

Revitalised Intersections, VOL. 1

By YP Mudaly

*Design
Development*

07.

Iterative design development
and final building
manifestation

7.1. Summary of Project intentions

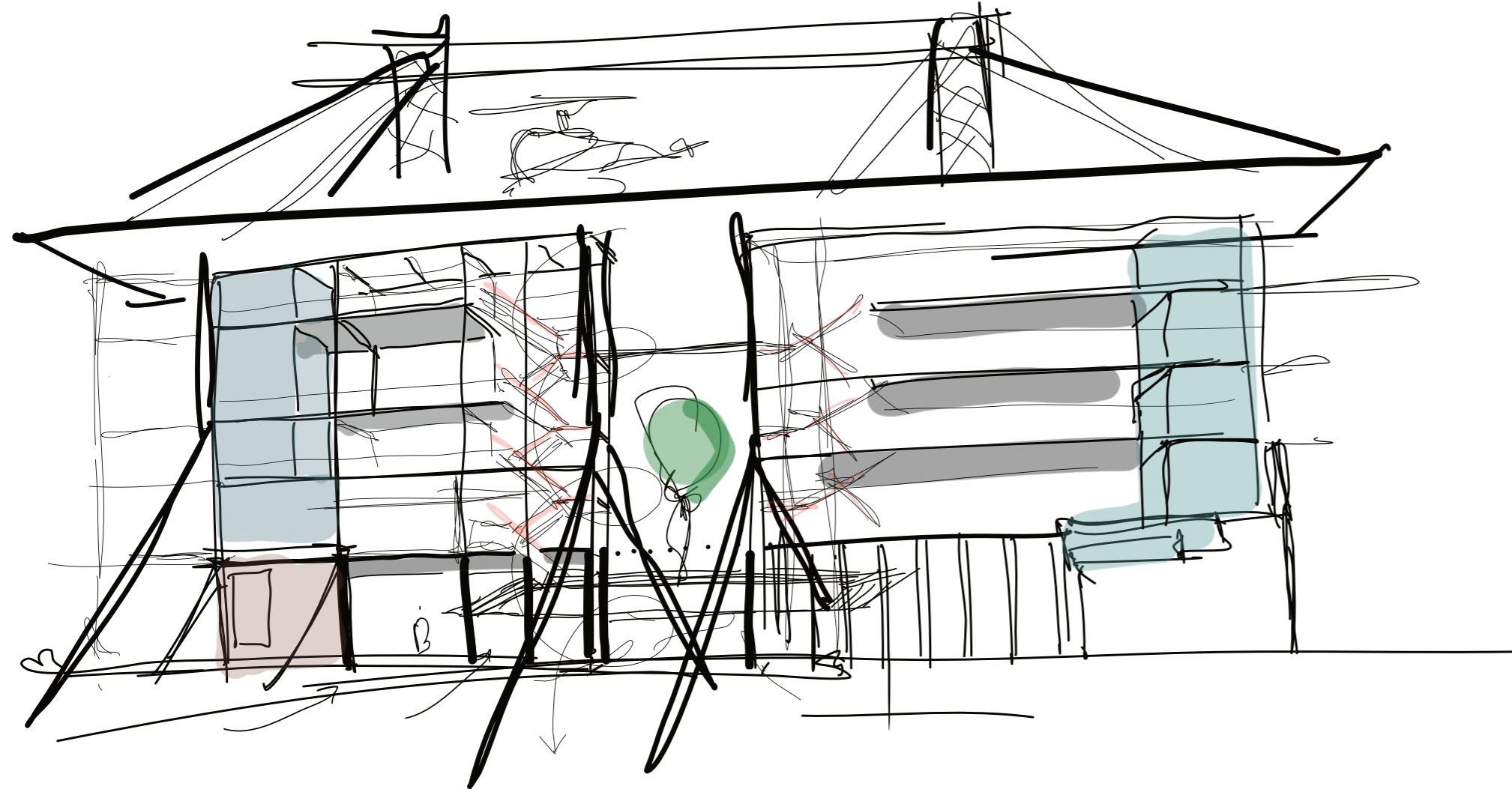
The project is a critical examination on port-city identity concurrently with neoliberal agendas.

The discourse of the dissertation is focused on the near future development of Durban's premier port towards the year 2048 whilst reflecting on the developmental interest of the city to extend or overlap within port boundaries to create more dynamic and

integrated programmes. The dissertation focuses on a particular characteristic of port design related to the architectural discipline being the immediate harbour mouth interface to existing infrastructure.

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

Fig. Ixiii. Concept sketch of building (Author 2021)



7.2. Iteration 1: Creating a new typology

Elements of the street were examined such as the building, the street paving and lines as well as greenery and within each category there was an exploration of intended and unintended consequences. An example being the new building which is intended to accommodate people but not meant to deregulate space to other buildings.

Another example is building lights where it must attract circulation but not disrupt incoming ships that need to dock

Fig. Ixiv. Existing site (Author 2021)



ELEMENTS OF THE STREET

BUILDING

BUILDING FACADE

BUILDING LIGHTS

STREET PAVING

STREET LIGHTING

STREET LINES

SIGNAGE

GREENERY

INTENDED CONSEQUENCES

TO ACCOMMODATE PEOPLE

TRANSMISSION BETWEEN NEW BUILT AND EXISTING

ATTRACT CIRCULATION

GIVE BETTER WALKABILITY TO SITE

LIGHT UP AREA ZONE AT NIGHT

REGULATE PEDESTRIANISATION AND PUBLIC TRANSPORT

ADVERTISING FOR COMMERCIAL PROGRAMME

INCORPORATE BIODIVERSITY; MAKE AREA FAVOURABLE HABITAT WHILST IMPROVING HARSH INDUSTRIAL OPENNESS

UNINTENDED CONSEQUENCES

DEREGULATE CIRCULATION TO OTHER SPACES

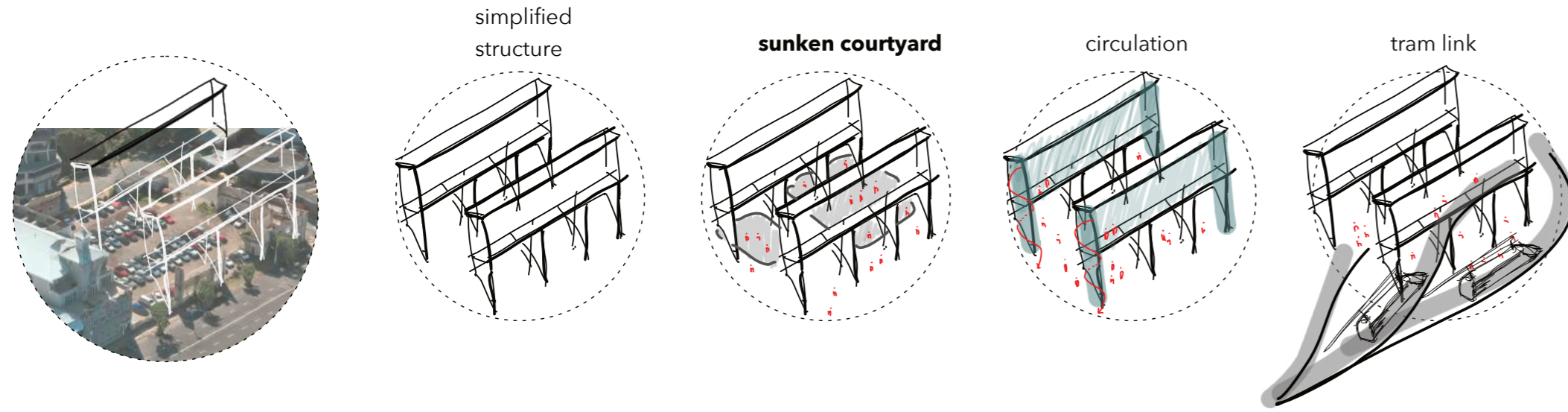
DISRUPT INCOMING SHIPS THAT NEED TO DOCK

CREATE VISUAL BLOCKAGE

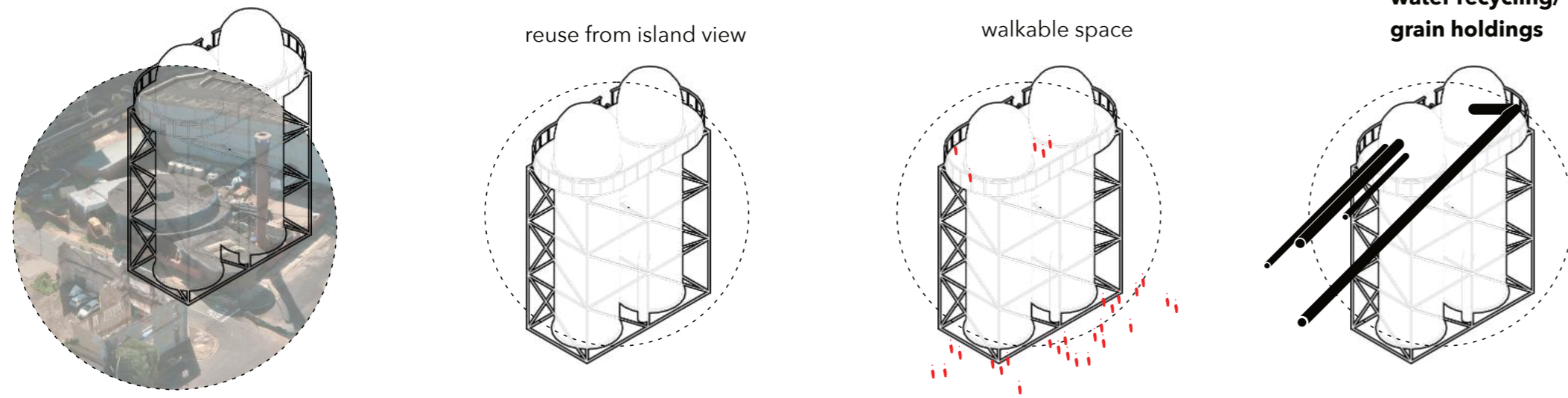
DISRUPT MARITIME COMMERCIAL ACTIVITIES

COST OF MAINTENANCE

7.2.1. Paying homage to steel structures



7.2.2. Reuse of liquid bulk silo from island view terminal



As a reuse strategy, revitalising abandoned brownfield sites was a key informant of the new design typology. Due to the waterfront district gradually losing its initial role and function from an initial container port towards a newly commercialised rhetoric.

Formalistically the design used existing ruins within the existing site as well as creating a new visual element in the landscape by making use of the yet-to-be demolished liquid bulk tanks from island view.

These will store the grain, hops and beer for the beer garden as well as serve for storage for fast moving commercial goods.

Fig. lxxv. Right: Iteration 2 concept (Author 2021)

Fig. lxxvi. Left top: Steel diagram (Author 2021)

Fig. lxxvii. Left bottom: Silo diagram (Author 2021)

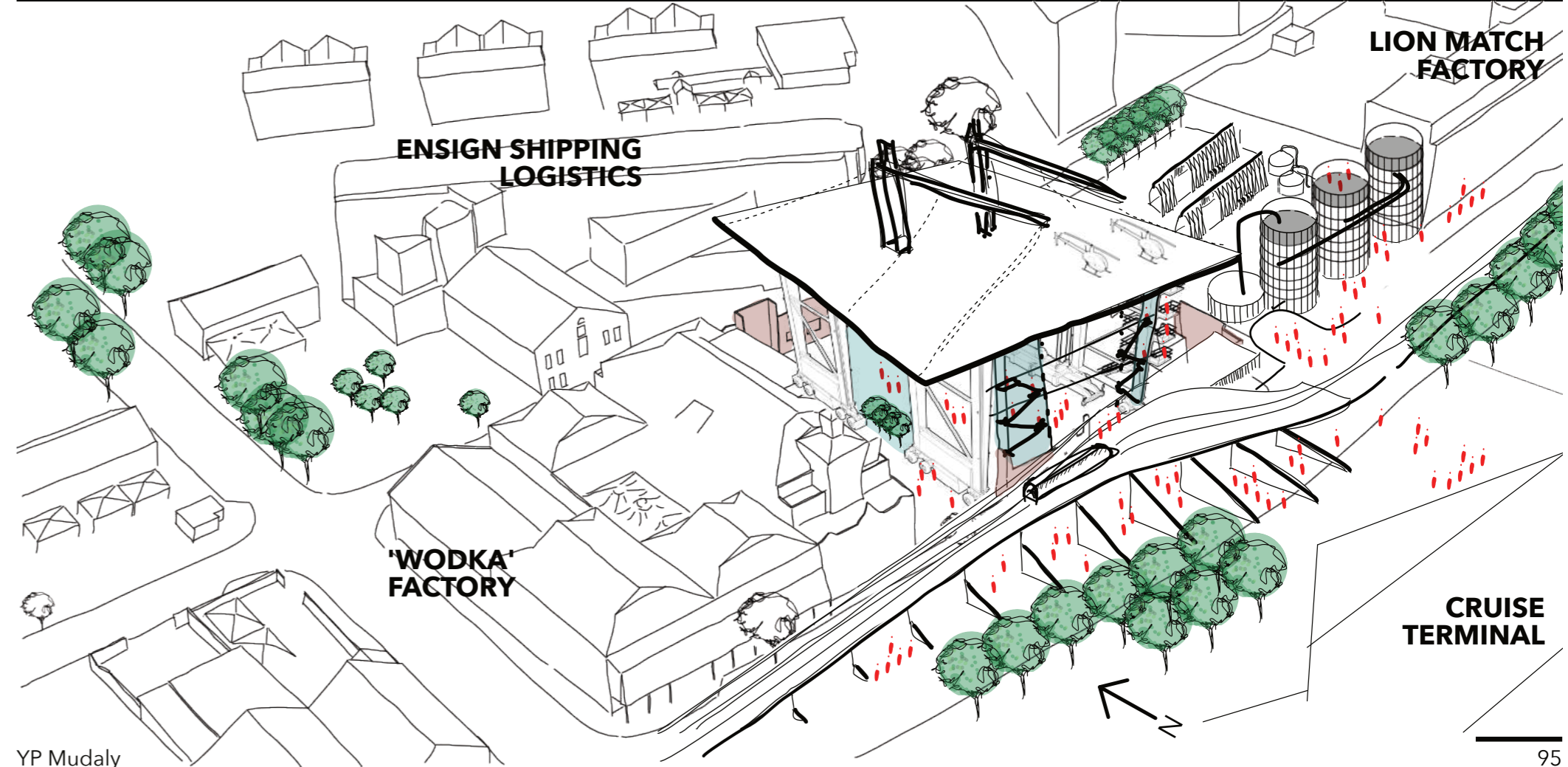
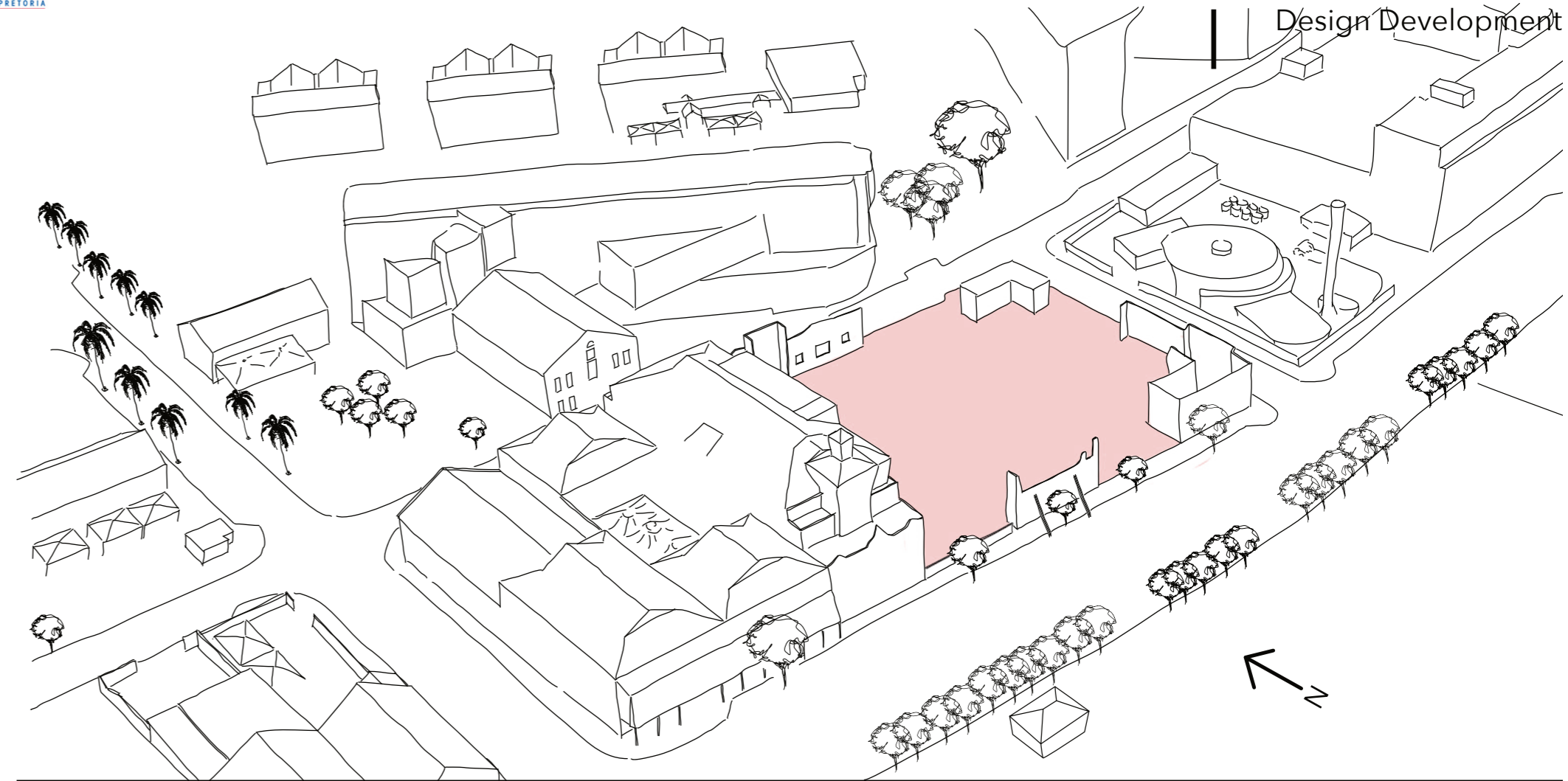


Fig. Ixviii. Iteration 1 concept section (Author 2021)

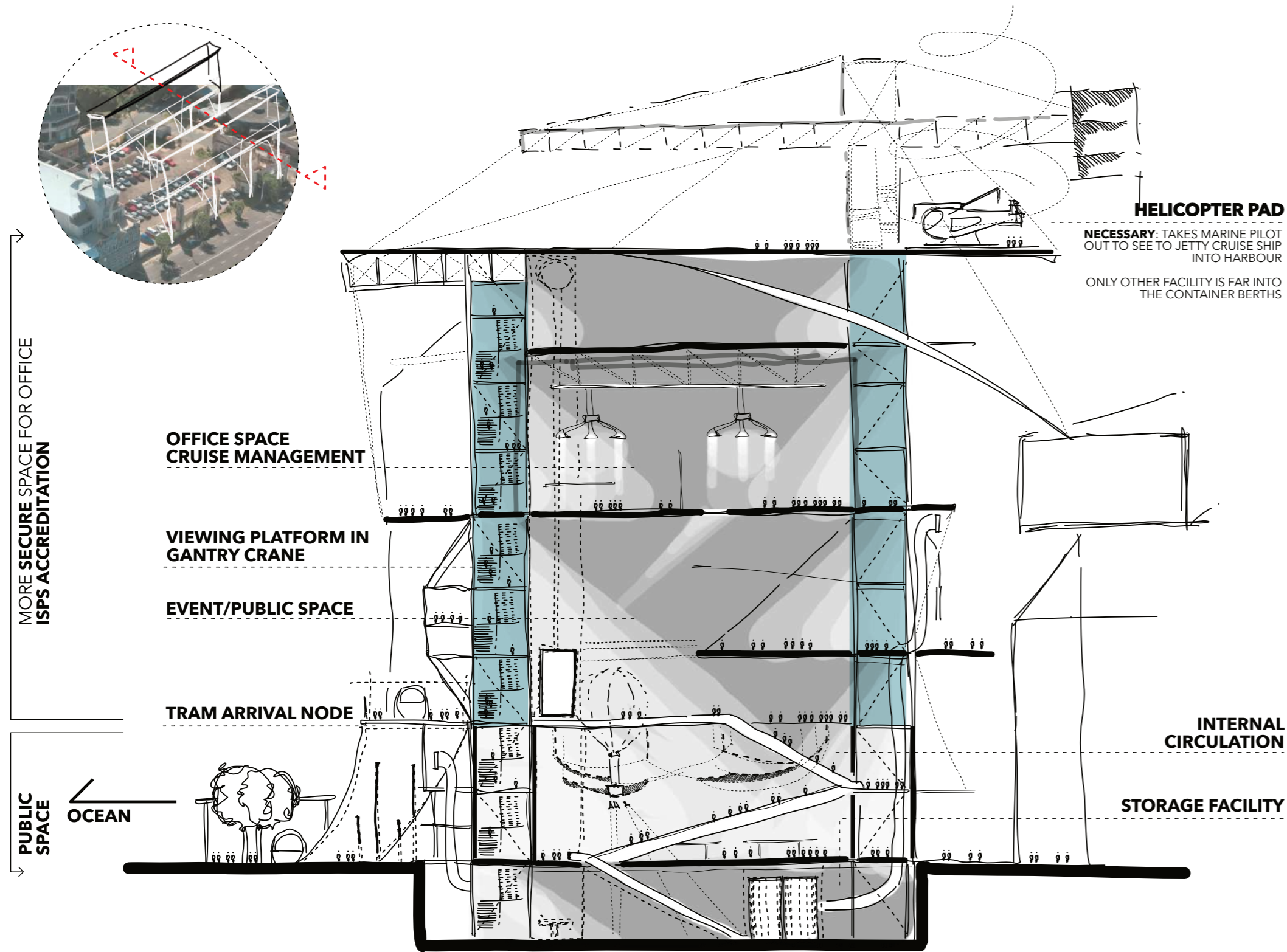
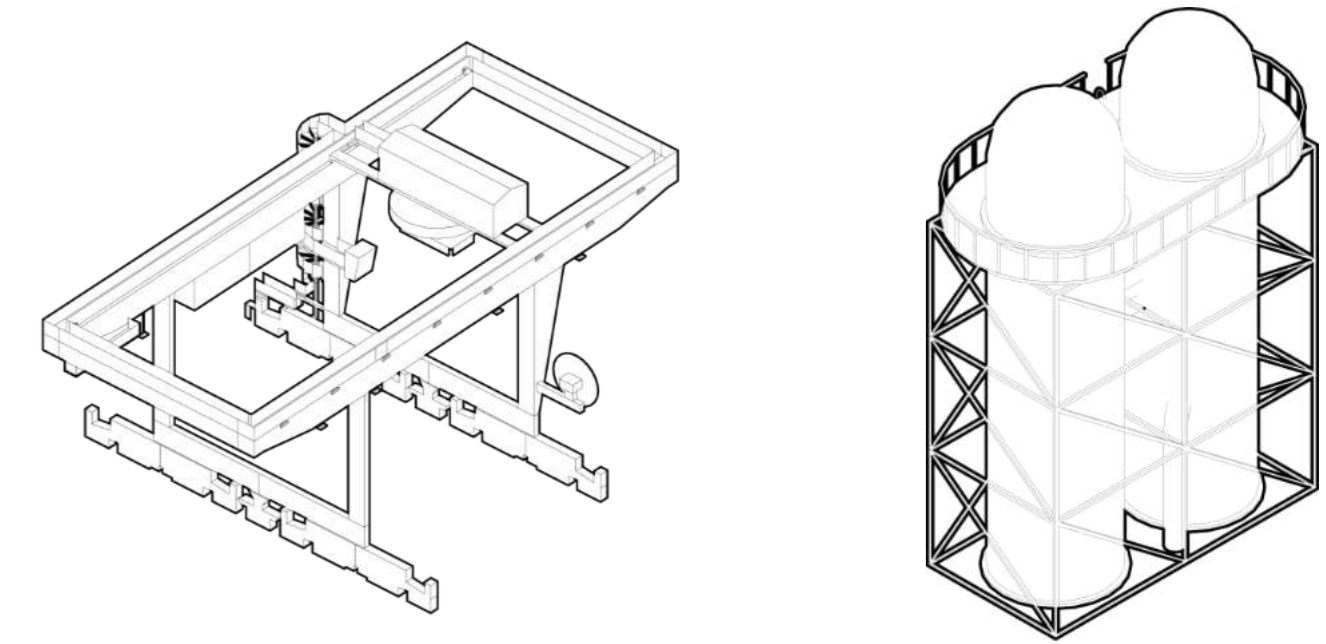


Fig. Ixix. Material and existing structure exploration (Author 2021)



7.2.3. Conclusions made about Iteration 1

Focus on maintaining and enhancing the strong points in the Port of Durban, elevating the promenade with a strong refusal to touch the ground the design narrates the spirit of the harbour with a modern abstract language .

