Throughout the process the theoretical notions of "roughness" and "landings" have provided a lense through which to understand site and inform design. The project is located at Granger Bay. The purpose of the project has been to enhance existing facilities in this working bay and further activate it through the addition of a legible public route that acts as a continuation of the seapoint promenade through the site towards the V and A waterfront.



Granger Bay

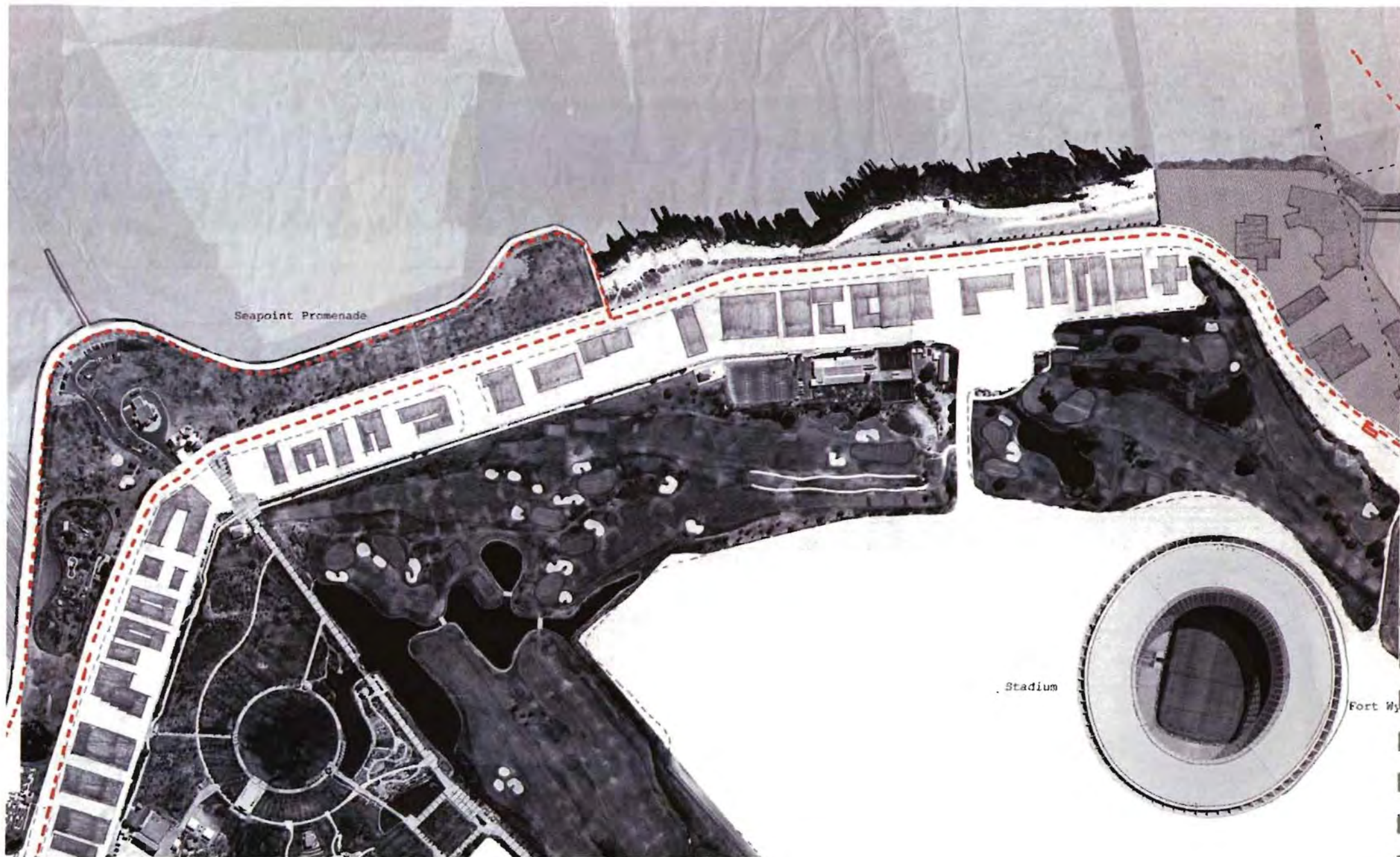
Site as Project Generator



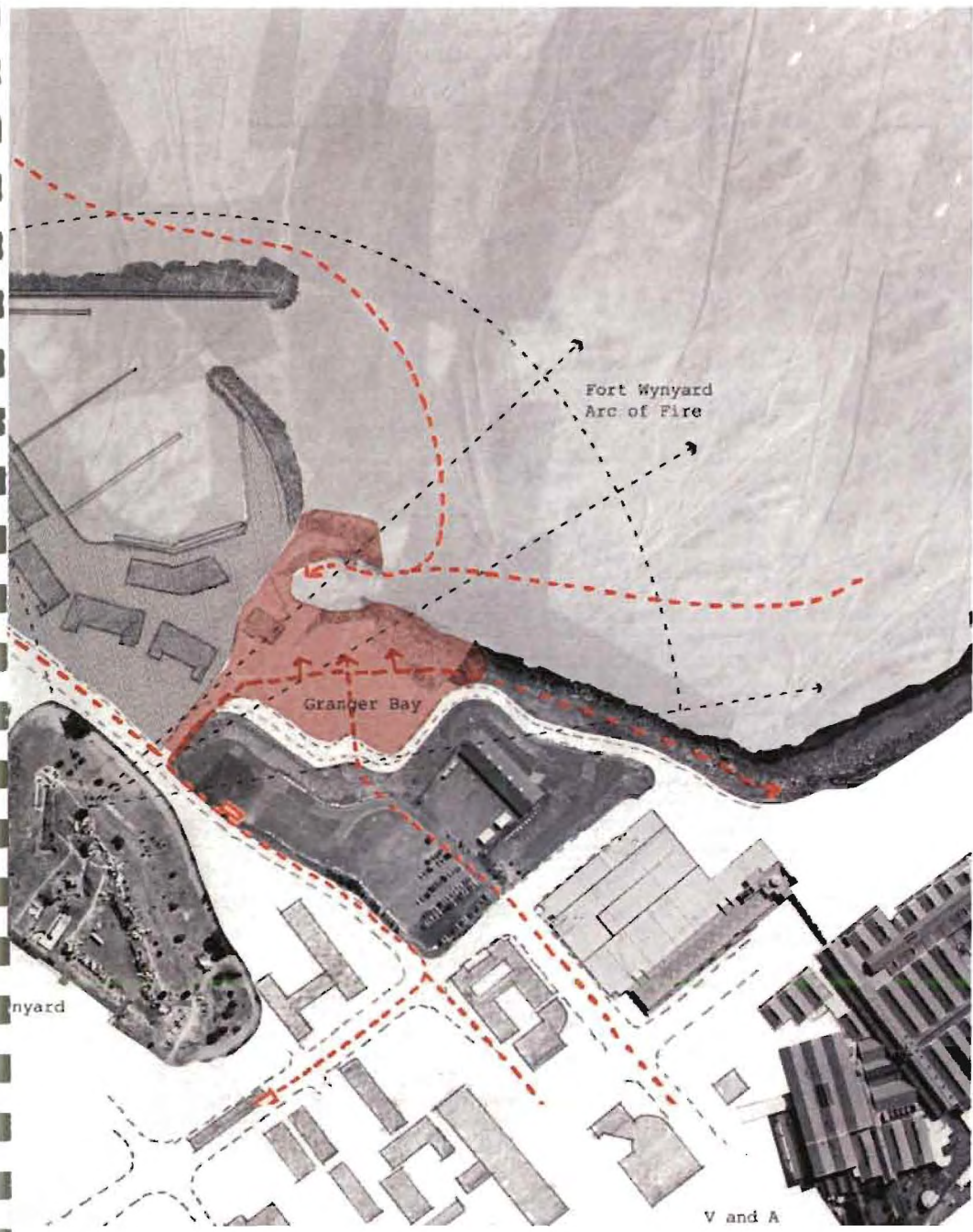
My choice of site was largely a result of a theoretical and material interest in roughness. However, theory, siting and design have come to overlap in the process of the project. At the outset, my intention was to select a site that could act as a project generator. I wanted to locate the project and enmesh it in the particularities of a place different from any of my previous projects which tended towards more urban contexts.

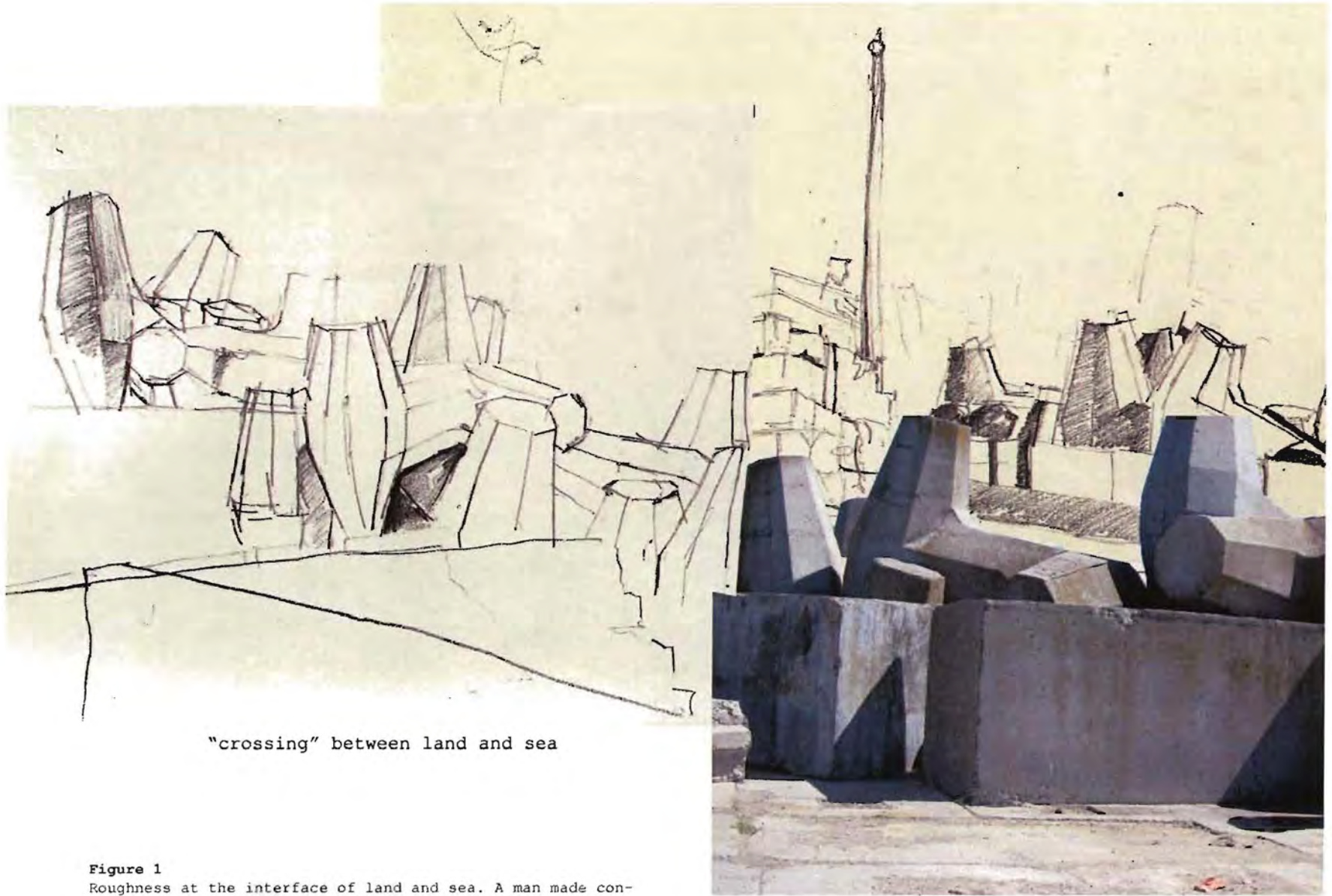
Granger Bay is an undeveloped piece of land between Mouille Point and The Victoria and Alfred Waterfront. Here one of the last safe accesses to the ocean from the city is permitted via a slipway that can be used by the general public. Fort Wynyard overlooks Granger bay, separated from the bay by Beach road. The fort is composed of a mound of land into which a fortress is constructed. It rises some 15 meters from Beach road and is backed by the Greenpoint stadium. Much of Granger Bay is artificial land reclaimed in the 1970s; its original rocky beach line situated just North of Beach road. The Grande Beach Café, the only piece of development along with the small Power Boat Club, is housed in an old ship repair shed-come crayfish store. It is fronted by a artificial beach composed of sand brought to the site. A breakwater of concrete rubble and tetrapods creates a safe bay. Due to the shape of the coastline, the Mouille Point outcrop protects Granger Bay from much of the harsh seas experienced along the Seapoint coastline. Thus the bay is one of the few places along the Table Bay coast line where access into the sea as permitted at a human scale. Here one can physically touch the water without a distinct level change whilst simultaneously

protected from the threat of the Atlantic waves. The immediacy of the ocean, the sense of impermanence on this man-made "land-seascape" and the multiple uses that occur on the site make Granger Bay an unusual and evocative place.



Broader context
Granger Bay is located between the Seapoint Promenade
and the V and A waterfront





"crossing" between land and sea

Figure 1
Roughness at the interface of land and sea. A man made concrete edge to the ocean. Roughness is expressed in the texture of the concrete as well as the interplay of light and shadow (ambient conditions) on the irregular surfaces.

Reading Roughness

Materiality and the
Picturesque:

the Sublime and the Beautiful

David Leatherbarrow (2009) introduces the notion of "roughness" in his book *Architecture Oriented Otherwise* as a suggestion of materiality: Roughness in the texture of a stone plinth, roughness in an articulated wall and roughness in a pile of concrete dolosse. Yet roughness is seen to speak of more than just materiality as it invokes notions of time and place that inform expression on a material's surface. Just as every figure needs a ground against which to appear, so too is a building forced into visibility because of a "horizon" that is not of its own making and that exists prior to construction (Leatherbarrow, 2008:8). With these ideas in mind I undertook an exploration of spaces that I instinctively desired to explore further: spaces in the city I recalled but had never fully experienced. This act of walking and documenting drew me to various sites of interest namely those possessing characteristics of dereliction, the "sublime" and the "beautiful" in the city (Figures 1 and 2). The choice of site at Granger Bay was a result of this exploration.

Ambient conditions are not visible but they are specific to a site and so condition how architecture in that place is made. The ephemeral surroundings dramatize the building. This describes the productive tension between what is natural (environment) and what is manmade (surface) and how the two work together to expose the presence of each other. In figure 3, a seasonal exploration of site reveals the dramatic in colour/texture and use resulting from the change in ambient conditions.

Apart from the immediate material possibilities of "roughness," another

reading of roughness recalls the Picturesque and the intrigue of the sublime:

*"Without contraries, there is no
progression"*

- William Blake, *The Marriage of Heaven and Hell*

Places of discord stimulate the imagination and have been theorised to do so since the 18th century (Leatherbarrow, 2009:99). Edmund Burke in *A philosophical Inquiry into the Origin of our Ideas of the Sublime and Beautiful* (1757) speaks of the passions roused by the sublime: "it is productive of the strongest emotion which the mind is capable of feeling." In picturesque gardens of the 19th century the value of the sublime is invoked by the Earl of Shaftesbury as seen in

*"...the rude rocks, the mossy caverns,
the irregularly unwrought grottos and
broken falls of waters, with all the
horrid graces of the wilderness itself,
as representing Nature more, will be
the more engaging and appear with a
magnificence beyond the formal mockery of
princely gardens..."*

(Leatherbarrow, 2009:99).

"Smooth" situations referred to in "princely gardens" are often overlooked or taken for granted in a passing summation. Nevertheless it is the coupling of beauty and the sublime that is integral to Picturesque roughness for it allows us to see beauty or at least intrigue in discordant situations. We are drawn to these evocative places that pique our vision of what could be.

LANDINGS at the scale of territory/ city/ building
Land in itself can be viewed as a landing, flanked
not by treads and risers but by lakes, rivers and
oceans. A landing then is not a thing but an
event.

the 'in-definition' of the site

"a building that serves as an emblem of what was
otherwise unseen but integral about the world in which
it stands"
Leatherbarrow, D.

landscape

"landings" in "terrain"
gardens in the city

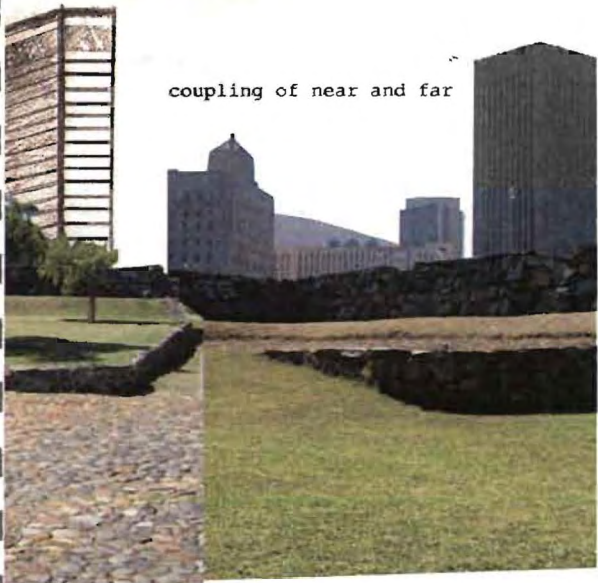


plateau
reservoir
garden
wall

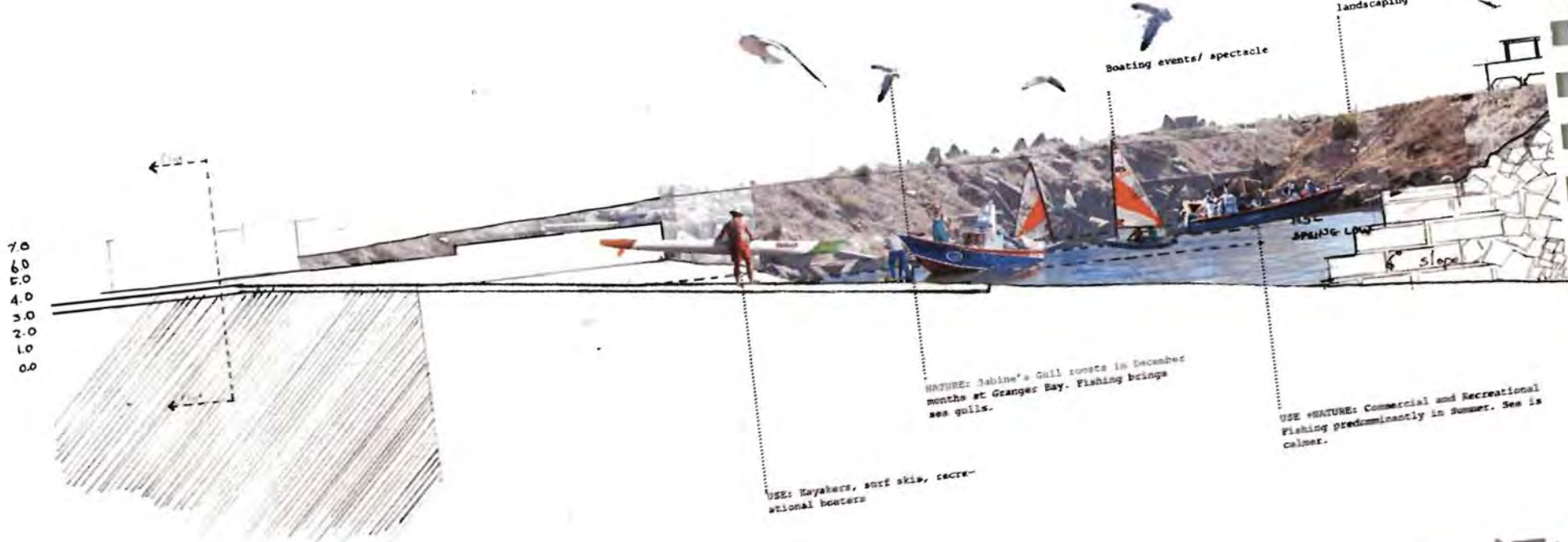
Figure 2

Drawing and exploring sites in the city through the lense of Roughness and Landings.

