

Revitalised Intersections, VOL. 1

By YP Mudaly

*Urban Design  
Approach*

*05.*

Interfacing anchor  
infrastructure to the site and  
creating a masterplan

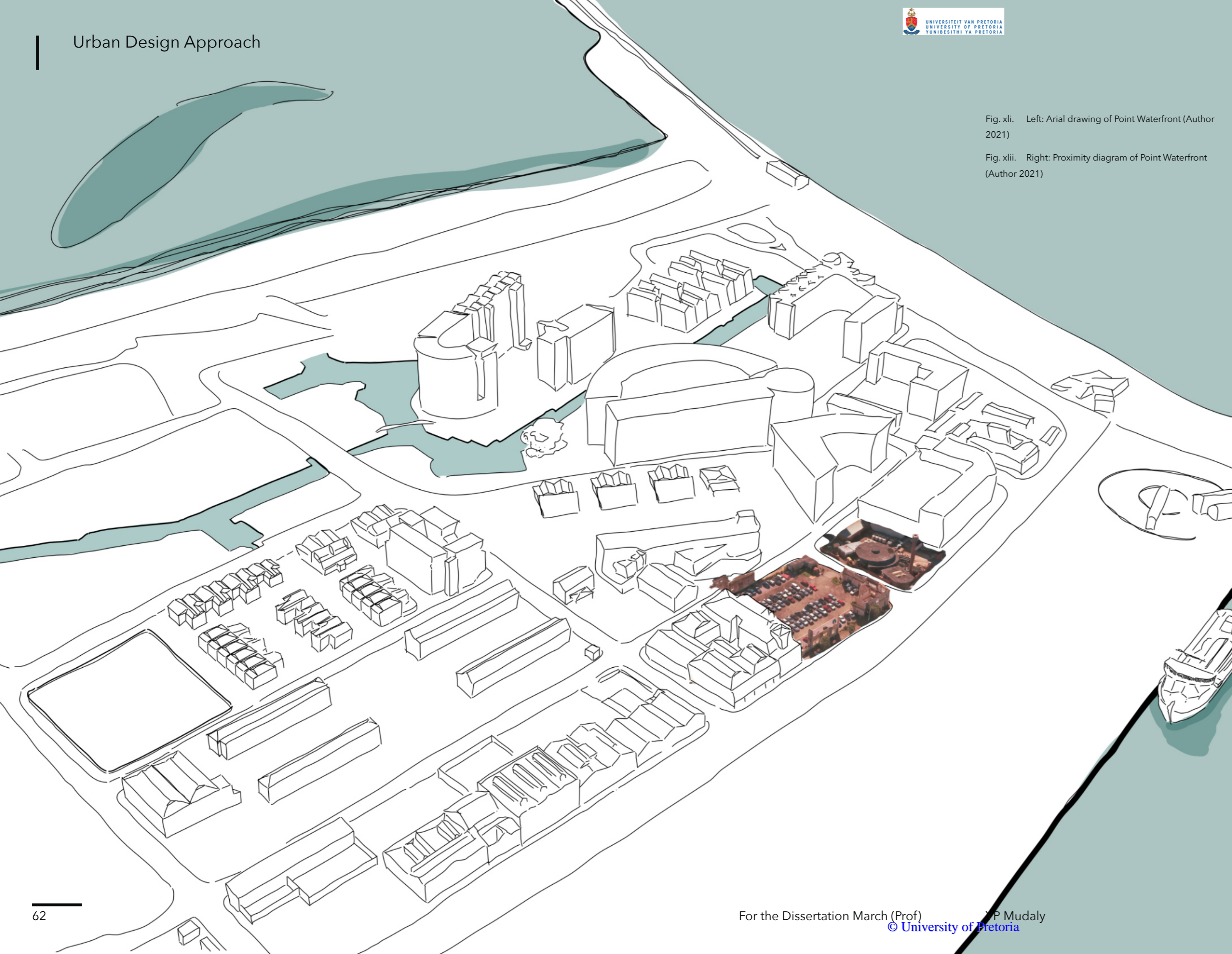
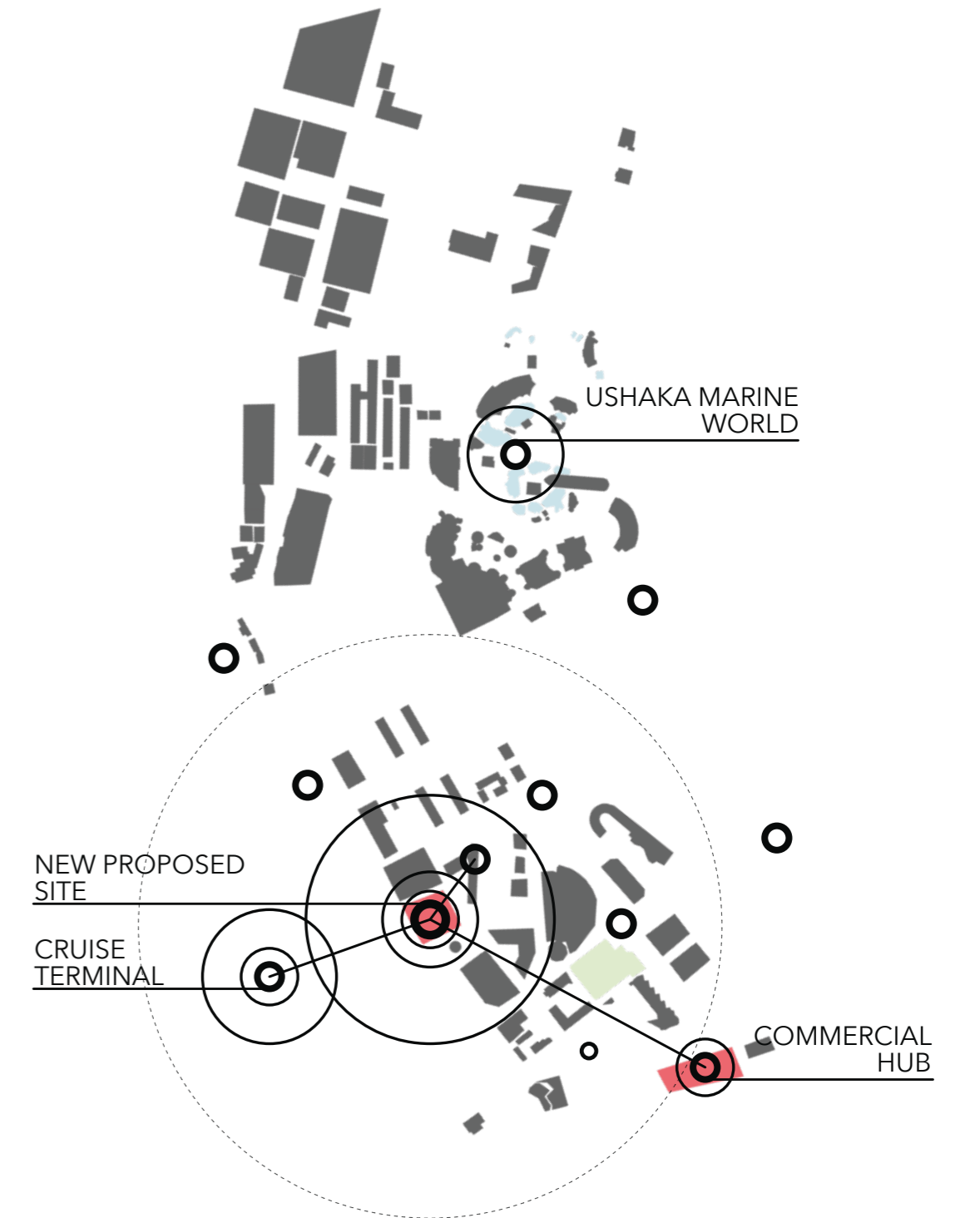