Focused on the dualities of discovery and operation, the new cruise terminal influenced the nature of form giving, making the gantry crane as a motif of the design stylised through geometric shapes.

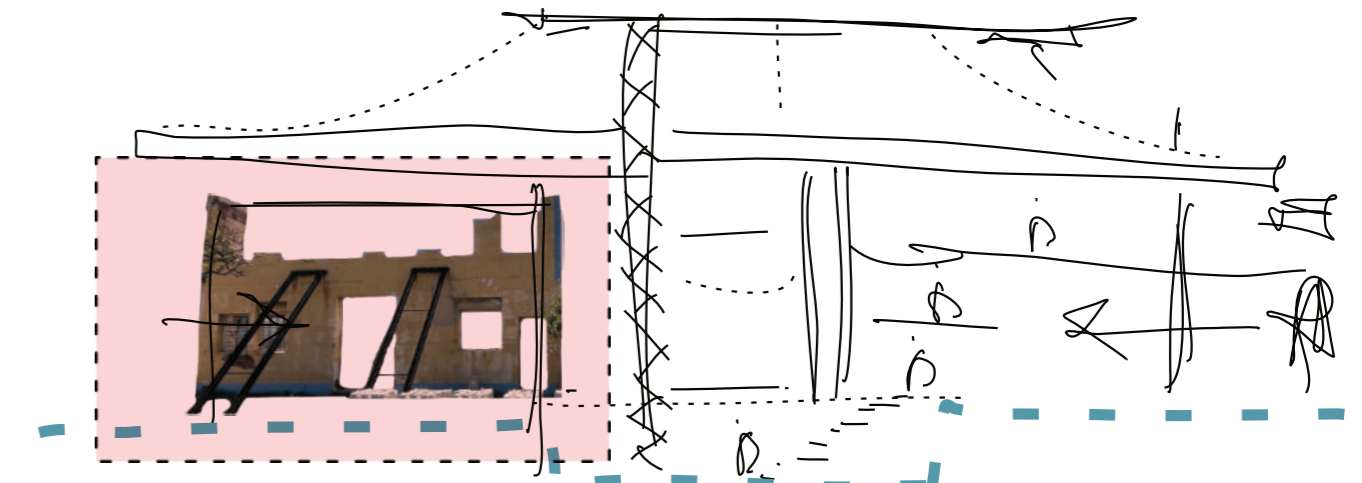


Fig. Ixx. Heritage interface in structure diagram (Author 2021)

7.3. Iteration 2: Heritage impact on architecture

Focus on maintaining and enhancing the strong points in the Port of Durban, elevating the promenade with a strong refusal to touch the ground the design

narrates the spirit of the harbour with a modern abstract language .

Focused on the dualities of discovery and

Fig. lxxi. Site block exploration (Author 2021)

operation, the new cruise terminal influenced the nature of form giving, making the gantry crane as a motif of the design stylised through geometric shapes.

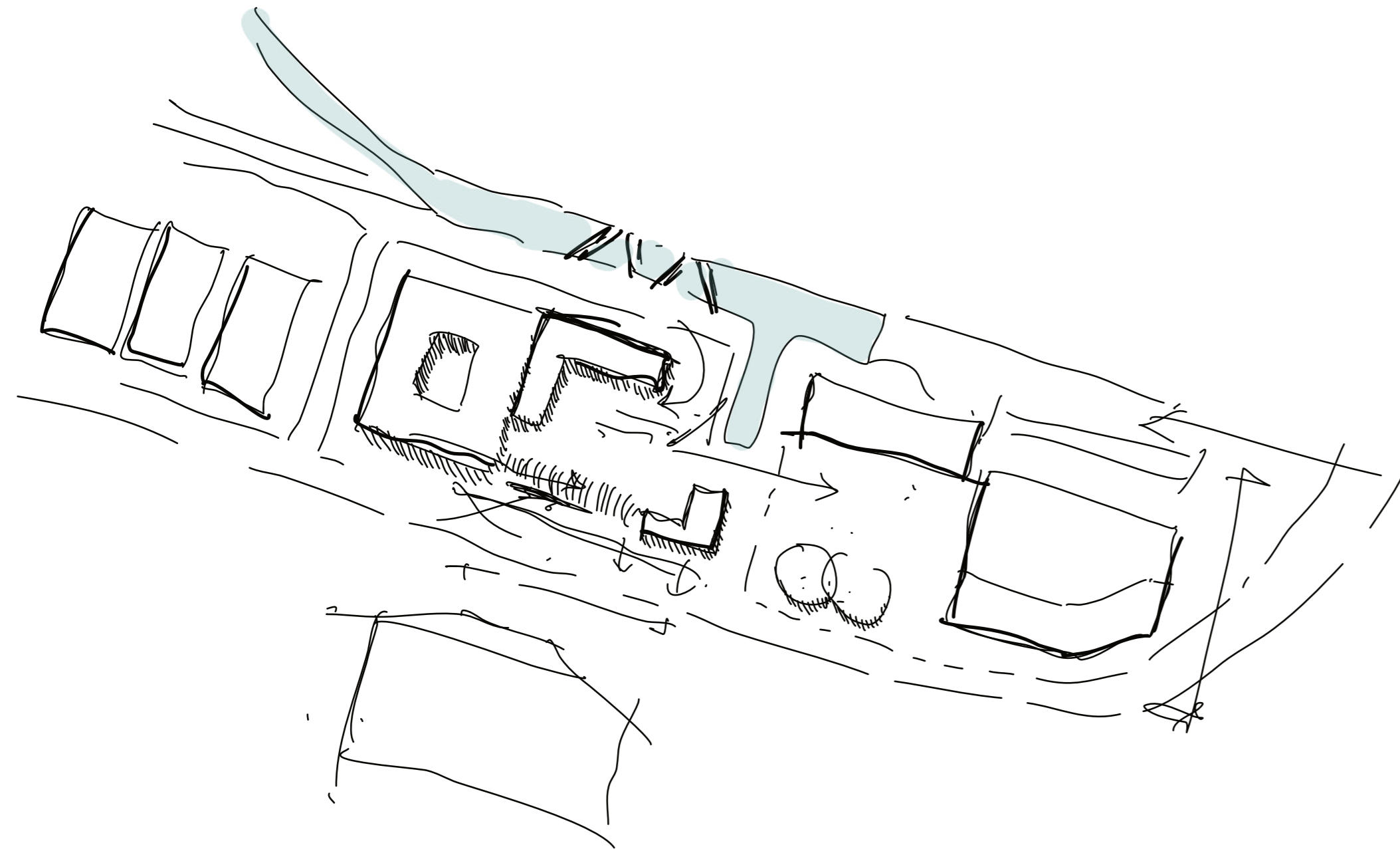


Fig. lxxii. Building manifestation exploration (Author 2021)

7.3.1. Defining the organisation of space

The second concept was more sensitive to heritage of the site by revitalising the ruins and creating a more architectural language between the built and the unbuilt.

The strategy of regeneration of the site aims to provide recreational and cultural programs in the various quadrants of the site for the users of the space by reusing existing structures such as the silo and heritage landscapes.

All of these strategies are characterised by a specific identity and storytelling. As seen where the waste management centre was, the beer garden is situated. The aspect of heritage is not just in the pure preservation of space, but it also preserves a nature of identity.

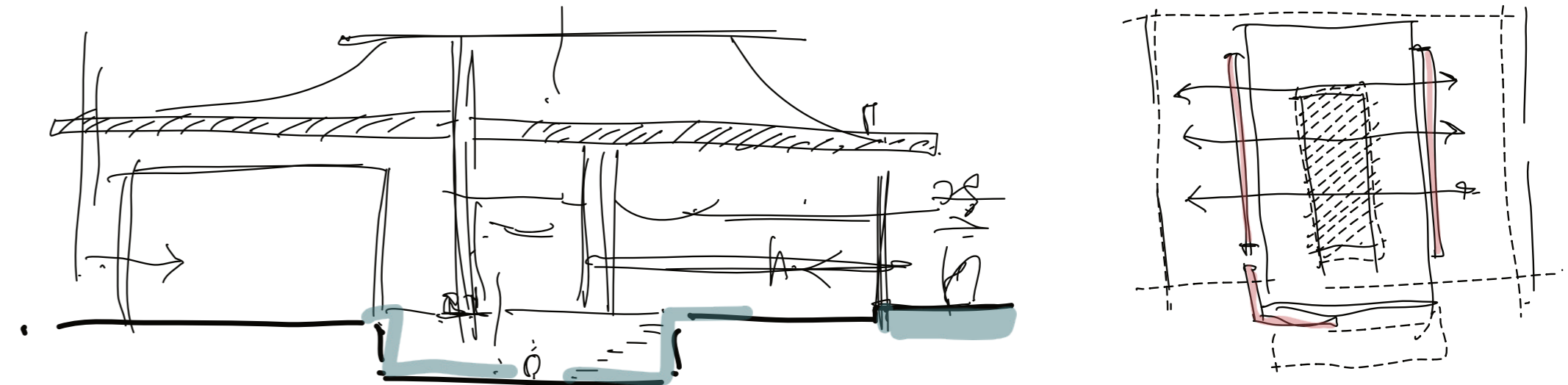
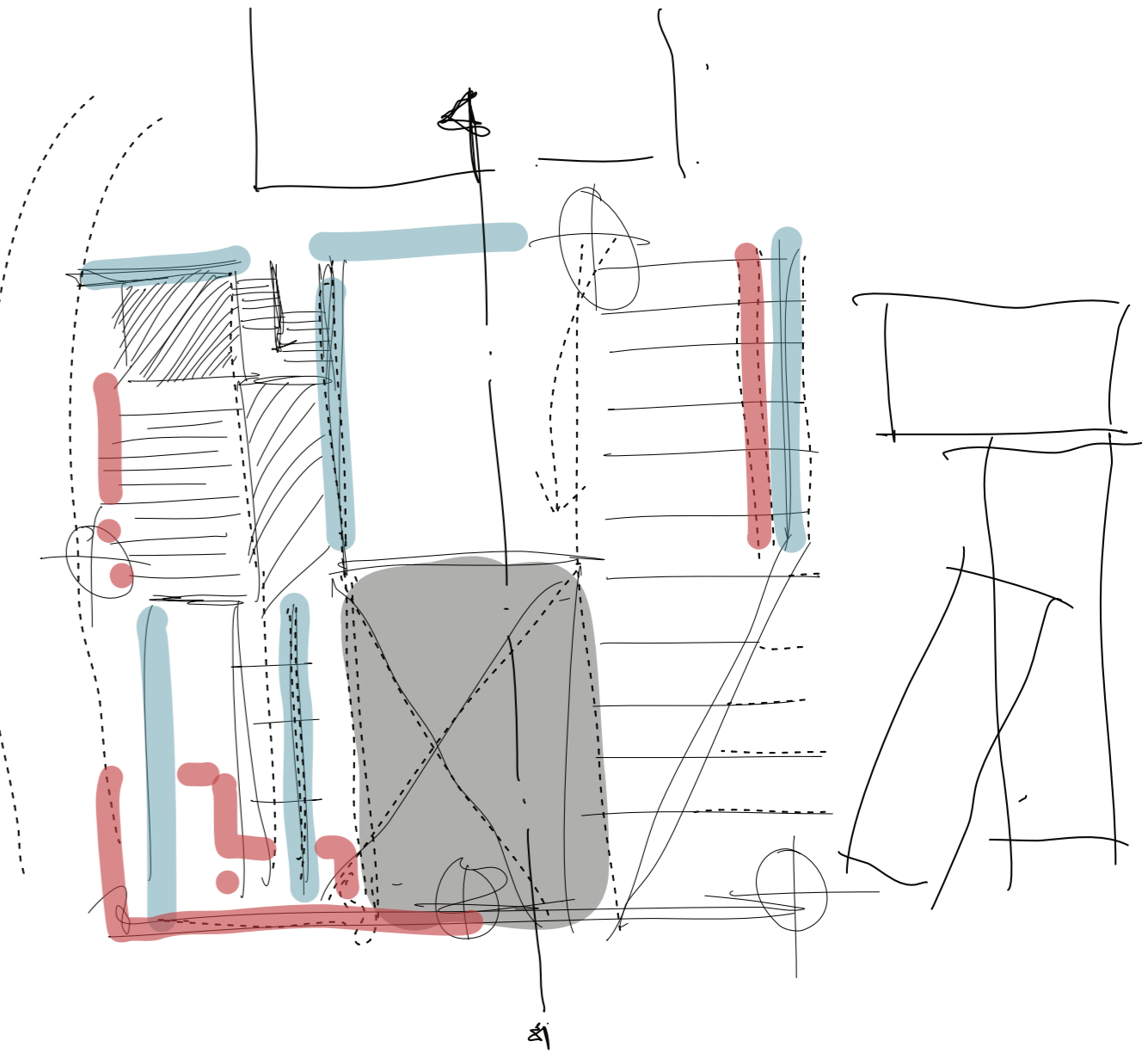
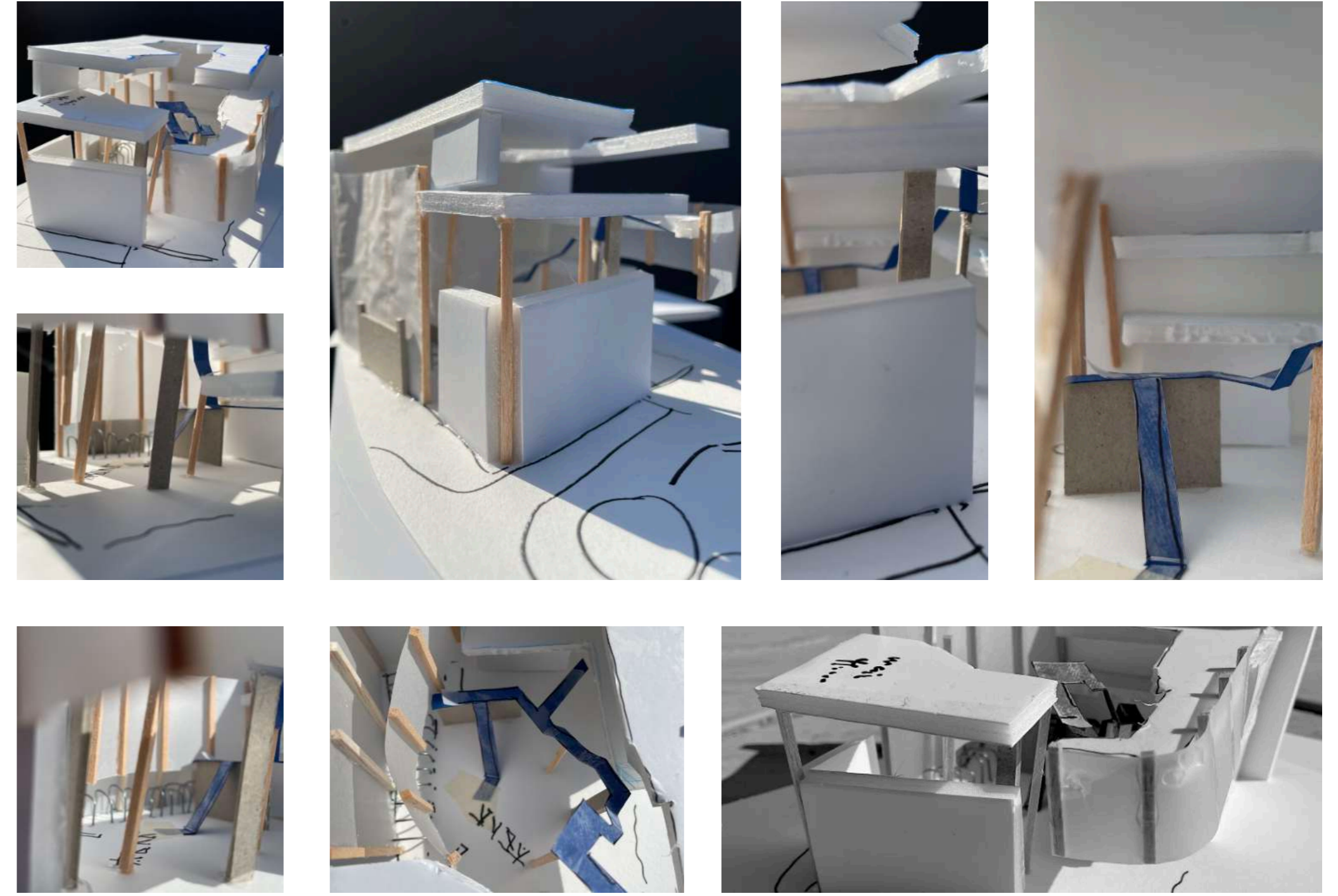


Fig. lxxiii. Iteration 2 concept section (Author 2021)



Fig. lxxv. Iteration 2 Maquette 1 (Author 2021)

7.4. Iteration 2 Maquette 1



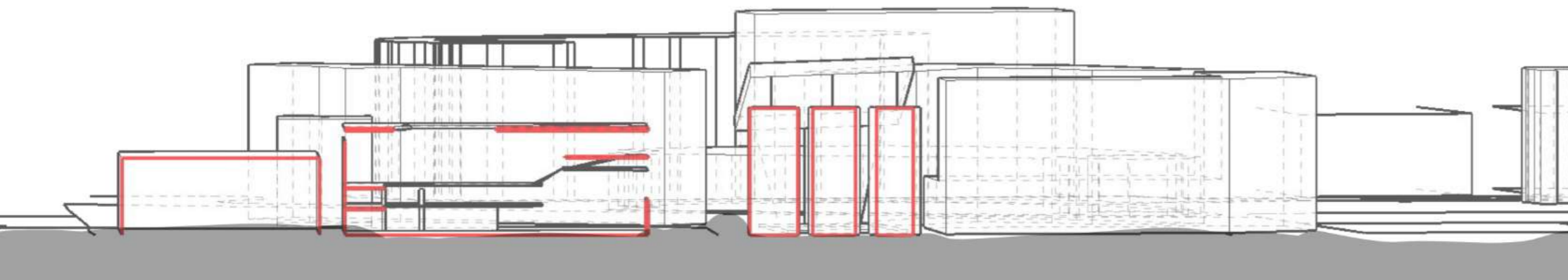
7.3.2. Form creation and materiality in facade

By contrasting materiality, spacial arrangement, dialectic of space and correspondence, a building is able to distinguish old from new. The silo component from island view also forms part

of the beer garden. The building concept then followed on a few strategies on ground floor and the intention was to fracture the nature of the ground plan then introducing very recognisable (facade-ical) elements in

Fig. lxxiv. Iteration 2 concept 3D section (Author 2021)

the elevation. In the end you get a gathering space circulated through urban space and the final diagram is the end parti.



7.5. Programme

7.5.1. Inspired by mixed use commercial space

The dissertation project focuses on the resolution of an office complex which utilises the site infrastructure being the fresh water canal and proximities to anchor infrastructure such as the new built cruise

7.5.2. Scale

Primary programme [MICRO]

1. Main TNPA (2019) office space
2. Shared office
3. Market
4. Rainwater management

7.5.3. Intent of intervention

The proposed intersections which are spatially manifested in the Durban Point Waterfront show how going from fragmented neoliberal space linked to public space in the inner city can be deemed successful by merging the two in a palimpsest of heritage, identity and use. The accessibility of space offered creates an integrated public network and supports the upliftment of developed space around the harbour and towards the inner CBD.

1. **Typological intent:** the nature of neoliberal space is fragmented within the South African context. The dissociation of programme to infrastructure creates neglected space which negatively impacts the surrounding public space. The

terminal to reveal a catalytic built space which increases productivity and spacial use in the Durban Point Waterfront. The retail allocation on ground forms as a main informant for bringing in users and will

Secondary Programme [MESO]

1. Art Gallery
2. Cafe
3. Beer Garden

dissertation proposes a palimpsest of mixed use ideologies along identified nodes to create a manifested space unified by site anchors and proximities

2. **Programmatic intent:** the merging of production through the use of office space and the productive nature of retail and public space to contribute to a trade experience which brings in users to the site whilst accommodating the new users who would fill space through MSC tourism.

3. **Architectural intent:** the architecture aims to encourage a new way of thinking about neoliberal development whilst linking experiences of economies

Fig. lxxvi. Programme diagram (Author 2021)

benefit the relationships near neighbouring retail offerings on site. For the purpose of the dissertation different levels from macro to micro shall be designed.

Tertiary non-designed programme [MACRO]

1. Tram line

from retail to corporate in one built function on site. This interface can reach far grander demographics and is a more sustainable approach than standard infrastructure pre-built and existing. The architectural strategy involves pushing the envelope of the building outwards towards the street edge to respect the linear threshold of the ruins. This allows for the creation of new connections towards the canal as the building is constructed in its new urban context through spatial fractures. 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.