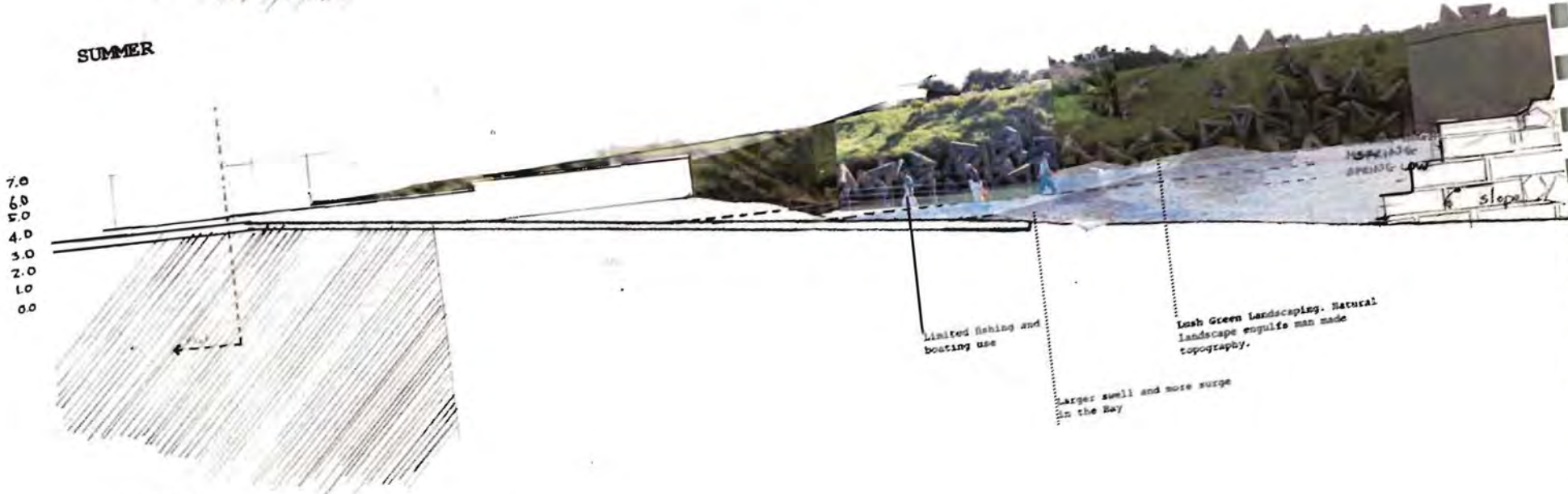
Whilst this drawing was done before chosing my site at Granger Bay, it is useful as it depicts ideas of landscape, landshaping, and tectonic expression. These ideas have been integral to the process of designing in the natural and man-made context of Granger Bay.



coupling of near and far



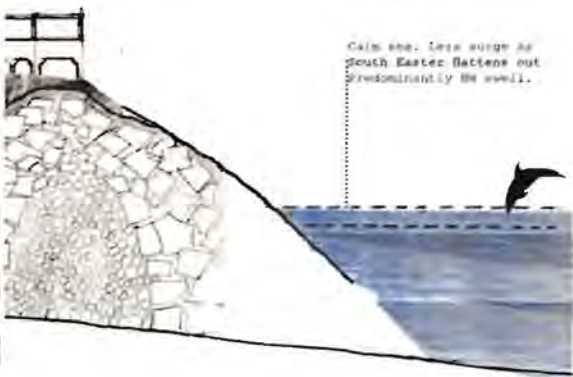
SUMMER



WINTER

Figure 3
Roughness as the expression of ambient conditions on architecture and topography.

In this section through Granger Bay, seasonal change affects the land in terms of use, colour, texture and ocean forces. This has been an important informant to the articulation of space and materiality in the design. This drawing illustrates my interest in the landform and tectonic of the breakwater.



Granger Bay Coastal Protection

Granger Bay is just such a place. It is a place of contraries: a terrain vague¹ at once complex in its cultural capacity and in its materiality.

The immediacy of the ocean invokes awe in its "vastness" and intensity. Furthermore the haphazard treatment of the land sea edge is crude and temporary giving the place a nomadic, transient quality. Here scale-less rough concrete tetrapods² and re-used building rubble have been dropped onto the site to serve the basic purpose of protecting the land from the encroaching ocean. Red and green containers, acting as valuable storage space, add to the sense of impermanence on the site; as does the roughly constructed slipway where ski-boats are winched in and fish are slung in bunches at midday, fins and tails flapping, leaving behind remnants of white scales and the tell tale stench: a reminder of the functionality of the site. The aesthetic of disorder, surprise and sensuality as described above is characteristic of the sublime and it leads one to encounter a forgotten materiality, a "roughness" that is not often experienced in the "pervasively programmed" landscapes of our cities (Armstrong, 2006:119).

Much of the land has been reclaimed from the sea in a speculative attempt to amass more lettable land in a burgeoning waterfront development. In spite of this the site has been left dormant for the past 35 years. An image of the site is that of asphalt, white painted road lines and fences that appear to serve as parking lot delineators. In the vast tarred expanse of the site, their randomness is highlighted. This image recalls Linda Pollack's project entitled *Drawing On site* (figure 8). Here

she endeavors to express the cultural and historical meaning, use and potential in a seemingly neglected piece of land by drawing site qualities onto the ground. Pollack's work inspired a materiality study of the site (figure 9). Granger Bay recalls Pollack's work in the sense that the detritus and informality found at Granger Bay is misleading in its masking of patterns of daily use. The bay is used by both recreational and commercial fisherman and boaters, promenaders, kayakers and for regular sporting and leisure events.

Despite the harshness of this environment, one cannot help but be struck by the shimmering ocean and the spectacle that unfolds on the site of constant flux where container ships and sailing boats silently glide past the rocky breakwater; the silence at odds with their vastness.

To the east of the site exists a new sandy beach flowing over the rock and rubble sea edge. It recalls the artificial beaches that are brought into Paris in the summer months that add an additional layer to the hard urban roads and pavements they inhabit. This simple act brings "sun," "fun" and "holidays" to the "rough" concreteness of the city. The Grand Beach Cafe has nestled itself into this harsh environment and created a space of entertainment and leisure that arguably does not "smooth" over the "terrain vague" it inhabits.

If the Picturesque is about the coupling of the sublime and the beautiful, then the value of this relationship can be further understood in Anderson's (2006) assertion of how "time, dereliction and beauty are woven together in ways that add depth to our lived experience of urban landscapes."



Figure 4 and 5
A Diorama model made to express the moving spectacle that unfolds at Granger Bay. Boats, ships, kayakers and flux of tide.

1. Terrain vague: A similar notion to the sublime is that of "terrain vague" as referred to by De Sola-Morales (1996). Terrain Vagues were originally observed by photographers in the 1960s through photographs depicting the beauty in abandoned places (Anderson, 2006:117). The word "vague" is related to "woge" or "wave" implying fluctuation, instability and oscillation. It can mean empty or vacant as well as blurred and indeterminate.

2. Tetrapods are used in harbour walls. They are triangular concrete structures interlocked to create an armour against the ocean and diffuse ocean forces. [http://en.wikipedia.org/wiki/Tetrapod_\(structure\)](http://en.wikipedia.org/wiki/Tetrapod_(structure))

3. Dolosse, like Tetrapods, diffuse wave forces by interlocking to create a permeable concrete armour. <http://en.wikipedia.org/wiki/Dolos>

At Granger Bay we are forced to experience the smell of rotting kelp, the bustle and cuss of tired fishermen or clamber over an inhospitable arrangement of concrete dolosse³ to touch the sea. Nevertheless this interactive and jarring experience is what makes the place so intriguing: a spectacle that unfolds (figures 4 and 5).

Edensor (2005) expresses the danger of eradicating such evocative urban sites through policies that privilege large-scale new developments because it is just the fragmentary nature and lack of fixed meaning that render "terrain vagues" deeply meaningful.

Of importance to my design process has been to understand the role of the designer in transforming what appears as a site in crisis without eradicating those qualities that display its inherent roughness. This is no small feat yet, as Blake infers, "contraries" trigger "progression." We need to understand the tensions that make these places valuable-tensions of man-made, natural and use- and facilitate them through architecture. The task of this thesis has been to understand the irregularities, contraries and multiplicity of use that make Granger Bay such an intriguing place and to create architecture that resonates with this place. I have attempted to achieve this through understanding the existing uses of the site and how I could add to this to create better legibility. Furthermore I have undertaken a thorough investigation of the unusual ground conditions, the environment, the broader topographical informants as well as the sense of spectacle that characterizes the place. (figure 4 and 5).



Figure 6
Kayaker in the bay with the beach beyond



Figure 7
Asphalt and fences with Fort Wynyard in the background and fisherman offloading fish



Figure 8
Drawing on site
Linda Pollak



Figure 9
Roughness at Granger Bay
On site materiality study inspired by Linda Pollack's project *Drawing on site* (figure 8).

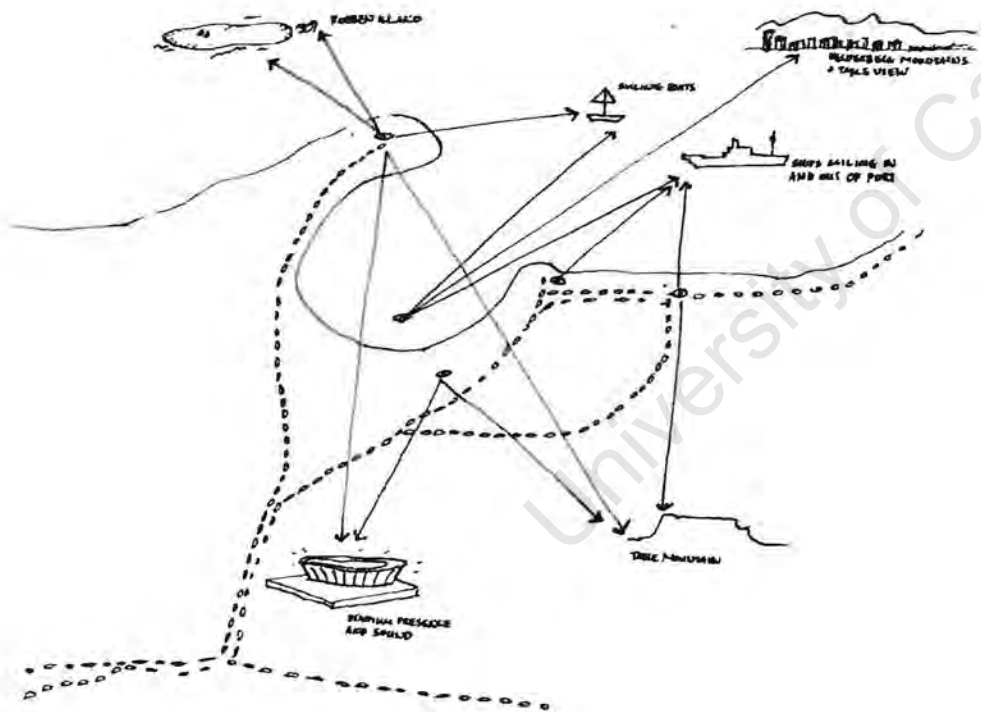


Figure 10
Views and movement at Granger Bay

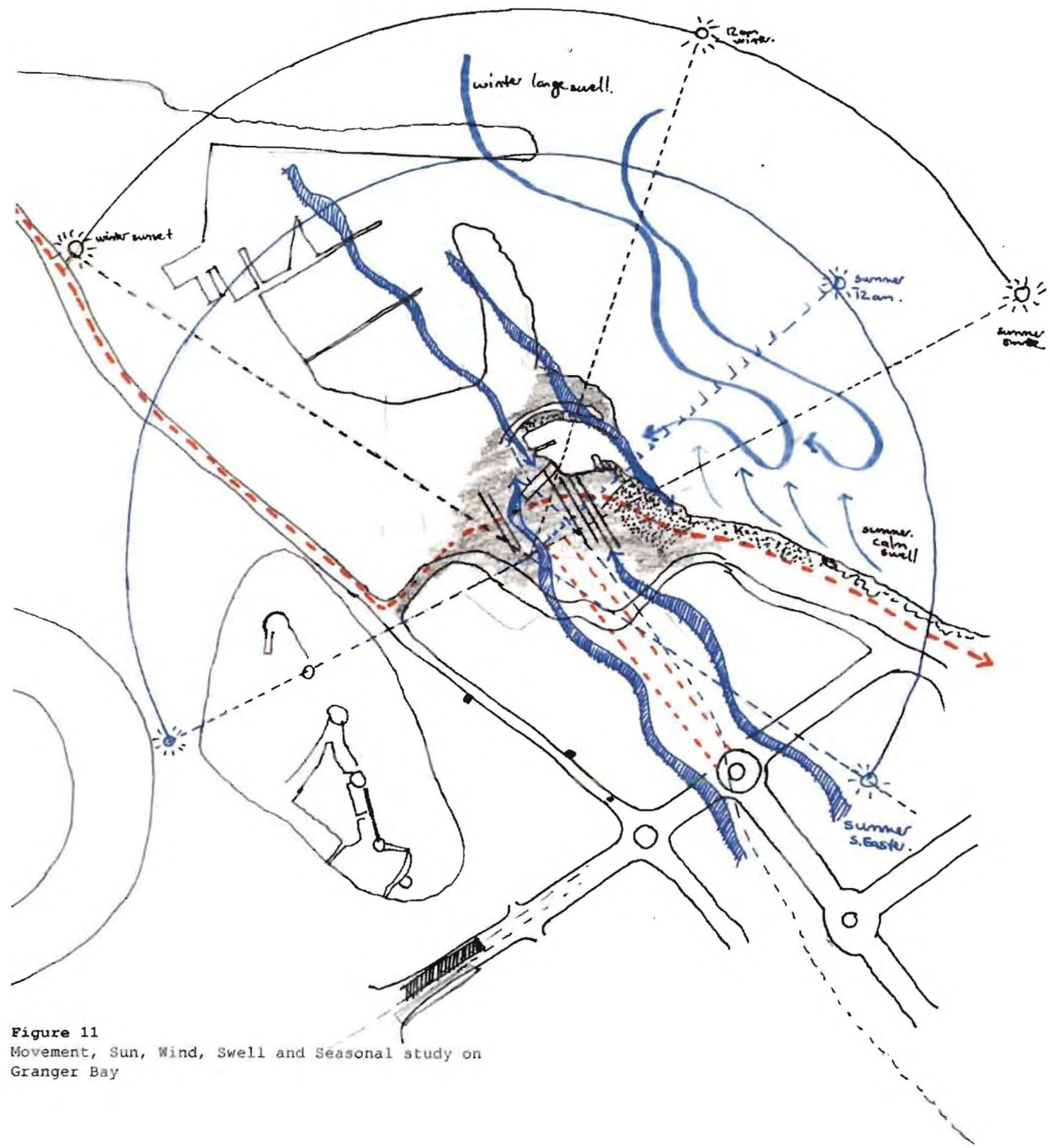


Figure 11
 Movement, Sun, Wind, Swell and Seasonal study on
 Granger Bay

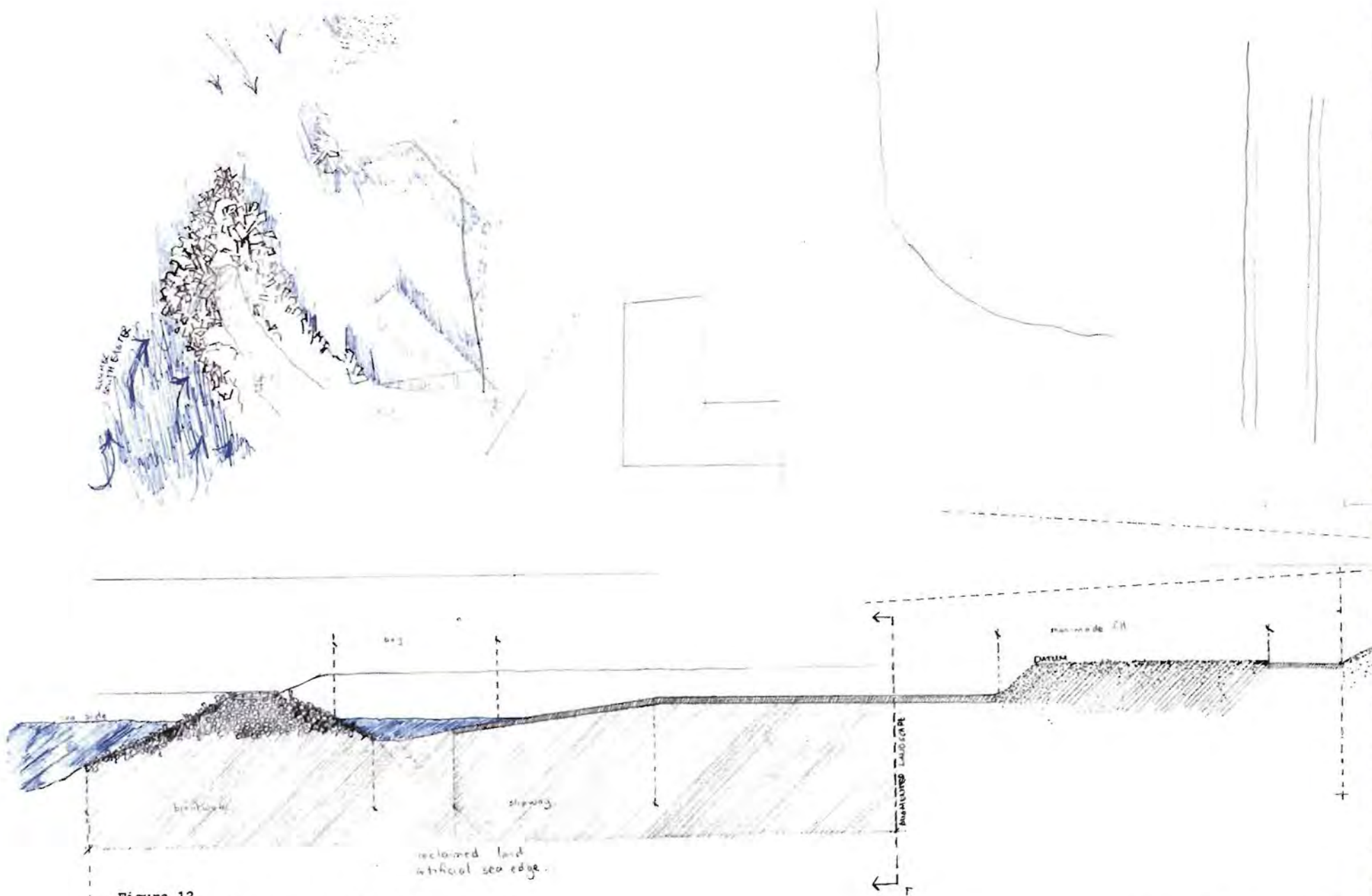


Figure 12
 Early Projection drawing study of the site with notions of land augmentation, man-made, natural and land/sea interface

Augmented landscape. landing floored increased

Shaping site

land(ings) surface/subsurface

3. topography implies a landscape of both natural and man-made accretions (<http://en.wikipedia.org/wiki/Topography>.)



Fort Wynyard

at scale of territory land & sea by ocean.

A second theoretical informant to the project has been that of "landings." Like roughness, landings have multiple readings that have helped to trigger site qualities and design decisions throughout the process. For the purposes of this section, land(ings) will be understood in terms of subsurface. Leatherbarrow (1999) speaks of subsurface with regards to its emergence throughout the course of history. The term landing implies land and terrain derived from the Latin terra. If the word terrain is assimilated to terrace signifying earth, the Ancient Greeks speak of a "terrace" being essentially a "dry" platform, limited and bounded. What is beneath its surface can be understood as its opposite. Subsoil is seen as unlimited, unbounded and wet or moist (Leatherbarrow, 1999: 176). It is formative and can be shaped.

Understanding and shaping land at Granger Bay was an important starting point to the design project that has been carried through to the final design. An early section depicts the nature of "augmented landscape" whereby substantial fill brings the earth out of the water to create useable land. This is then shaped to create a safe bay in the form a breakwater. Anything constructed on this topography is an "additional crust," another layer superimposed on an already artificial landscape. The nature of Fort Wynyard as a rising mound of artificial land overlooking Granger Bay, further informs the quality of the site as one of land shaping at a broader scale.