Fig. xli. Left: Aerial drawing of Point Waterfront (Author 2021)

Fig. xlii. Right: Proximity diagram of Point Waterfront (Author 2021)

The project seeks to explore challenges and potentials of the site as well as combine and/or overlay programmes and typologies to benefit the fluid nature of constant movement and access around the harbour and the vision is to create a dynamic and inviting urban environment. The architecture can change the way developments catalyse dead sites and how one uses existing systems to add to an urban fabric.







### 5.1. Development through an urban revitalisation

The development of the urban framework focused on developing the anchor areas to create an impactful density on the overall waterfront precinct. The Durban port is a dynamic infrastructure which is integral in the economies of South African import/export as well as tourism in recent years with the advent of improved cruise infrastructure for MSC.

The careful methodologies followed in the design of an urban scape considers locations such as the canal, uShaka Marine World, the existing site and the heritage scapes around it to achieve the dissertations selected goals. The feasible area studied concentrated the canal through the whole scheme of the site and its intention to bring in a recognised water frontage in the Durban Point Waterfront. In the end it creates an international character and the dissertation focuses on 4 zoning strategies of space for the urban vision.



Fig. xliii. Left: UEM Sunrise urban development plan (Company 2021)

Fig. xliv. Right: Analysis of UEM Sunrise urban development plan (Author 2021)

#### 5.1.1. UEM Sunrise Plan Analysis

The first iteration of the urban vision critiqued the existing development plan designed by UEM Sunrise. Categorically the critique was extracted into 3 elements as seen in figure 2.

- I. The canal - which was not expanded upon and was made smaller - possibly to create more space for development within the urban block system.
- II. The urban densification of buildings and public realm which did

improve on the existing landscaping of the site, however, fell short of designed integration within the building footprints and was determined as very typical and poorly designed

- III. Within the urban block, edge conditions for building pads seemed to be ignored due to development ownership of land parcels, resulting in dissociative urban spaces which seem to separate by programme and use.





## 5.2. Creating the urban design scheme

Celebrating the essence of the anchor connections and the spirit of the 'port-city', the site is revitalised through an identity restructuring of appropriate used space and anchors to exemplify the total port city narrative. Here, the theme of resilience is brought in to show how a system is able to withstand change through dereliction and reflect a city's fortunes through adaptation, use and activity as well as relationships and civic use. All strategies were studied for their opportunities and uses according to existing conditions, surroundings, and site advantages.

The urban design approach was implemented to ground the architecture tactilely within the new scheme to provide

intricate detailing on edge conditions and fringe boundaries to tie it to its environment.

Within the block as the use of the new Durban Harbour changes towards a more tourist oriented and business park themed space, sites surrounding chosen site A (fig.5) are designated as public mixed use space, some with intermodal transit nodes with high density pedestrian traffic flow. These strategic locations are all to be connected to the water canal network.

Fig. xlv. Existing Site and Harbour (Author 2021)





### 5.3. Rethinking the existing Durban Point Waterfront Salt Water Canal

One of the main components of the schematic is a reliance on the water edge brought in by the salt water canal. The canal is devised as a connective system pulling in different land parcels from each quadrant and quarter of the Waterfront through water networks and fresh water canal integration into buildings. This ideology suggests that the Durban Harbour is not closed off as the city internally contains a visible water edge through the canal as a 'device'. This new salt water canal proposed acts as the backbone for new recreational space to emphasise the distinctive nature of a seaport/ waterfront town identity that Durban requires.

The open canal will not only provides connectivity towards the tabula rasa of a water edge but also act as a pedestrian urban space as mediation between buildings. As a service, the canal further acts as a water collector for overflow storm water to alleviate flooding throughout the side as well as provides active ventilation and cooling strategies which would be discussed in chapter 8.

Currently the canal is used as a breeding pond for salt water fish used at uShaka Marine World as well as a recreational space for gondola rides.

#### 5.3.1. Salt water typology

The canal features as a lower walkway in-between block footprints and the concept is applicable to run along the street.

#### 5.3.2. Fresh water typology

The second type of canal is one that runs within buildings as a freshwater typology which is a catchment for rainwater and provides as water management for chosen, designed buildings.