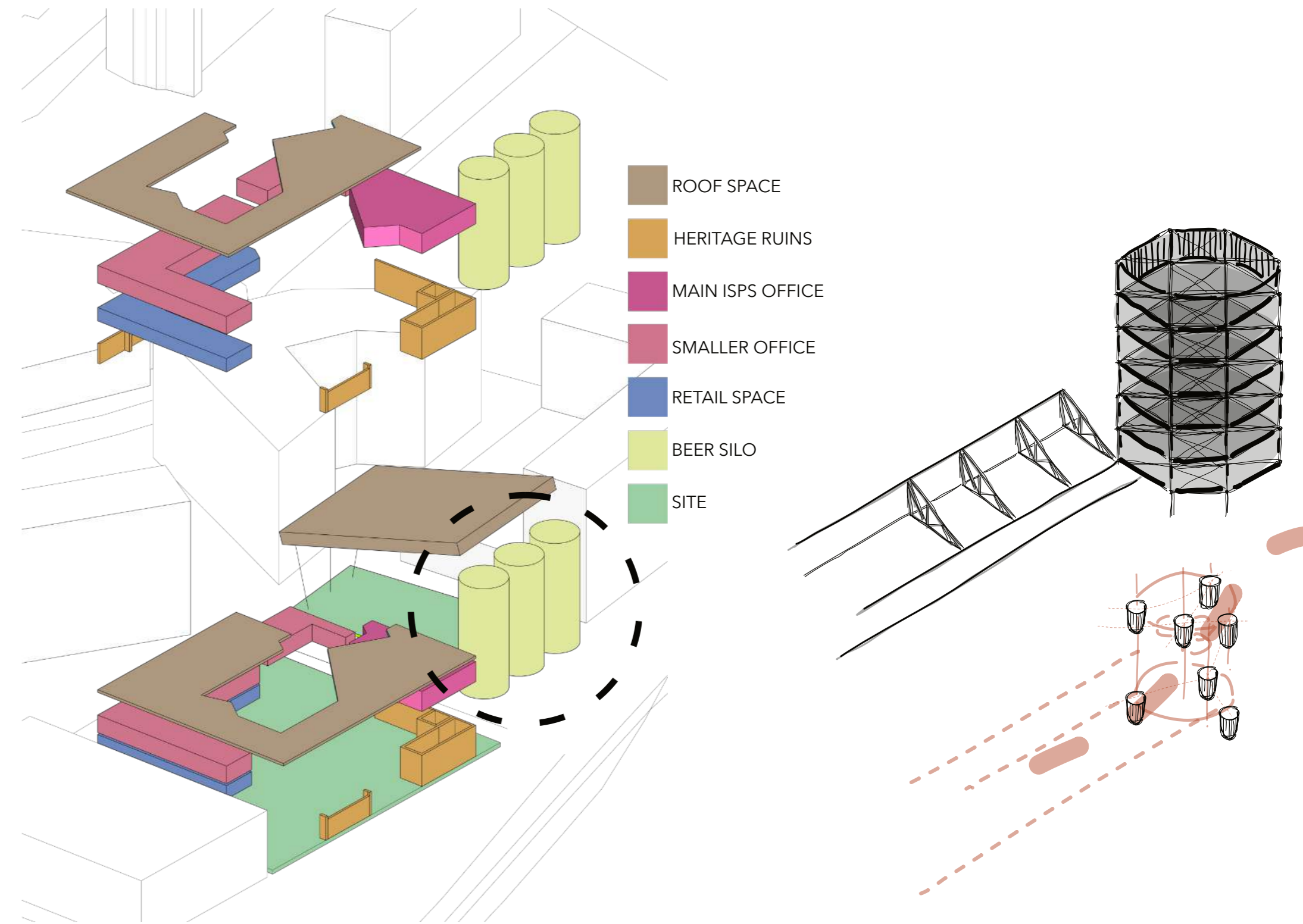


Fig. lxxvii. Below: Iteration 2 ground floor plan concept
(Author 2021)

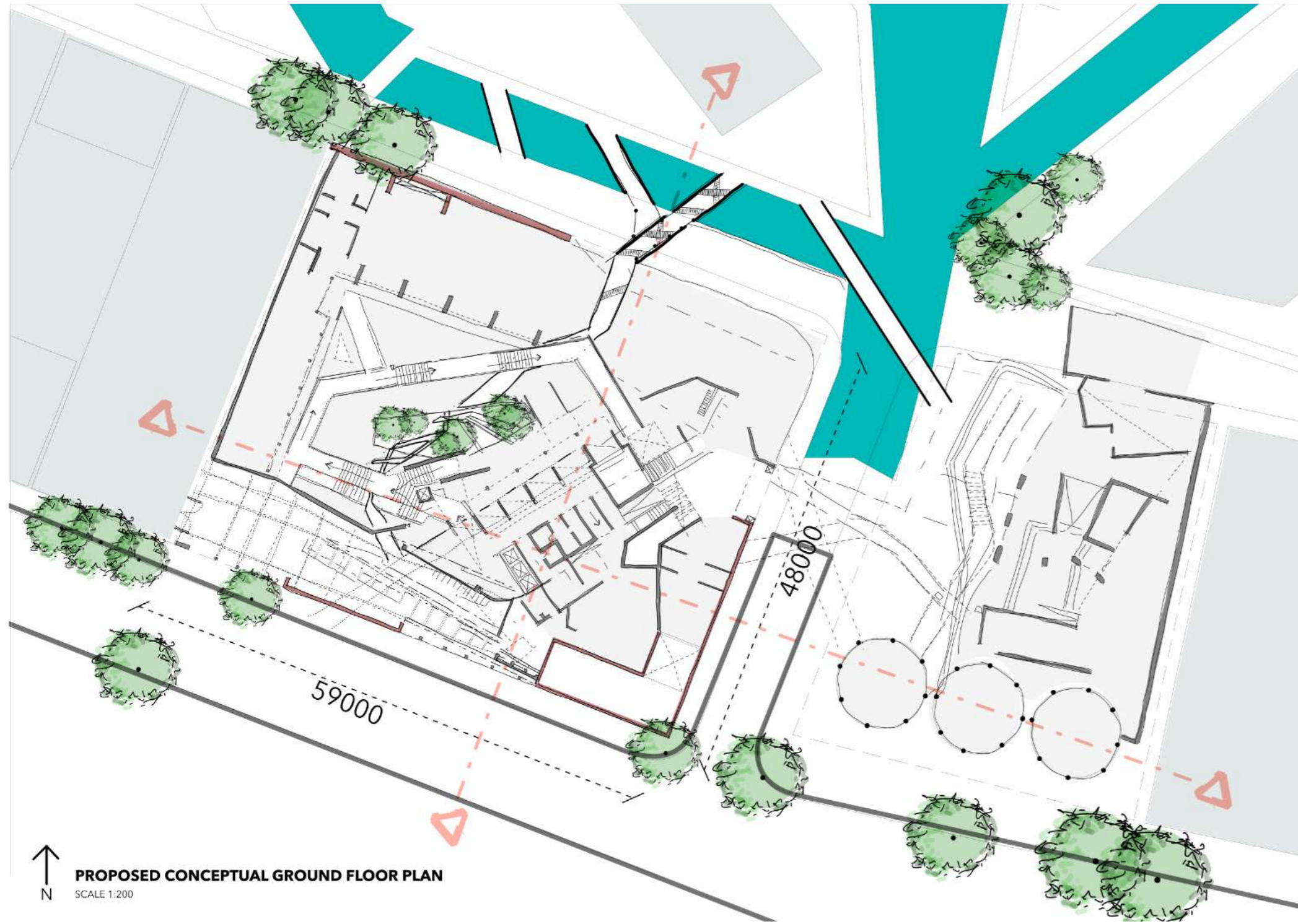
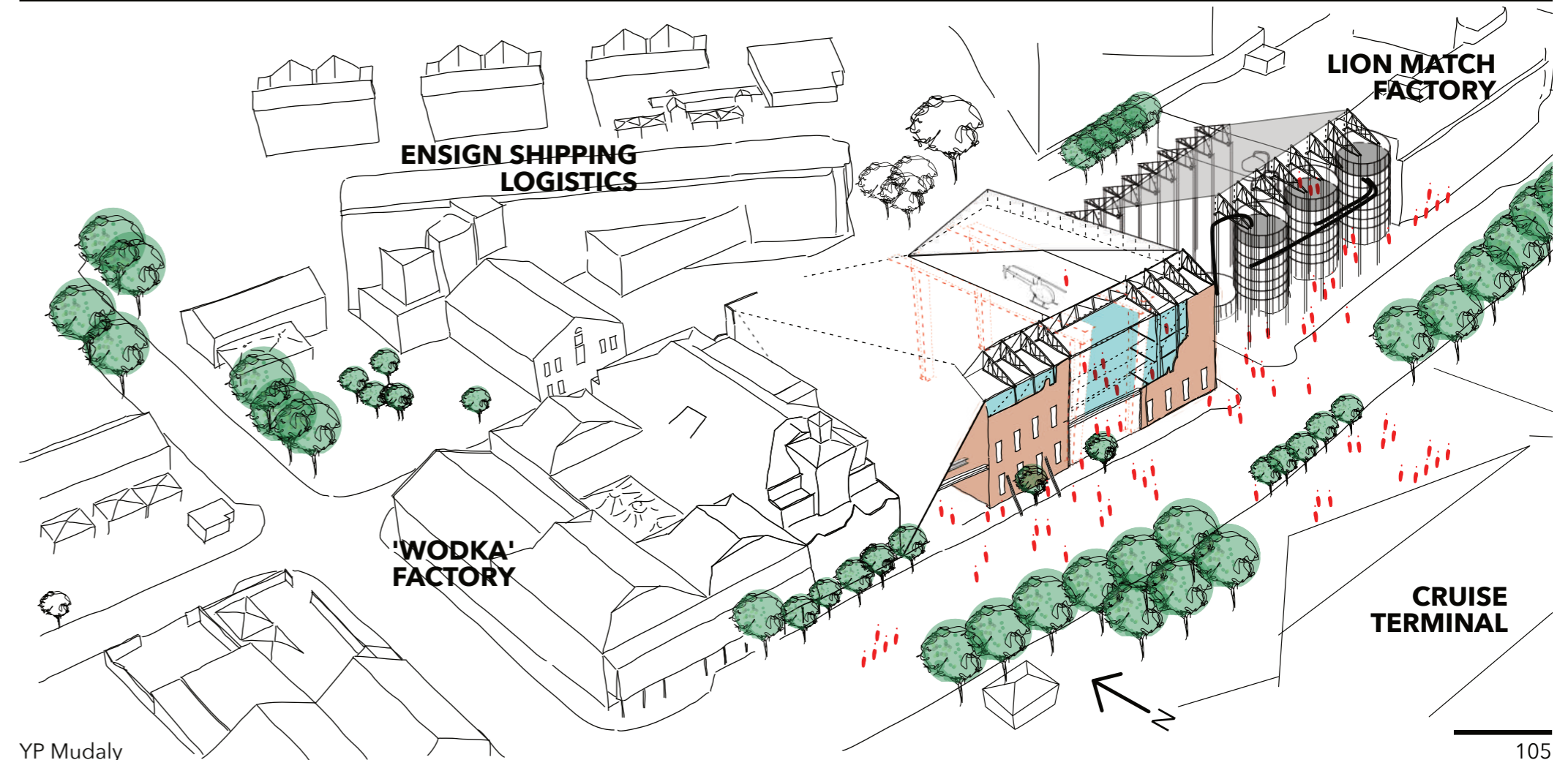
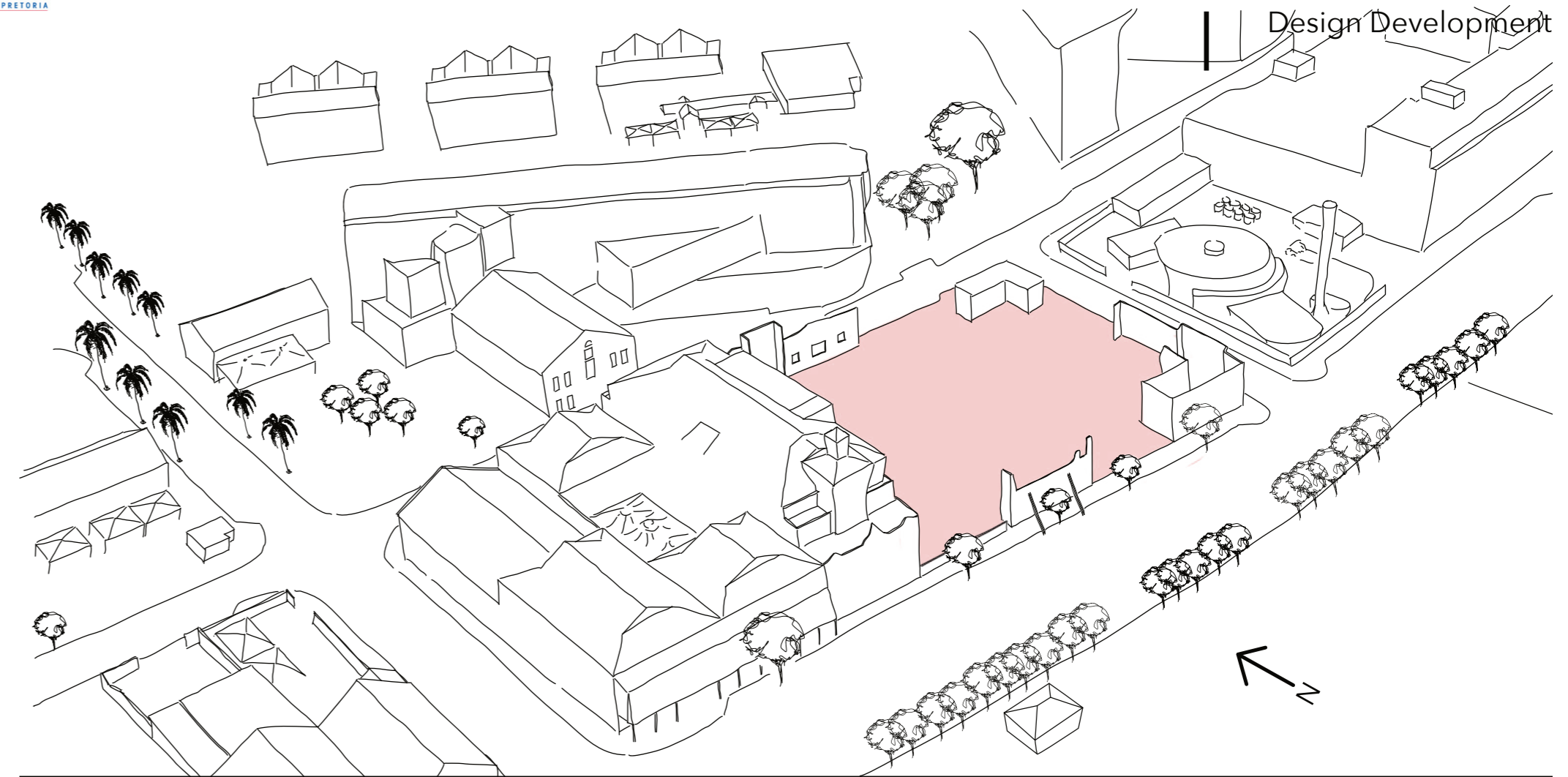


Fig. lxxviii. Right: Iteration 2 concept (Author 2021)



7.6. Iteration 2 Maquette 2

Upon reflection of the design the following critiques were identified:

I. The connection between the new building and any water bodies were required to be stronger

II. Where is a critique of the existing languages of architecture in the harbour precinct as the well as an understanding of the relationship between

function and form (and identity) in such an industrial precinct?

III. The relationship between interior and exterior edge has so many

spatial possibilities inherent in it that were under-explored at present.

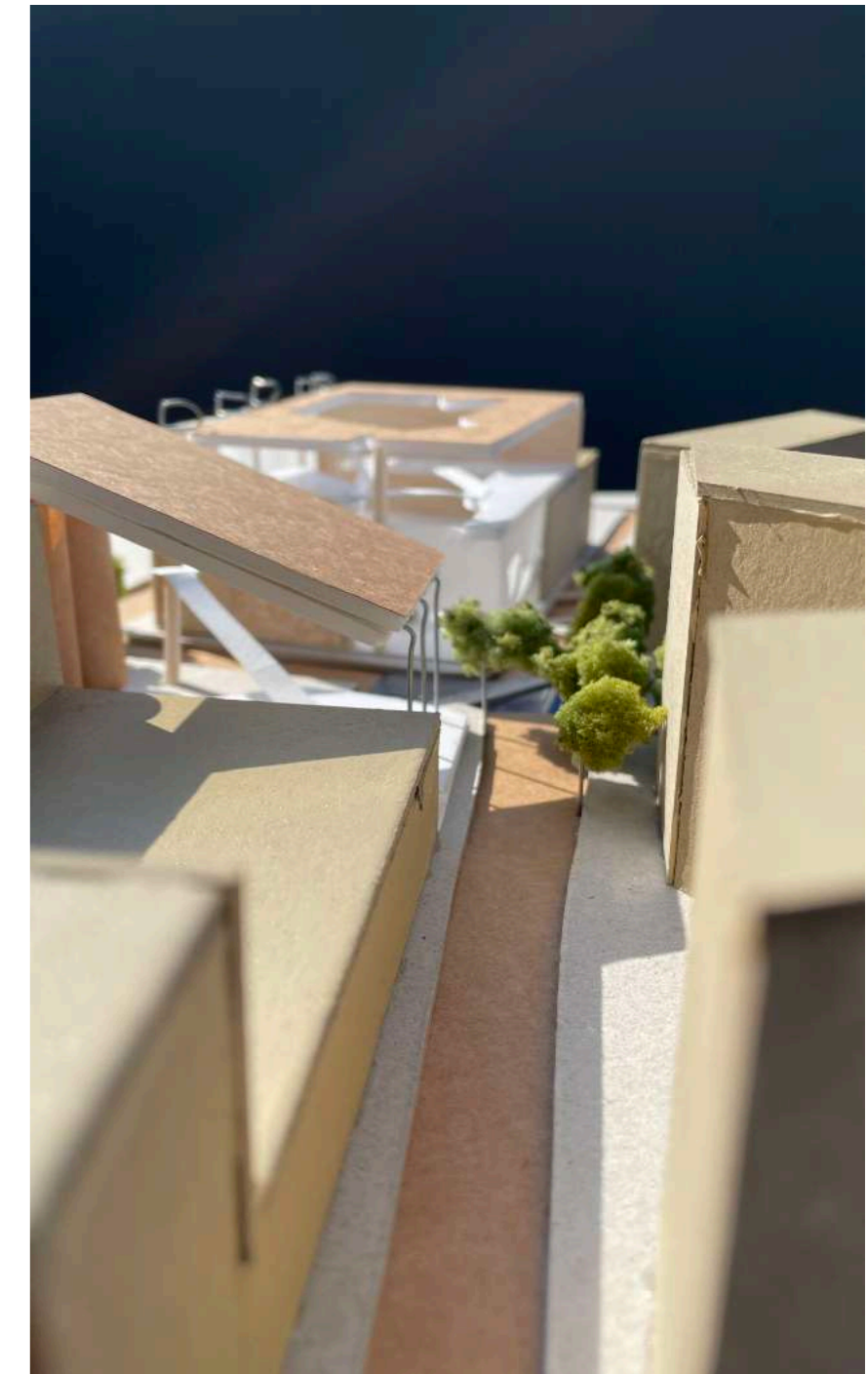
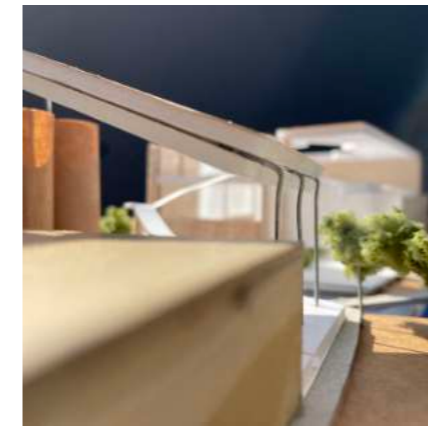


Fig. lxxix. Iteration 2 maquette 2 (Author 2021)

Fig. lxxx. Iteration 2 maquette 2 (Author 2021)

Revitalisation

7.7. The Brewery Yard

Location:

Chippendale
Australia

Architect:

Tzannes Associates

Value to Research:

Using existing infrastructure,
programme implementation.

Conclusions and relevance to Port of Durban

The AIVP Guide of Good Practices report suggests that (Aivp 2015: 65) port-city interfaces are ever-changing according to the current condition of their context. Concurrently, through the identification of heritage nodes or value space, the need to preserve or revitalise such sites becomes important to establish the palimpsest of histories through the age of the site. This is done to affirm the identity of the port, but at the same time, encourage a unique quality of space in the port that does not exist anywhere else in the world. Such is the case in the Port of Durban where many heritage structures situate themselves as desolate and abandoned but contain rich heritage value, the implication implying that there should be consideration for revitalisation.

The aspect of heritage is not just in the pure preservation of space, but it also preserves a nature of identity and the ability to situate a site in context and 'place' through history. This new history is therefore able to transcend old histories and encourage a new language through building structures which are redone and developed using new creative ways to interface the port. By contrasting materiality, spacial arrangement, dialectic of space (Lefebvre 1991) and correspondence, a building is able to distinguish old from new.



A similar revitalisation site to the one in Durban, The Brewery, was one of the largest retained heritage buildings on site in Chippendale and expressed the memory and history of place in context. Within the urban context, it was able to enhance the significance of the heritage facade of the building; whilst increasing the technical

demand of the programme (Archdaily 2015). The design both respects the historical fabric but also embraces a change in condition, where the physical usefulness requires revitalisation to bring significance and a new urban identity to the place.

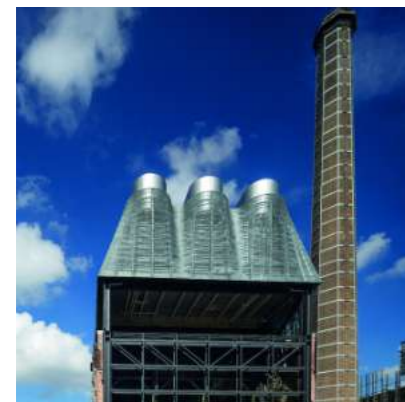


Fig. lxxxi. Images from ARCHDAILY. 2015. *The Brewery Yard / Tzannes* [Online]. Archdaily. Available: <https://www.archdaily.com/770027/the-brewery-yard-tzannes> [Accessed 2 July 2021].

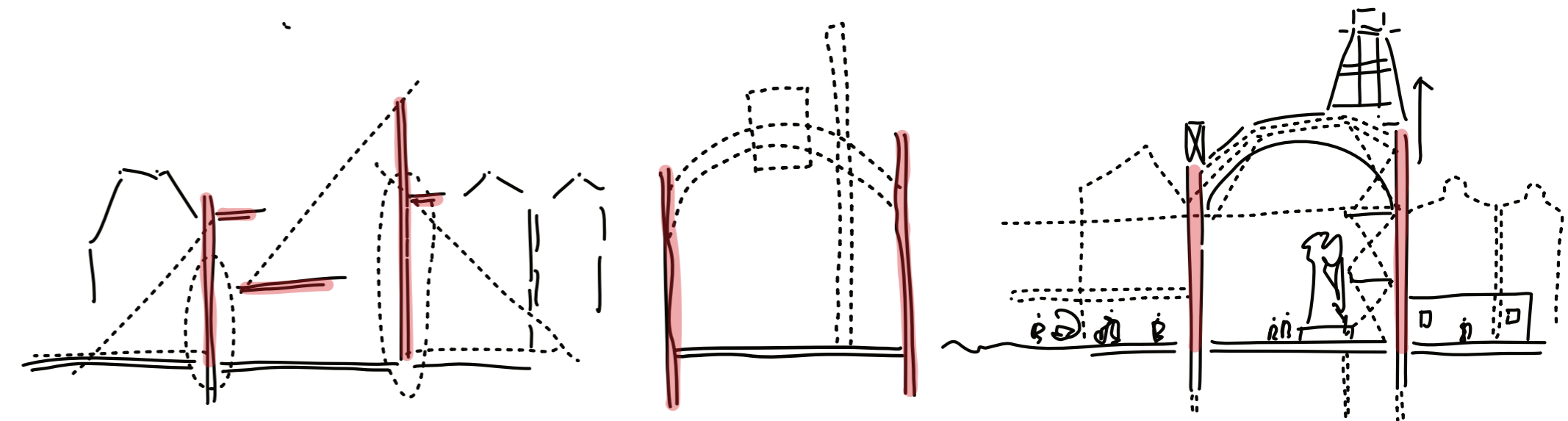


Fig. lxxxii. Precedent breakdown diagram (Author 2021)

Canal Integration

7.8. Student Residence REGA Exterior Landscape

Following the collapse of the river on site, the architects were tasked with a revitalisation structuring and infrastructure improvement on site. The project is manifested through strong water connections and instead of covering the canal with just bridges, the architect designed seated spaces for students and active users to enjoy through a continuous cycle (Pintos 2019). Through the use of terrain and existing masonry walls the riverbed was opened up and the programme became frivolous in descending concrete blocks towards the water edge.

This recession follows a similar rationale towards the Rotterdam development where the edge of water is designed and encourages public relaxation along the water edge.

In terms of planting the design is conceived as a courtyard with various plant species which work around water treatment and shallow planting. Vegetation provides a vital plateau which mediates hold materials and gives a soft tone to the scheme

Location:
Leuven
Belgium

Architect:
Ontwerpbureau
Pauwels

Value to Research:
Canal integration, public
urban design interface

Conclusions and relevance to Port of Durban

Durban port as described in previous chapters lacks a visible water edge and as described in the urban approach and the previous iterations there have been attempts to use the canal as an anchor system. From this point the precedent will be used to fully assemble active users along the salt water canal so that it becomes a designed space

rather than a step over which is just a visual piece in the landscape. Made from masonry along the edge the intention is to bridge the site on Albert terrace using this stepped terrace typology through seating areas and scattered vegetation along cobbled walkways.