To begin with, an analysis of the ground conditions both in technical and speculative terms was undertaken. This investigation took me through research of the old sea line and the underground Malmesbury shale

as well as breakwater construction as possible informants to form.



On site layers of rubble mound breakwater.



Figure 13
Geological map of Cape Town.
The ocean edge is composed of a combination of Malmesbury shale and Quaternary Sands (Cape Town City Maps)



Figure 14
Malmesbury shale at the sea edge at Granger Bay

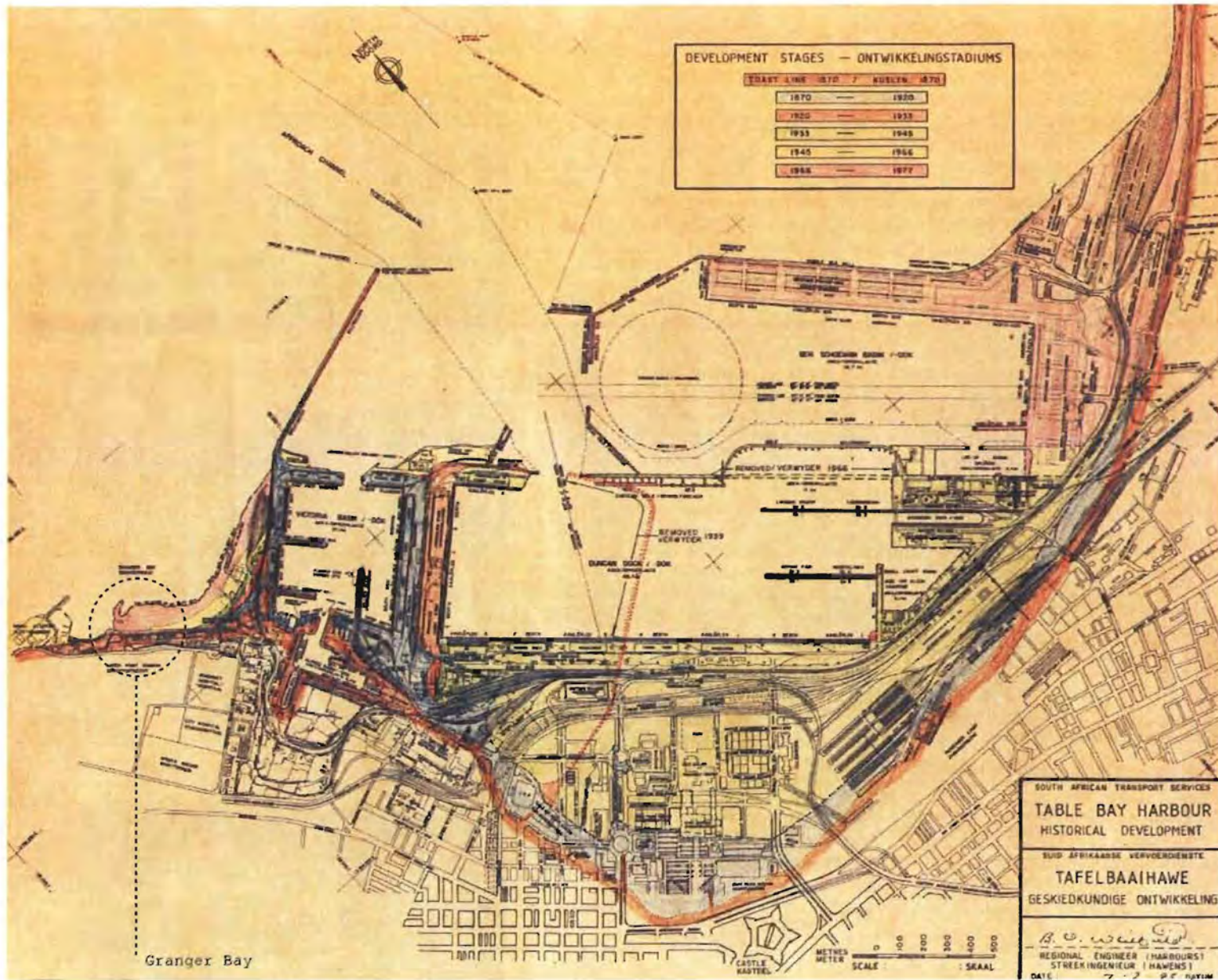
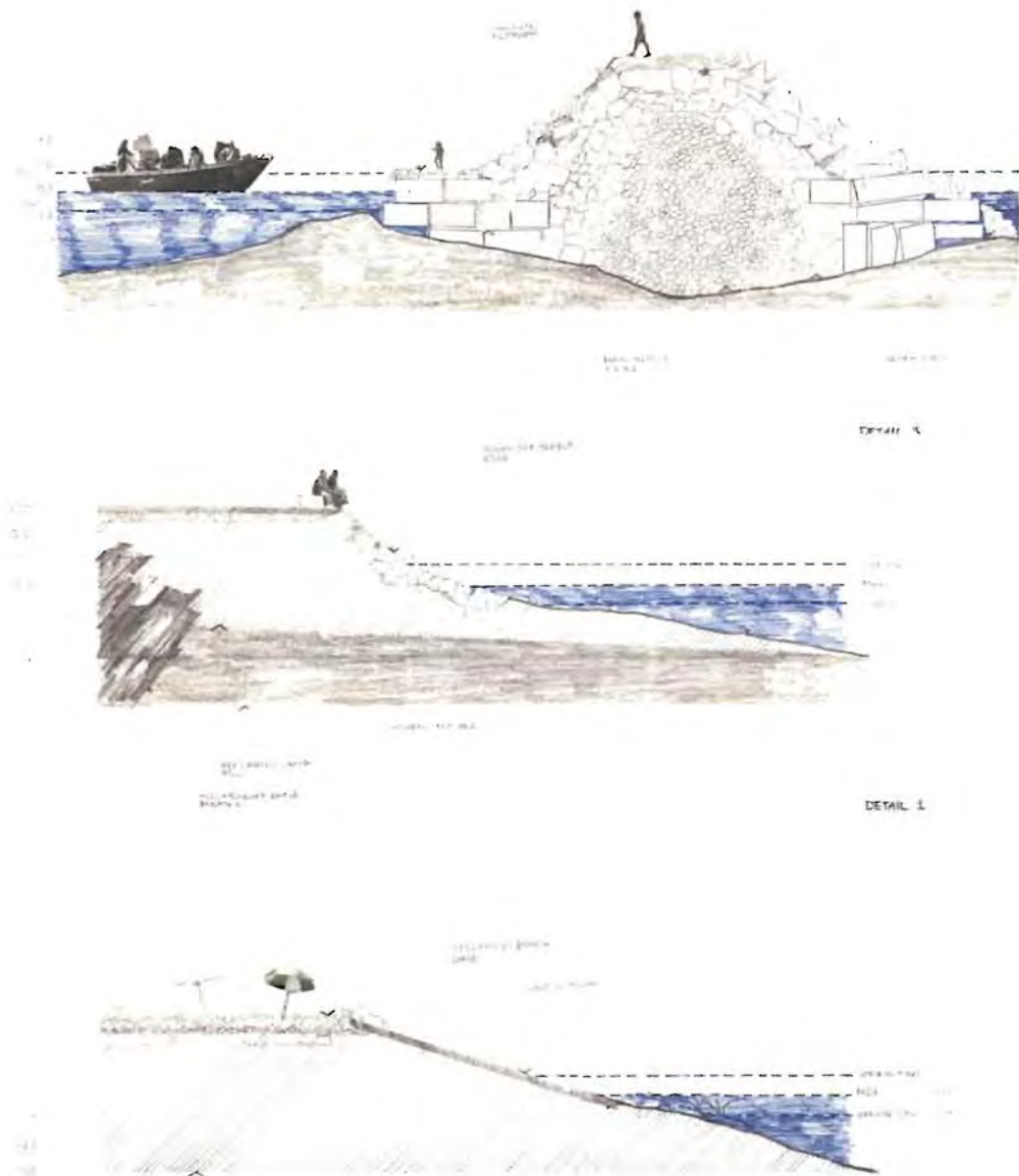


Figure 15
 Map of Cape Town showing reclaimed land and date of reclamation.
 Cape Town city Maps



Figures 16
Sectional analysis of land-sea interface and natural and man-made land.

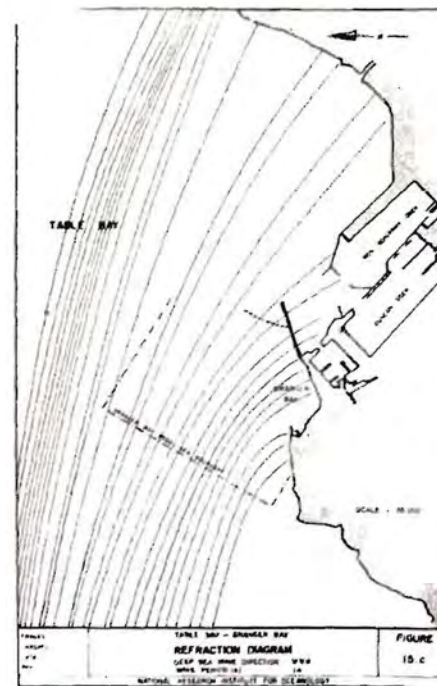
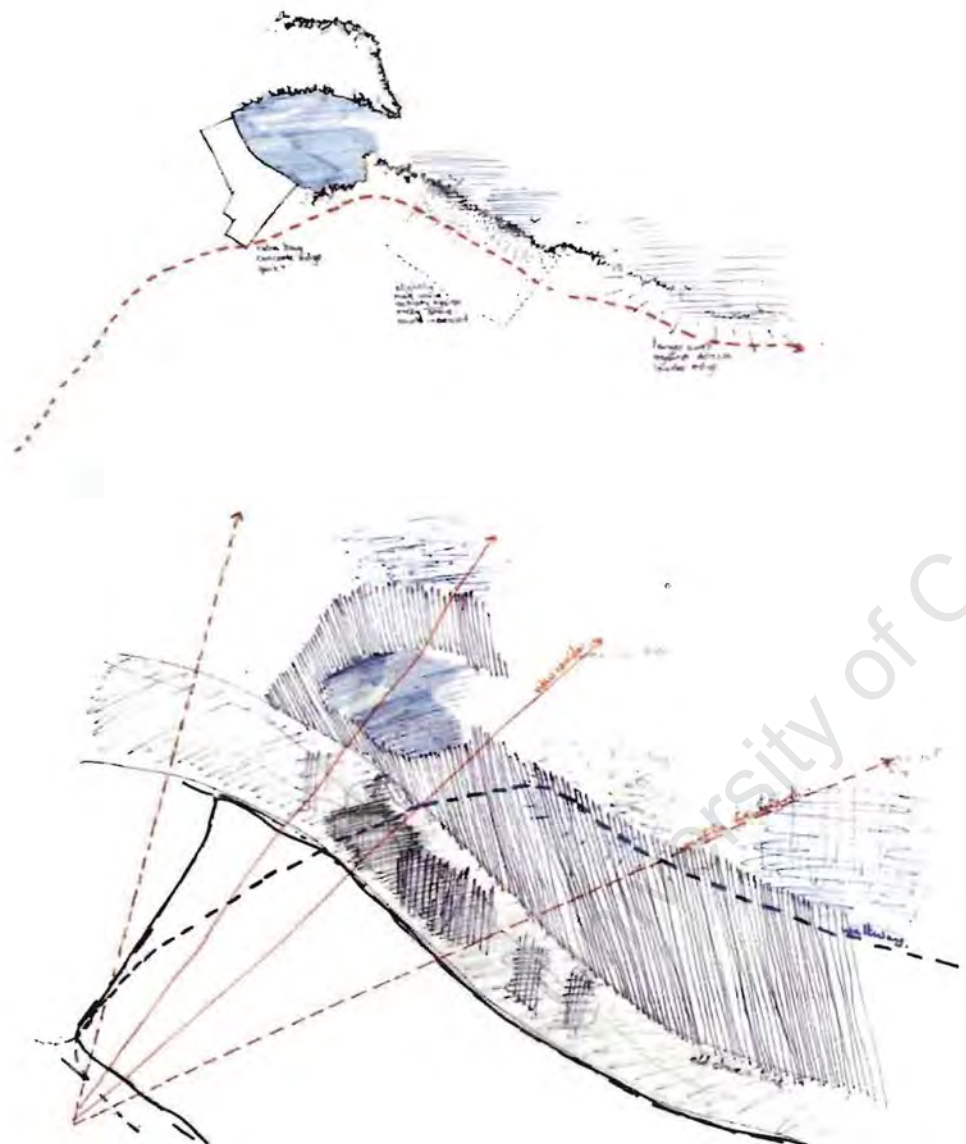


Figure 17
Wave forces acting on site from a predominant North Westerly direction.
Diagram from PRDW engineers



Figure 18
Aerial Photo showing rock base under reclaimed land at Granger Bay before Marina was built.
Photo from PRDW engineers



Figures 19
Swathes of natural land, malmesbury shale and reclaimed land

In thinking about land(ings), I was interested in the man-made and natural swathes across the site. I initially sought to use these as a framework for design. This study produced drawings and a diorama model (figure 20) which was valuable in expressing my interest in the "heaving" geological character of the site. I would later use these ideas to inform how platform making would occur in such a place. However, I found that the swathes did not integrate well with the sea edge condition. I struggled to create form with these horizontal bands. I moved away from this notion for a more integrated, less literal interpretation of the land formation of the site. This will be further elaborated on the section entitled "Erosion and deposition".

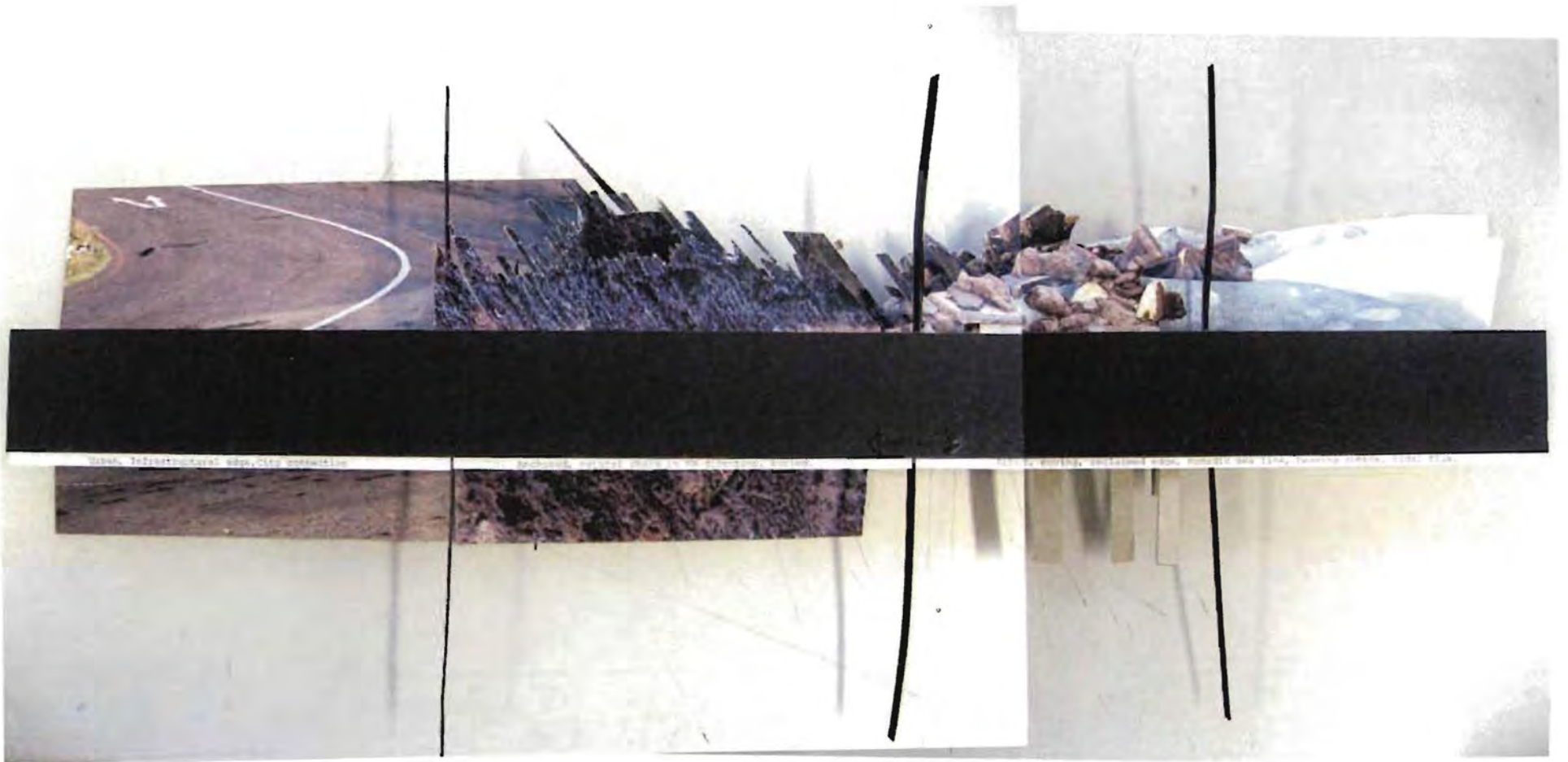
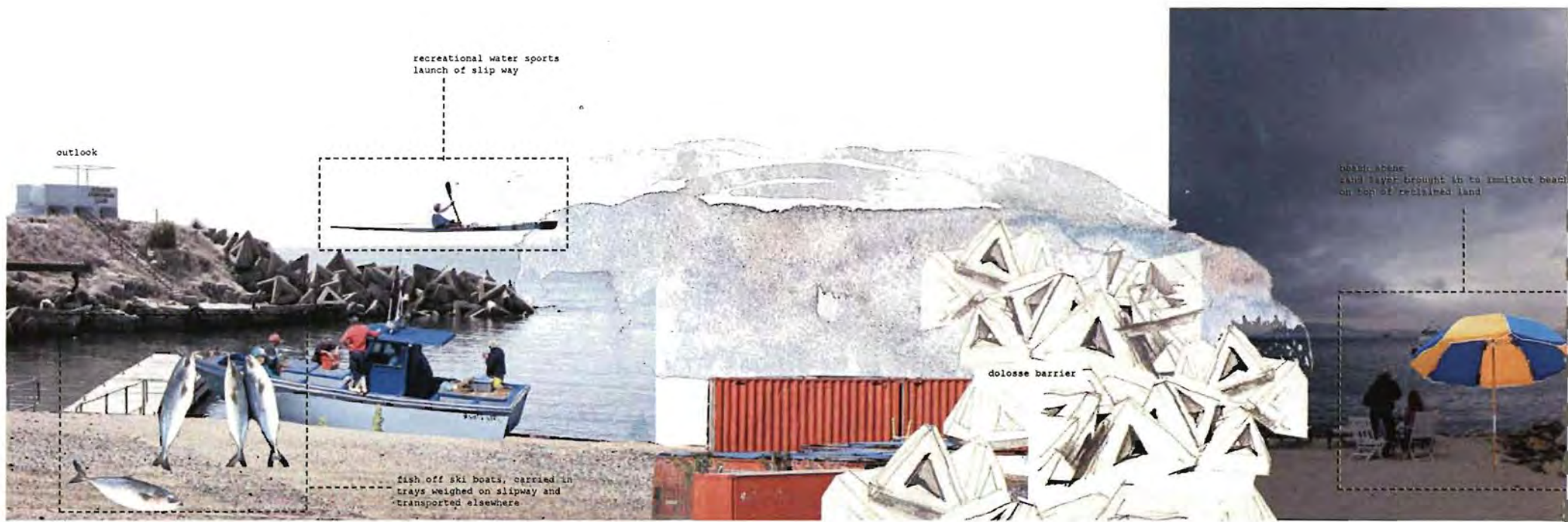


Figure 20
Diorama underground
Urban edge, anchored shale, ephemeral
heaving, moving rubble sea edge

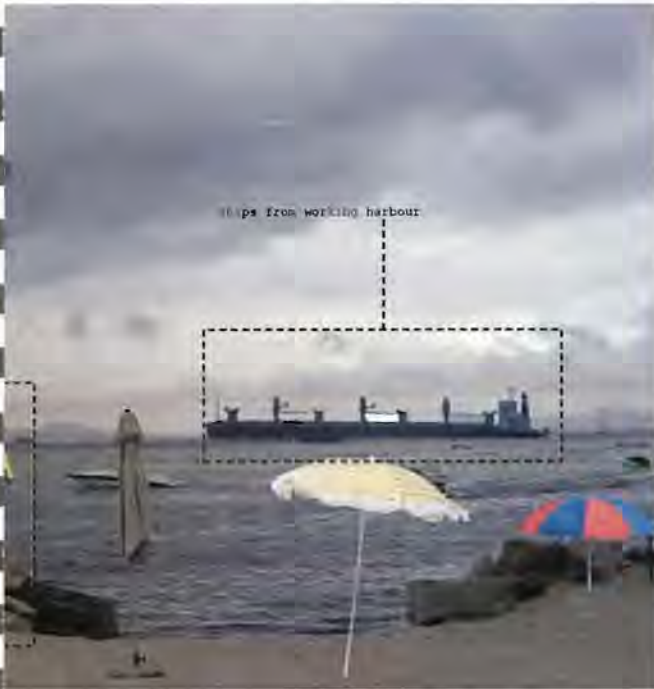


Figures 21
Patterns of use at Granger Bay

Use at Granger Bay

Existing patterns of use and cross programming

5. *landschaft* as an "occupied" landscape which is moulded and shaped through use over time. It has cultural significance and is a productive landscape. This is a contrast to "landskip:" landscape that is contrivance and primarily visual (Corner, 1999:54).