Fig. xlv. Bottom Left: Fish breeding typology in canal (Author 2021)

Fig. xlvii. Bottom Right: Gondola activity in canal (Author 2021)



### 5.4. Key components of the new canal system

#### 5.4.1. Bridge Walkway

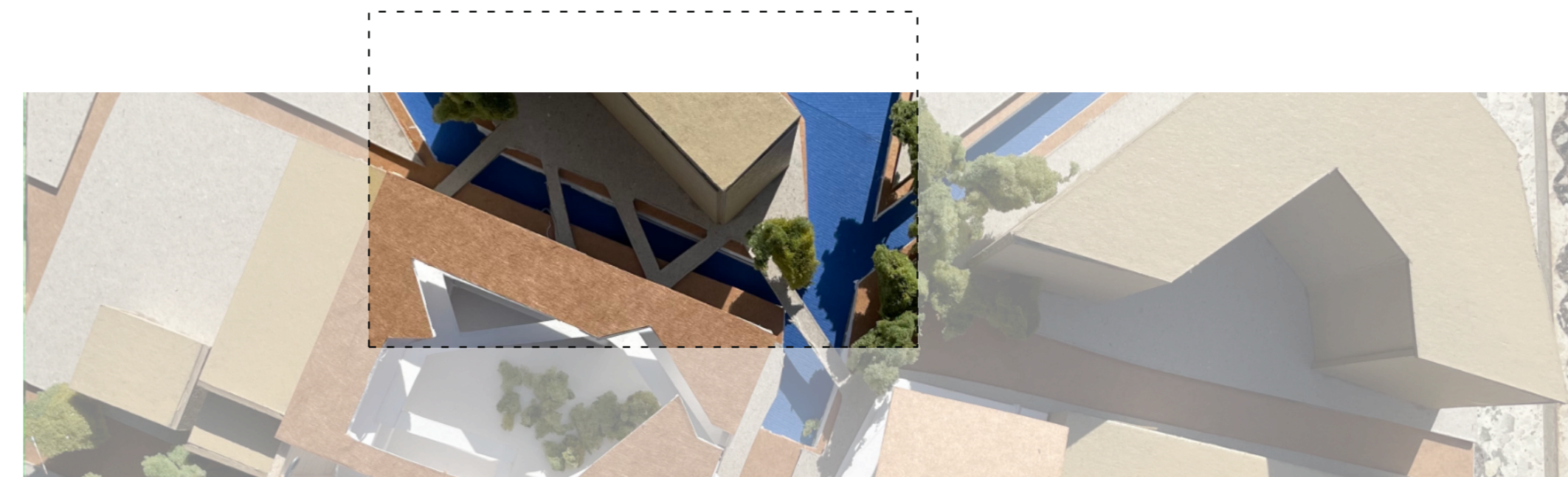
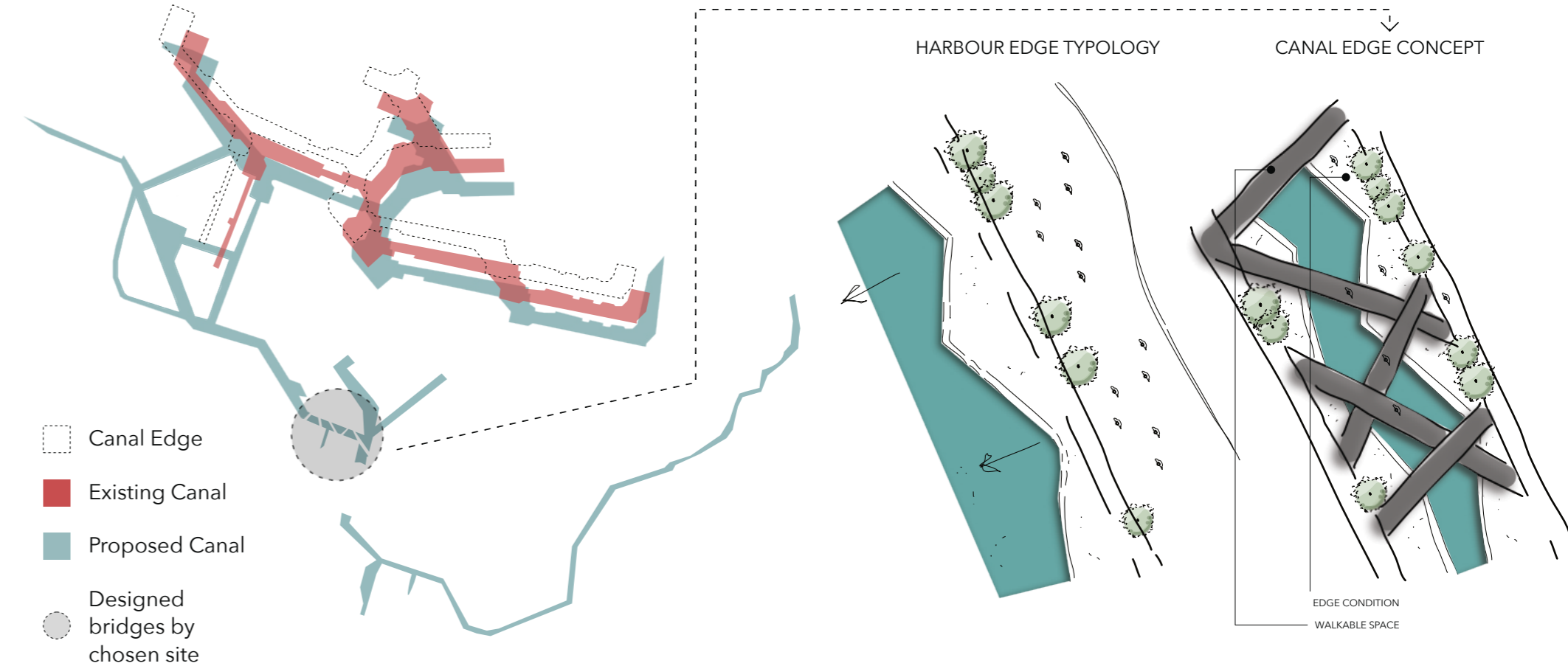
Along the canal the walkways across the scheme serves as a major pedestrian walkway from block to block. Such walkways also include bicycle lanes as well as in-situ concrete block seating within the canal for recreational activities close to retail and restaurant offerings such as the beer garden programme for the dissertation chosen site.

#### 5.4.2. Water Treatment

One of the existing programmes of the existing canal near the uShaka quadrant is the ecology of fish breeding for the marine world which is an innovative machine programme. This programme is cordoned off from the water treatment facility which treats the salt water for the buildings to use as clean water. This system shall be cheaper than conventional water procurement in buildings and chemical forms of water purification and provides as an ecological step in a greener urban fabric.