Fig. lxxxiv. Precedent Section diagram (Pintos 2019)

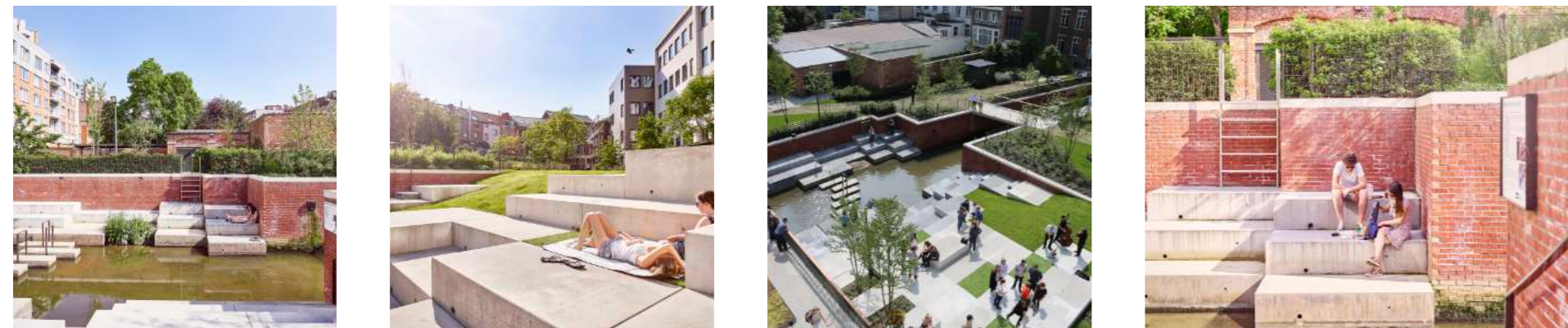
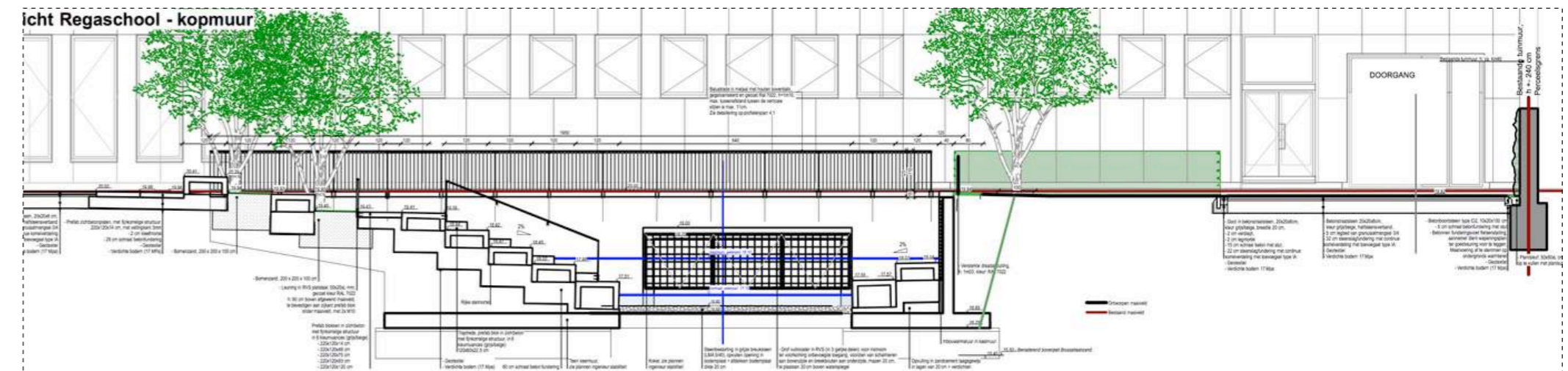


Fig. lxxxiii. Images from PINTOS, P. 2019. *Student Residence REGA Exterior Landscape / Ontwerpbureau Pauwels* [Online]. ArchDaily. Available: https://www.archdaily.com/926354/student-residence-rega-exterior-landscape-ontwerpbureau-pauwels?ad_medium=gallery [Accessed 9 August 2021]. Photographs: Studio Chloki.

7.9. Iteration 3: Finalising an architectural language

The new design development aimed to consolidate the urban iteration one with architectural iteration 2-3 in order to achieve a more holistic composition as well as clarify the limited areas of design and the implementation of the canal as a design and spatial informant.

The new building design not only exemplifies the change in rhetoric in the urban fabric but is able to draw synergies from the spaces around it similar to the urban context. At the end of the day, the main goal of the architecture is to combine all layers of continuity into a space which celebrates innovation and progression through a discourse of identity. Programme on the southern edge are the open public space pushed back from the one heritage ruin, a cafe and art gallery and centrally the stair case circulation takes on the fractured language of the canal. There is also a market and retail space and the right is the beer garden with its back of house. There are event spaces and bar offerings with the canal mediating the site. New functions and programme are introduced through celebrating the hospitality industry and creating a building which not only contains a range of retail offerings but institutions which facilitate operations of the working port. The beer is stored in drums in the silos and the technical requirements are going to be explored further.

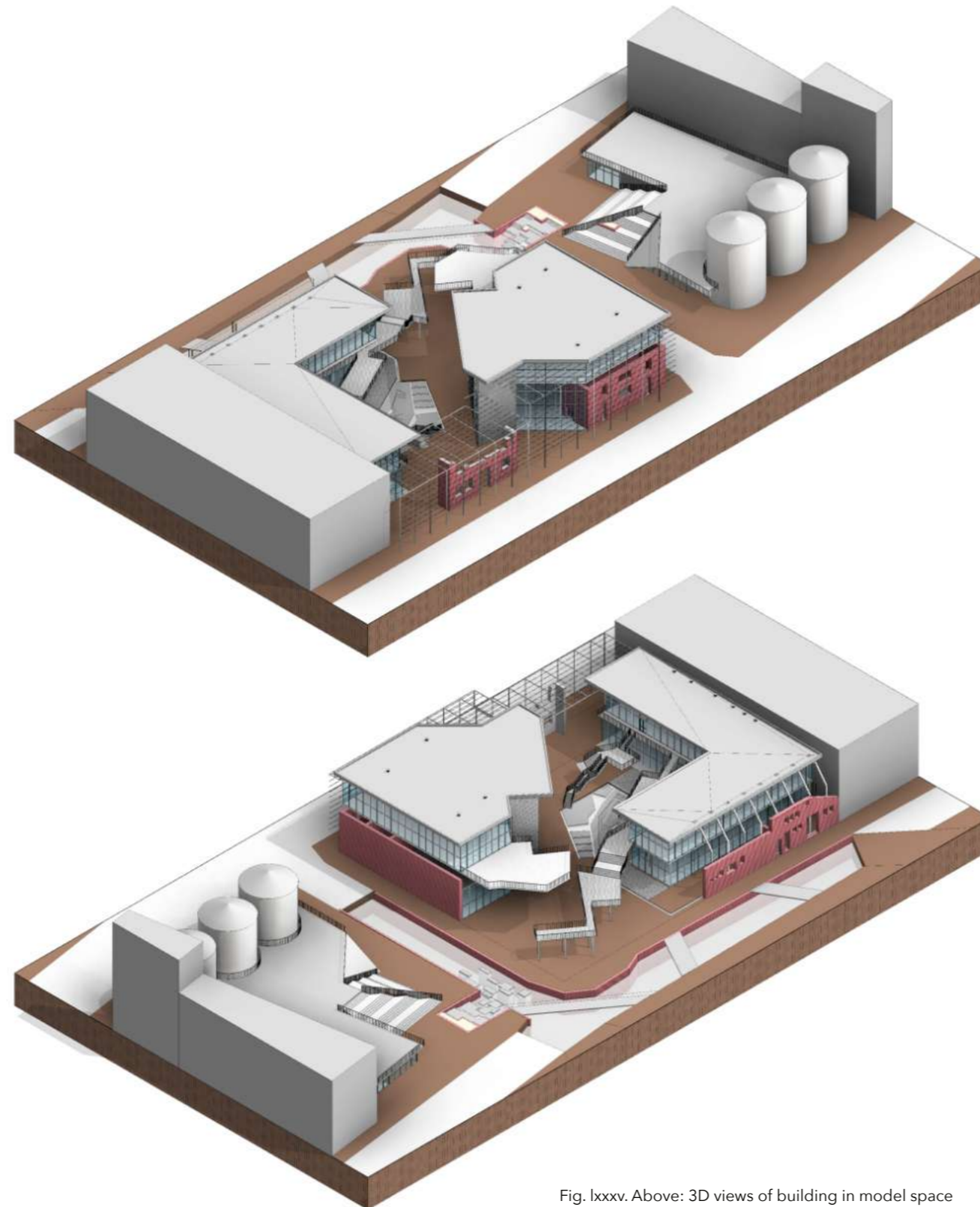
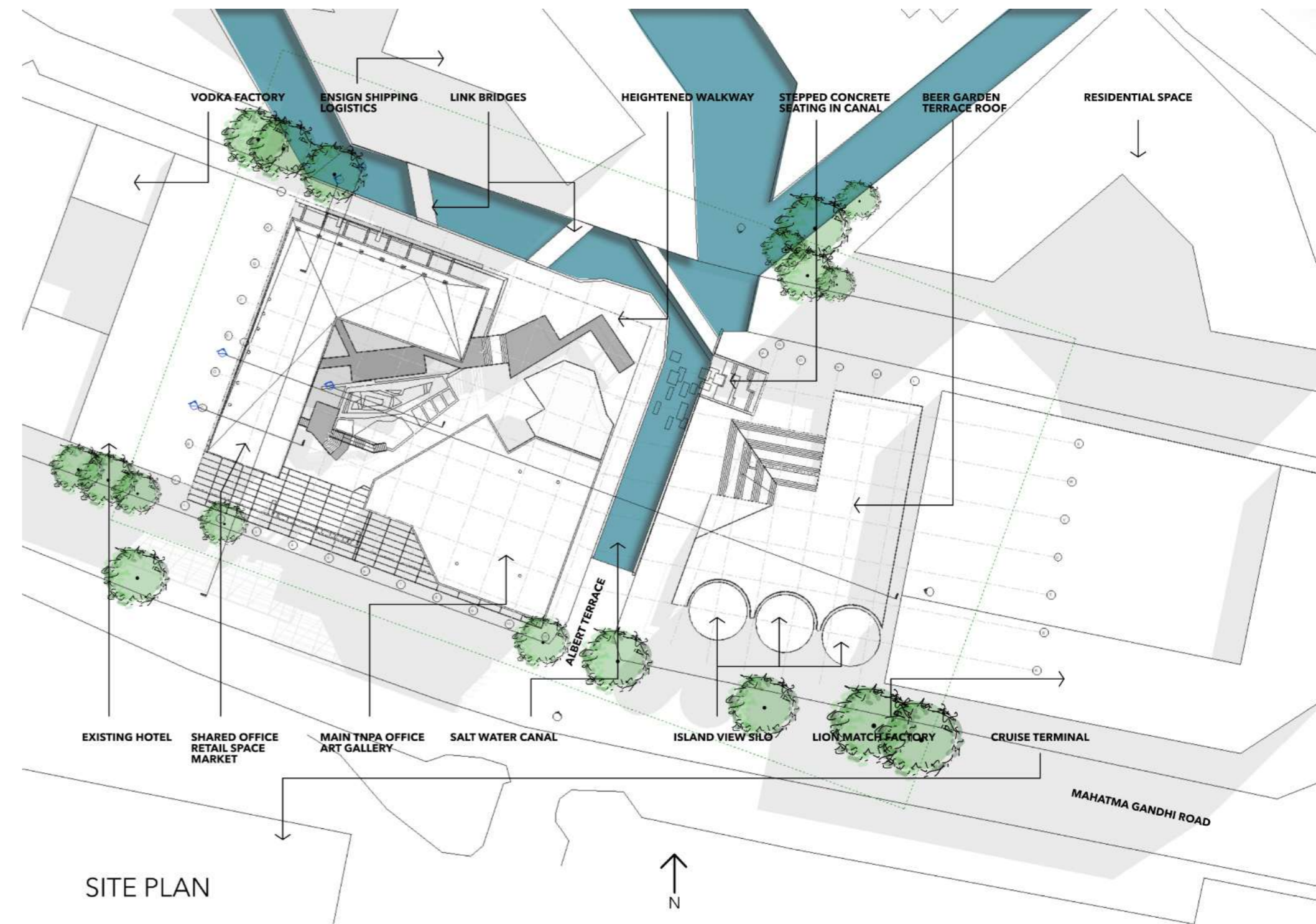


Fig. lxxxv. Above: 3D views of building in model space (Author 2021)

Fig. lxxxvi. Right: Iteration 3 new site plan (Author 2021)

The canal not only acts as a formal element in the landscape but is transformed into an interactive element by stepping down from the ground level into concrete steps where users can sit and interact within the landscape rather than view the canal as just a visual device to connect building sites. This dialogue with the canal shapes the way the building is circulated and used and also provides an active ventilation space from the north eastern quadrant.



SITE PLAN

7.10. Final Design

The final design development concept and building was a palimpsest of historic, material investigative qualities and the previous 3 iterations. The new design is sought to exemplify a modern seaport typology with a defined water edge within the Point Waterfront Precinct 3 allocation.

Success is built on layering and cutting through the urban fabric to stitch together

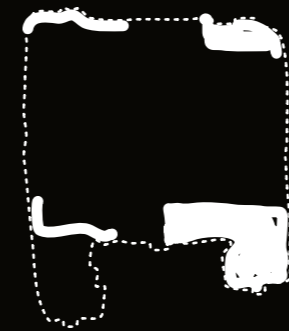
synergies of space whilst being unique and true to the dissertations normative position spoken about in chapters 1-3.

Built upon strong gastronomic and business programmes the new precinct follows a standard of continued evolution which the Port of Durban and the city of Durban require to be able to handle new transit traffic from MSC as well as facilitate

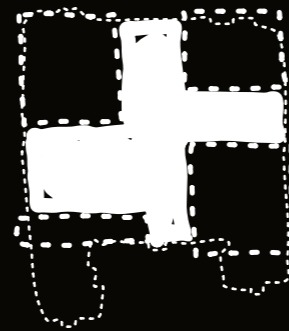
operations on port handling throughout the eastern coast. This does not however compromise the urban feel through unique enclaves and canal corridors where people are meant to congregate and circulate through gathering areas.

7.10.1. Building concept

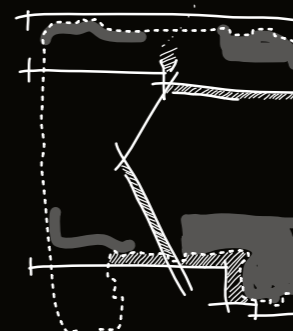
IDENTIFY HERITAGE



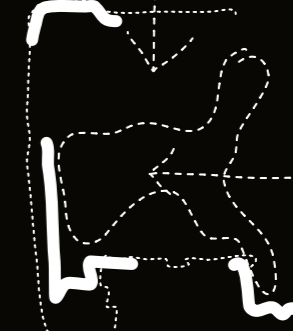
LAYERING



CUT AND PULL



GATHER



CIRCULATE URBAN SPACE

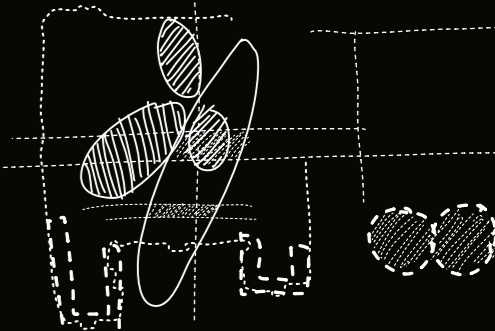


Fig. lxxxvii. Building concept diagram iteration 4 (Author 2021)

Fig. lxxxviii. Final site plan (Author 2021)

7.11. Final Site Plan

The site plan references many examples of successful port infrastructures through the precedent development, understanding water as a major player in the facilitation of active edging by penetrating the site and allowing activity to form in and around the level mediations on site.

Access to site is found on the Southern quadrant and Northern quadrant whilst Albert Terrace has been converted to a full canal space which has concrete stepping blocks for active users to walk across to get from the main site to the beer garden and terrace roof space for viewing of ships and the harbour mouth.

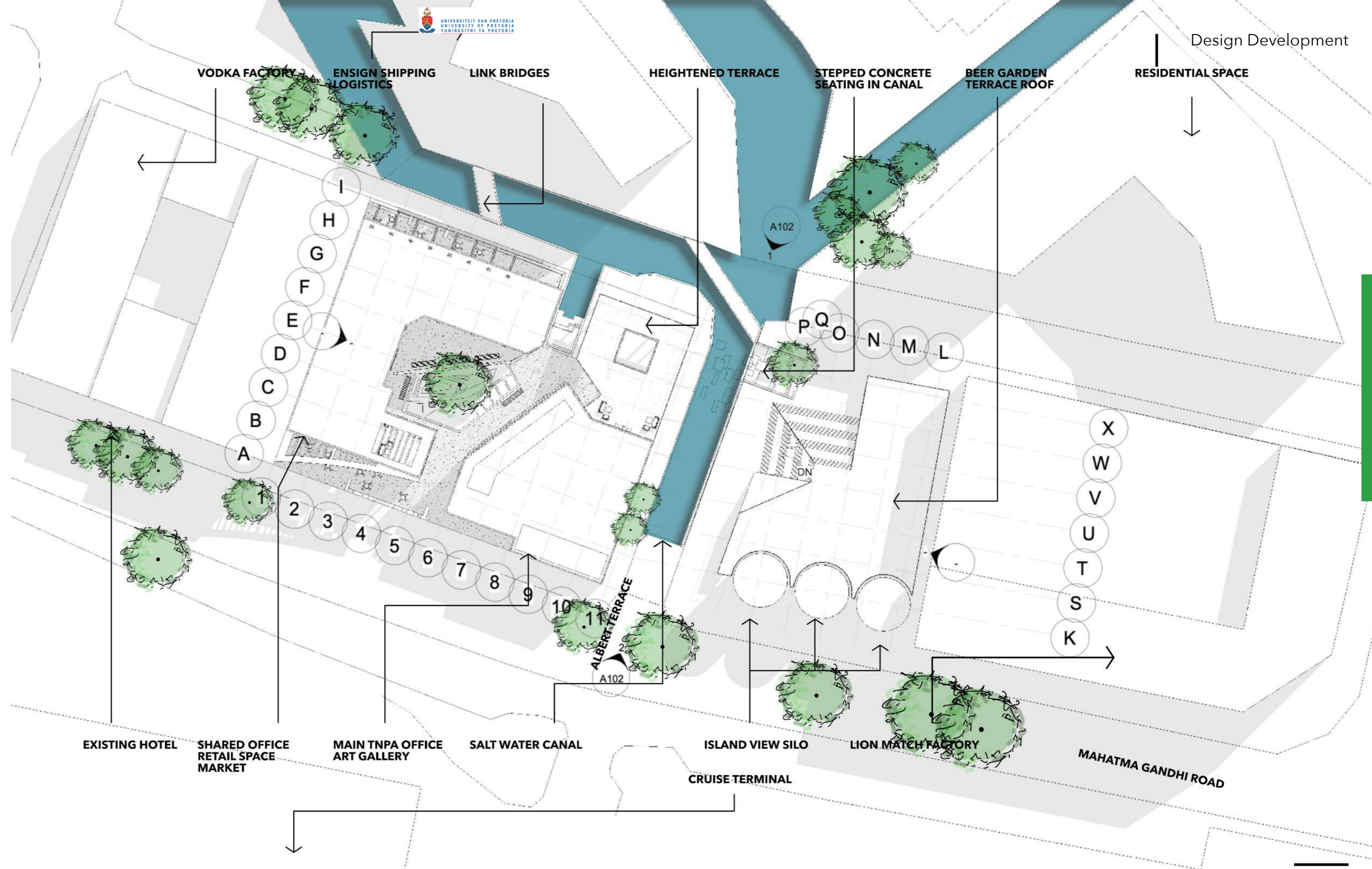


Fig. lxxxix. 3D diagram Southern elevation (Author 2021)

Fig. xc. 3D diagram Northern elevation (Author 2021)