Because *land* has been such a fundamental part of this design process, of interest to me was the notion described by Leatherbarrow where in Homeric myth, "use" was interwoven with "subsoil, platform and sky." At Granger Bay the threshold between land and sea is both enjoyable and functional. It serves recreational ends but is also a working landscape. A "*landschaft*" that is not only beautiful but is also productive through the daily use of the slipway by commercial and recreational fisherman.

The site is a place of conflict and contradictions used by a broad spectrum of the community from Snoek fisherman to the recreational power boater. It is a socially contested site whose conflicts I do not presume to resolve. Instead I see the value in the way the bay currently functions as a public space. Hajer (2001) describes how different groups become attached to a place and must somehow reach a compromise of interests. Through my intervention I have sought to maintain the existing contradictions in this place and in programming, exacerbate them to trigger interaction. Hajer (2001) refers to the notion of 'public domain' as those places where "an exchange between different social groups is possible and actually occurs" (Hajer, 2001:11). In terms of use, Granger Bay is just such a place where the affluent inhabitants of the Atlantic seaboard must interact with the use of the space by small scale fishermen. Hajer states the value of these unique kinds of spaces in society, "where we encounter the proverbial "other" and we must relate to other behaviour, other ideas and preferences (Figure 22). Here surprise and reflection can happen which contributes to meaningful public space.

For these reasons I have attempted to maintain existing uses in the bay but permit a better legibility of access to the site for the general public from the surrounding landmarks of the Seapoint Promenade and the V and A Waterfront. The site is then activated by a pedestrian promenade through Granger Bay that links the Seapoint Promenade to the V and A waterfront; a link that already occurs albeit haphazardly. Granger Bay is then an active node along a pedestrian walkway.

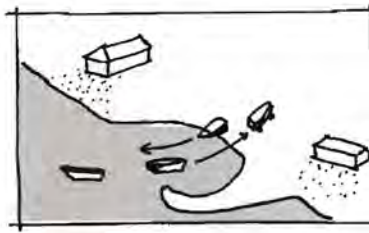
Whilst a clear breakdown of programme occurred later in the process of the thesis, my intentions for the site will be addressed briefly: Currently the bay is frequented by a select community. Programmatic emphasis has thus been to maintain the existing uses on the site but provide key insertions that would activate the site and support a broader base of users from the promenade. Taking cues from the existing ease of access to the water, new programme would be added to enhance opportunities for access to the sea.



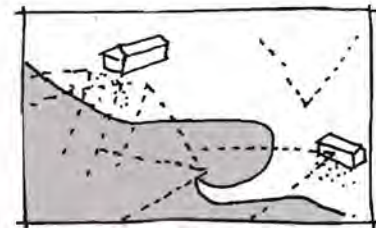
Figures 22
Images depicting spaces of "encounter" where we must relate to "other behaviour" and preferences.
Images taken from the book, *In Search of New Public Domain*,
Hajer, M and Reijndorp, A. 2001. NAI Publishers: Belgium.



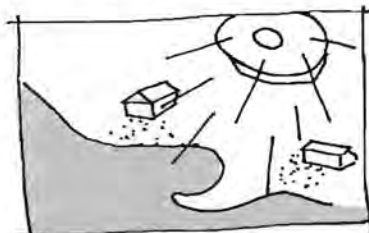
event
snook run
8 times per year



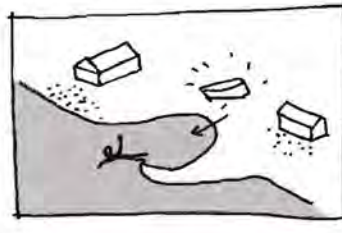
daily
commercial fisherman
5 boats/ day



daily
outlook, enjoyment of landscape
and ocean, vistas from Power boat
club and the Grand.



event
stadium use
sound, activity, people and energy
to site



several times a week
marine research, NSRI, water
police.



weekends
recreational use: kayaks, boating
recreational fishing etc.

Figure 23
Multiple patterns of use at
Granger Bay

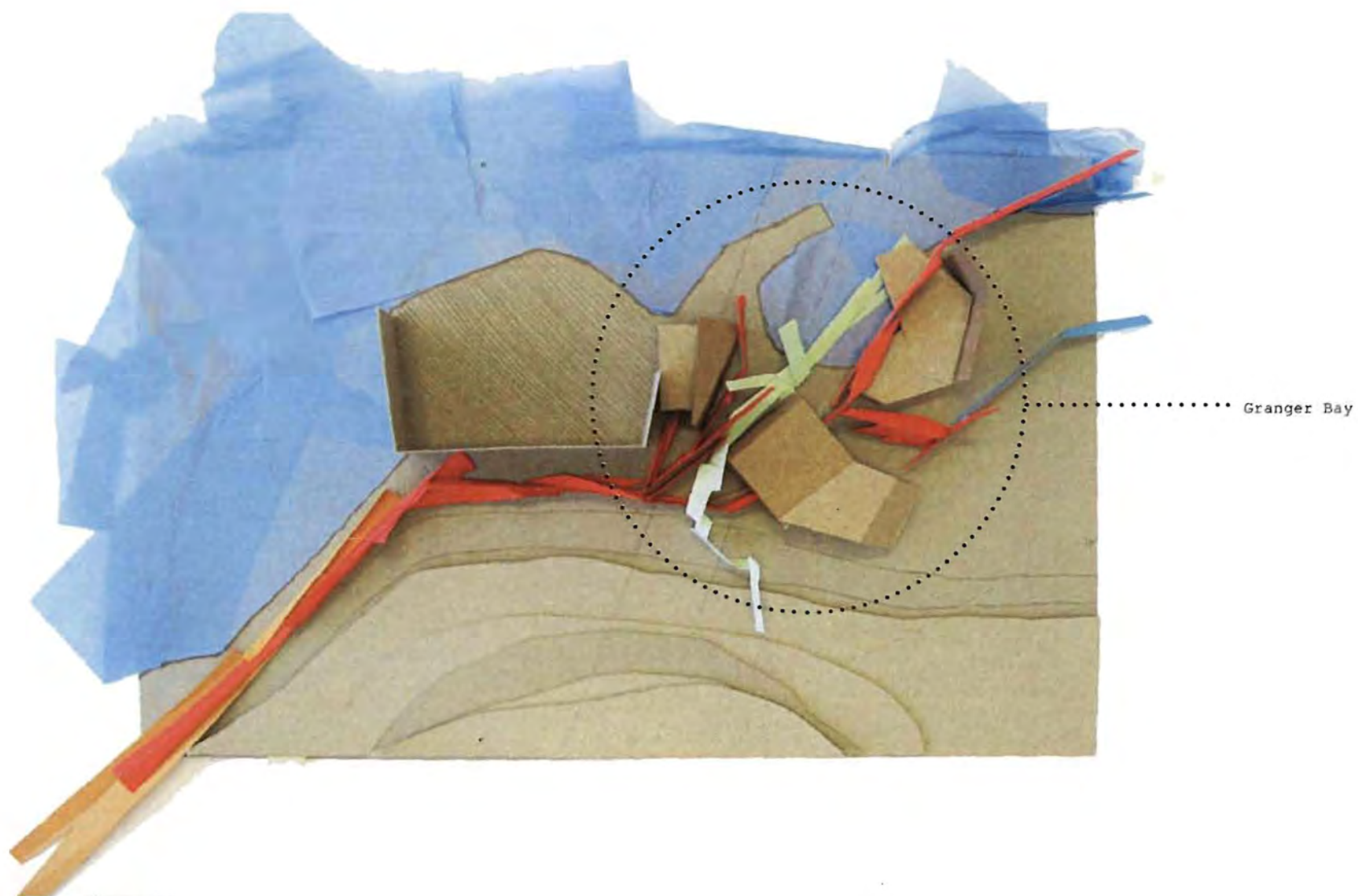


Figure 24
Early conceptual collage of the path from
Seapoint to Granger Bay. The different colours
express a reference to the envisioned and ex-
isting interaction of multiple users.

Drawing on site

Site strategy

6. Andrea Kahn
(2005) refers to the
"unbounded urban site"
in the essay, *Site
Matters*.

The large piece of undeveloped land at Granger Bay called for a broad site strategy that would inform both my architectural intervention at the sea edge as well as future development happening behind it. This has been a challenge. Where few typical built urban constraints exist on a large stretch of undeveloped land, finding boundaries has been difficult. Much time was dedicated to configuring a broad scale approach within which I could begin to define the architecture at a more tangible scale. This has resulted in a constant interchange between scales: that of the broader coastal promenade to the immediate scale of the breakwater landform. Nevertheless, moving between the "bigness" and "smallness" of the site and its surroundings has proved productive in understanding the "unboundedness" of the site and its determinedly contrary nature. Andrea Kahn (2005) in the essay, *Site Matters* refers to the notion of the permeable boundaries of an urban site. She speaks of boundaries that are porous,

permitting "active interrelations" between scales. Similarly Linda Pollack in an article entitled *Constructed Ground: Questions of Scale*, speaks of "nesting" multiple scales within each other to create architecture that is embedded in its context. She refers to how modernist planning has tended to separate functions as a means of resolving conflicts. She argues that this has continued to produce sterile environments. The regeneration of a site- much like Granger Bay- is further hindered by this strategy as derelict sites are often the result of their position between radically different scales (Pollack, 2006:133). The notion of overlapping functions and scales inspired an early conceptual model revealing activities that occur at Granger Bay. It expresses how the site partakes in a broader network of activities from Seapoint to the V and A waterfront and suggests how architectural interventions could "curate" a flow of activity across the site (figure 24).

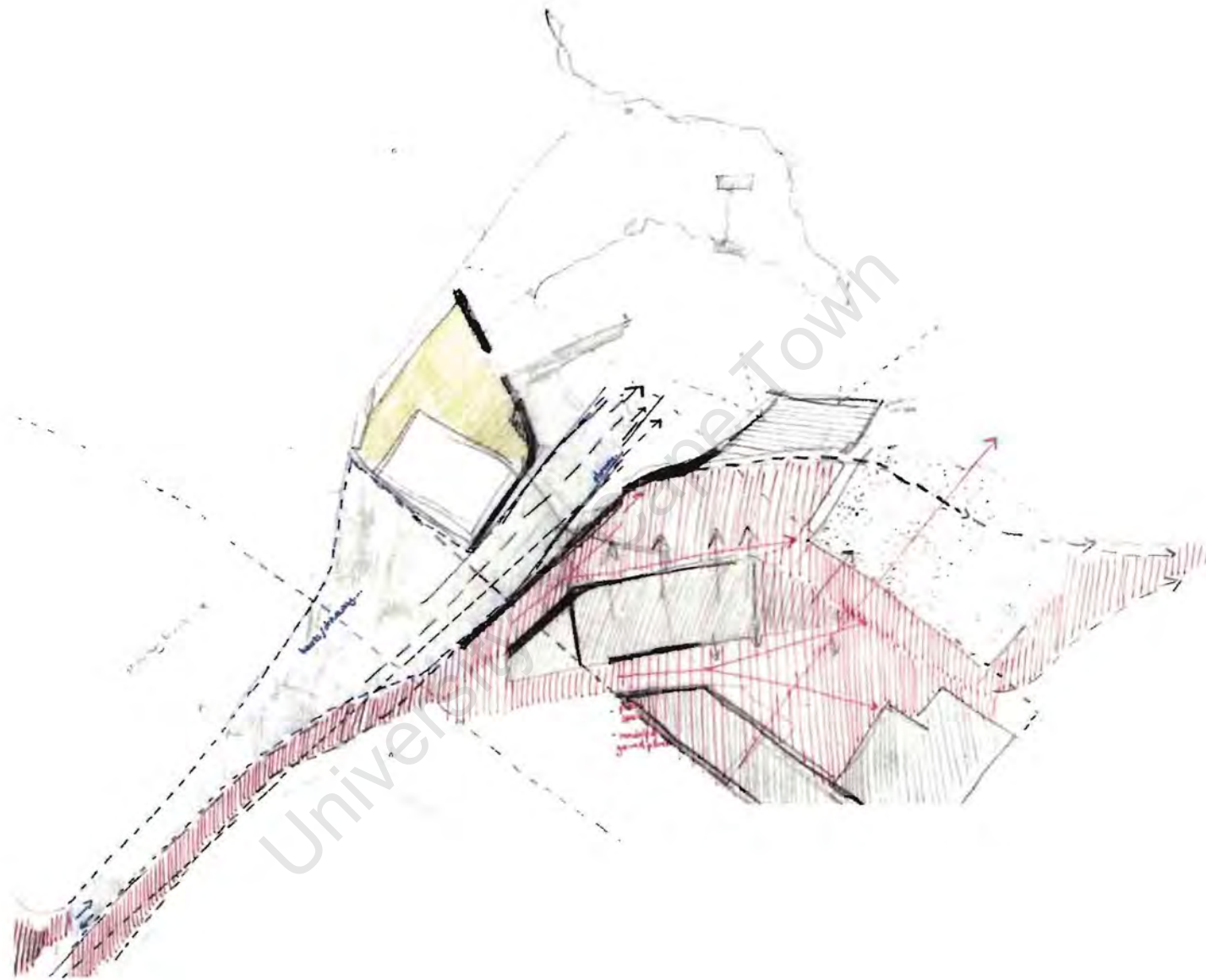


Figure 25
En Loge May 2012
My first approach to site strategy illustrates the principle of a meandering route that opens itself out to the site and the sea.



Granger Bay

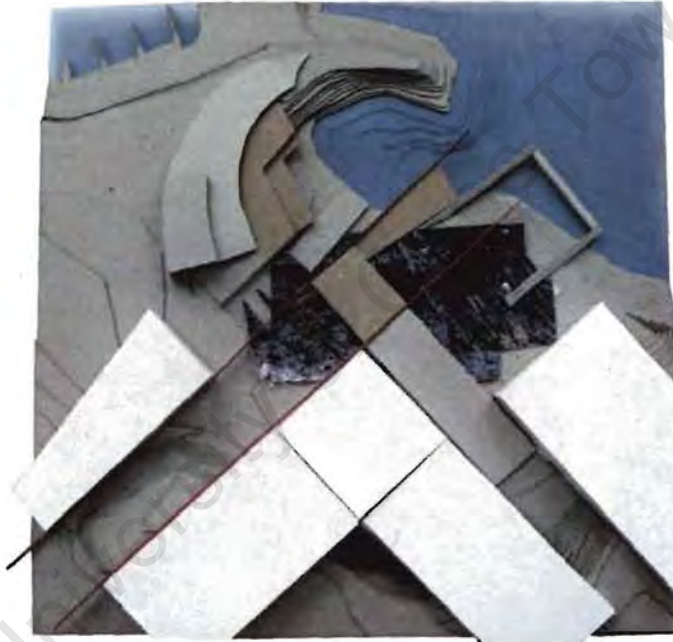


Model 1

First site model.

Slipway is moved to allow for a larger public open space.

Conclusion: a decision was made to retain the slipway in its existing position as an important constraint and formative aspect of the site.



Model 2

This strategy proved ineffective. It was a searching attempt to find constraints on the site.

Here the site is defined by the future development around it (white blocks). These are too arbitrary.

A tentative allusion is made to the sea point rock formations.

Conclusion: Remove the suggestion of future development for the moment but develop the idea of a building informed by the nature of the breakwater.



Model 3

This "swooping" strategy is a development of the breakwater landform building of the previous attempt. Contrasted to this is a series of lightweight timber decks elevated above the sea.

A sinuous elevated promenade is implied.

Model explorations to configure
a site strategy



Model 4

In this scheme the promenade is elevated. Extra fill from the mound adjacent to the site is brought up to the level of the elevated promenade to allow for parking and other facilities beneath it. This gives a level of privacy to the quiet bay and also allows sea side facilities to be built beneath it. Future development is envisioned to be built atop this parking deck overlooking the activity in Granger Bay.

Conclusion:

To develop elevated deck.



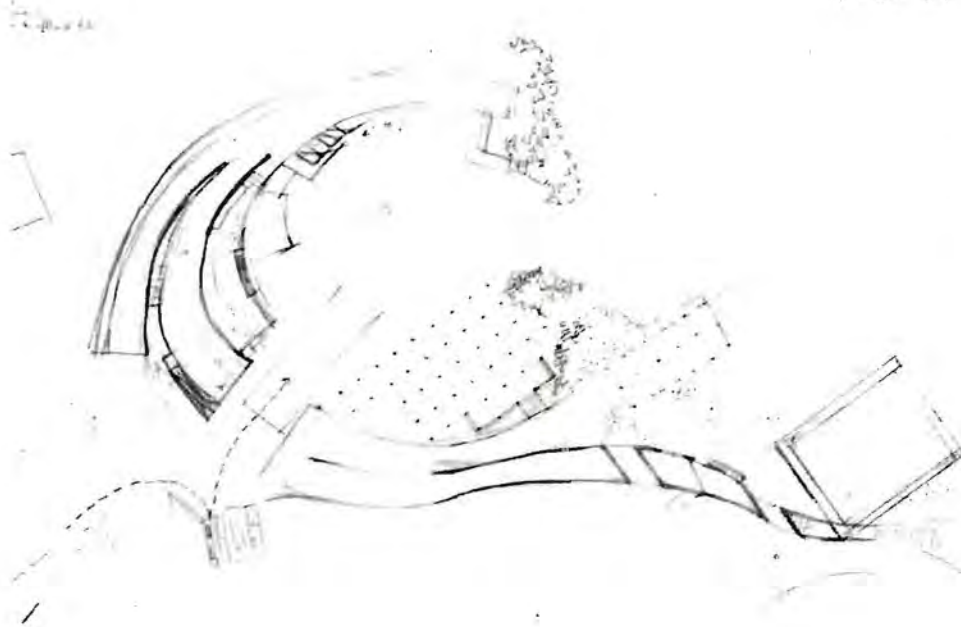
This model exercise was undertaken, along with drawings, to configure a site strategy. Although this exercise did not entirely resolve the strategy, the process was valuable in establishing two key principles for the design:

1. A decision was made to establish a pedestrian walkway, that would meander past the active bay. This would be elevated in parts to accommodate facilities and parking beneath it and to provide enclosure to the bay (model 4).