Fig. xlviii. Canal exploration diagram (Author 2021)

Fig. xlix. Below: Canal maquette (Author 2021)





## Urban design Integration

### 5.5. Port of Tolbiac

As a starting anchor to situate the design informants of the dissertation, the theoretical framework was broken up into the categories mentioned in the 'Guide-of-Good Practice' document authored by the AIVP 'worldwide network of port cities' (Aivp 2015: 9-132)

The breakdown of the spatial organisation section within the AIVP Guide of Good Practices report suggests the need to "share the use of the water and waterfront between urban and port functions" (Aivp 2015: 17). This is done to reclaim as much existing industrial land as possible whilst improving the existing landscape which the harbour situates itself. The 'site' contextually functions within a working port as Durban Harbour and the approach specified within the architectural and urban recommendations were vital to improve its environment.

The success of the Port of Tolbiac was the identification that much of the original port space which was not used was transformed into walkable promenade space (Lynch 2015). The activated area draws in pedestrian traffic and allows the space to still have access to prominent water edge space whilst being well lit and safe for users.

Location:

Paris  
France

Architect:

CEMEX Matériaux

Value to Research:

Reclaim of existing land, reformatting space, inclusive of context functions

### Conclusions and relevance to Port of Durban

In the end concept, the architectural form would make use of oil tankers from Island View terminal in the Bluff area of Durban Harbour and the Tolbiac Industrial Port makes use of the same silos but places them on pilotis in order to create walking space and views beyond the firm ground condition.

The integration of space is therefore achieved by using existing spatial structures and the organisation of walkable space



Fig. li. Exploration diagram of precedent (Author 2021)

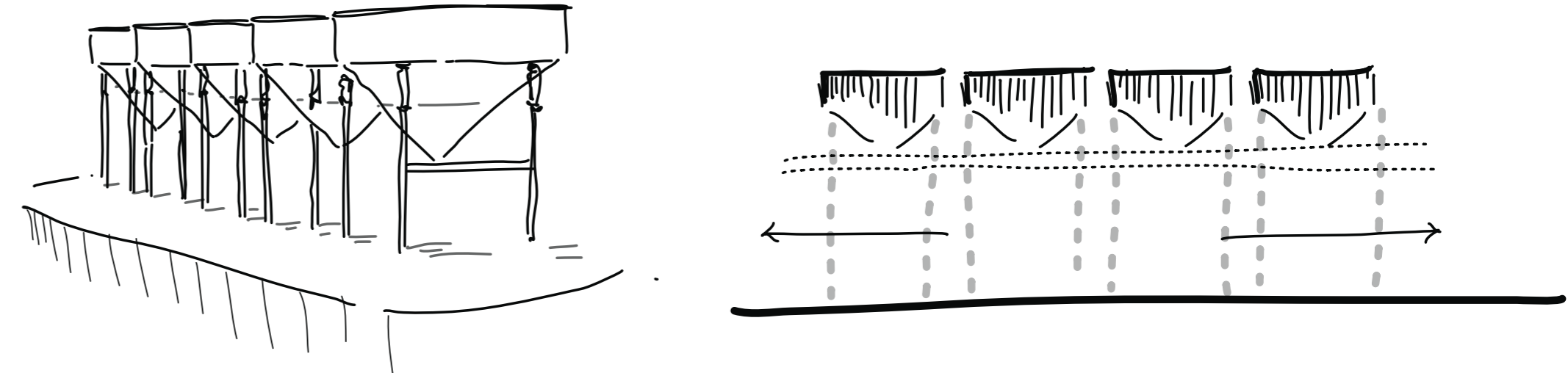
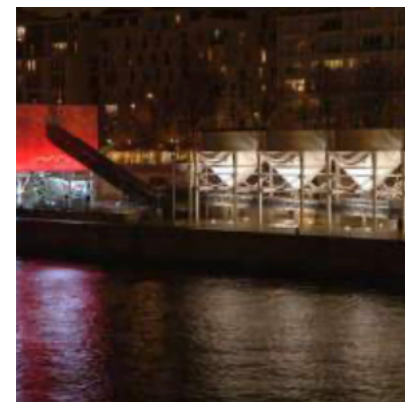


Fig. i. Images from AIVP. 2015. Plan the city with the port: guide of good practices. Available: [https://www.aivp.org/wp-content/uploads/2021/01/AIVP-guide-of-good-practices-english\\_adherent.pdf](https://www.aivp.org/wp-content/uploads/2021/01/AIVP-guide-of-good-practices-english_adherent.pdf) [Accessed 2 June 2021].



## Port and user interface

### 5.6. Port Vigo

Port Vigo by Jean Nouvel depicted a new developed landing zone for passengers which was about the circulation interface within the harbour space. From a reading of their manifesto, the intention of the scheme was to “bring the city to the port and the port to the city” (Nouvel 2007).

In terms of the layout of the port and the quay there is a sense of continuity where through amplifying existing space the port is able to interface with the water edge to contrast solid to liquid ground conditions. From here the play on landscape creates a catalogue of themes where user perception changes from the length of the scheme. Jean Nouvel is successful in tackling the issues of historical identity loss in the Port of Vigo and understands the relationship between the marine and the infrastructure around the context.

Location:

Vigo  
Spain

Architect:

Jean Nouvel

Value to Research:

Historical identity unfolded,  
water edge integration

### Conclusions and relevance to Port of Durban

At the current moment there is no connection between the harbour infrastructure and any architectural scheme in the Port of Durban. The success of the port of Vigo lies in its ability to link water and architecture together where the architecture immerses itself unapologetically into the landscape.

In the case for the Point Waterfront the water edge needs to be created to familiarise users with the marine identity that is no existent in the current context.

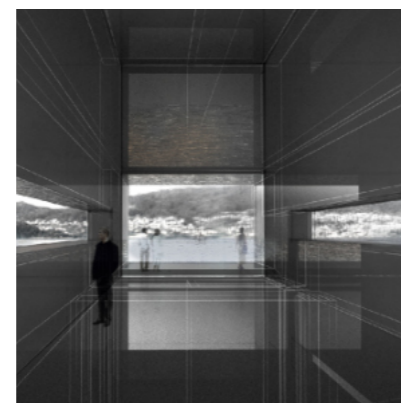
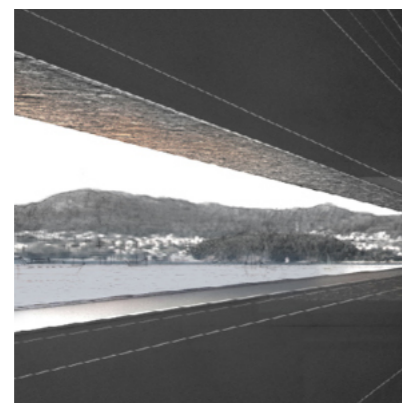


Fig. Iii. Images from NOUEL, A. J. 2007. *Port of Vigo* [Online]. Paris: Ateliers Jean Nouvel. Available: <http://www.jeannouvel.com/en/projects/port/> [Accessed 28 April 2021].