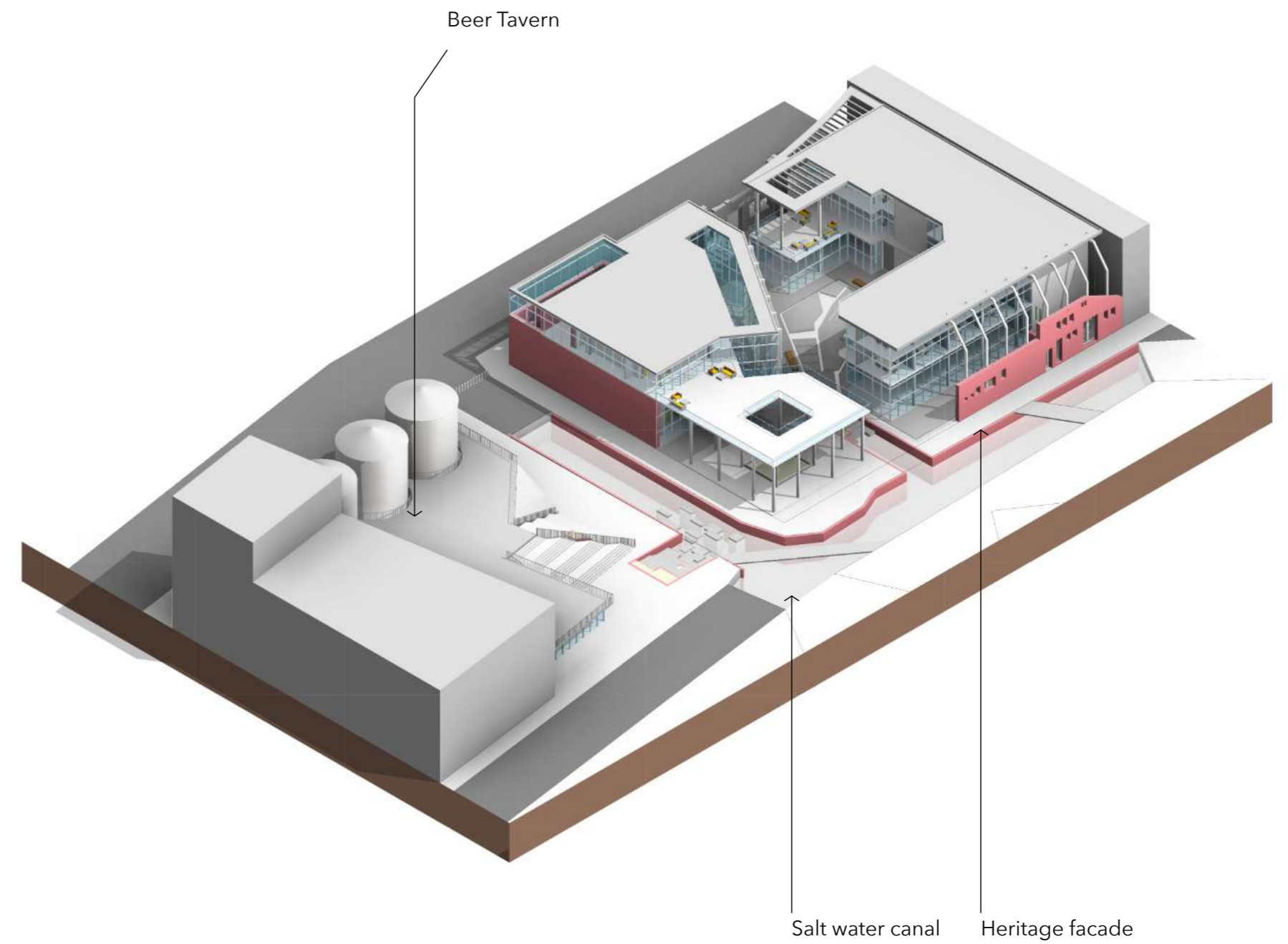
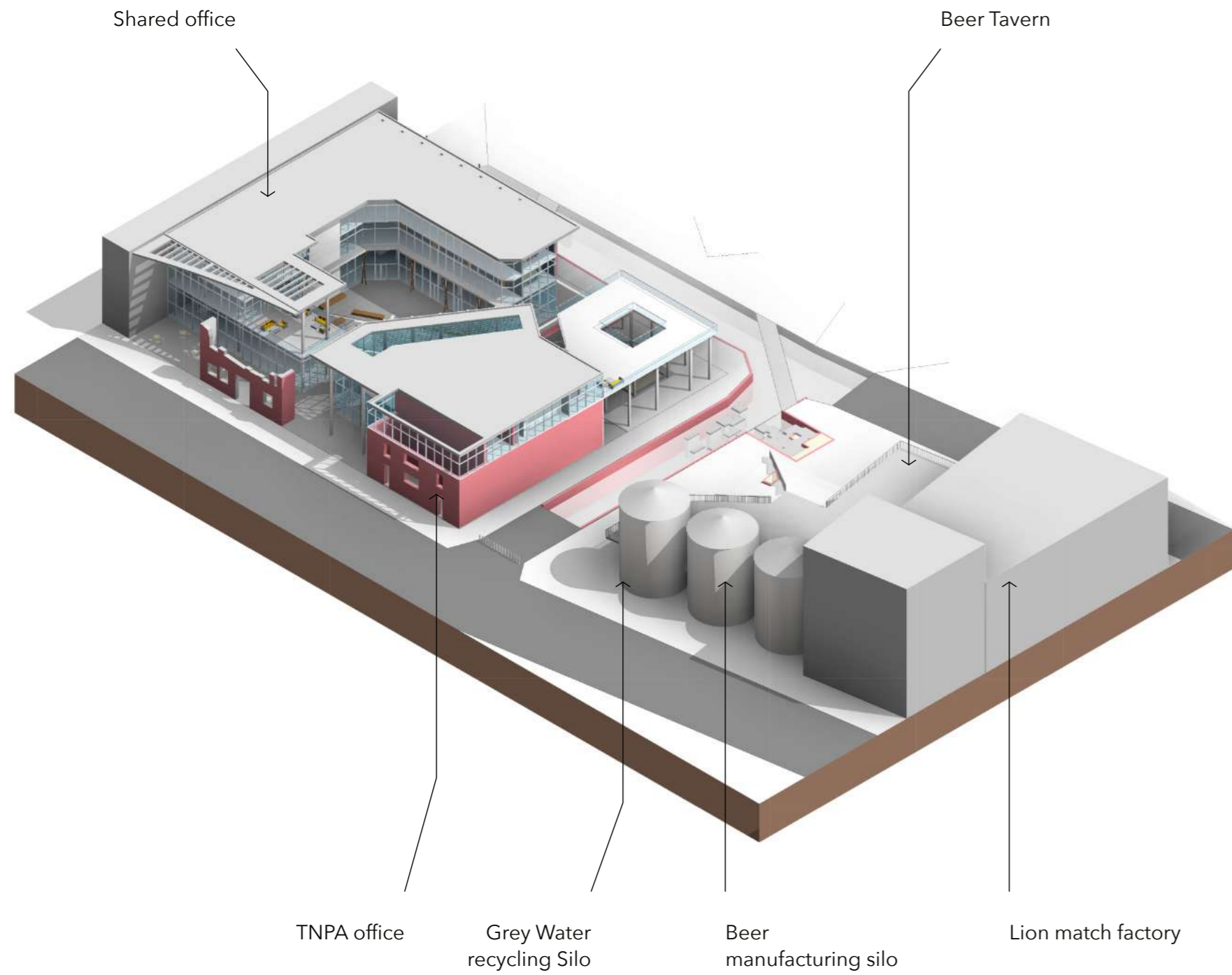
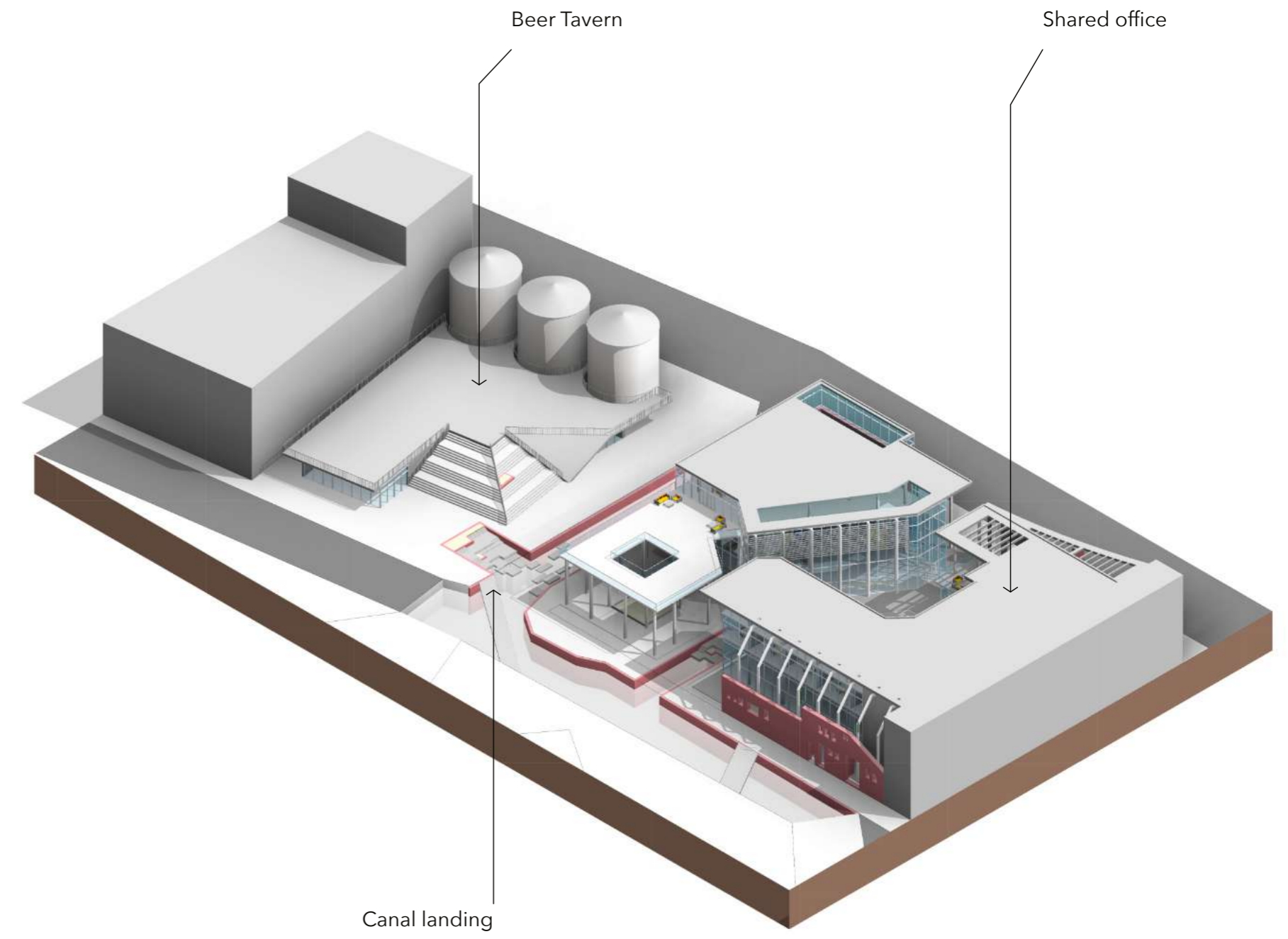
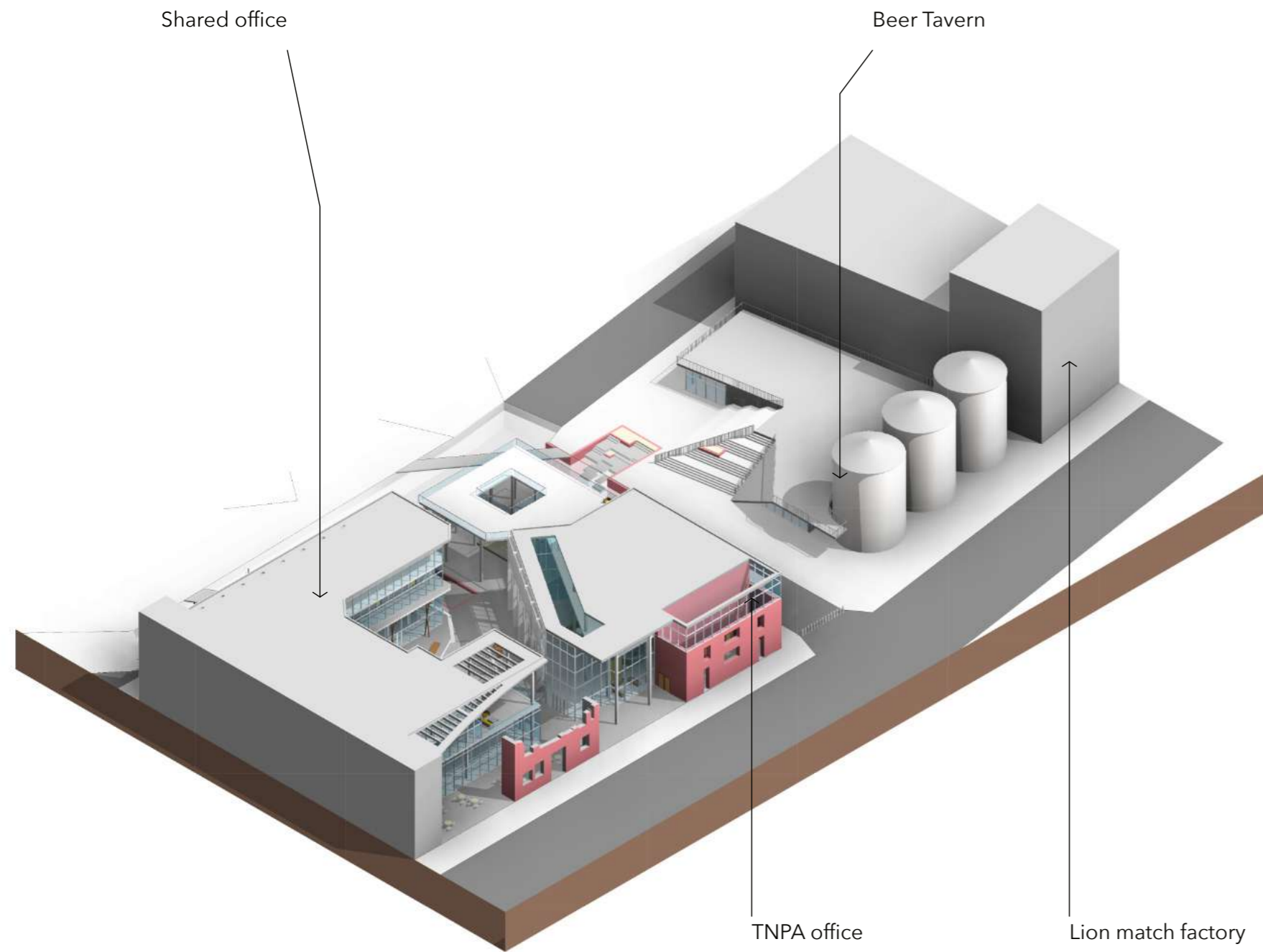
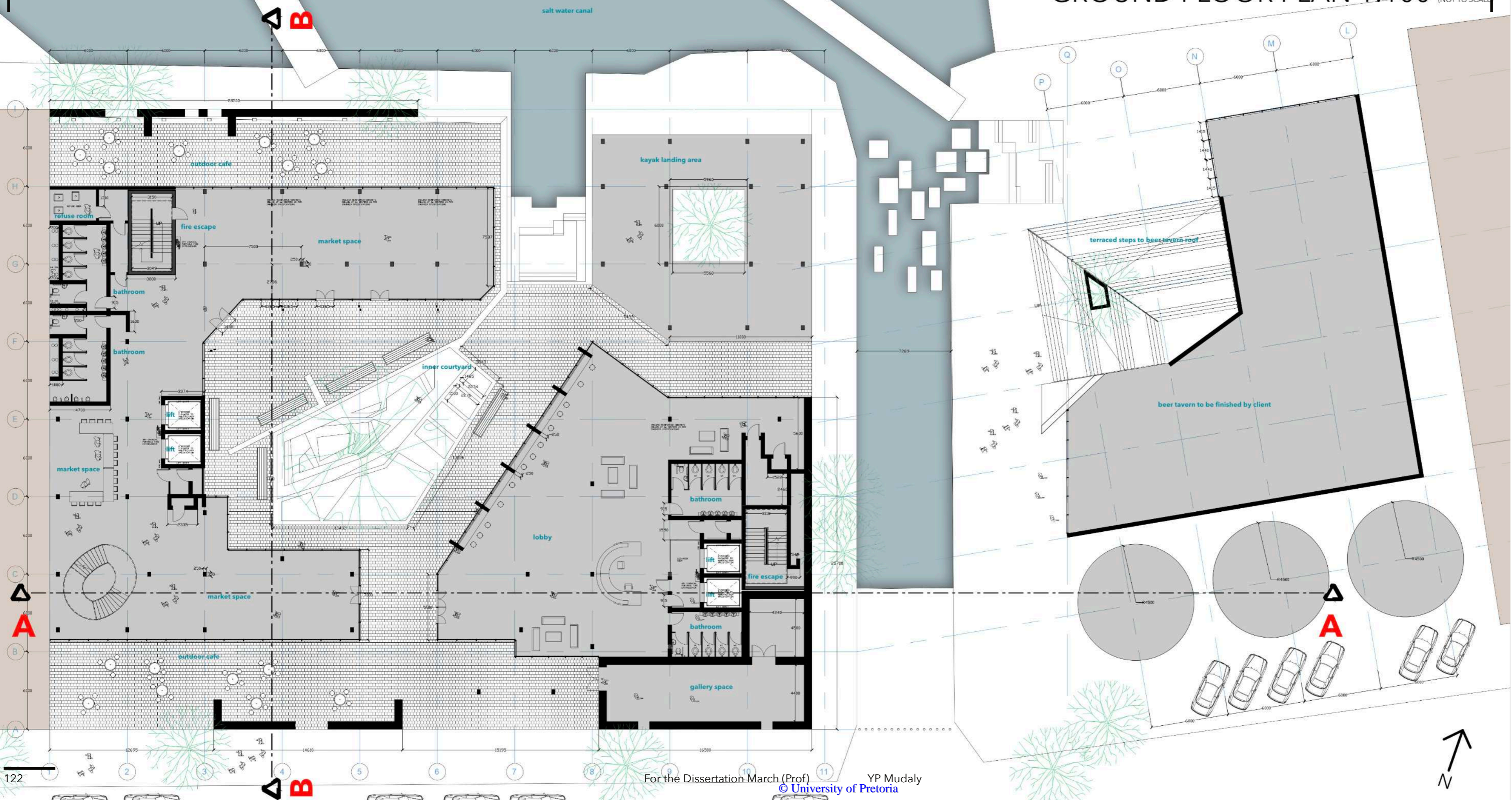
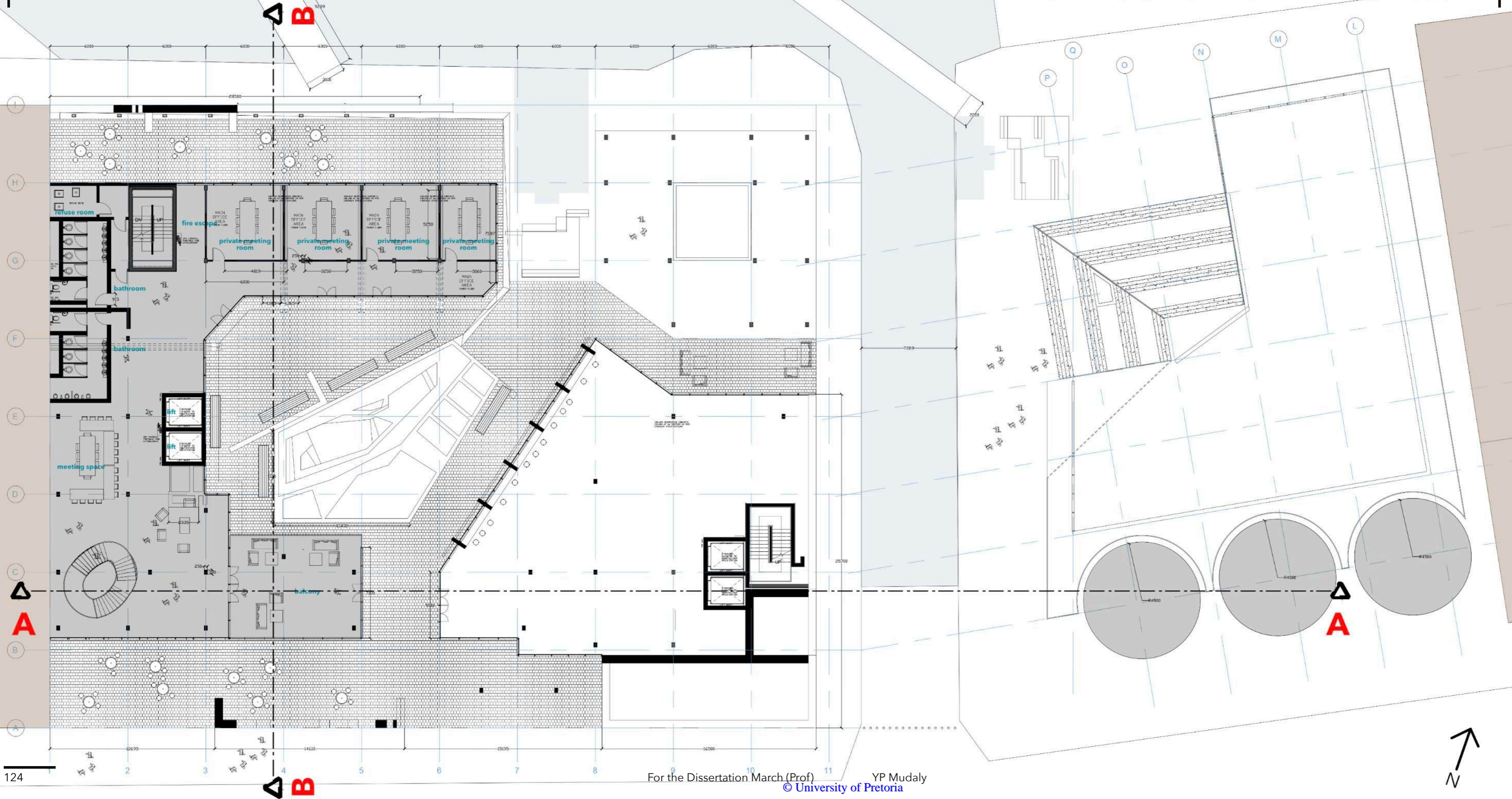


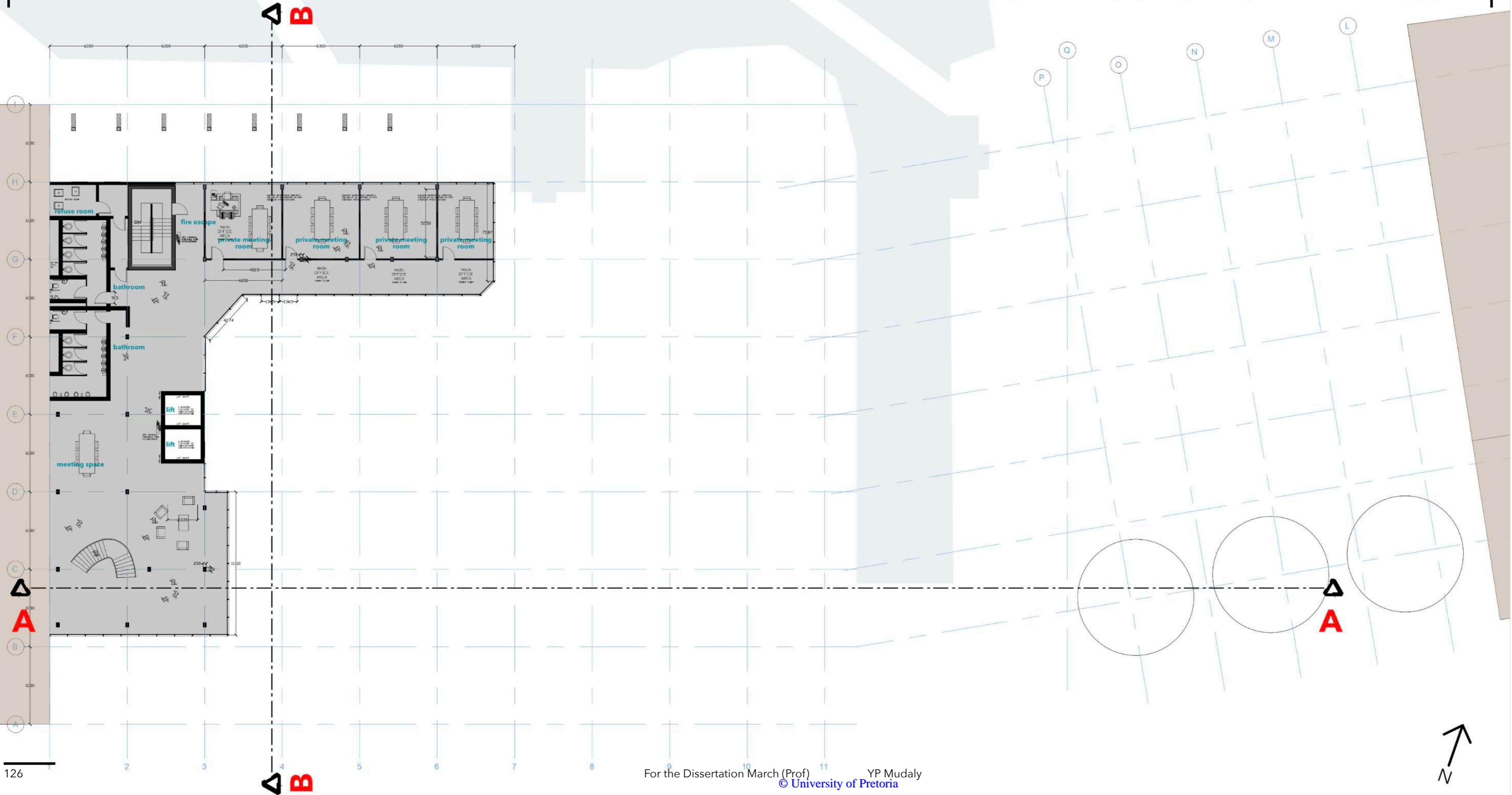
Fig. xci. 3D diagram Southern elevation (Author 2021)

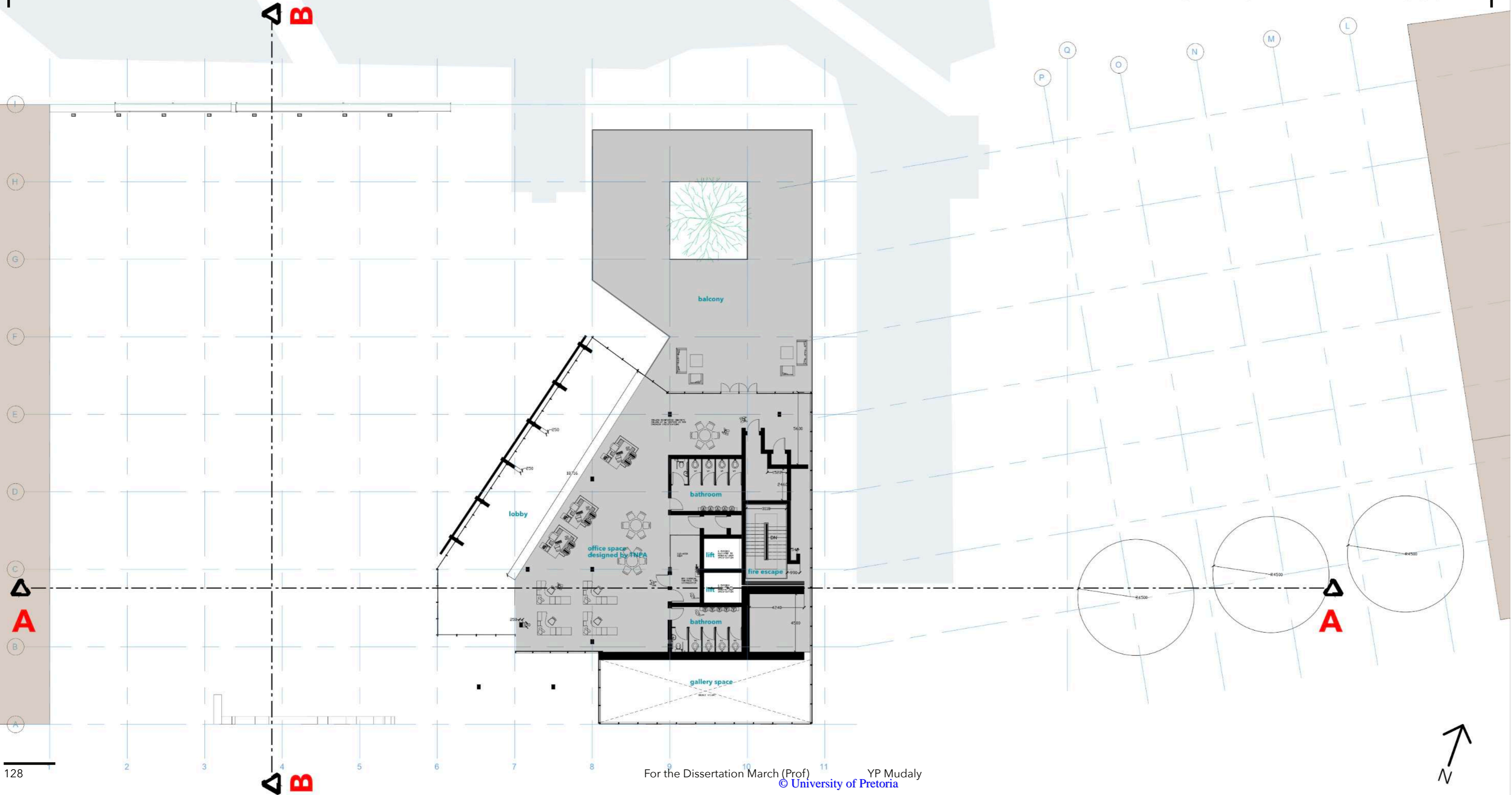
Fig. xcii. 3D diagram Northern elevation (Author 2021)











7.12. Sections

Sections show how level mediations takes place in the main TNPA building which is built upon the grander heritage structure and forms a secure lobby on ground and how the L building contains two shared

office spaces above with a market space underneath selling local produce and gives opportunity to small business owners. Centrally there is situated a courtyard with the rainwater collection system and between

the two sites is an active canal which pushes towards the main road which houses the new MSC cruise terminal.