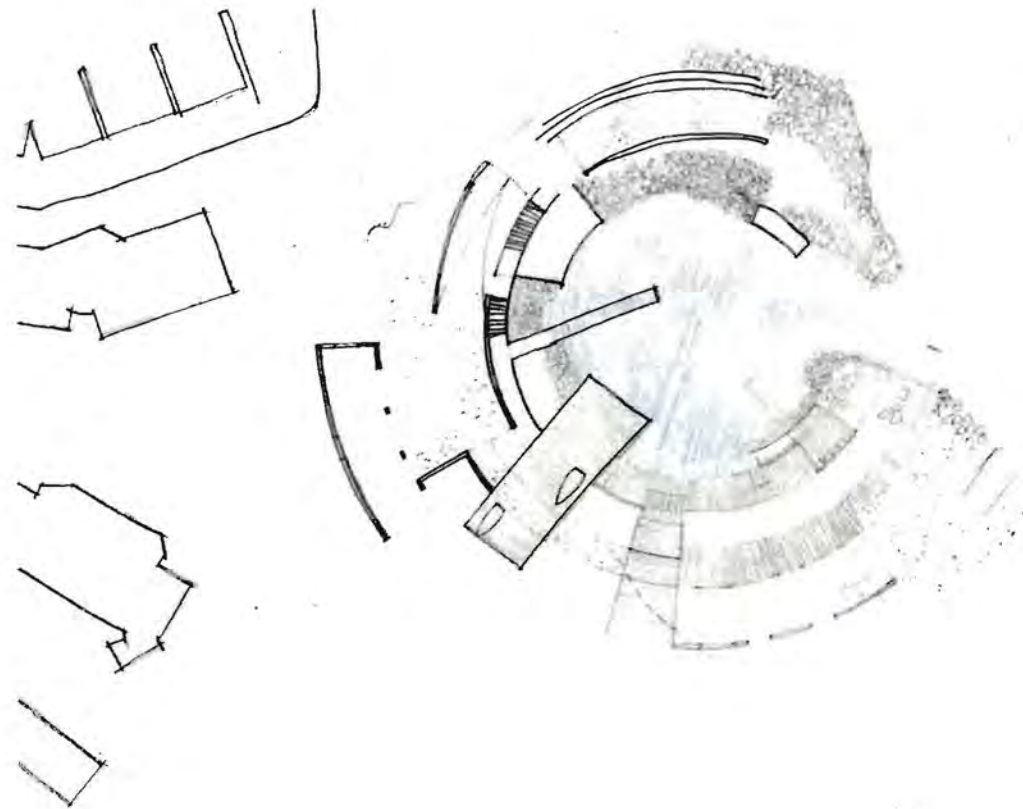
2. A focus of the project was placed on shaping the site through building into the breakwater landform. The breakwater- a clear suggestion of form and mass on the undeveloped site- triggered ideas of space, tectonic, roughness and land shaping. Its evocative geological composition is revealed in sections cut through it. Experiential qualities of land mass in the sea make the breakwater an architecturally compelling aspect of the site.

By building into the breakwater, the transition from building to breakwater could be both seamless and juxtaposed. As a result the building and manmade breakwater could change colour and texture with the seasons (figure 3). This would blur the distinction between building and landform and express the ambient conditions (roughness) on the surface of both landform and building.

Building into the breakwater would prove to be my area of focus for the design at a more detailed scale.

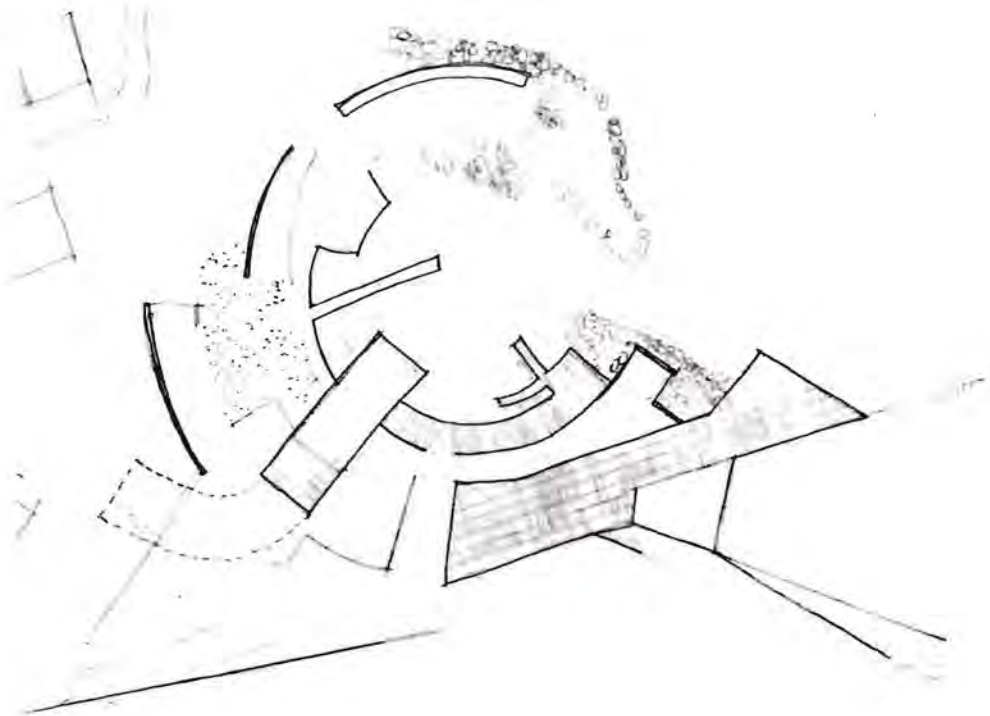


Drawing 1
"swooping" scheme
(model 3)



Drawing 2
Circular Scheme
Bay as an amphitheatre with sea side activities
distributed around the bay.

Drawing to configure a site strategy



Drawing 3
Circular Tangent
(model 4)

This drawing exercise worked simultaneously with the previous process models.

Drawing 1 "swooping scheme"

This scheme responded to the landscape formation of the site. It was composed of a moulded sinuous breakwater building that continued to form a walkway across the broader site.

It emphasized the moulded heavy nature of the breakwater landform and contrasted this to a light platform elevated from the sea on stilts.

However, this scheme became difficult to define as its shapely forms were irrational and lacked order.

Drawing 2 "circular scheme"

This scheme provided a rational concentric system that gave order to the vast expanse of the site. It ordered the bay and provided a flow across the site that was very clear. However, it internalized activity within the bay and did not open itself toward the ocean or the new walkway.

Furthermore this scheme was found to be too imposing on the exact irregular qualities that made the site so evocative. In essence by creating order I was doing exactly what I intended not to do which was to "smooth" over a rough, discordant site.

Drawing 3 development of "circular scheme"

Conclusion of this exercise:

After struggling to resolve the geometry of the imposing circular scheme on a highly irregular and contoured site, I realised a need to return to my earlier notions of land, sea and land formation at the sea in order to find a site strategy that would resonate with the site.

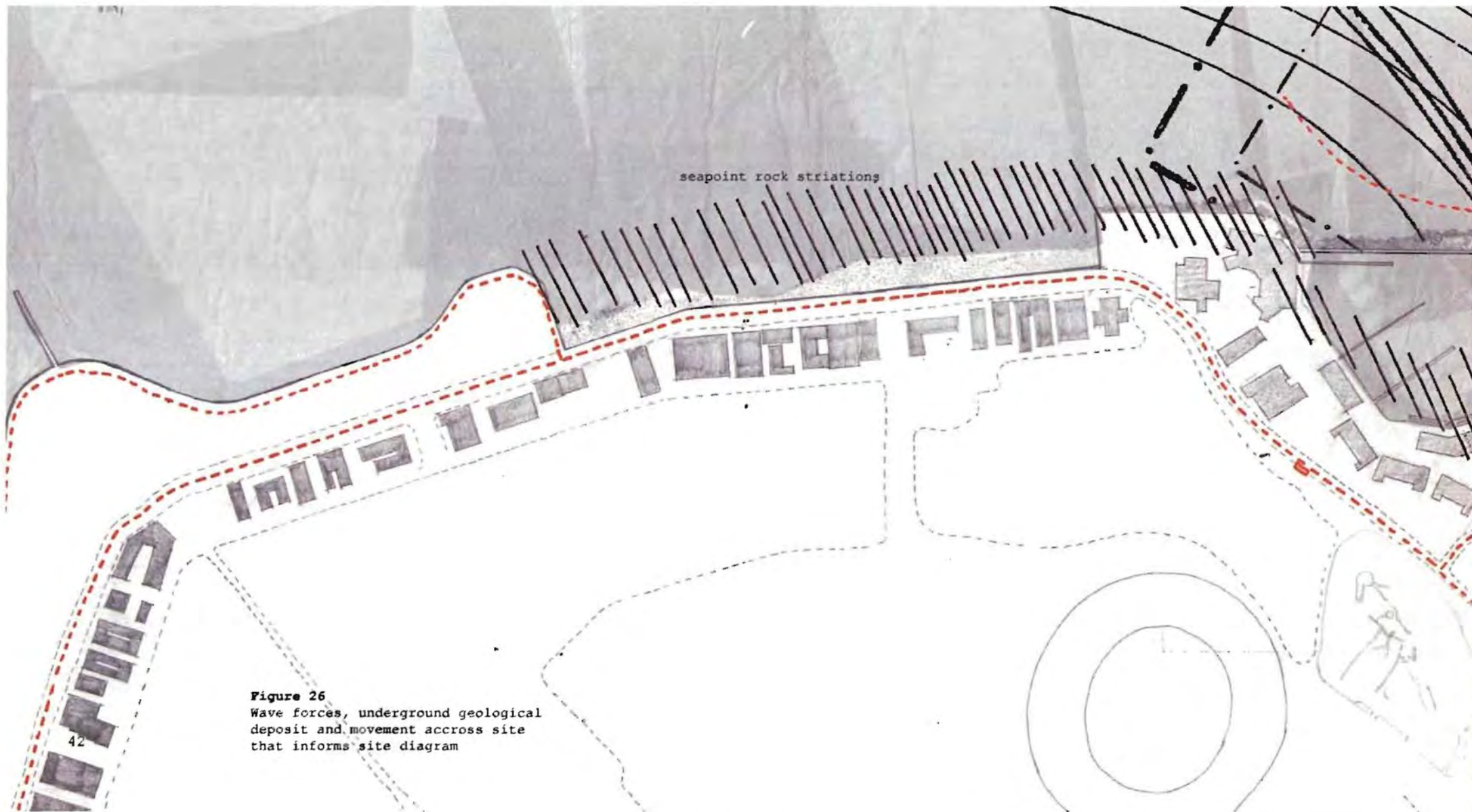
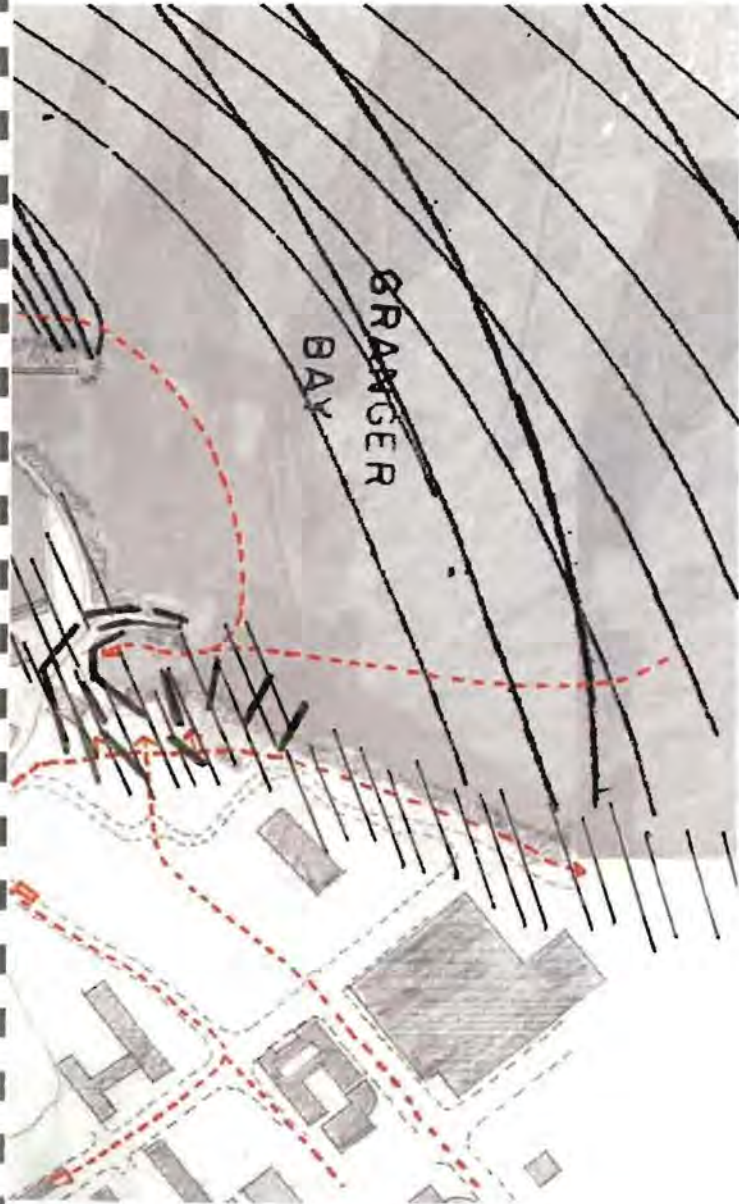


Figure 26
Wave forces, underground geological
deposit and movement across site
that informs site diagram

Deposition and Erosion strategy

A return to earlier conceptual ideas to configure a site strategy



"The water hollowed the stone, the wind dispersed the water, the stone stopped the wind, water and wind and stone" -Octavio Paz, *A draft of shadows*

The process of this thesis has not been a linear one and I found it useful to revisit my initial intentions for the project at this point. I returned to thoughts about the essential character of the place and the surrounding coastline in terms of land and land shaping.

The site at Granger Bay was formed when a process of man-made deposition in the form of rubble was dumped on the land atop the original rocky shoreline. Asphalt formed a cover to the rubble to make it useable and rocks and Tetrapods were placed to prevent the sea from eroding the new land. A slipway was engraved into the new land to create access between the land and the water. Later reclaimed beach sand and grassy platforms were placed on the site to make a new surface for play and leisure. Through time, the rubble deposit will heave and settle allowing smaller sediments to drop into its crevices all the while buffeted from the force of the sea.

To configure a site strategy I looked further afoot at the broader coastline where the predominant North-Westerly swell has scored and etched the surface of the rock to form North Westerly striations. With the knowledge of the original rocky shoreline at Granger bay and taking cues from the eroded Malmesbury shale up the coast at sea point, the site at Granger Bay is envisioned to become an abstraction of these formative processes. The contours

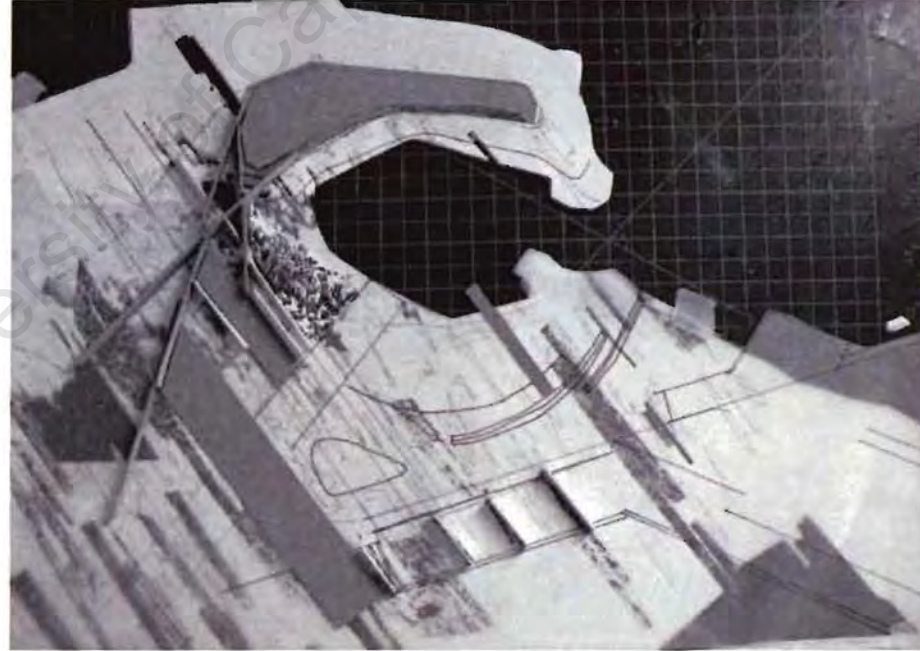
of the breakwater mound are abstracted to etch lines across the site delineating inside from outside, wet sloping area from dry platform, pathway from pause, rough surface from smooth (models 1-3 pg 44-45).

Linda Pollack (REFERENCE) speaks of the importance of overlapping or "nesting" multiple scales in a project. Striated forms create spaces at the scale of the immediate site as well as at the regional coastline by referencing those at Seapoint. While the forms are not imitated, a continuous but changing awareness of geology and land form at the sea is experienced along the meandering coastal route past Seapoint through Granger Bay to the V and A waterfront.

This strategy respected and enhanced the existing irregular quality of the site instead of imposing a formal geometry onto it. This process was beneficial as it developed the site strategy and led to the sketch design proposal.



Seapoint rock angle striations
overlayed over contours of Granger
Bay breakwater



Model 1
1. Cut lines are drawn from the ir-
regular contours of the breakwater.



Model 2

Deposition and Erosion strategy

Model and clay shaping site



Model 3.
Proposal to be developed.
Breakwater cut into and eroded to create habitable
space. Cut lines established from the contours of the
breakwater are transferred across the rest of the
site.

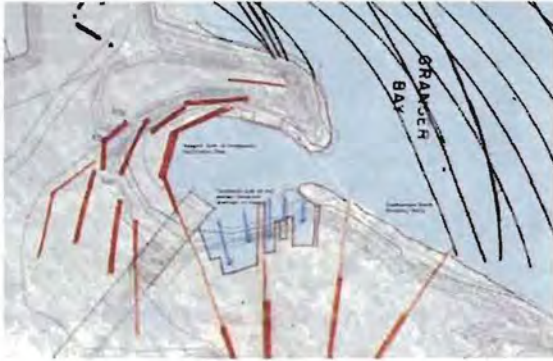


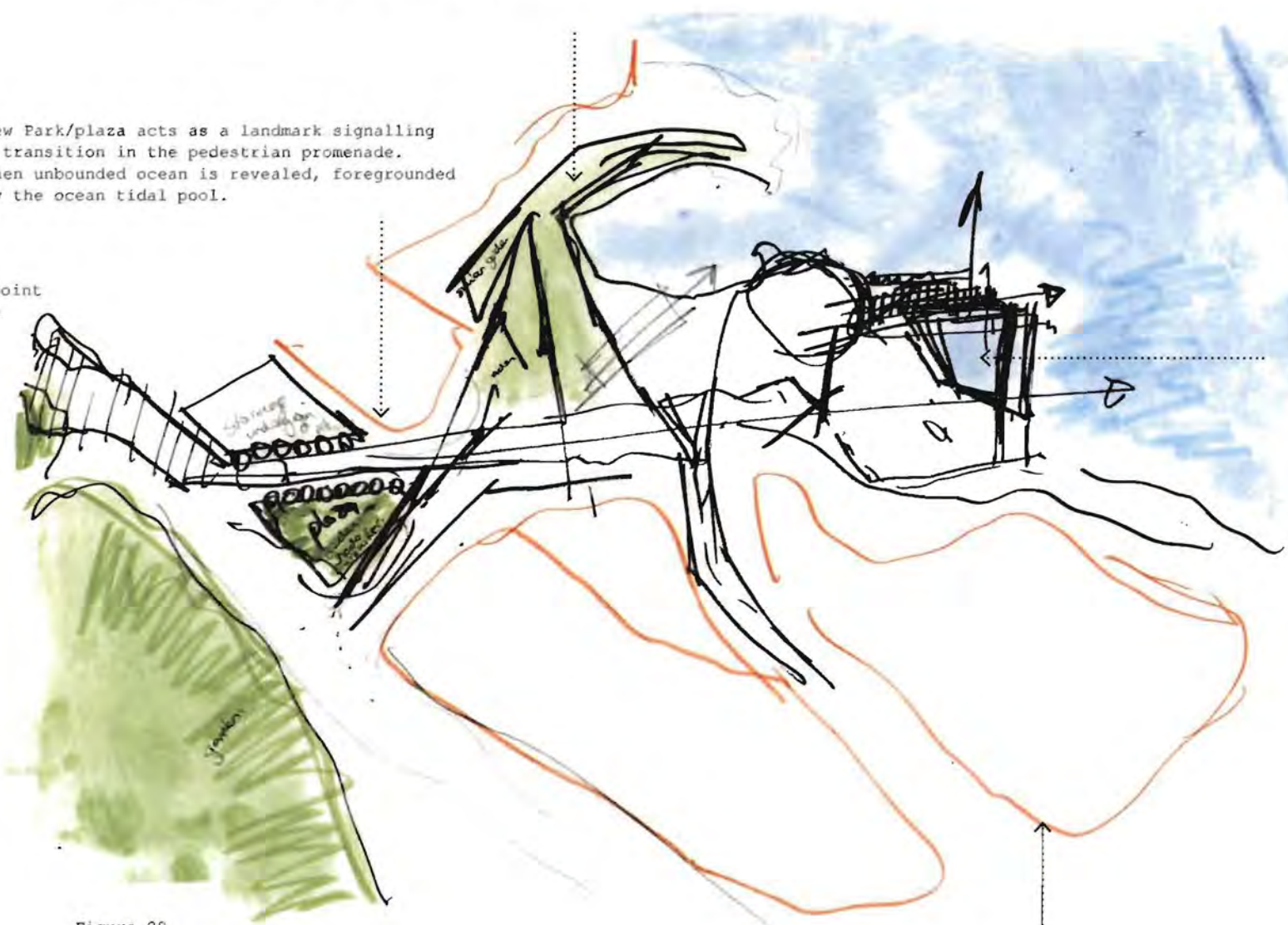
Figure 27
Model exploration of Erosion/ Deposition
strategy

Pollack (2006) speaks of scales "nested" within each other (Pollack, 2006:133). She refers to how an urban site exists at multiple scales and must be understood this way. In the scheme, the grassy earth mound of Fort Wynyard recalls the breakwater grassy man-made earth mound. Similarly, the distinction between contained tidal pool and ocean expanse is blurred. (Figure 28).