## Water edge threshold

### 5.7. Hasle Harbour Bath

There is no active water edge in the Durban Harbour as it is a working port with strict operational management (Mpuku 2018) as well as zoned space which is bordered and not accessible from the main road. Therefore, the schematic of the waterfront the only active water edge exists through the canal. The end intervention is required to draw in the synergies of space through this anchor infrastructure to create a resilient space which adapts and moulds itself into its context and place. The precedent of the bath explores the idea of active edge on the island on Bornholm in its local port sector which is known for fishery and ferry servicing. According to Paula Pintos (2019), the declining fishing industry was in need of restructuring and the opportunity to revitalise the harbour was catalysed.

The baths form a sequence of activity on the harbour on floating platforms which undulate as built landscape on the water edge and plane. The success of this environment cultivates a threshold space as curatorial where end users fluctuate and congregate space on a daily basis, forming part of a ritual of circulation through the harbour.

Location:  
Bornholm  
Denmark

Architect:  
White Architects

Value to Research:  
Defined edge condition on water, public gathering point, strong identity of place

### Conclusions and relevance to Port of Durban

The necessity of such a used space shall be explored in terms of the extension of the canal which should in theory cultivate a greater urban language of the Point Waterfront in Durban. Water edge plays a vital role in the understanding of smart port-city enclaves and demonstrates how successful design approaches dealing with

prototyping and simulating could dynamically add to diminishing ports.

This criteria theorises how context and place is linked with practice of development through theory. The whole characteristic of a city/port interface is reliant on the presence of water (Aivp 2015: 15) and use of existing anchor infrastructure such as the salt water

canal would actualise urban amenities through functionality and new uses in the city interface. By moving the city to the water, the space is defined as maritime 24/7. Increasing the anchorage of space migrates urban functions around water instead of water around urban functions which is the challenge facing the Durban Port.

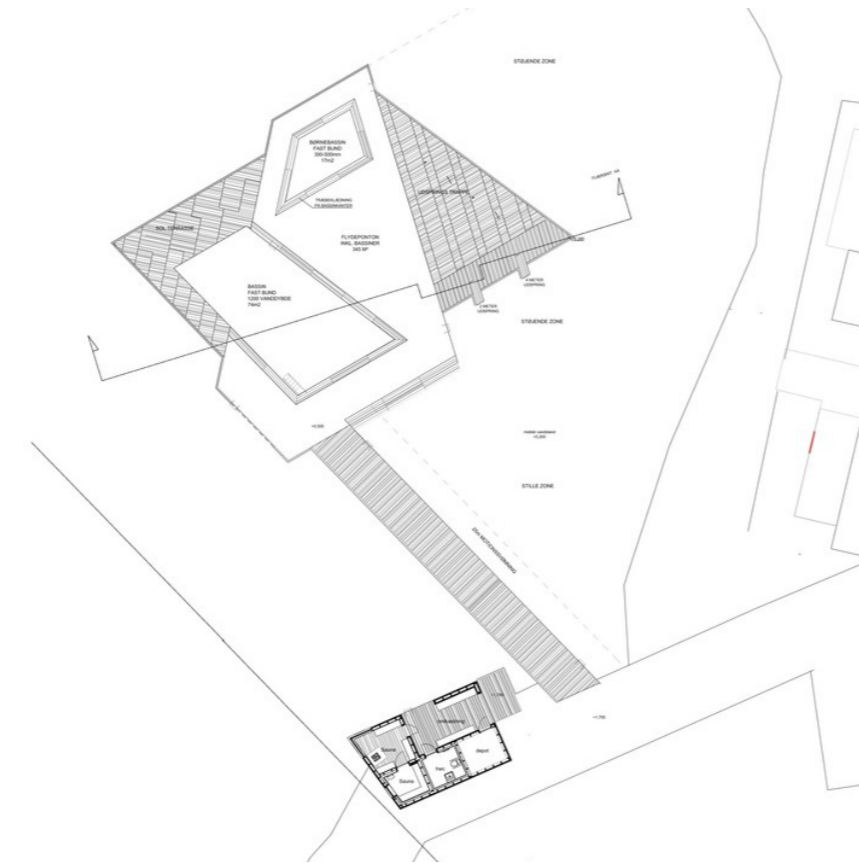


Fig. liv. Exploration diagram of precedent (Author 2021)