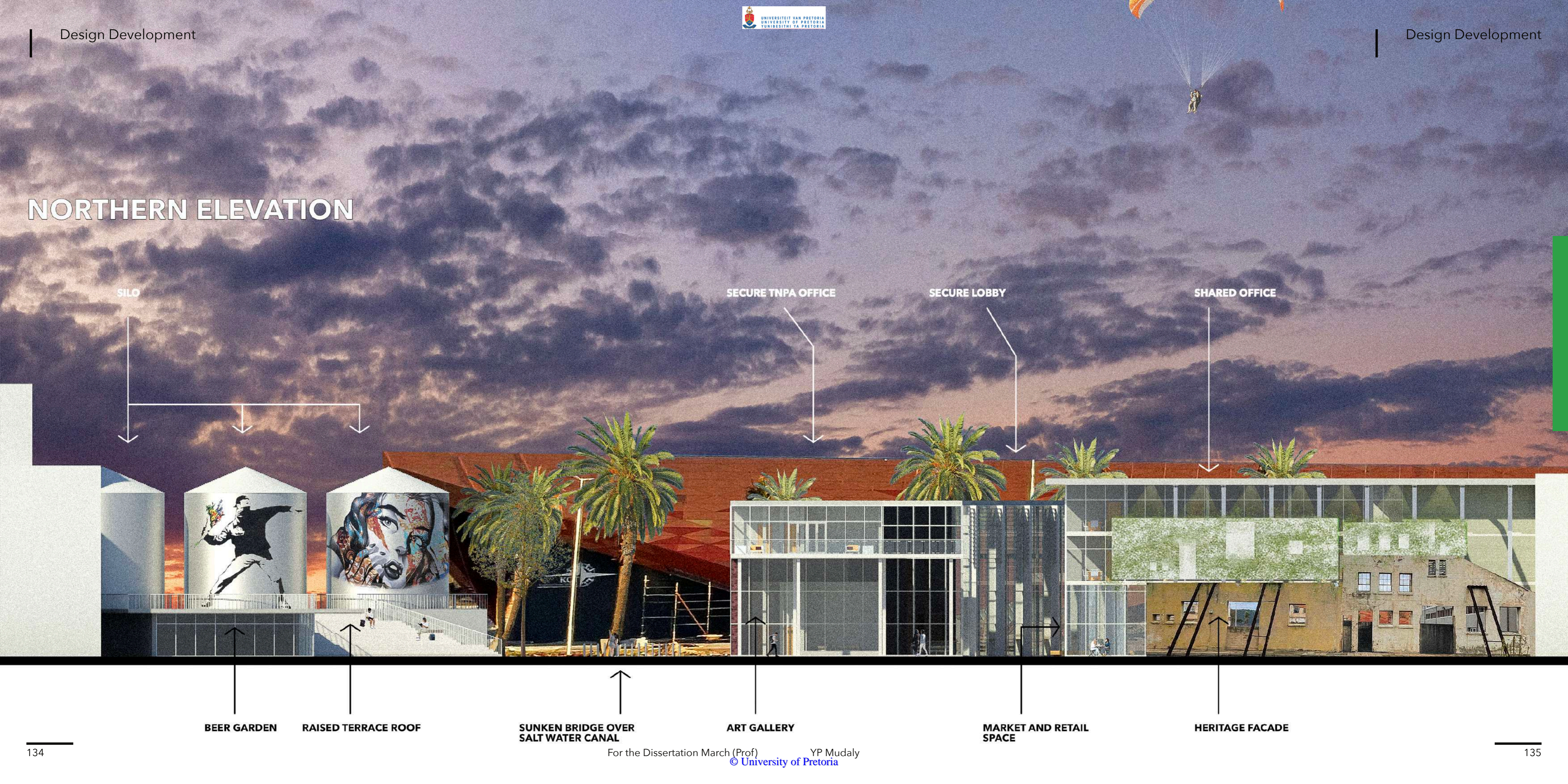
Fig. xciii. Section A-A (Author 2021)



Fig. xciv. Left bottom: Section B-B (Author 2021)



NORTHERN ELEVATION



SILO

SECURE TNPA OFFICE

SECURE LOBBY

SHARED OFFICE

BEER GARDEN

RAISED TERRACE ROOF

SUNKEN BRIDGE OVER SALT WATER CANAL

ART GALLERY

MARKET AND RETAIL SPACE

HERITAGE FACADE

SOUTHERN ELEVATION



7.13. Perspective 1

Taken from the balcony of the first level shared office the perspective shows the natural quality of space in the central courtyard meant to circulate and gather users. Market goers have the pleasure of using the courtyard as a place of rest whilst business owners may use it as a place of contemplation. Cobbled walkways scatter around the circulatory area and pull users in through visual stimulus and curiosity.

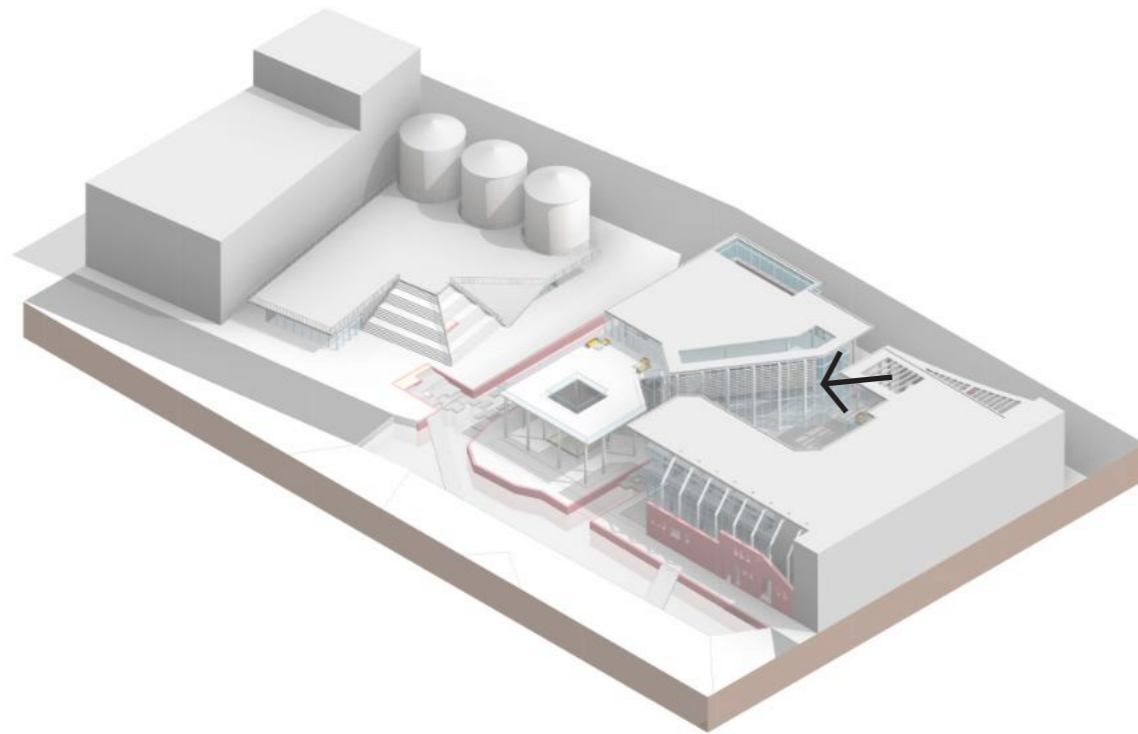
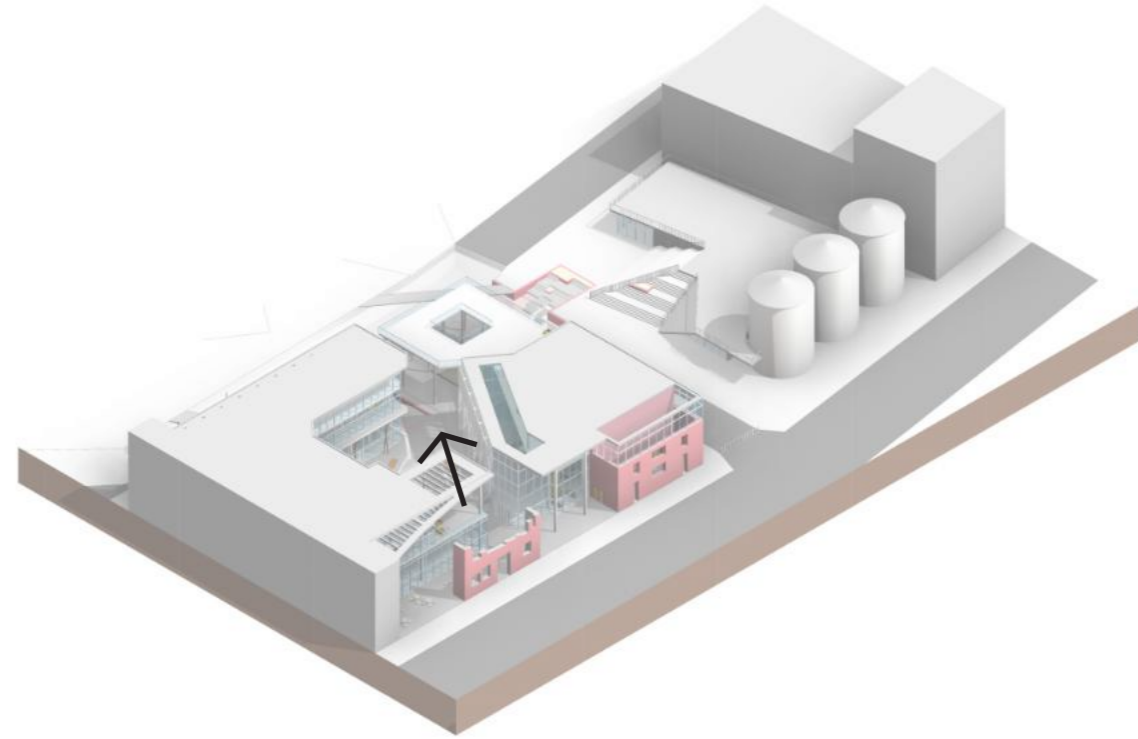


Fig. xcvi. 3D Diagram of building for perspective (Author 2021)

Fig. xcvi. Perspective 1 (Author 2021)



7.14. Perspective 2

This perspective exemplifies the success of controlled open space and pedestrian comfort. The site quality along the water edge breaks the hard concrete block typology prevalent in other parts of the site whilst being among softer materials being water and glass through its transparent quality.

Views of the new cruise terminal by MSC are shown and active users may walk up the terracing on the beer garden to view ships that will dock in the new transit access terminal whilst being immersed in a new facade language through the use of liquid bulk silos recycled from island view as shown on page 34 figure xviii.

Below the TNPA building is an art gallery where installations may be housed. Local artists are encouraged to paint on the silos directly across the call through different artistic mediums to continue the new landing space ideology.

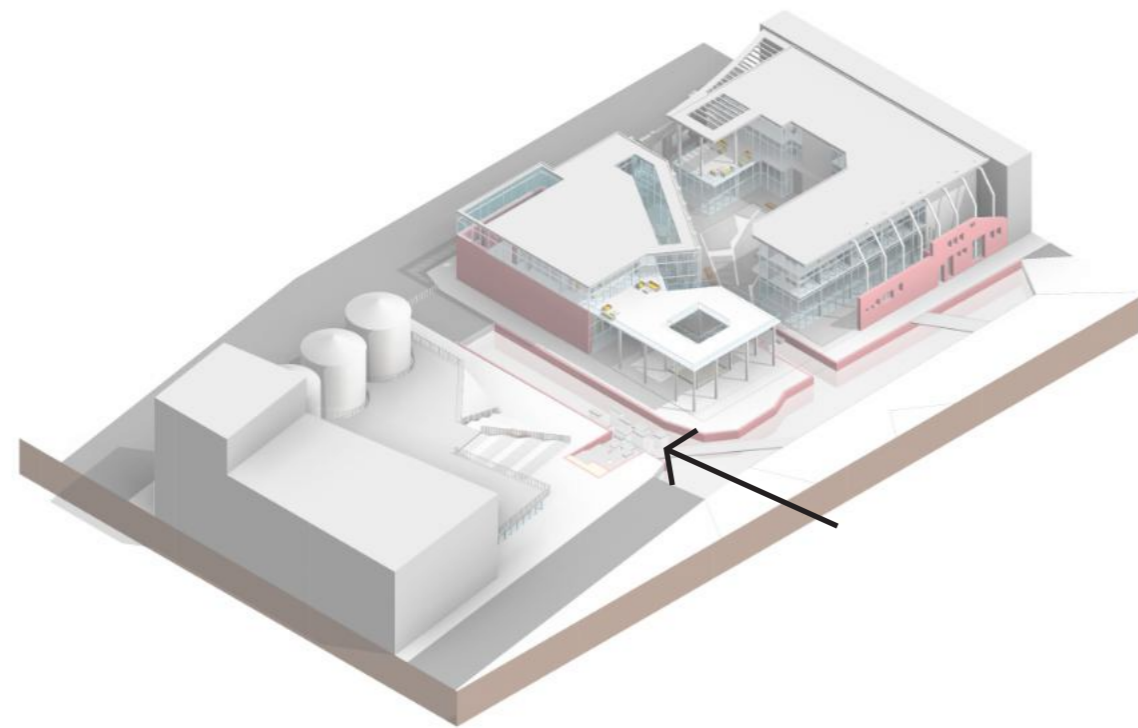
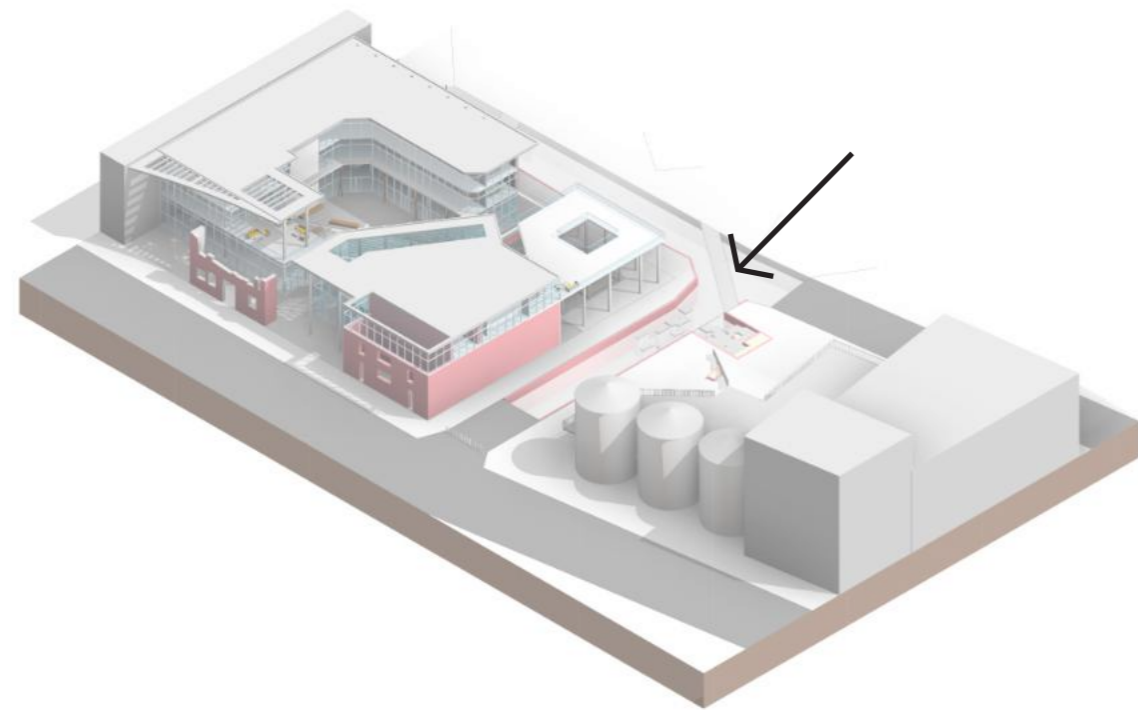
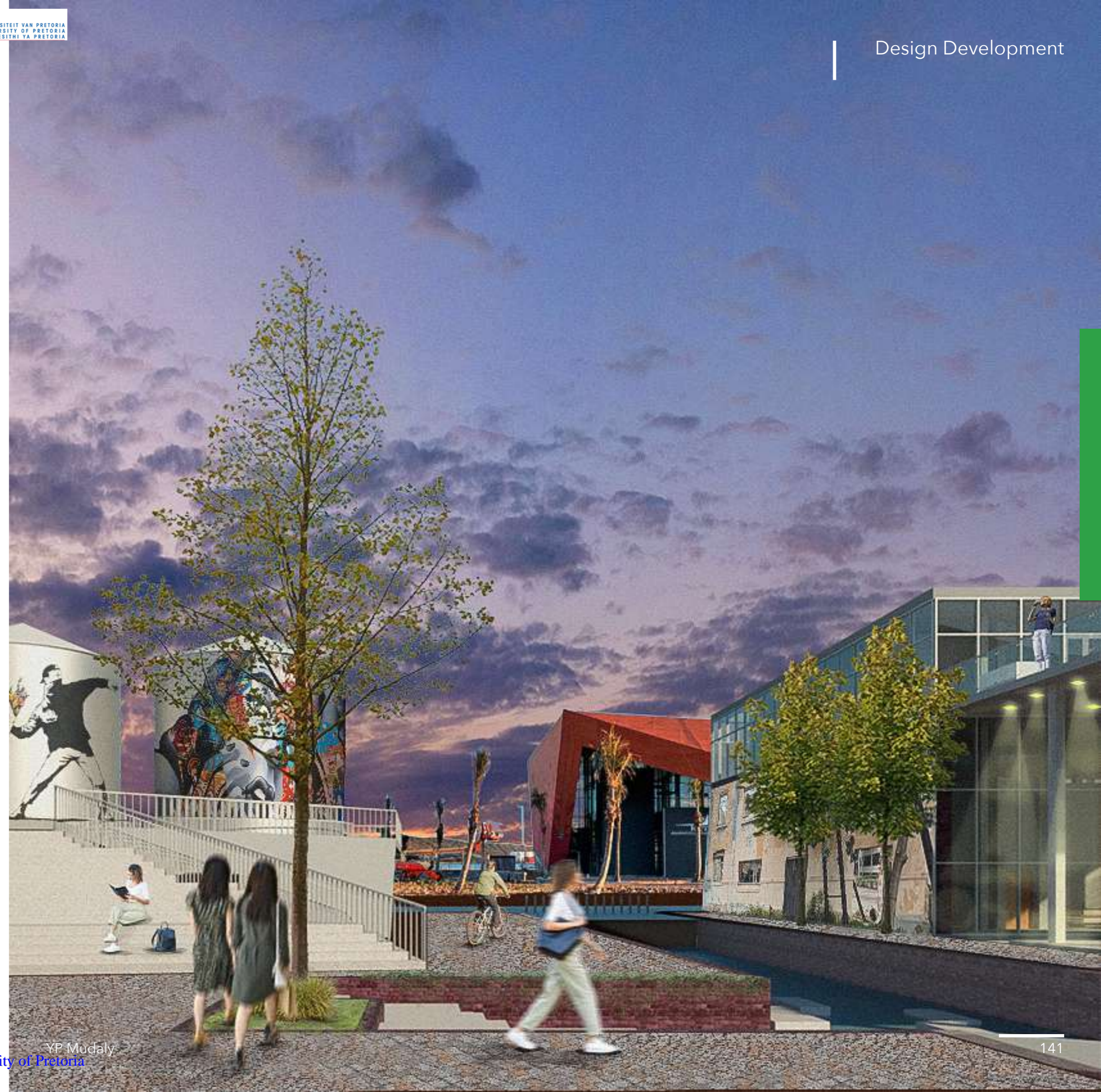


Fig. xcvi. 3D Diagram of building for perspective (Author 2021)

Fig. xcvi. Perspective 2 (Author 2021)



7.15. Perspective 3

Through the programme of gastronomy, the market space respects the old heritage facade by pushing the building away and creating a niche space which contains tables and chairs for coffee and rest. The Northern facade gutter detail as shown on page 158 figure cxvii creates an open covering area where planters are used to soften the space.

The canal edge pushes further into the building along the developed fresh water canal for the courtyard. This space is used as a gondola rest area where users float along the canal and move from site to site via the water body.

The perspective shows the threshold to the courtyard.

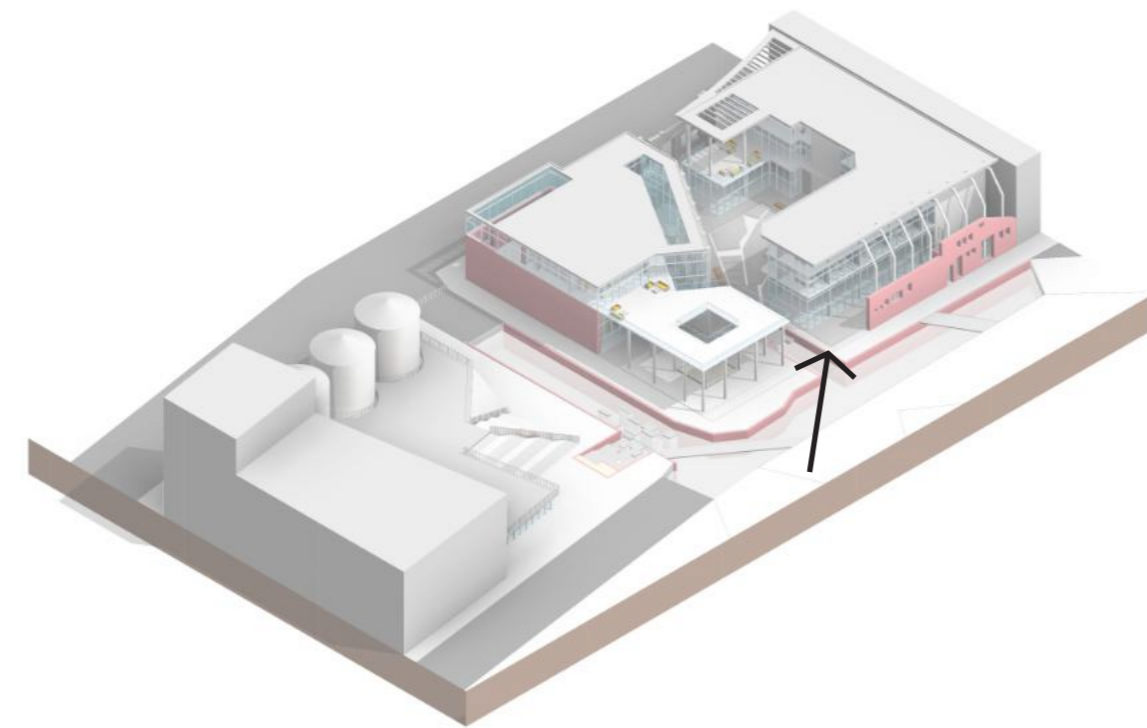
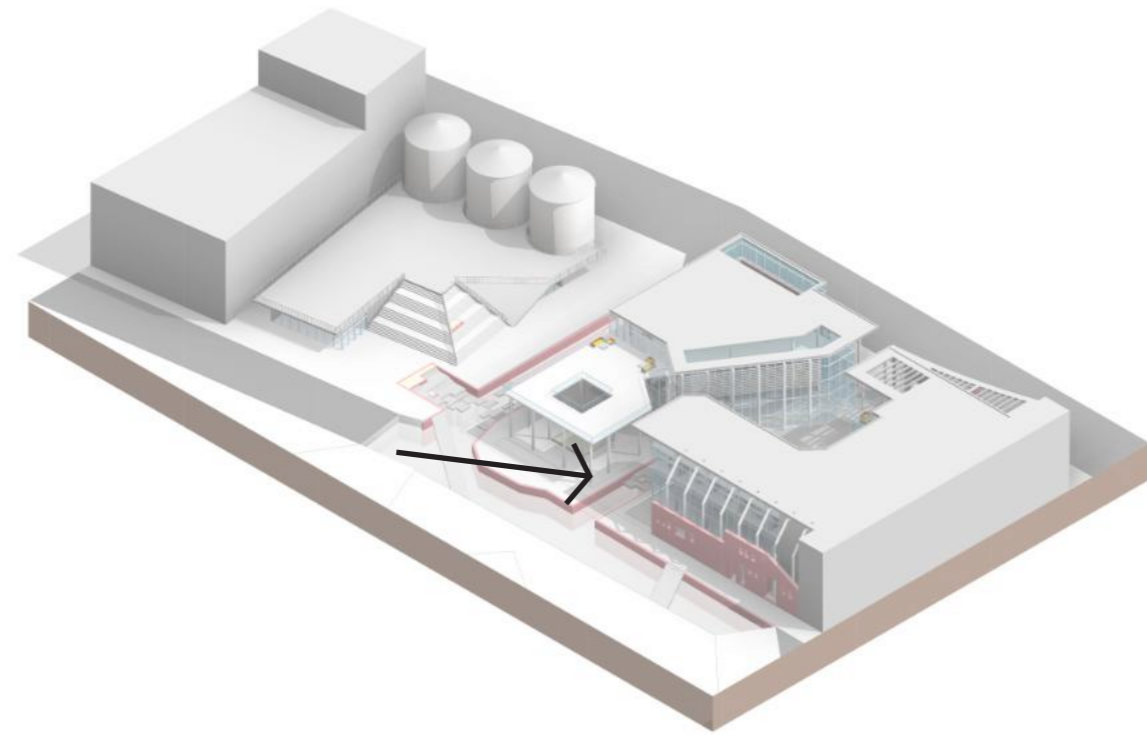


Fig. xcix. 3D Diagram of building for perspective (Author 2021)

Fig. c. Perspective 3 (Author 2021)



7.16. Perspective 4

One of the main and most prominent features of the precinct is the sunken courtyard which takes references to the dock area of a ship yard where ships come to rest.