Planted roofs merge with breakwater to create a seamless transition from building to landform. Furthermore planting partakes in a broader network of green space at a larger scale: that of Fort Wynyard and the new park/plaza

New Park/plaza acts as a landmark signalling a transition in the pedestrian promenade. Then unbounded ocean is revealed, foregrounded by the ocean tidal pool.

From seapoint
Promenade



New tidal pool as part of view to ocean. Scale of pool becomes part of unbounded ocean when viewed from the pedestrian route.

To the V and A waterfront

Figure 28
Diagram of site strategy

Suggestion of
future development

Sketch Design

Development of Erosion and Deposition Strategy

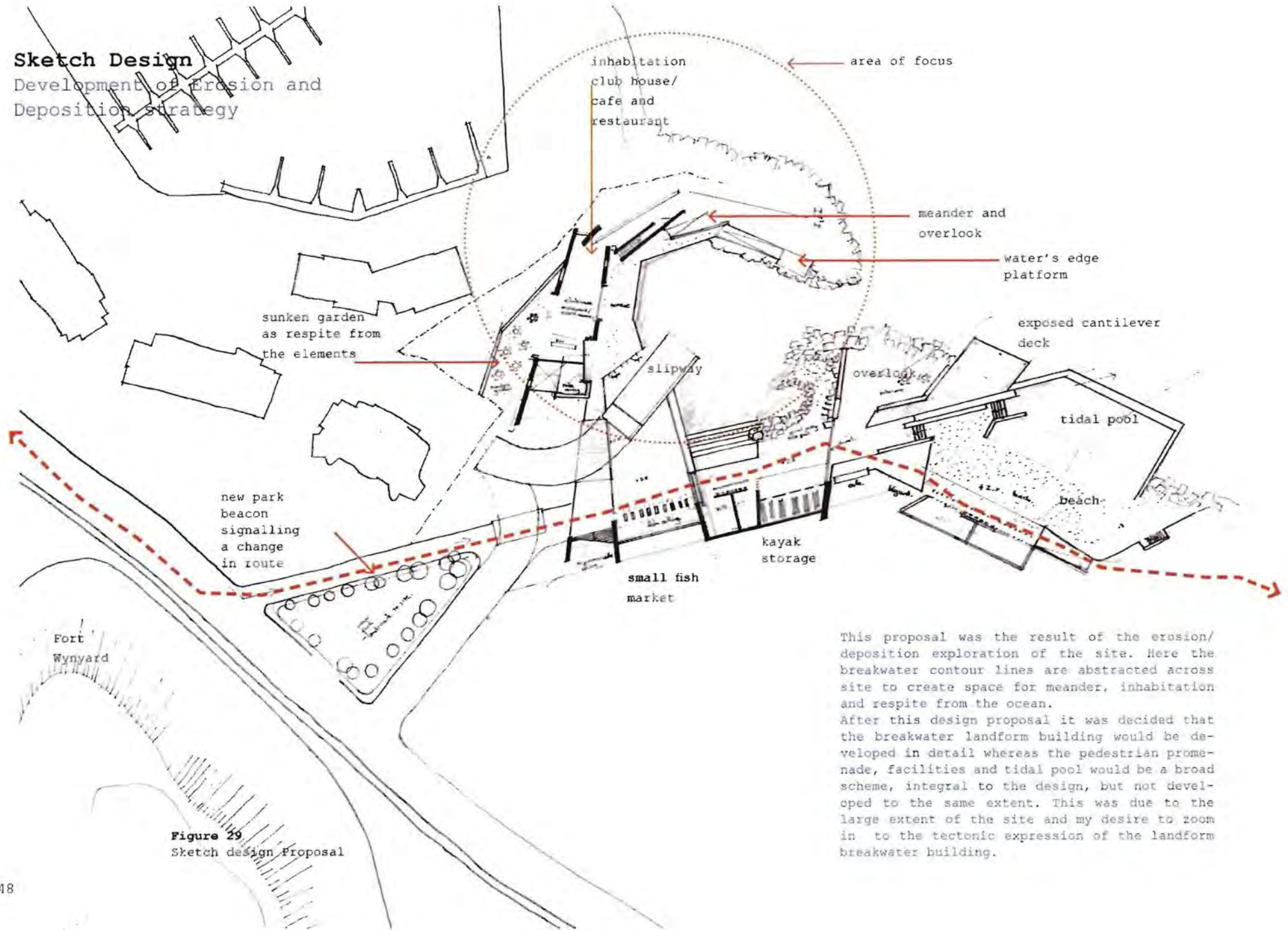


Figure 29
Sketch design Proposal

This proposal was the result of the erosion/deposition exploration of the site. Here the breakwater contour lines are abstracted across site to create space for meander, inhabitation and respite from the ocean.

After this design proposal it was decided that the breakwater landform building would be developed in detail whereas the pedestrian promenade, facilities and tidal pool would be a broad scheme, integral to the design, but not developed to the same extent. This was due to the large extent of the site and my desire to zoom in to the tectonic expression of the landform breakwater building.

Programme

cross-programming

At the scale of the broader coastline this programmatic proposal is composed of a new pedestrian promenade links the Seapoint Promenade to the V and A waterfront through Granger Bay. Granger Bay is then an active node along a public walkway. This link (already occurring albeit haphazardly) will be given legibility. At the Granger Bay node a more intimate experience of the ocean than that which is experienced at Seapoint and the Waterfront will be afforded. One is brought down to water level to overlook, touch or enter the ocean.

This link allows the general public to watch and partake in the spectacle of the working bay. Offshoots from the main promenade create varying places to dwell. So the route transforms from watery platform to cantilevered surface to landform crevice etched into the breakwater. Multiple opportunities to interact with the manmade landform and water are created.

A new tidal pool acts as both termination of the Granger Bay route and suggestion of a new more expansive experience of the ocean to come. Changing facilities set under the parking deck accompany the tidal pool.

Upon entering the node of the bay, the Pedestrian route is buffeted on each side by different uses. Existing cross-programming is amplified so as to enhance the spectacle and sense of frenzied activity. Furthermore this "controlled chaos" allows for the "exchange" and interaction to which Hajer (2001) refers.

On the watery side of the pedestrian route, new uses such as a floating jetty, a tidal jetty, fishing platforms, decked outlooks, boat moor and grass berms are split around the bay to trigger activity in all parts of the bay. The route bends around

the site to view first the contained bay and then the boundless ocean beyond. This recalls the tension of the sublime whereby intimacy is coupled with uncontainability heightening the experience of moving through landscape.

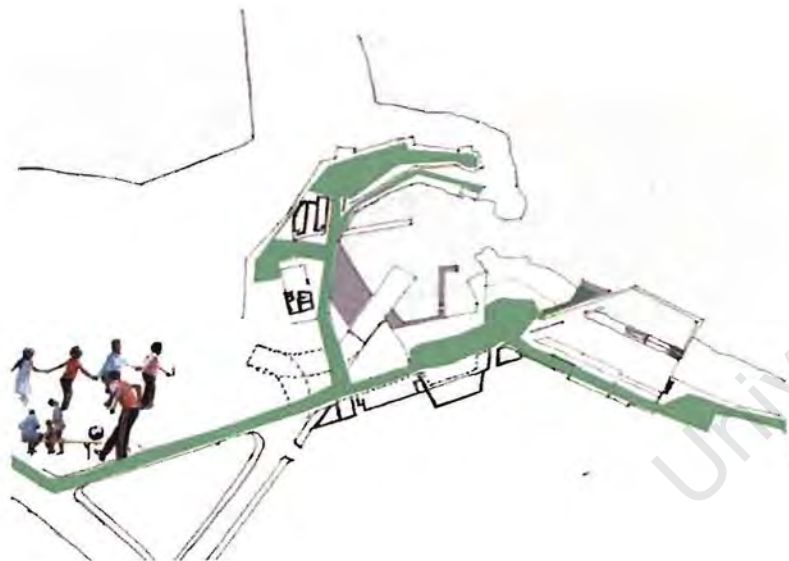
On the land side of the promenade, a small fish market, kayak platform and storage is situated. These facilities are set into a decked parking lot atop which runs a secondary walkway elevated above the level of Granger Bay serving the future development. Along the Granger Bay route are multiple accesses up to the top walkway via stairs and a ramp. Pedestrian access from the parking lot is permitted along the Granger Bay promenade.

At the scale of the bay, the existing club house is maintained but elevated above ground floor. A new juice bar is added on ground floor to attract passing pedestrian activity en route to the breakwater. This leads onto a large deck over the water catering for both events and promenaders. The juice bar leads onto a grassy, treed sunken garden that faces north allowing for a quieter seating area. Flanked by a breakwater path, one is protected from the elements as if hidden behind a dune.

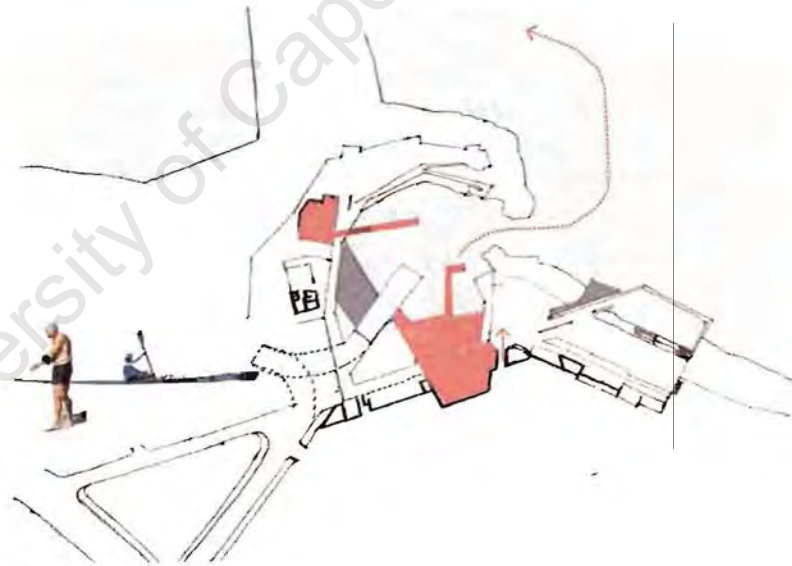
A snack bar leading onto the breakwater is created which serves both the club house users as well as the general public. This is partly owned by the club house and can be rented out for events.

A corner cafe adjacent to the slipway serves both tired fisherman as well as passing promenaders who can enjoy their take-aways on the breakwater park area.

Changing rooms, outdoor shower and a place to rest a kayak are etched into the mass of the breakwater. This block acts as a foot supporting the new inhabitable landform.



Promenader

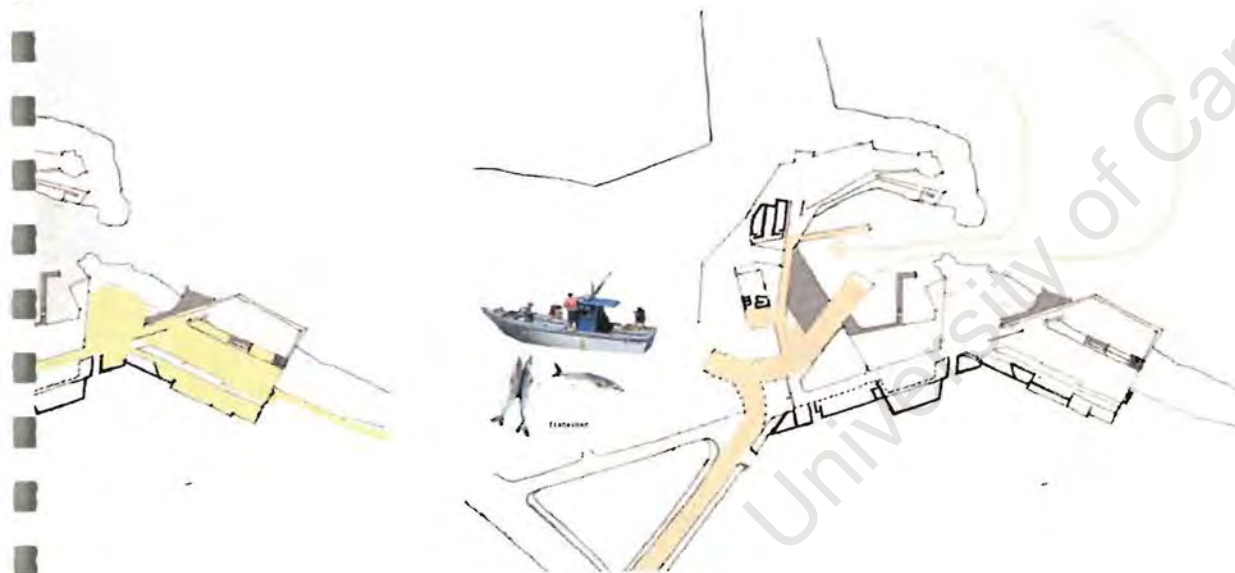


Kayaker



Beach-goer

Figure 30
Diagrams of use on site



Fisherman



Overlap of use

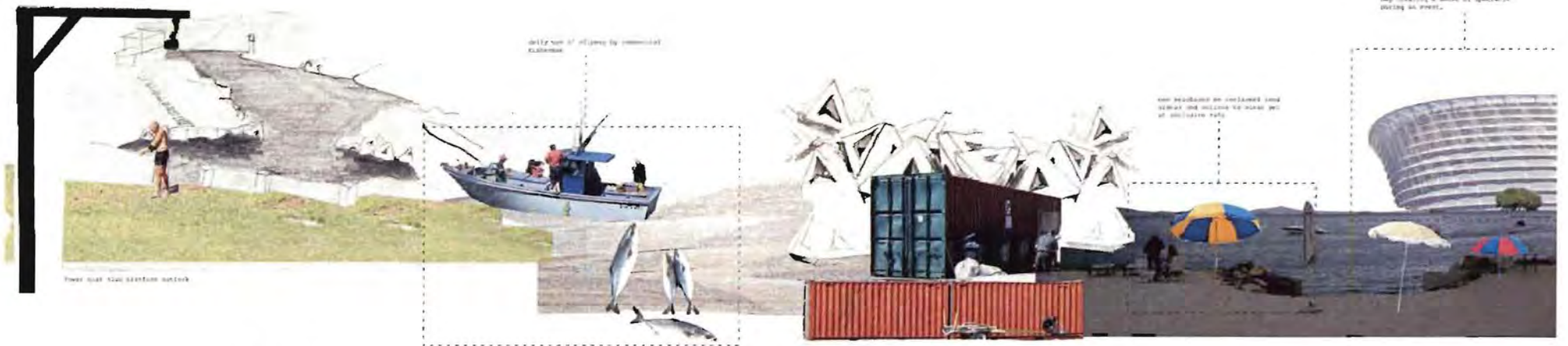


Figure 31
 An early derives/panorama depicting the experience of site as one of multiple views outlooks. At every place on the site there is a different view. Here exists an interplay of landform, sea, floating deck lookout point and surrounding landscape.

Landings

Orientation and views on the
breakwater building

1. *"the open they
came into by these
moves Stood opener,
hoops came off
the world- Seamus
Heaney, "Crossings"
in Seeing things
(New York: The
Noonday Press,
1993), 84.*

2. J G Ballard
quote in Vale, V.
(1984) RE/Search JG
Ballard. RE/Search
publications:London.

*"The open stood Opener and the hoops
fell off the world"¹*

- Seamus Heaney

The notion of "landings" has helped to inform spatial delineation in the breakwater and building. Granger Bay can be understood as a landing that mediates both land and sea; landform and surrounding context. A landing is activated or influenced by what it is situated between. According to Leatherbarrow (2009), "Communicative space comes into being when limited conditions give in to what they lack, to what they want, desire or are pulled toward". When one walks onto the breakwater one is simultaneously on land and in the sea. The experiential quality of ascending this man made landform in the sea is what has informed the articulation of this space and the building.

*"All the most interesting things in the
world take place where the sea meets the
land and you're between those two states
of mind. On that border zone, you're
neither one nor the other, you're both.
And people tend to take their clothes
off, which is always a plus."*

-J G Ballard.

The following model and drawing exercises reveal how the building is formed by what it is situated between. In this instance, Fort Wynyard, Table bay, Robben Island and the Breakwater Pier serve to shape the building and confer orientation to its users. Views are unveiled and the architecture engages with what it chooses in its surroundings.

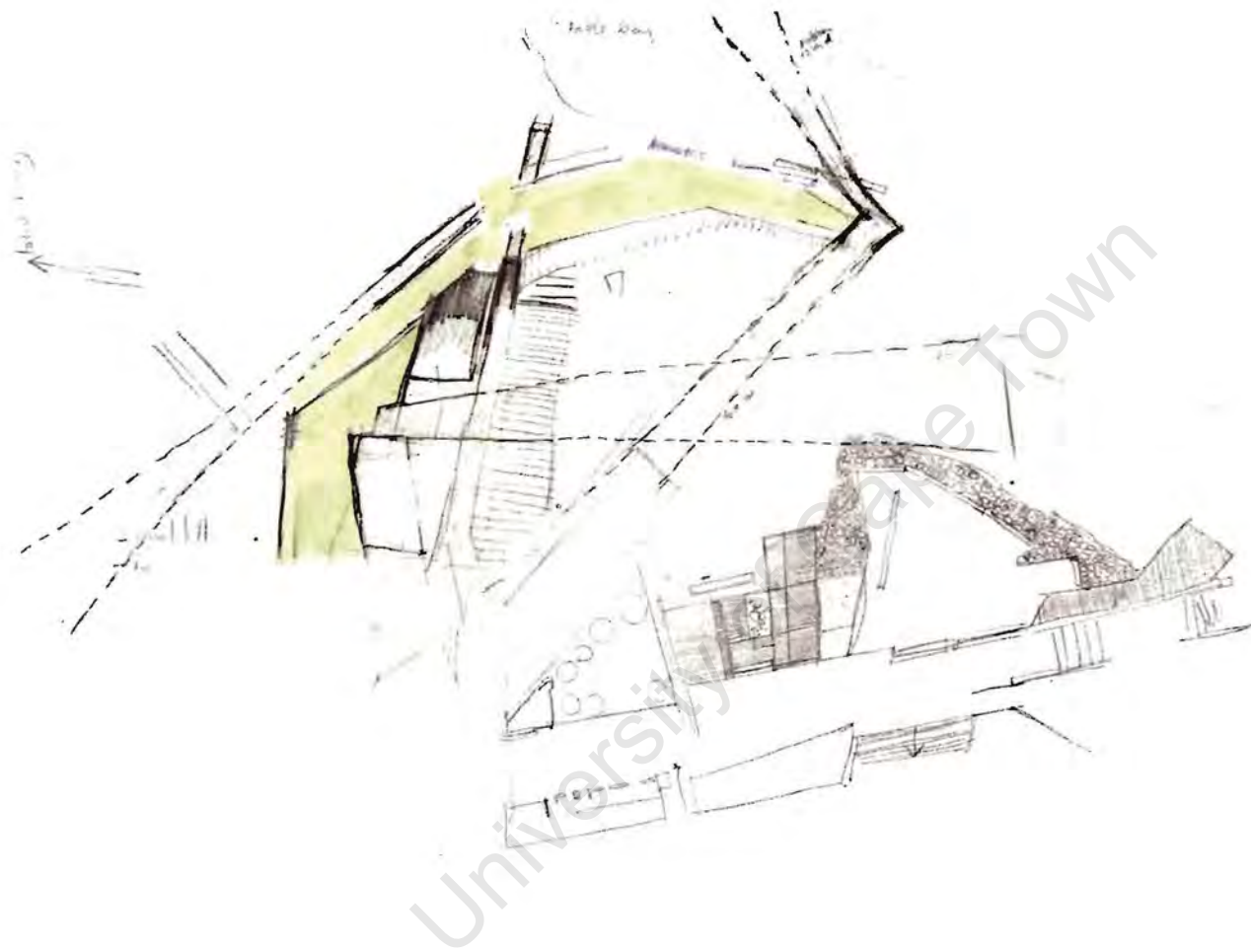


Figure 32
A Sketch depicting how the landform breakwater building
is etched into by the outlooks it permits.