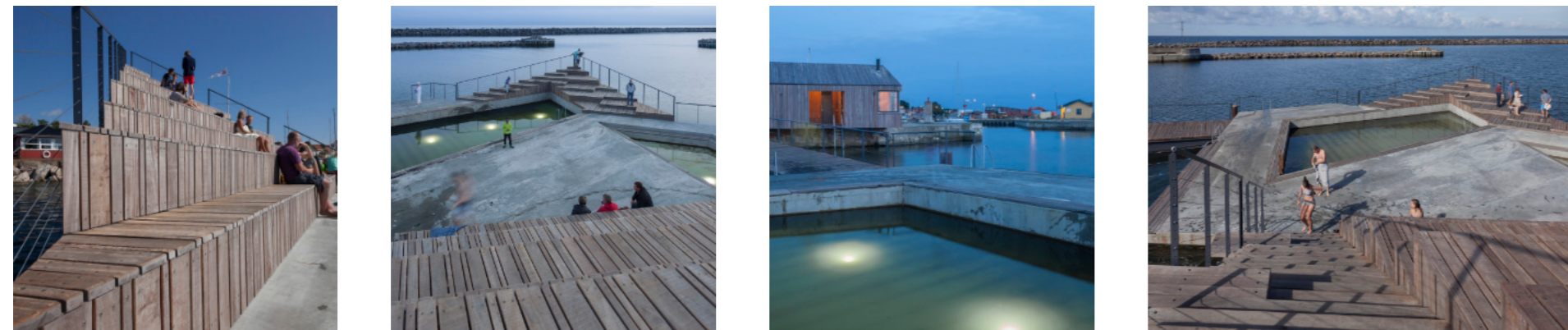
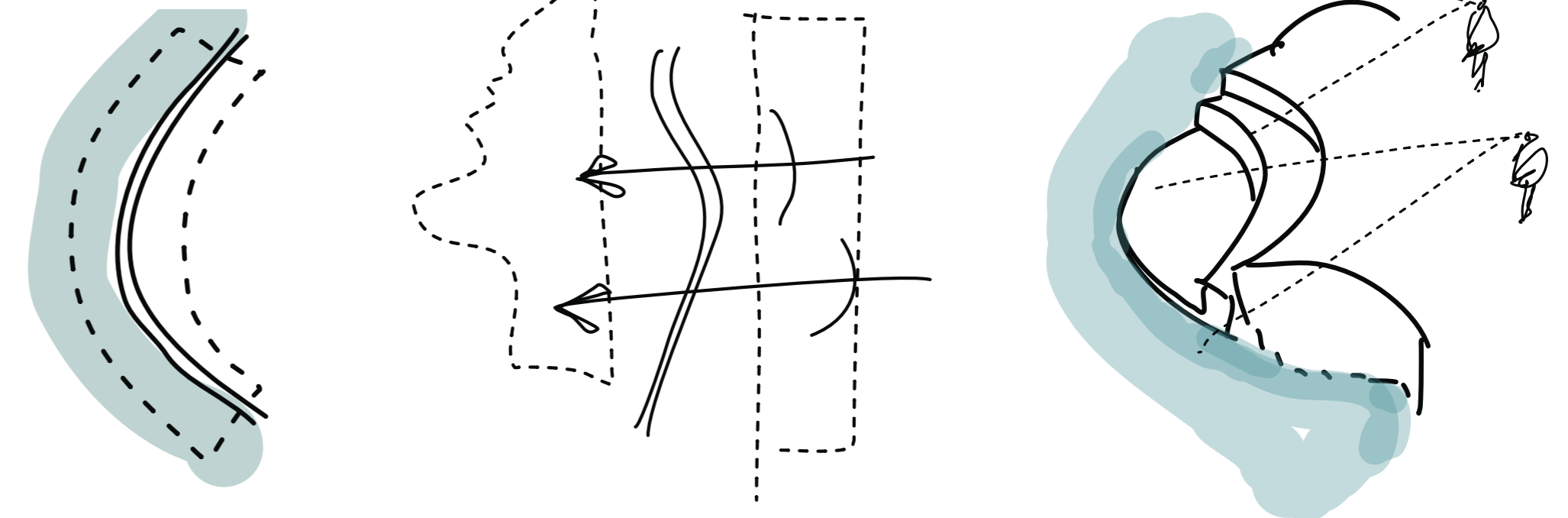


Fig. liiii. Images from PINTOS, P. 2019. *Hasle Harbour Bath / White* [Online]. Archdaily. Available: [https://www.archdaily.com/535966/hasle-harbour-bath-white?ad\\_source=search&ad\\_medium=search\\_result\\_projects](https://www.archdaily.com/535966/hasle-harbour-bath-white?ad_source=search&ad_medium=search_result_projects) [Accessed 2 July 2021].





**5.8. Urban development scheme**

The iterative process flowed by improving the quality of the canal, improving the pedestrianisation of the site as shown in figures 6-8 in orange and the intention was to let these intersections link the block forms through the anchor feature considered in the new urban scheme. The junction between the canal and the new proposed building was then chosen to be resolved architecturally and link to the proximity systems.

**5.8.1 Iteration 1: Changing pedestrian channels and canal**

The urban strategy was not to start new but to draw synergies

Through this intervention one is able to link:

- I. The city to the landscape
- II. Citizenship to socio-cultural significance
- III. Leisure to working port conditions



Fig. Iv. Iteration 1 Urban map (Author 2021)



### 5.8.2 Iteration 2: Using the existing environment

The potential site development seen to the right therefore theoretically latches onto existing synergies to anticipate links to points through all layers of investigation. The moment of stimulation through the canal is from the water edge and its corridors for threshold. The ubiquity of canal makes the harbour water edge more accessible and connected.