This activity now follows on for active users and promotes the idea of comfort and recreation by the market area which is below the shared office space as well as opposite the secure lobby for the Transnet National Port Authority.

Rainwater is collected into the system and pumped towards Silo 1 for treatment as shown on page 162 figure cxii.

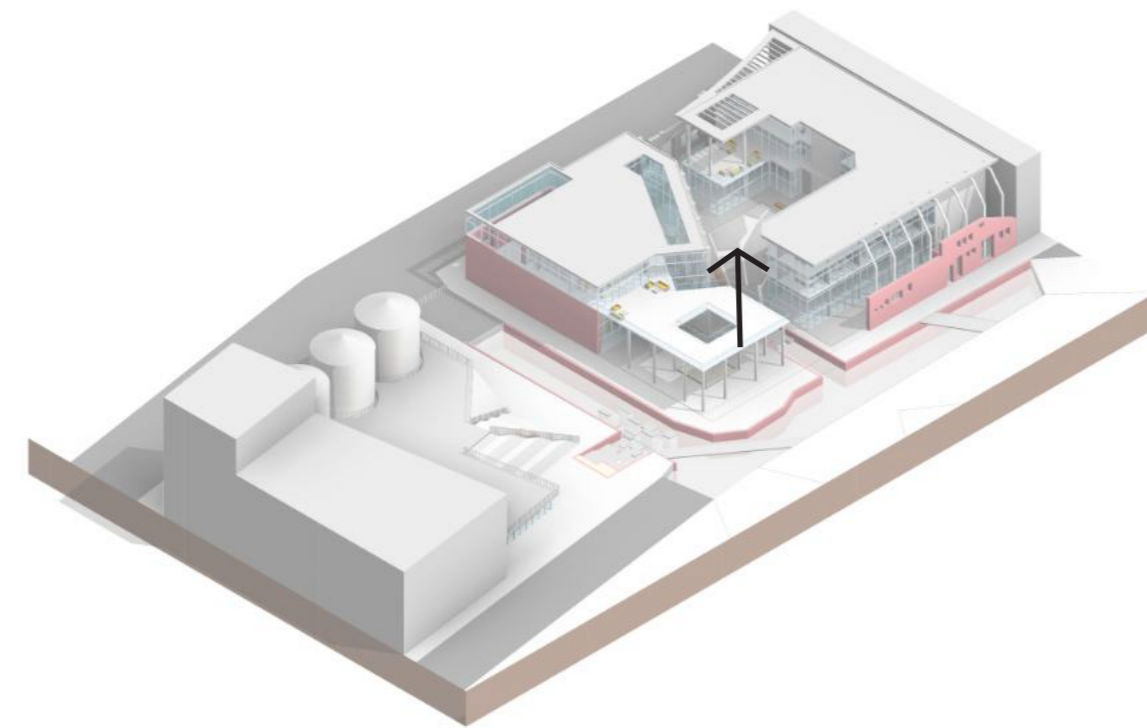
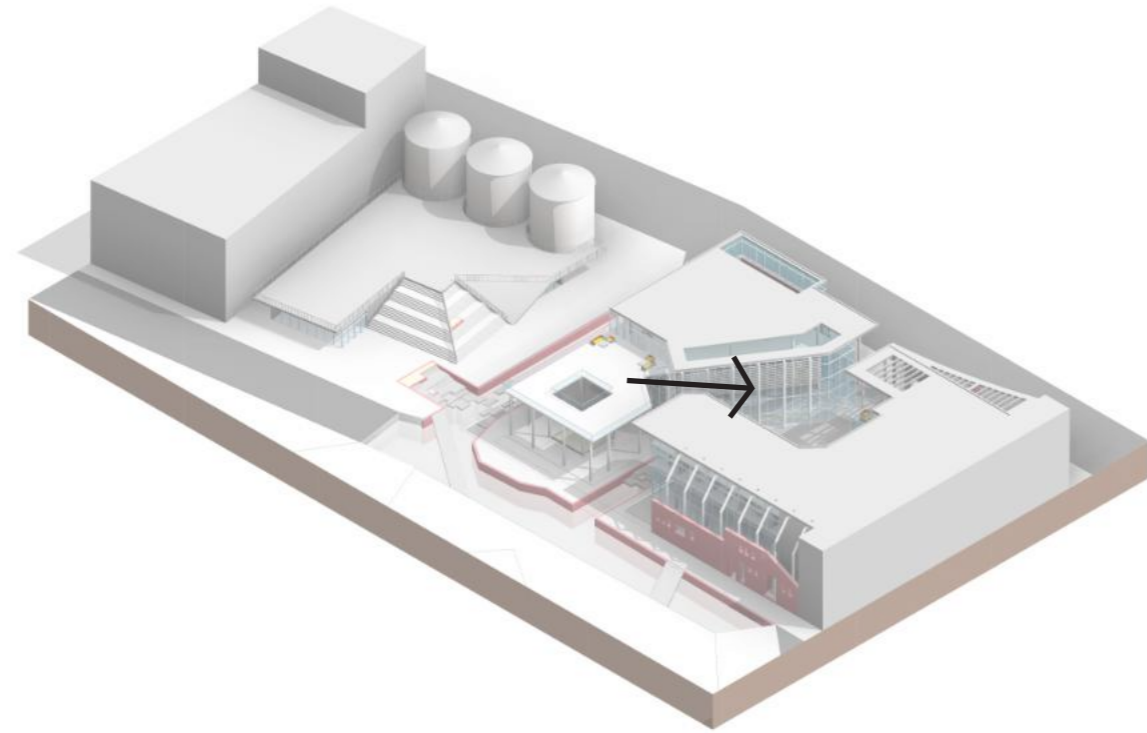
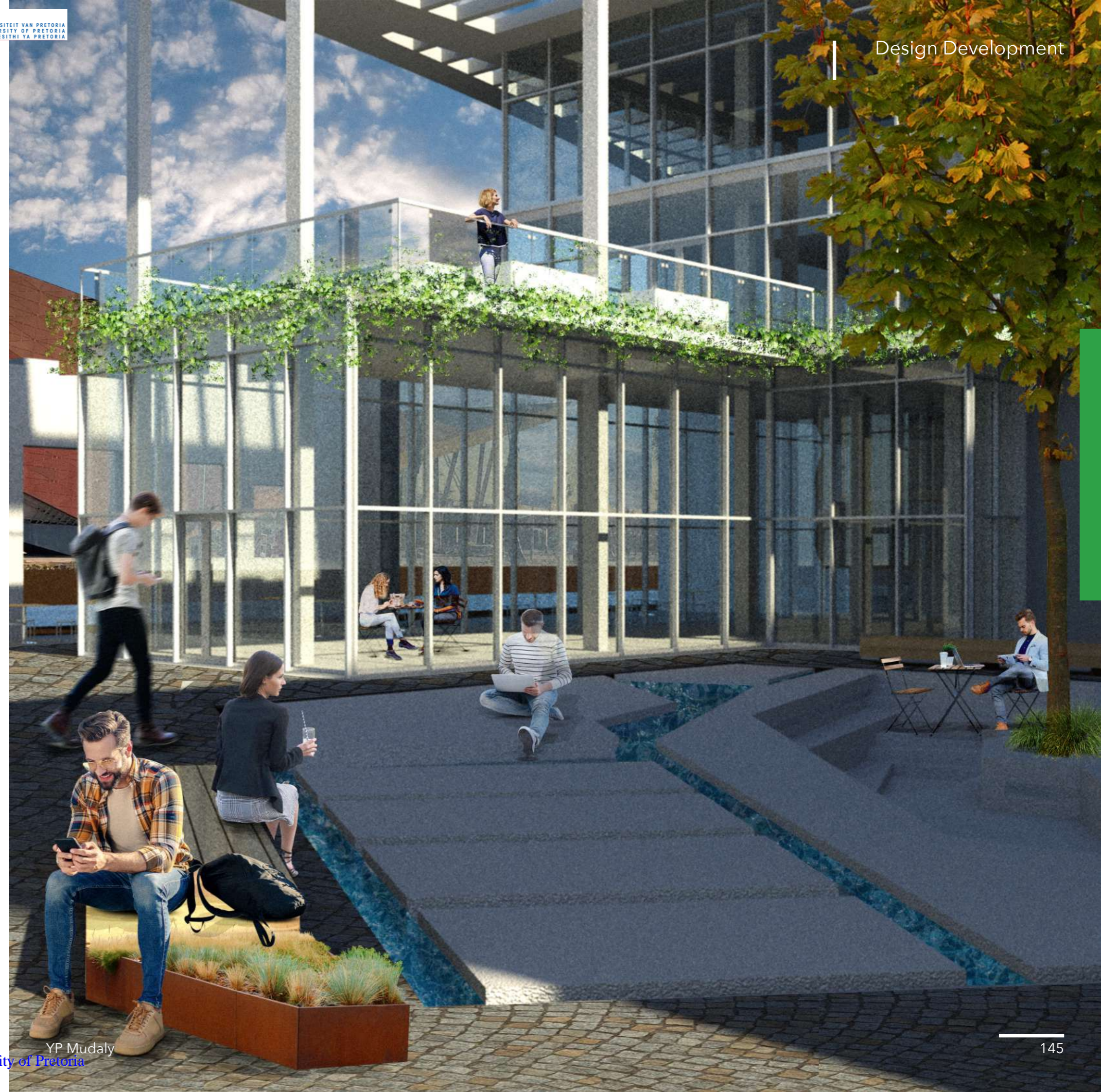


Fig. ci. 3D Diagram of building for perspective (Author 2021)

Fig. cii. Perspective 4 (Author 2021)



7.17. Perspective 5

Located on the main threshold of Mahatma Gandhi road, the entrance of the space dictates the flow of activity towards the market space as well as the central courtyard area of the precinct. As a space of respite, it is a welcome addition to use the existing facades as a familiar feature to accentuate the rich history and presence of the space.

This continuum of facade represents the everchanging presence of a new modernisation of port development in the new Durban Point Waterfront.

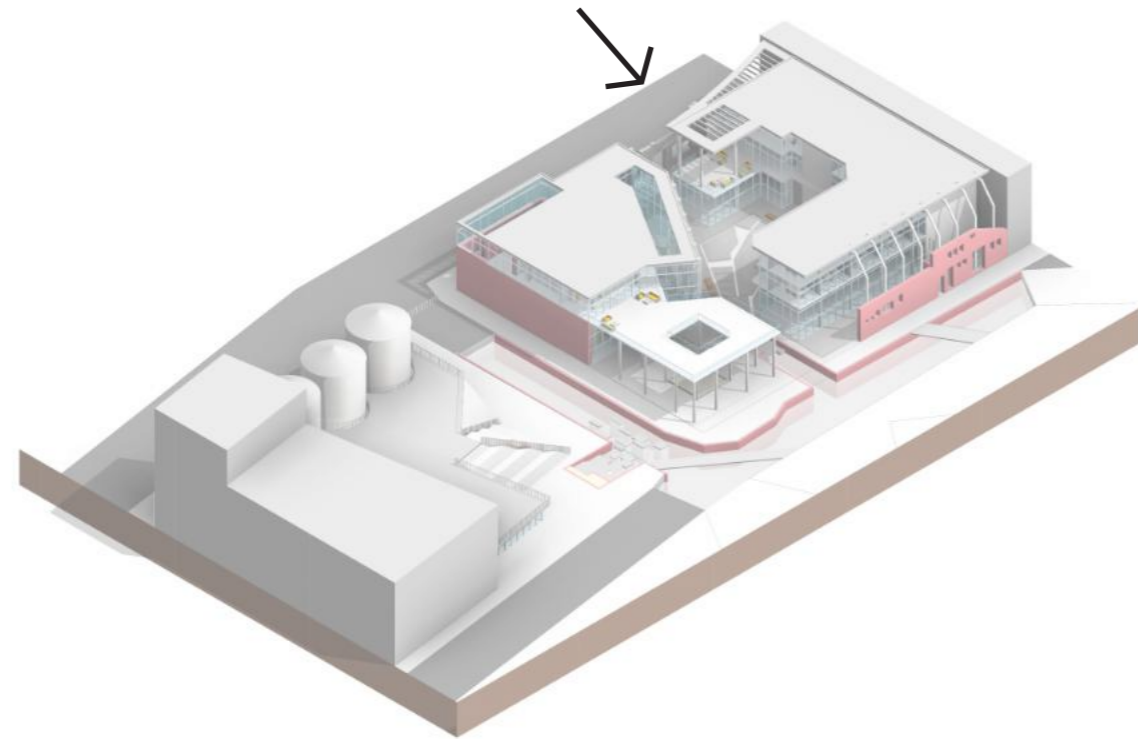
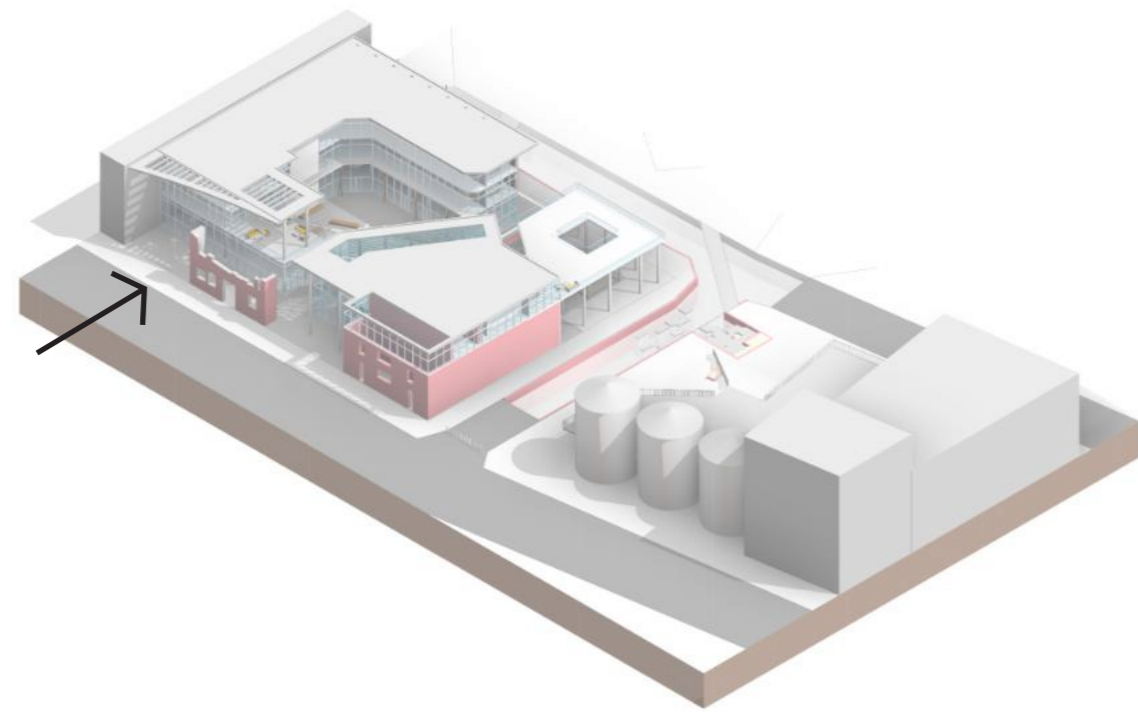


Fig. ciii. 3D Diagram of building for perspective (Author 2021)

Fig. civ. Perspective 5 (Author 2021)



7.18. Perspective 6

The fruit terminal exists on the fringe of T Jetty as well as near the Victoria Embankment. This created the opportunity to impliment a new produce market into the lower portion of the public space and bring in a new local identity of FMCG in the area.

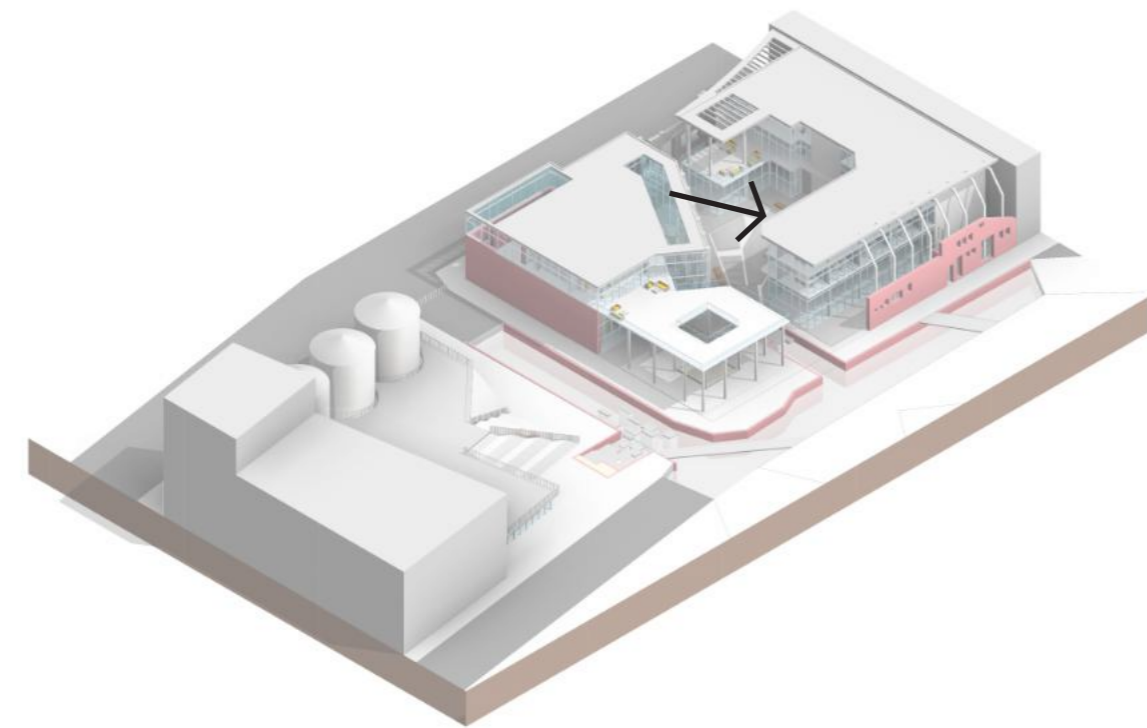
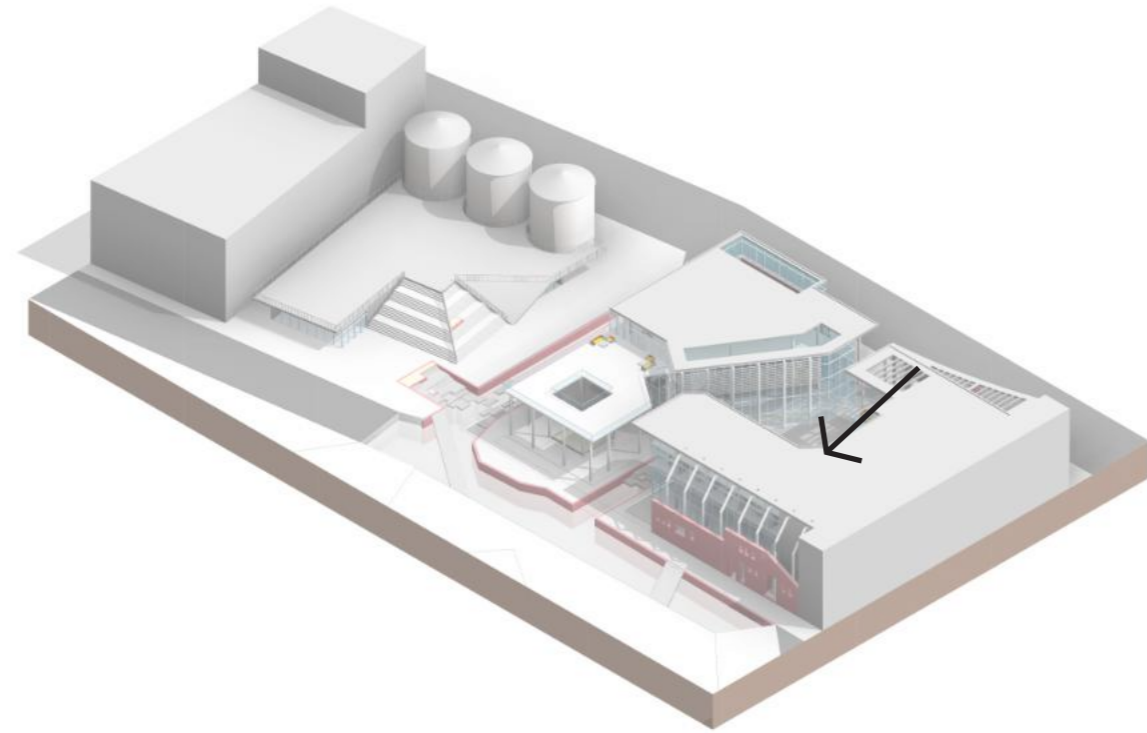


Fig. cv. 3D Diagram of building for perspective (Author 2021)

Fig. cvi. Perspective 4 (Author 2021)



7.19. Perspective 7

Main View from TNPA office balcony.

Views towards the new cruise terminal are a welcome addition to the ever changing space, locally intertwining synergies into one visible assembly.