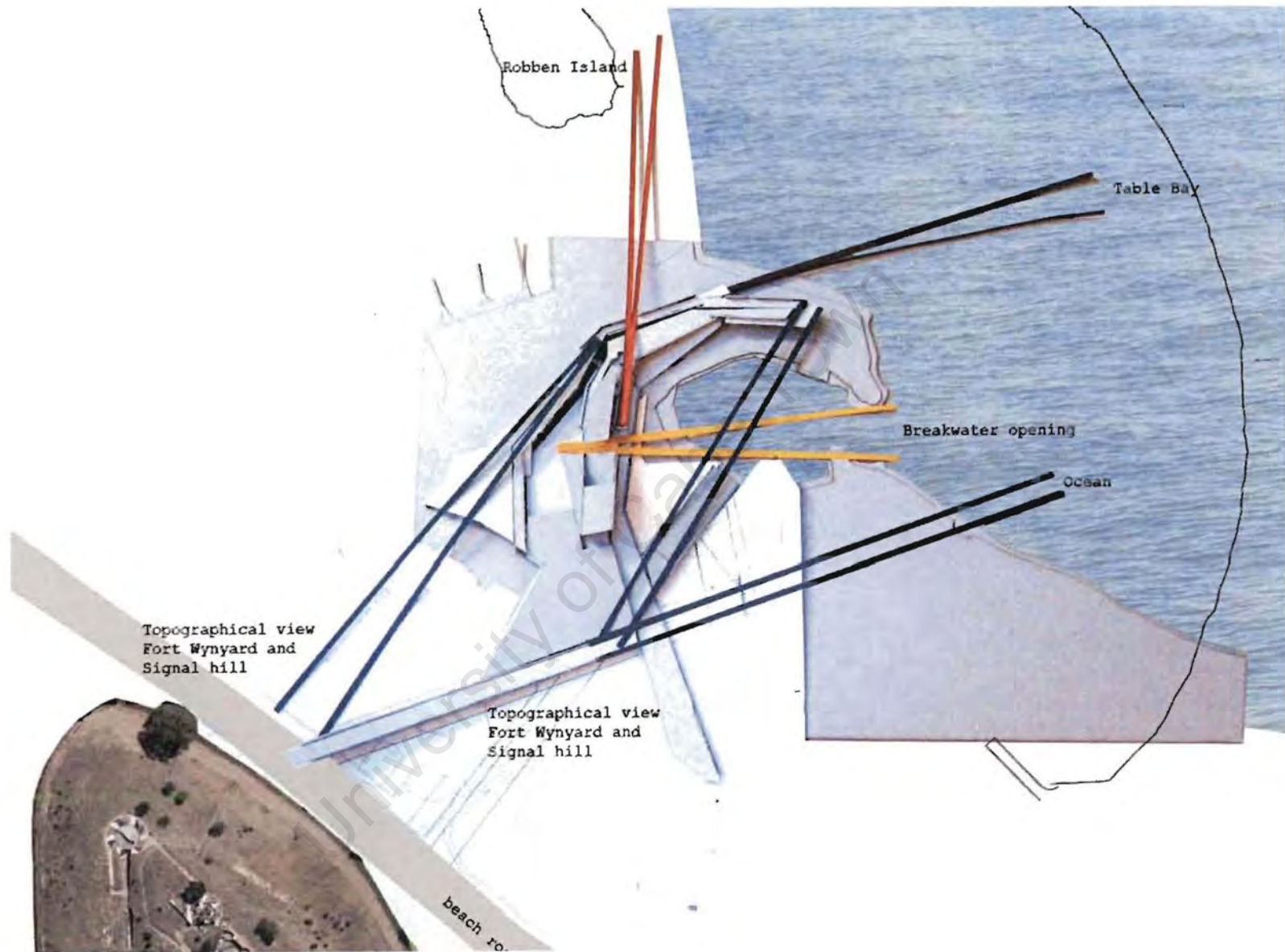


Figure 33
3 Dimensional study of how building is shaped by what it
"chooses" in its vicinity



Figures 35
Fishing Platforms off a pier
in Barcelona are closely
related to the topography
and are made cheaply and
with little effort.
(Daidalos, 1997:122)

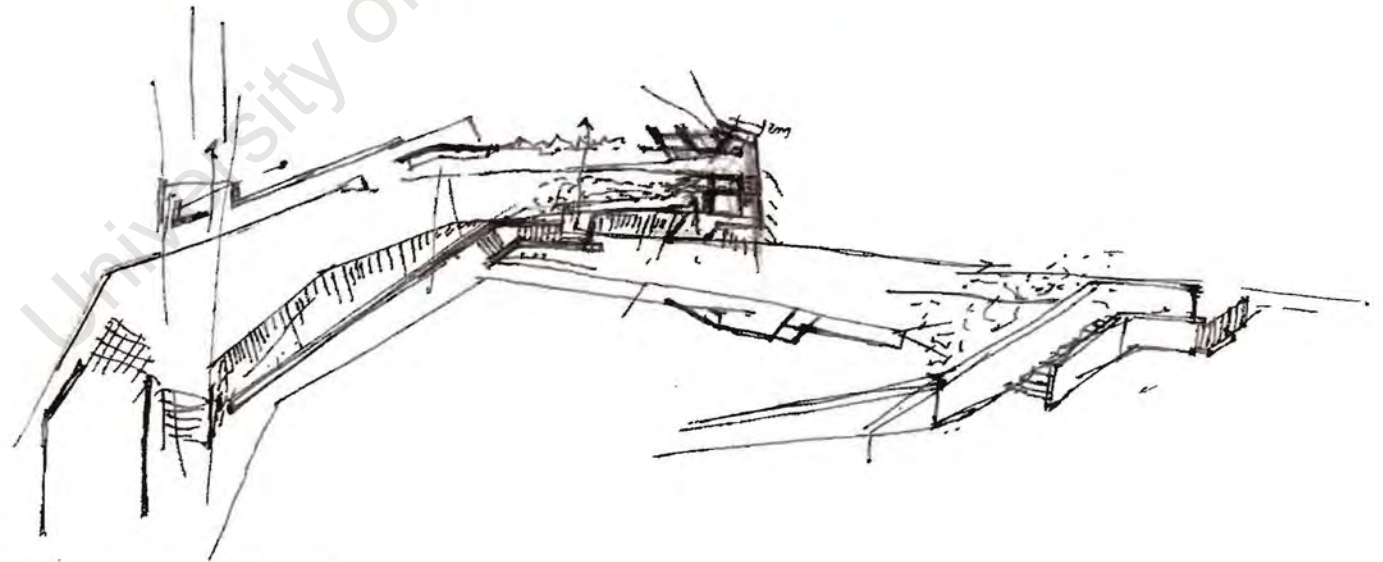


Figure 34
Sketch of breakwater landings, outlooks and stairways
etched into the landform.
Platforms are closely related to the topography just like
the fisherman platforms in Barcelona.

Leveling the land

Creating platforms in the breakwater

ordinance of the world was "drawn". It was a framework that articulated an habitable landscape onto the ground. Had this veil or "map" not covered the ground, the "dark earth" would have remained "unchartered and un-navigable." This story implies the establishment of platform or landing that permits human use.

Land "shaping" is revealed in the anonymous architectural interventions that are found at the end of a pier in Barcelona (Daidalos,1997:122). Here, fishermen have demarcated their area with bulky flotsam and jetsam (Figures 35).

These platforms reveal the basics of shaping land where verticals and horizontals slip and slide, allowing for infill where necessary, across the irregular topography. This addition allows for human use and an extension of platform into the ocean for fishing.

Similarly, at Granger Bay, the very basics of platform-making exists where concrete surfaces and a floating jetty touch the water precisely where necessary. My intervention on the site has been informed by the position and materiality of the existing concrete and timber platforms (Figure 42-43). The top of the breakwater has become overgrown by planting that changes drastically with the change in seasons (figure 3). Below this emerge concrete tetrapods which protect the bay. The existing site has the character of the Barcelona platforms. This phase of the design has consisted of shaping site by building into the existing breakwater. Articulating spaces to inhabit, overlook, dwell, wash and seek refuge from the elements has been of particular importance to the design. The spaces are interlocked and have their own 'temperature, dimensions and sectional position between water,

rubble landform, building and surrounding environs (Leatherbarrow, 2009:99).

Alvaro Siza's *Leca da Palmeira* 1961-1966 is another useful precedent; its continuous concrete wall bending and transforming itself from the urban road to the rocky strewn beach, to the expanse of the ocean (Figure 37). Here Siza explores the experiential qualities permitted by shaping and excavating land.

In designing the breakwater landform, the walkway meanders allowing for the experience of walking in the breakwater and walking up it where the expanse of table bay is revealed. A heavy mass of building is cut into the breakwater to permit inhabitation. Here the definition of landform and building is blurred as glazing floats over the breakwater and a large opening in the building/landform reinforces its purpose for inhabitation (Figure 36).

Leatherbarrow (1999) talks about "leveling the land." He refers to how, in Greek history, the world was seen to be created when Zeus threw a matrimonial veil over the head of the Goddess of the underworld. Into the cloth were woven lines and divisions of the earth and the ocean. Thus the marital veil was really a map on which the axes and



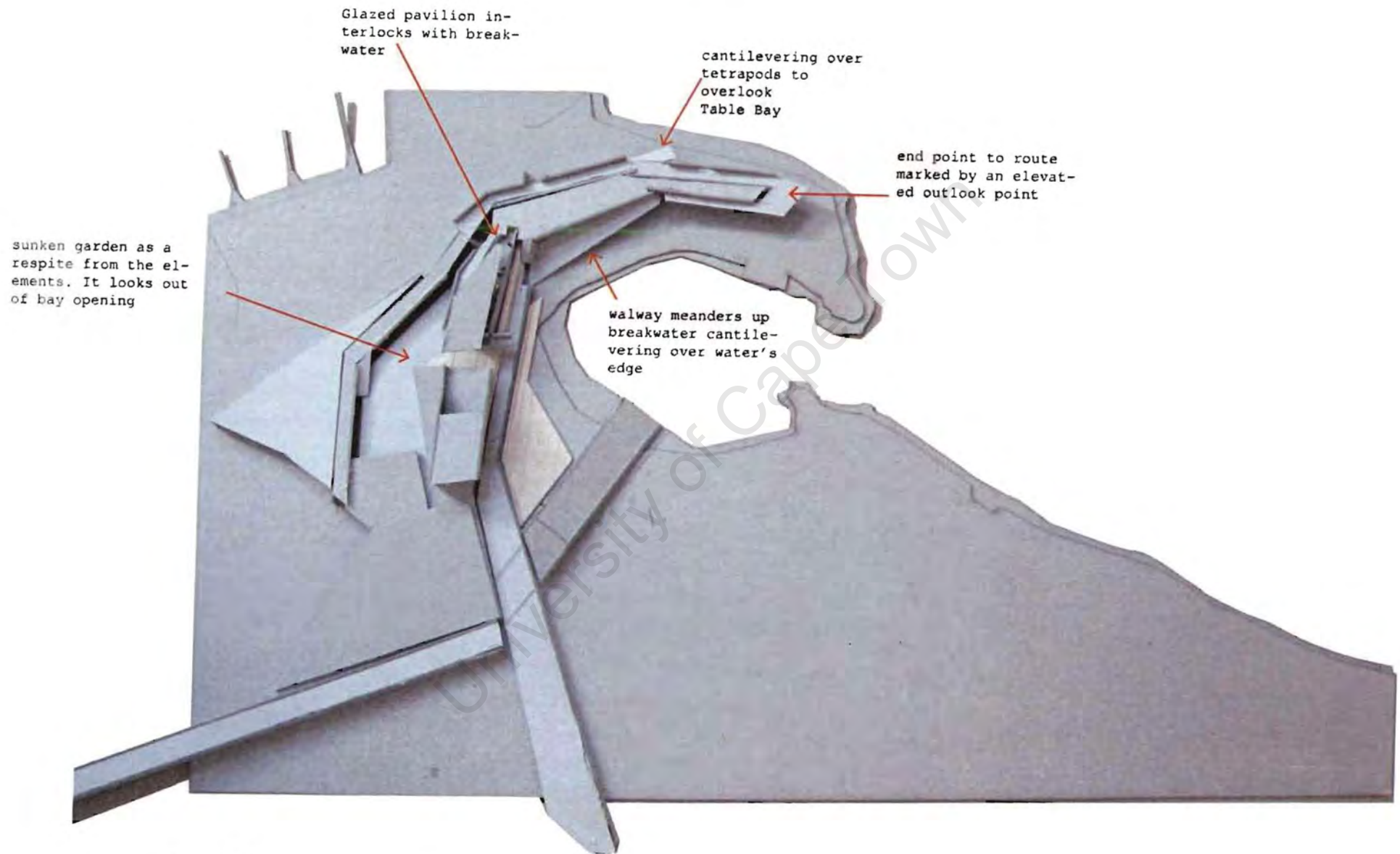
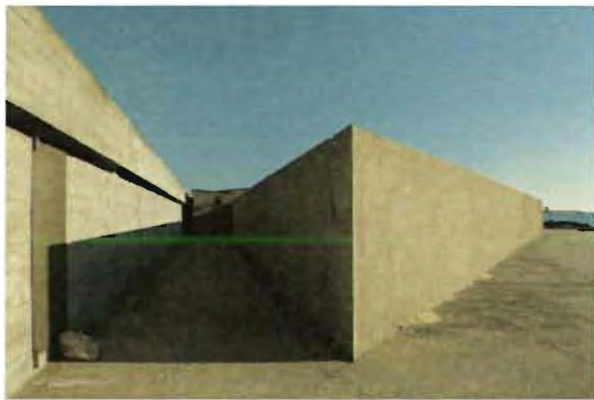
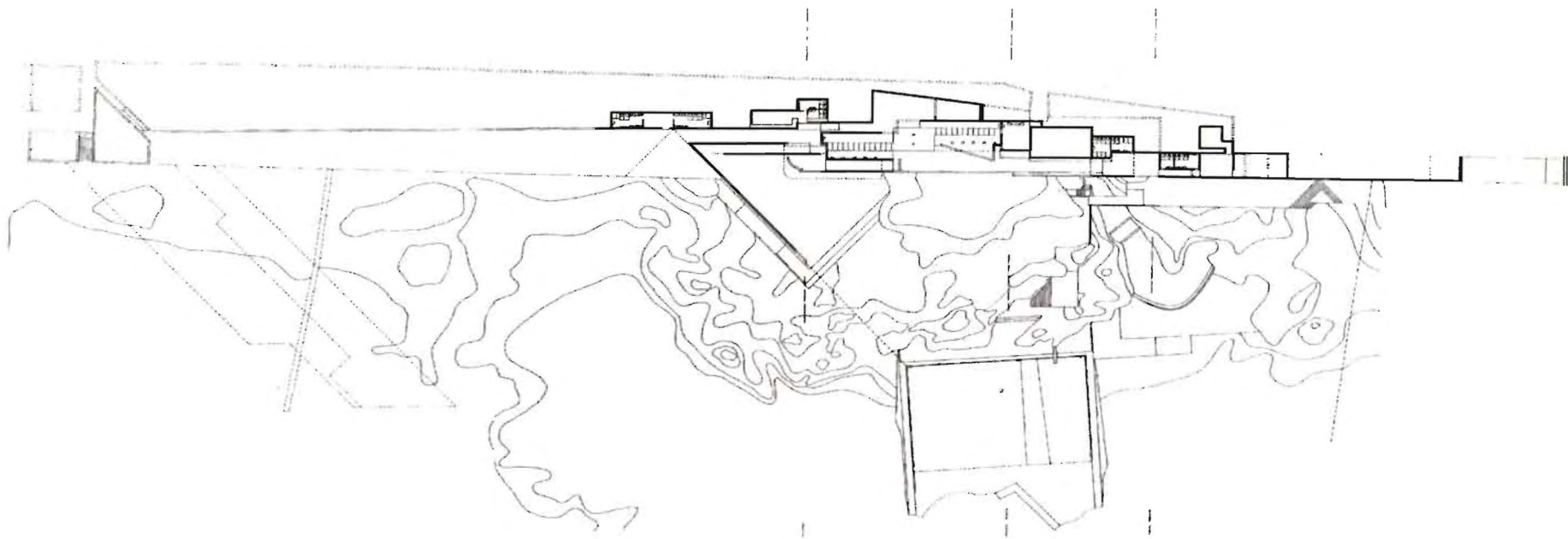


Figure 36
Model study of making platforms



Figures 37
Alvaro Siza
Leca da Palmeira 1961-1966
Frampton, K. (2006). *Alvaro Siza Complete Works*. Phaidon Press: London.