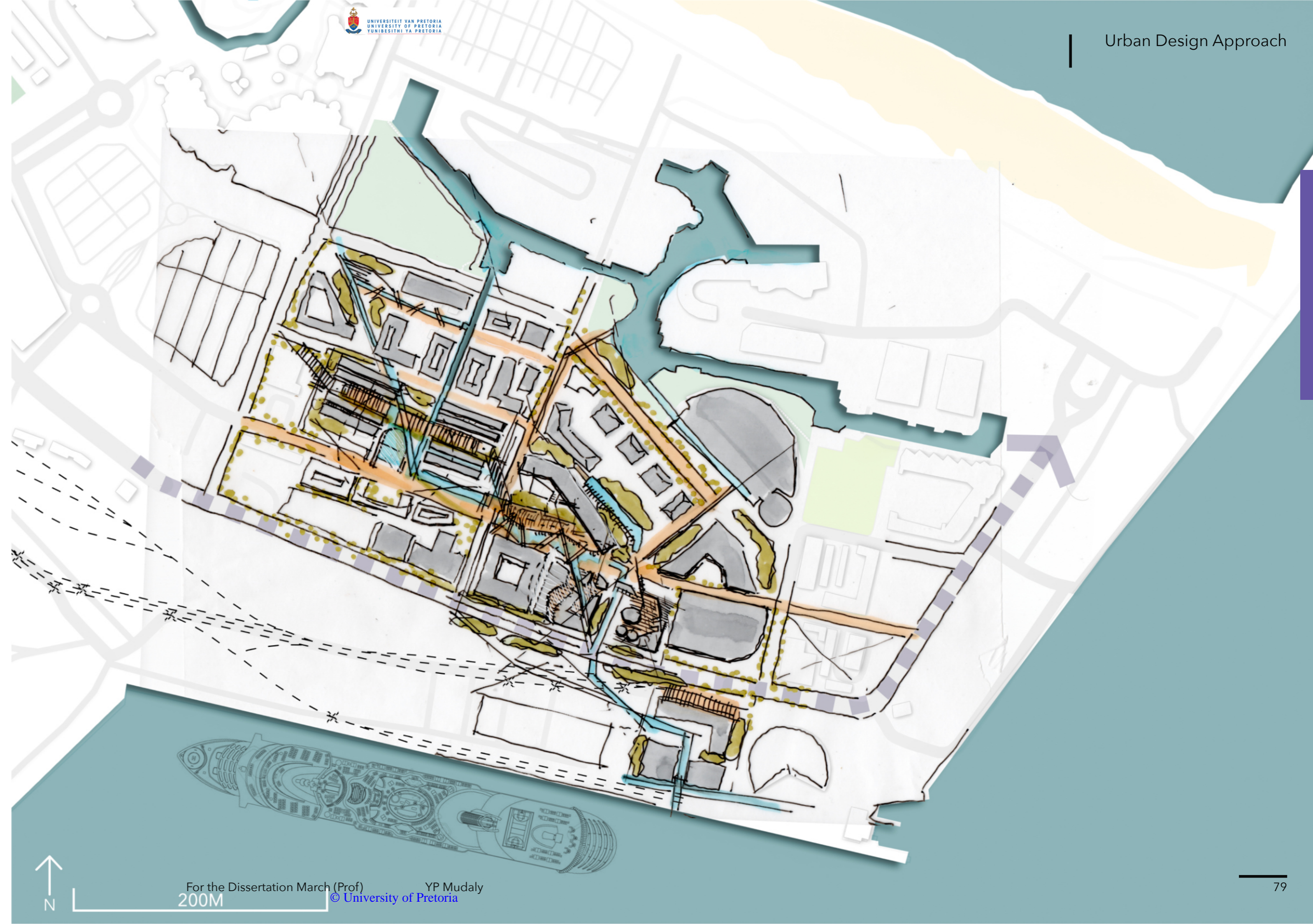


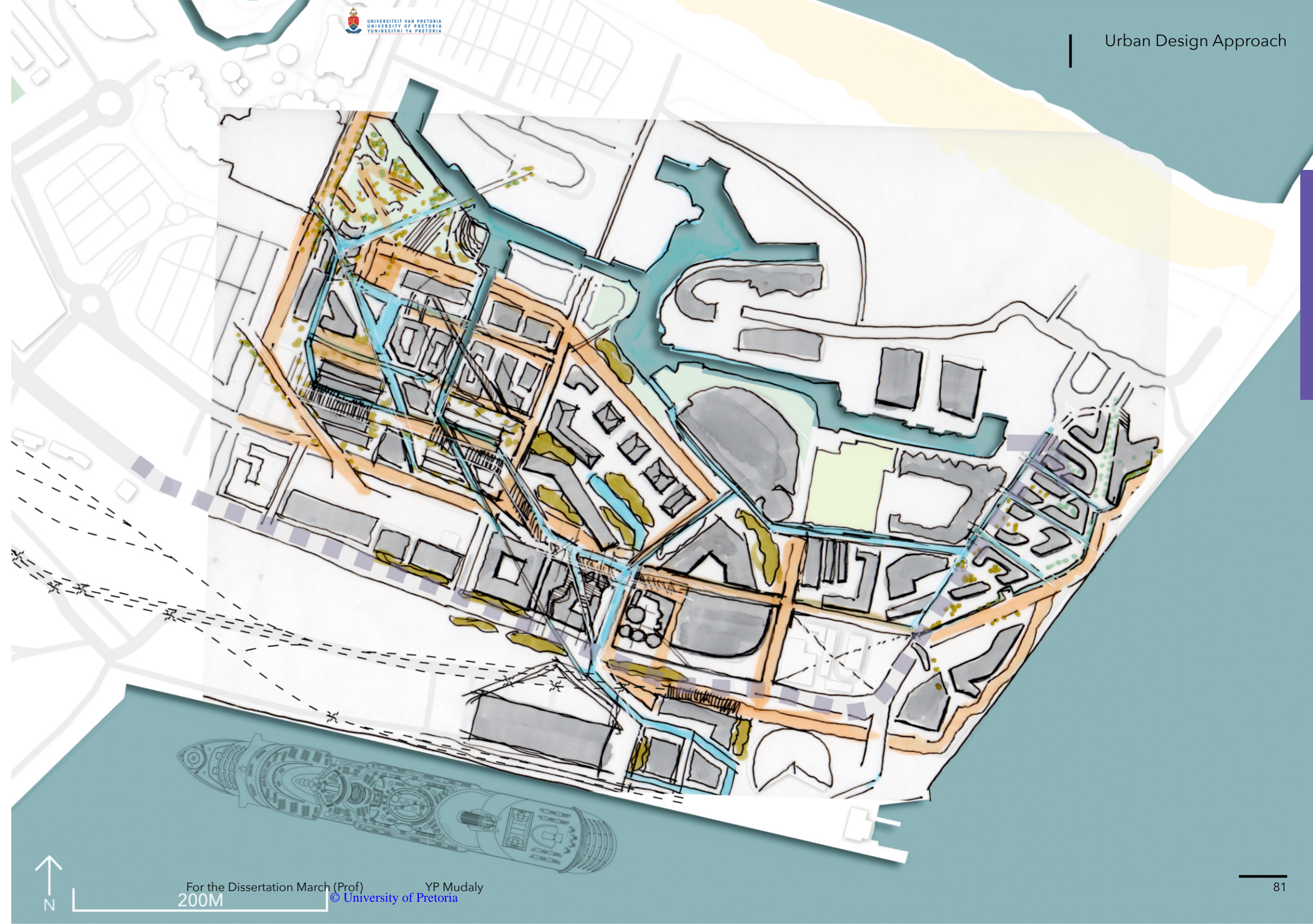
Fig. Ivi. Iteration 2 urban map (Author 2021)



**5.8.3 Iteration 3: Consolidating the canal and urban edge density**

Celebrating the essence of these connections and the spirit of the 'port-city' the site is revitalised through an identity restructuring of appropriate used space and anchors to exemplify the total port city narrative. Here, the theme of resilience is brought in to show how a system is able to withstand change through dereliction and reflect a city's fortunes through adaptation, use and activity as well as relationships and civic use.