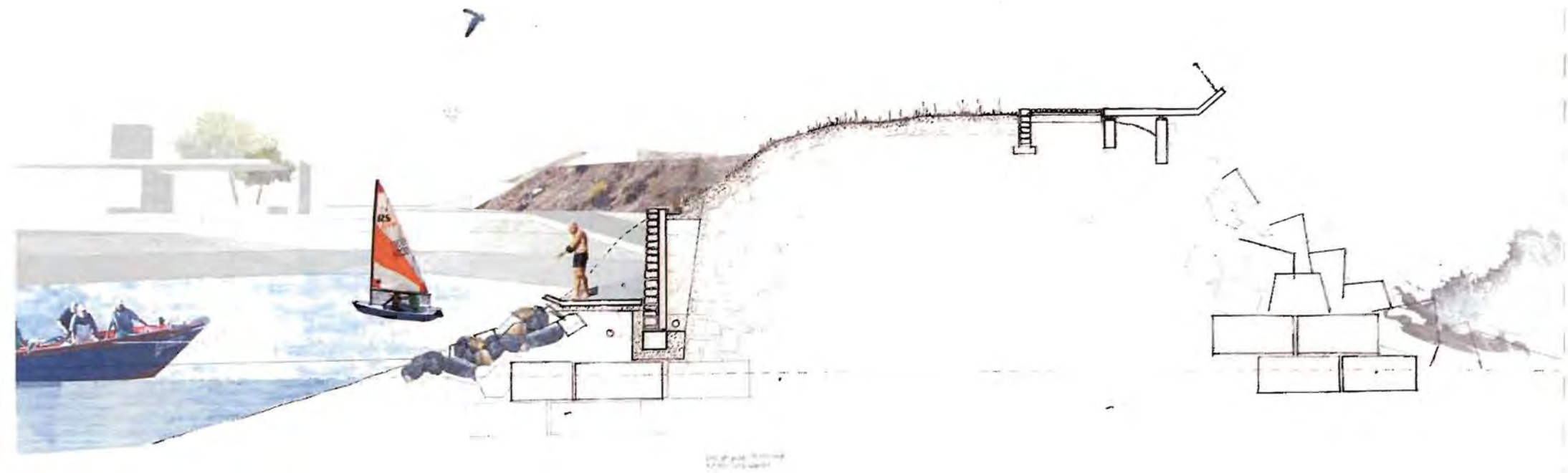
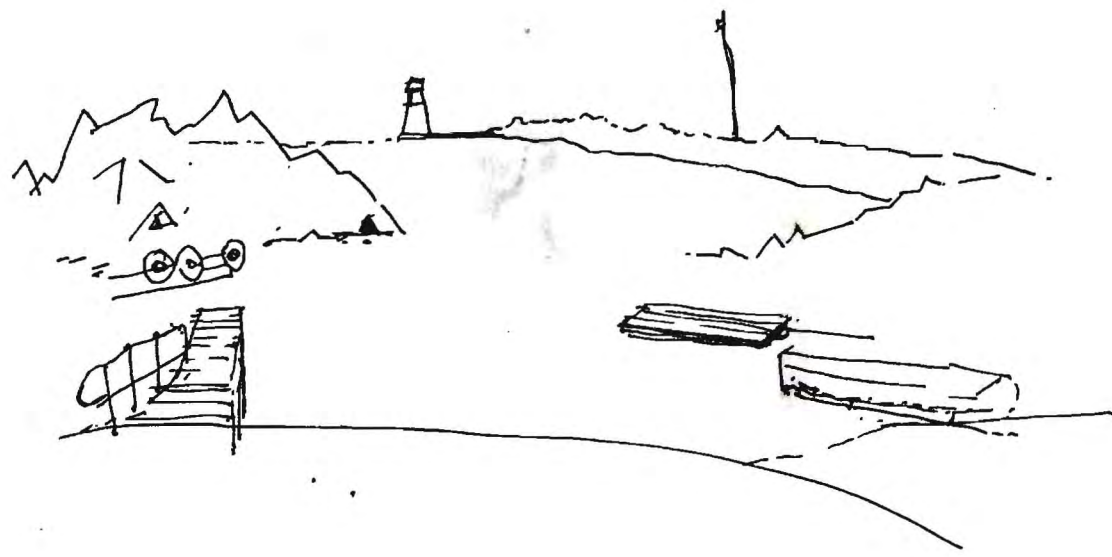
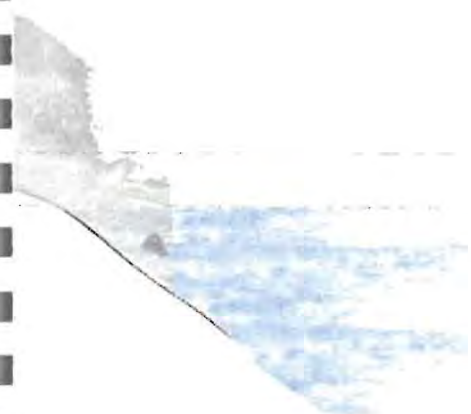


Figure 38

A Preliminary detail section through breakwater revealing how the heaving mass of the breakwater is translated into an assembled stone wall and off shutter concrete platform that floats over the rubble embankment.



view from Granger bay out of breakwater opening towards
lighthouse



Figures 39

Model study of building into the breakwater. Here walls are not continuous: an allusion to the heaving subsoil that will move with time. The roof of the inhabitable space is a continuation of the breakwater.

Aspects of this model have been developed for the final project



Figures 40

Model study of Breakwater showing stairs cut into breakwater and lower walkway that becomes part of the dolos and touches the water. Grass berm and walls overlap and corten outlook point is culmination of the breakwater route.

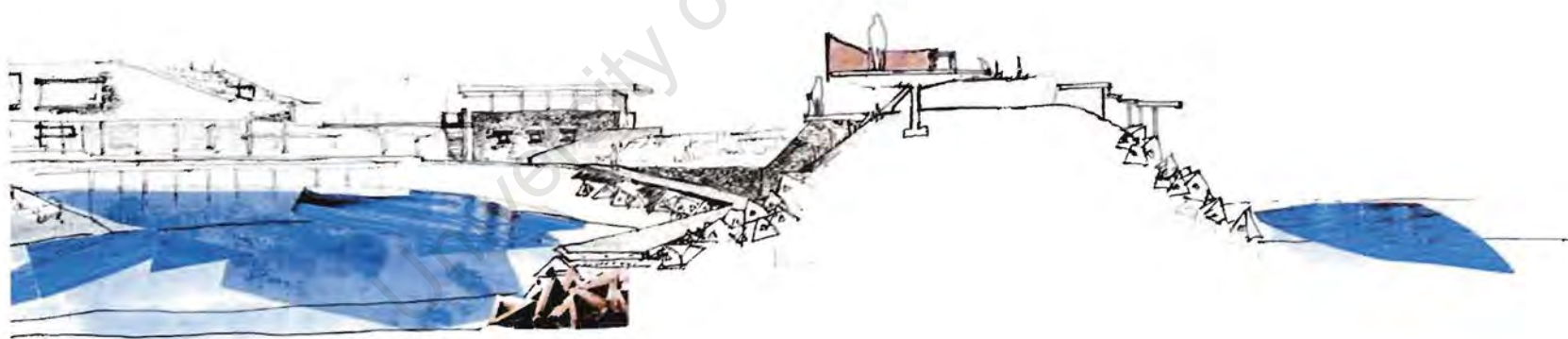
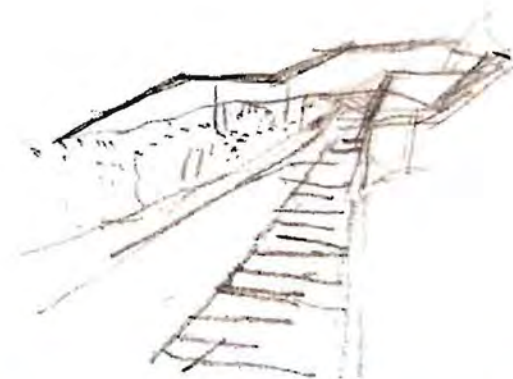
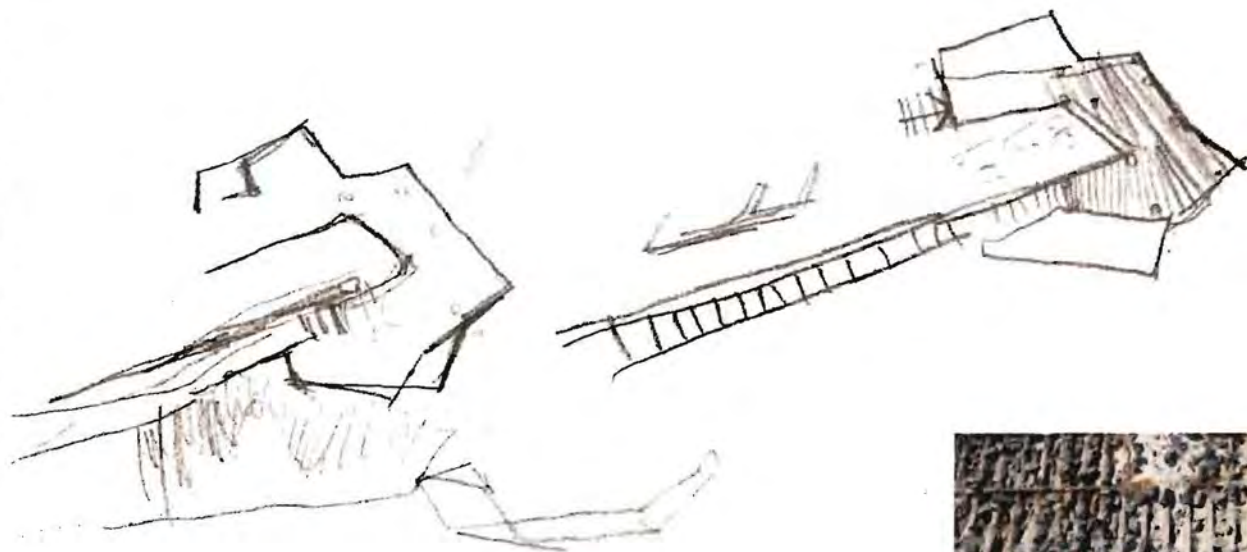


Figure 41
sectional perspective through breakwater outlook



Figures 42

Sketches of the elevated outlook at the end of the breakwater. It is made of corten steel that will weather over time. Its position is informed by the existing outlook at the end of the breakwater. Its chromatic character resonates with the rusted surfaces and steel containers present on the site.

Figure 43

Existing materiality on site that informs selected material palette of weathering steel, off shutter concrete and stone.



Figure 44
 Diagram of how pedestrian flow occurs across site.
 The pedestrian experience moves from contained, internalised bay to the expanse of ocean beyond. This recalls the tension of the sublime of vastness and intimacy.

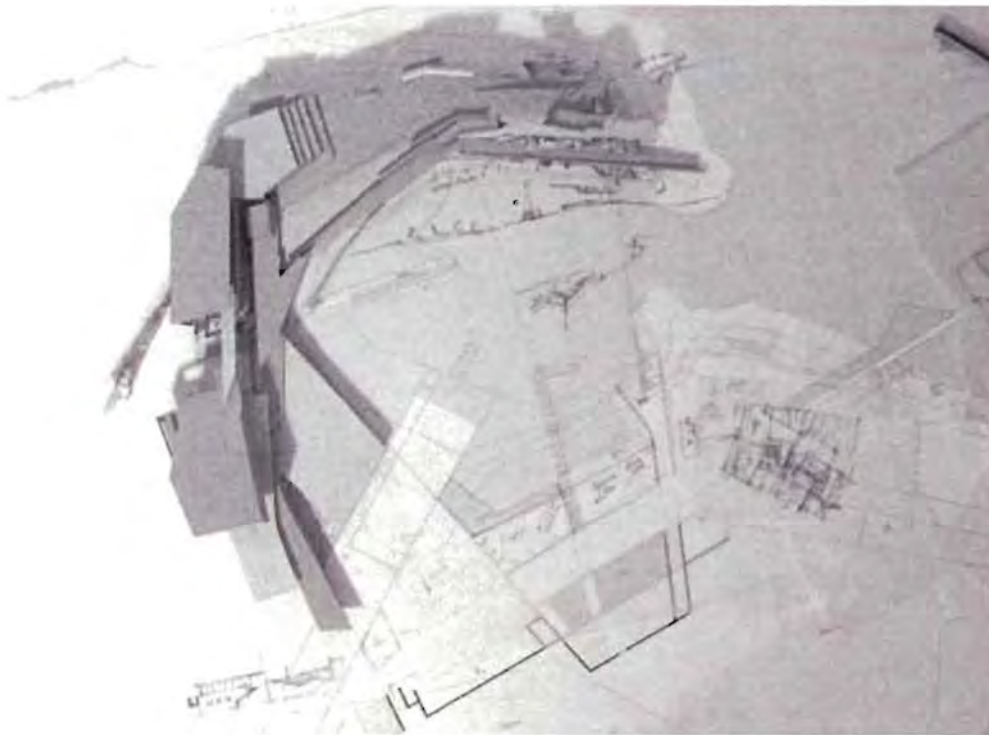


Figure 46
1:250 concept model progression of how breakwater landform is articulated to create movement and gathering spaces and then transforms to incorporate habitable spaces.

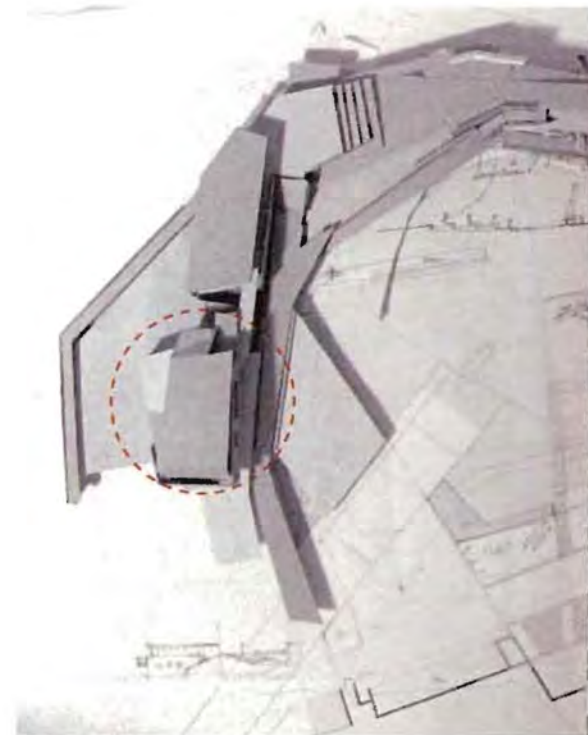
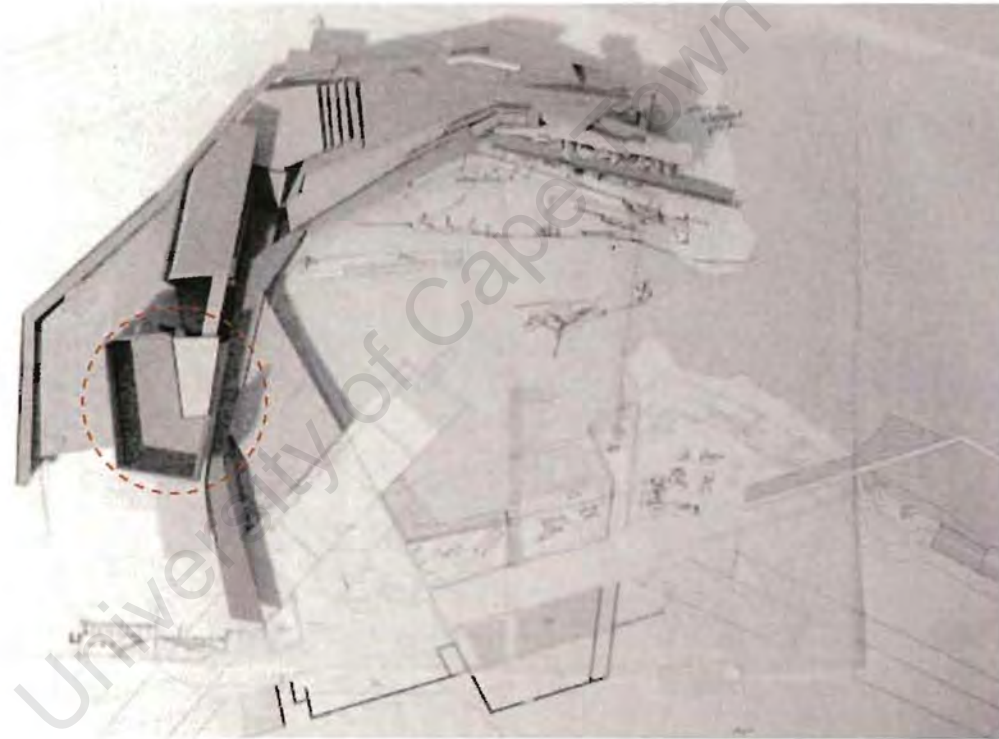


Figure 47
Sunken garden and back route is added to the model. The building appears to act too much as an impenetrable barrier to the bay with not enough mediation between levels.

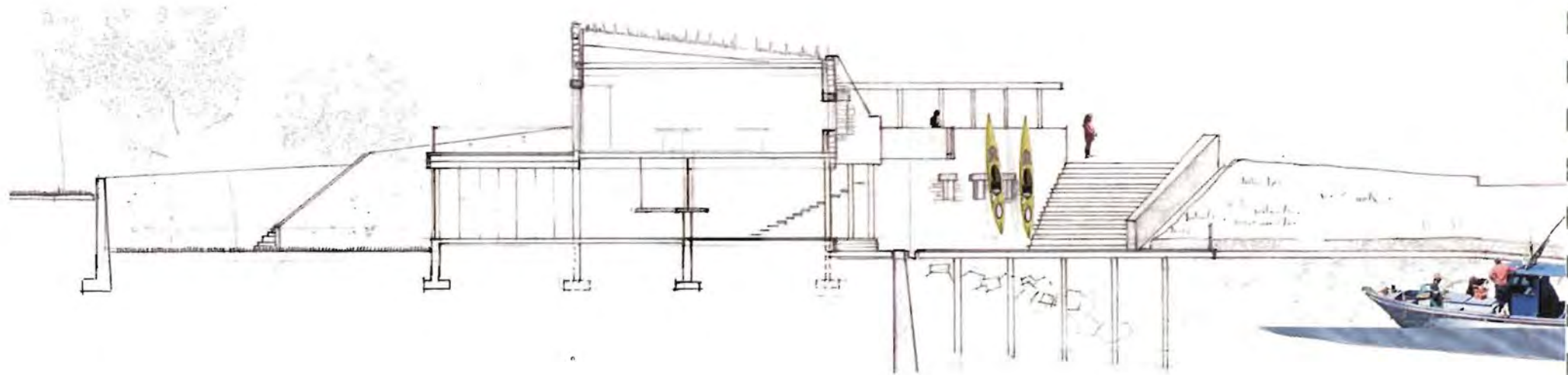


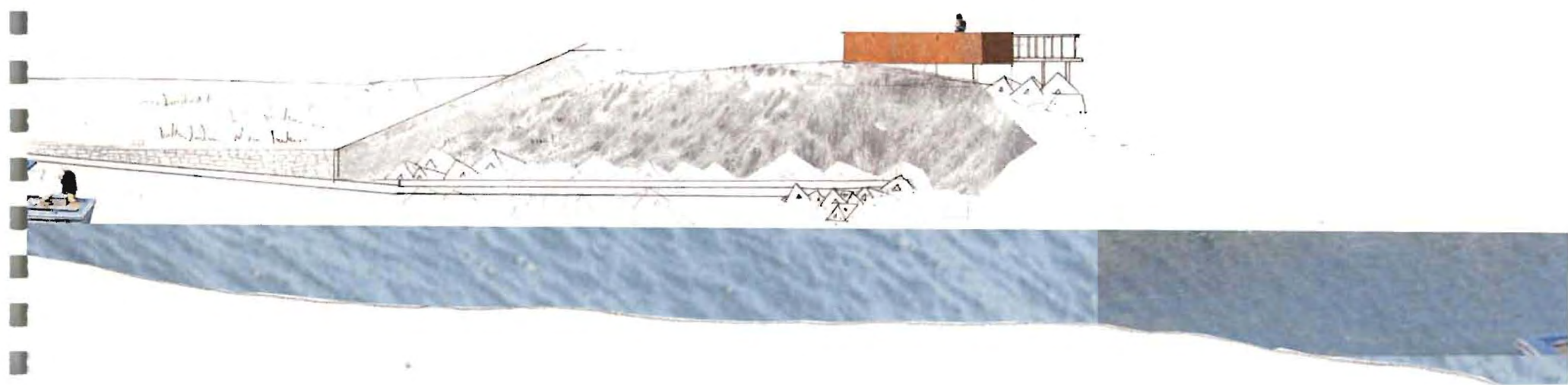
odel. However
able wall to
s and bay.

Figure 48
Breakwater building is changed to better mediate between
upstairs hall, deck, lower deck and bay.

"a stepping stratified spatiality that links together by sectional increments the watery origins of the site, the surrounding city and the remote because elevated recesses of the building."

David Leatherbarrow, 2009, referring to the Beuna Shore Club of Rudolf Schiller





University of Cape Town

Conclusion

The process of this thesis began with a theoretical and material interest in roughness and landings. These notions led me to a choice of site at Granger Bay: a place of intrinsic "roughness." The place is evocative of contrast in both its materiality and in the way it receives multiple divergent uses. Applying the notions of roughness and landings has been a means of understanding the site and making architecture in the place.

Studying the site in its geological, tectonic and overlapping functionality has been a rewarding process culminating in a project that addresses the shaping of land at the land sea interface as well as the broader urban context.

The project has involved a process of working across a broad range of scales. This has been a challenge and configuring a broad scale strategy, into which the architecture at the scale of the bay could be embedded, has been a central concern. The project has involved moving from the broader urban route, to the way in which the site is used as a working and recreational bay and then to the detailing of a building and walkway set into a landform. The project envisions a bustling, enlivened public space where urban practicalities meet unbounded nature and landform meets sea. By having an opportunity to work at different scales the product is architecture that resonates with all the peculiarities and tensions of its place.

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