Fig. lvii. Iteration 3 urban map (Author 2021)





**5.8.4 Iteration 4: Final Urban Framework**

The end design was placed in the existing parking space near the Waterfront hotel and the old sewerage space on Mahatma Gandhi Road. Seen in red, the new building sits in a cross roads between the operational harbour and the Point Waterfront. Reuse of existing heritage facades are used to form part of the intervention and grain/liquid bulk silos from Island view terminal as seen in the Durban Harbour Map in chapter 4 form a new facade element in the scheme.

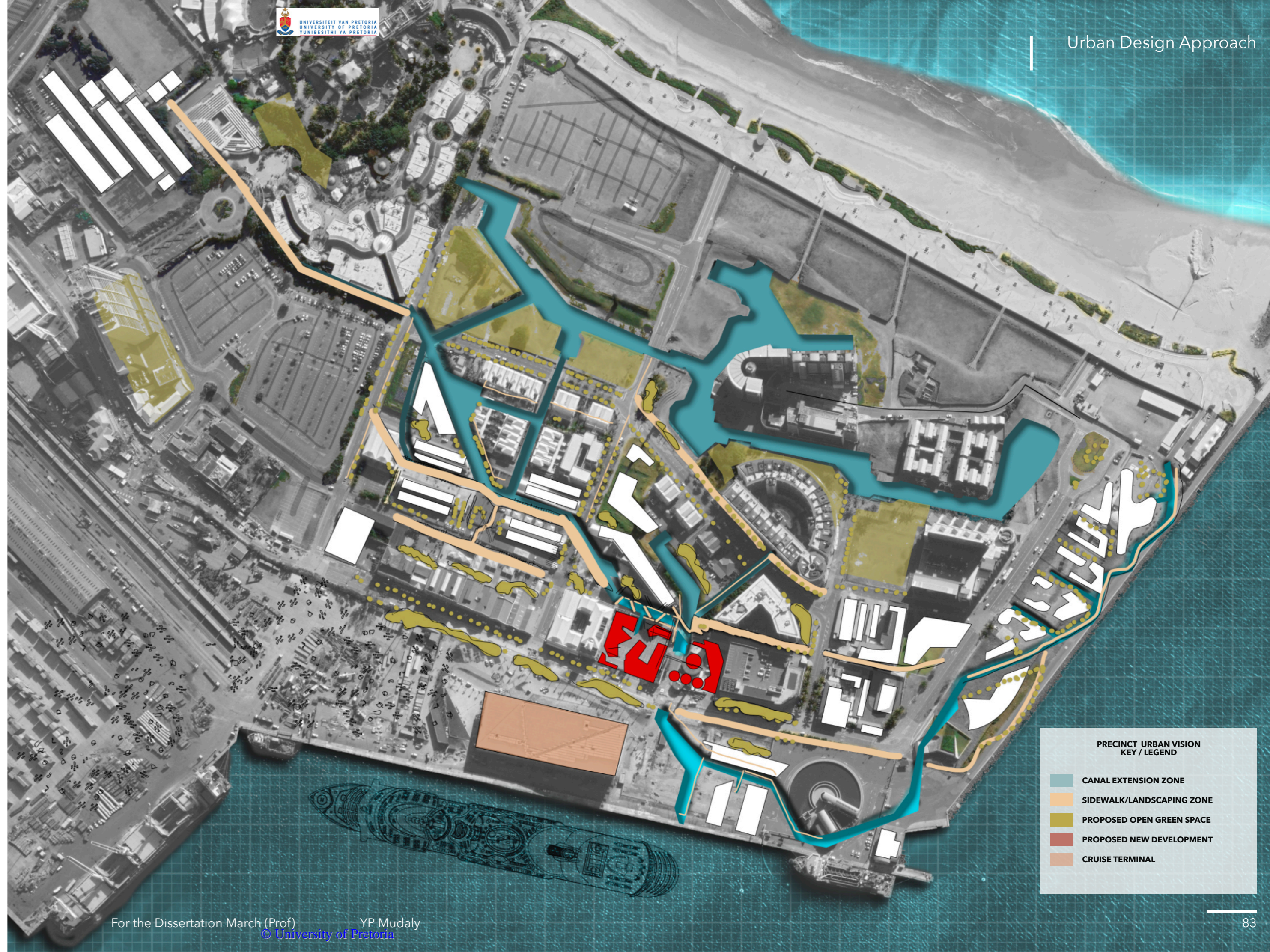
From here, the final site vision was informed by the way the Local Area Plan constructed by eThekweni Strategic Planners (Mkhize 2016) was set up concurrently with the Precinct investigation plans drawn up by Transnet (Tnpa 2019). The scale of enquiry situates itself in the bigger picture through accessible scales of movement, city connections and arrival.

The new urban scheme therefore theoretically fulfils its physical usefulness in space and time (through the readings of Lefebvre (1991)) and latches onto existing synergies to anticipate links to points through all layers of investigation. The canal is an interwoven network introducing new linear pathways which annotate programmatic responses and consequences around the site.

These elements exemplify the Rotterdam quality of the river (Meurs 2012) which encourage play and recreation along a defined water edge and persist a walkability on site through its mixed programmes. The urban strategy reconnected urban remnants of past seaport conditions (Lee 2012) to uncover their current dissociative condition and recover their regenerative potential.

As seen in the right urban framework, the site itself nestles itself within the embrace of existing structures and the new canal integration. Celebrating the essence of these connections and the spirit of the 'port-city' (Hein 2012) the site is revitalised through an identity restructuring of appropriate used space and anchors to exemplify the total port city narrative. Here, the theme of resilience is brought in to show how a system is able to withstand change through dereliction and reflect a city's fortunes through adaptation, use and activity as well as relationships and civic use (Davis 2014: 3).

Fig. Iviii. Iteration 4 urban map (Author 2021)



**PRECINCT URBAN VISION KEY / LEGEND**

<span style="color: teal;">■</span>	CANAL EXTENSION ZONE
<span style="color: orange;">■</span>	SIDEWALK/LANDSCAPING ZONE
<span style="color: yellow-green;">■</span>	PROPOSED OPEN GREEN SPACE
<span style="color: red;">■</span>	PROPOSED NEW DEVELOPMENT
<span style="color: orange;">■</span>	CRUISE TERMINAL