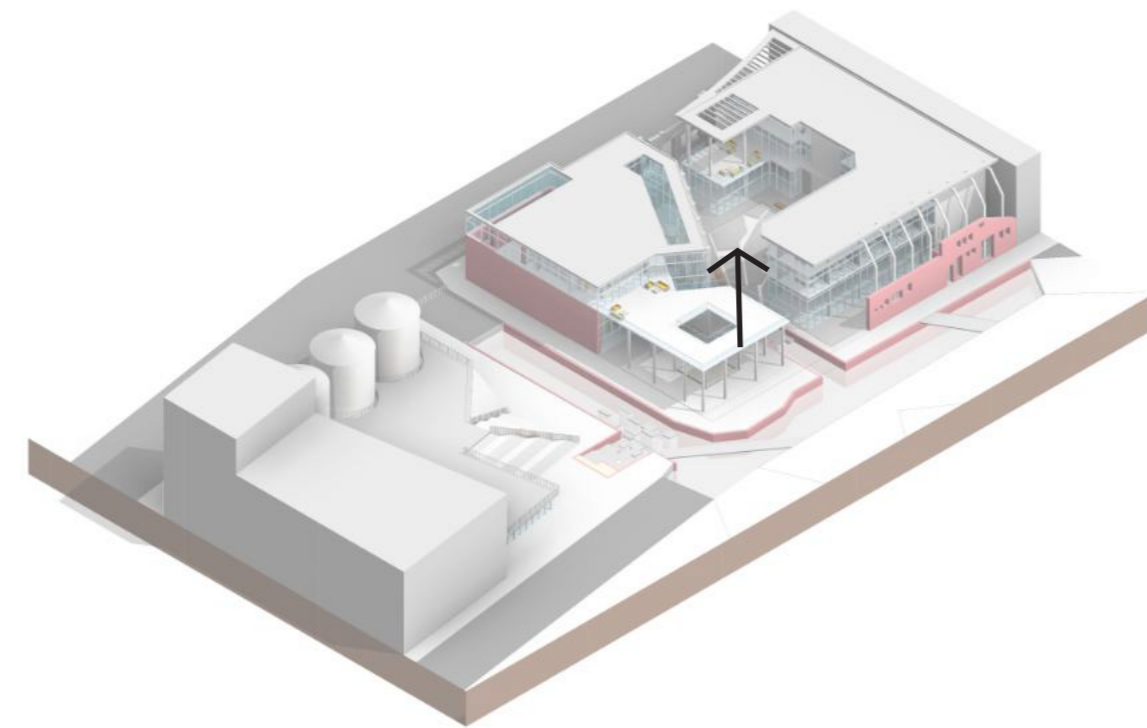
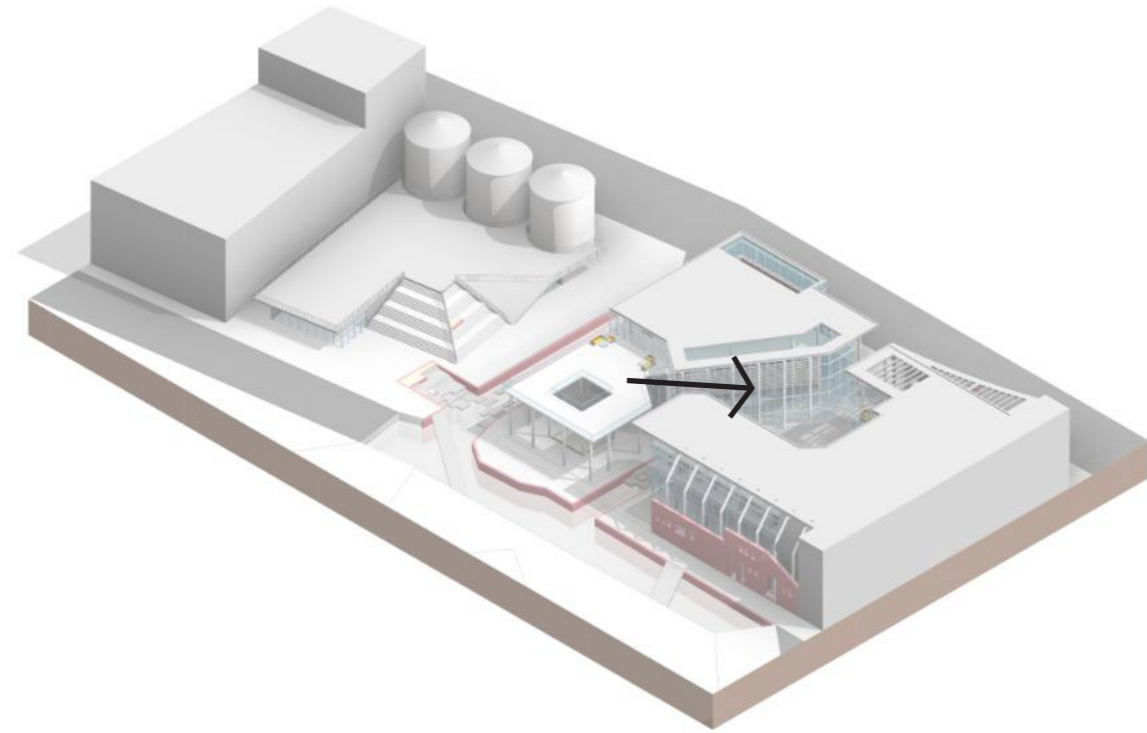


Fig. cvii. 3D Diagram of building for perspective (Author 2021)

Fig. cviii. Perspective 4 (Author 2021)



7.20. Perspective 8

The TNPA office lobby with views of the new cruise terminal at Durban Point create a welcome and healthy space for users, with natural lighting and an abundance of open space towards the central courtyard.

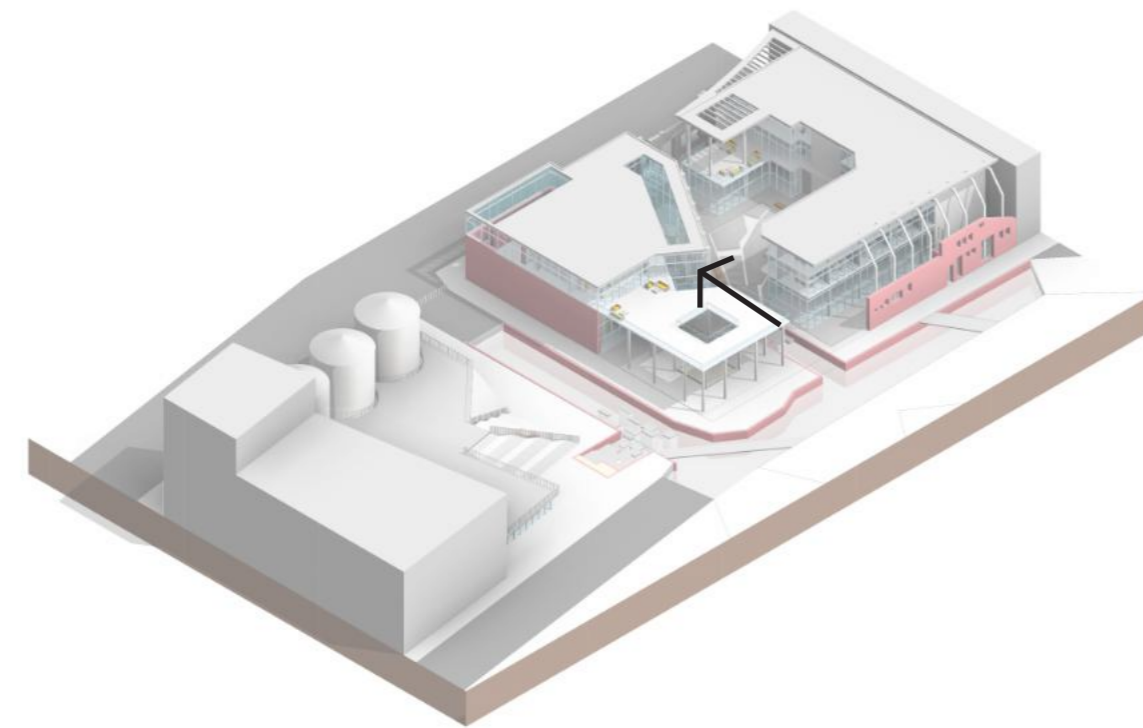
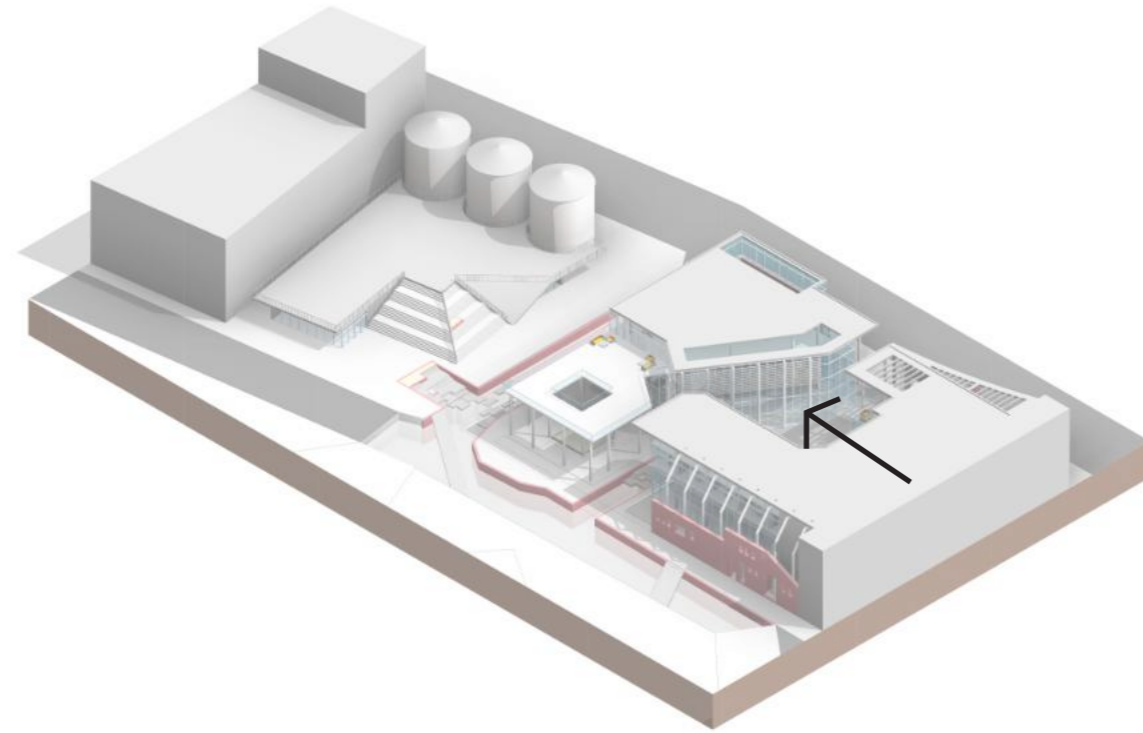


Fig. cix. 3D Diagram of building for perspective (Author 2021)

Fig. cx. Perspective 4 (Author 2021)



7.21. Perspective 9

The new canals act as a space of recreation, offering an abundance of water activities which exist primarily near the uShaka land plot. The idea here was to pull the canal towards the new precinct whilst accommodating for the recreational water edge which is used by actors of the site.

This new canal apart from collecting rainwater then accommodates more than just functional aspects of the site but also creates an abundant threshold to mix up the circulation of space. There are link bridges across the canal as well as steps which allow for rest and boarding of paddle boards or canoes.

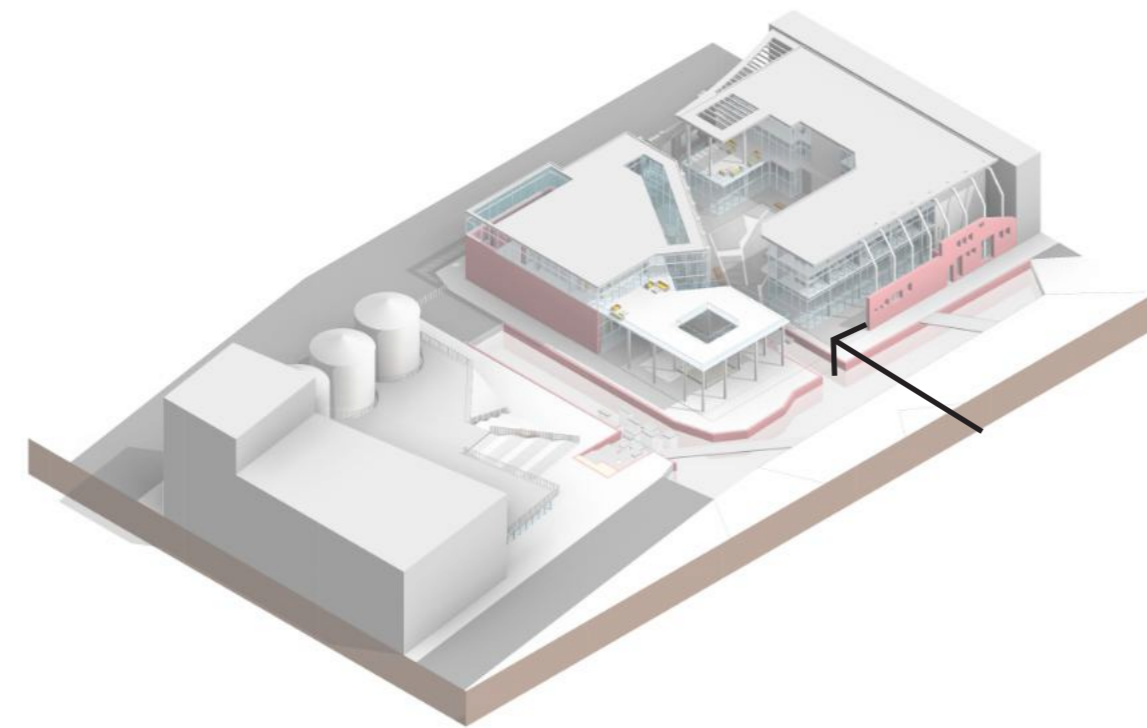
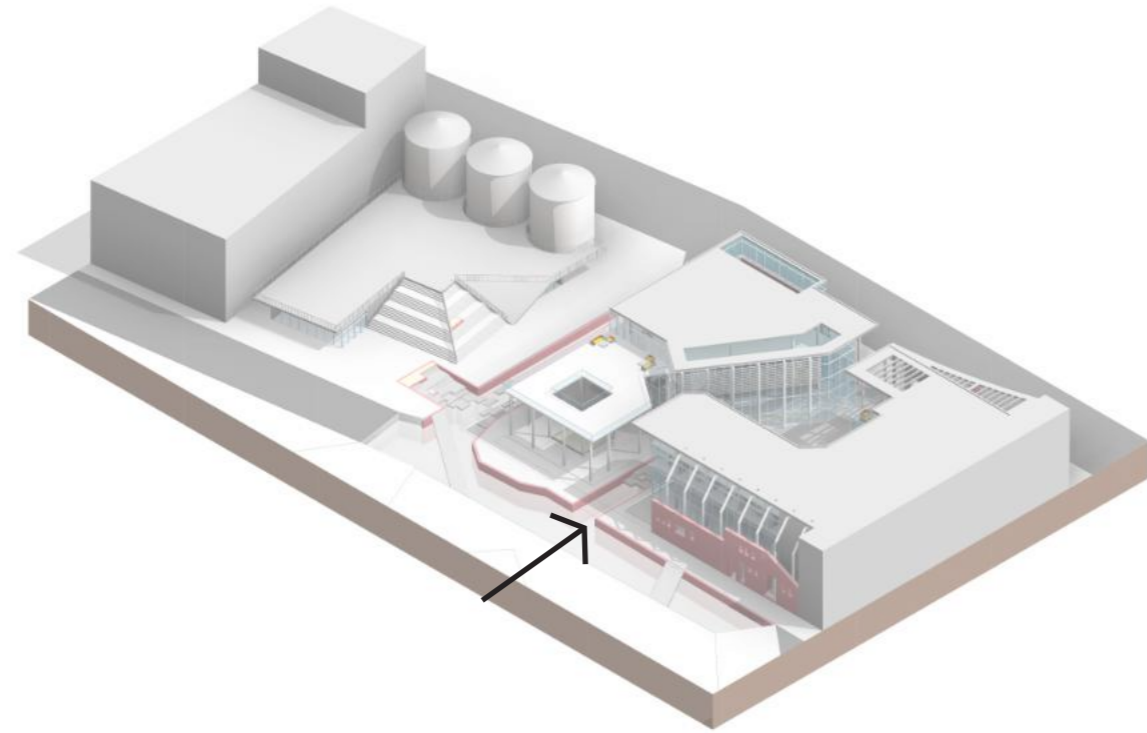


Fig. cxii. 3D Diagram of building for perspective (Author 2021)

Fig. cxiii. Perspective 4 (Author 2021)



7.22. Perspective 10

As the island view terminal is demolished, the new silos presented an opportunity to add a new facade element to the site but required function. As there was an existing beer manufacturer on site, the expansion of the programme created a separate building which became landscaped in the precinct on the Eastern side of the site.

The beer house has a terraced roof which allows for actors to have beautiful views of the precinct.

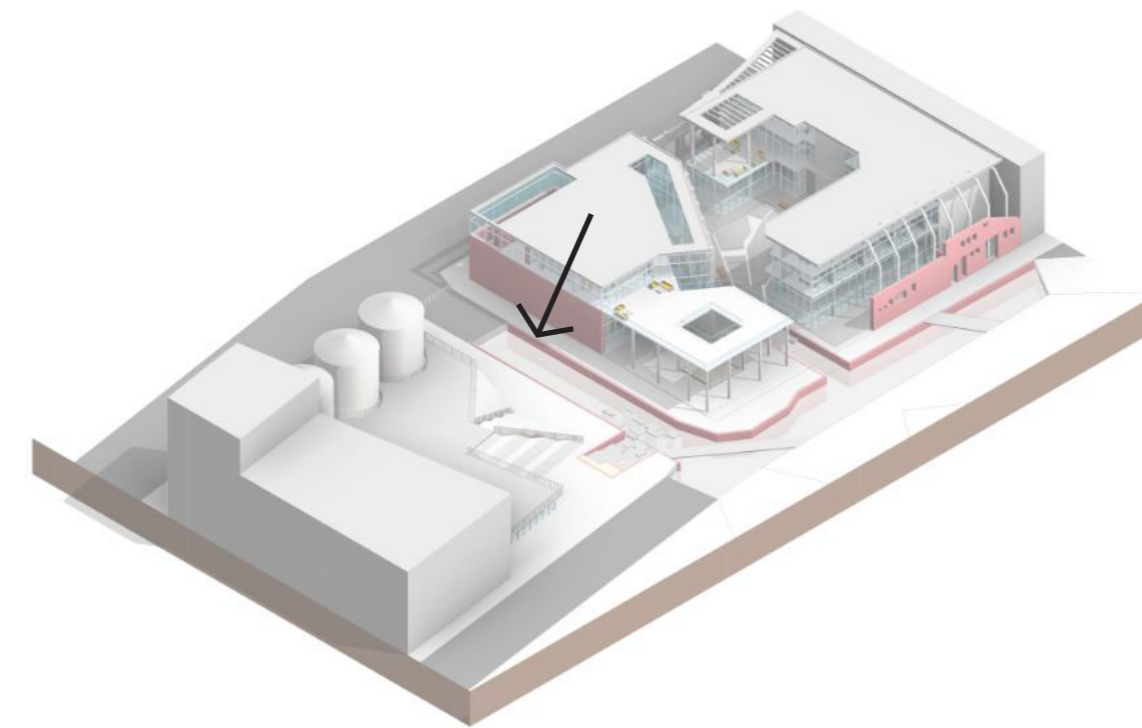
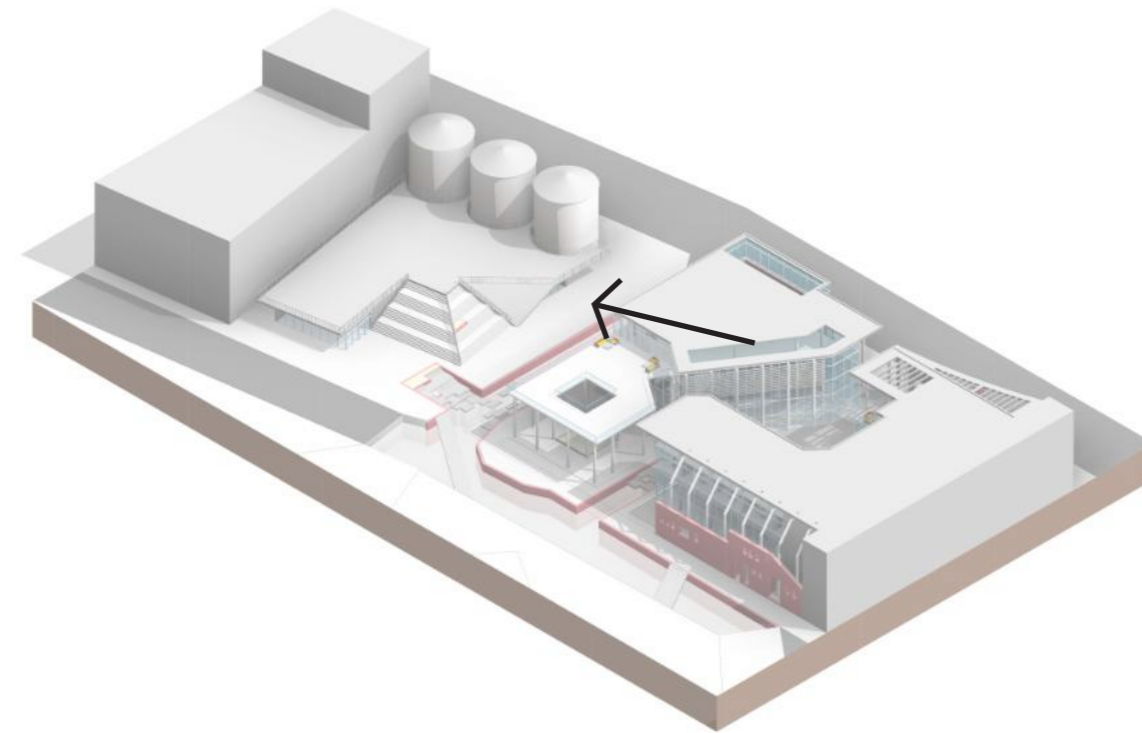


Fig. cxiii. 3D Diagram of building for perspective (Author 2021)

Fig. cxiv. Perspective 4 (Author 2021)



7.20. Final Model

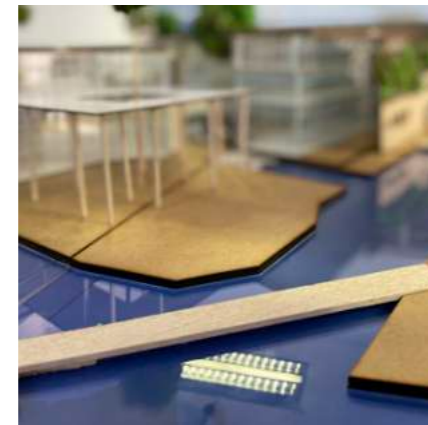
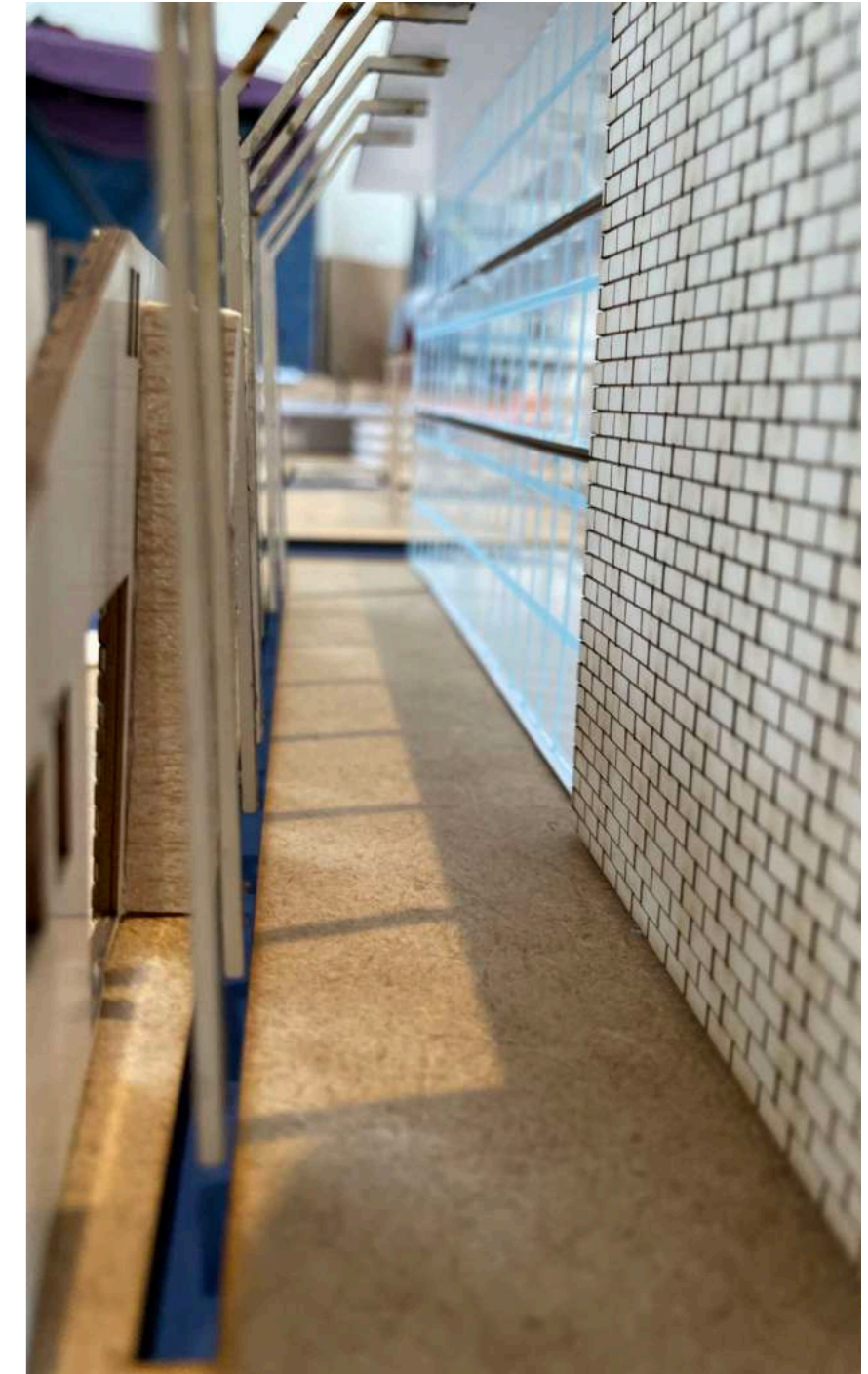
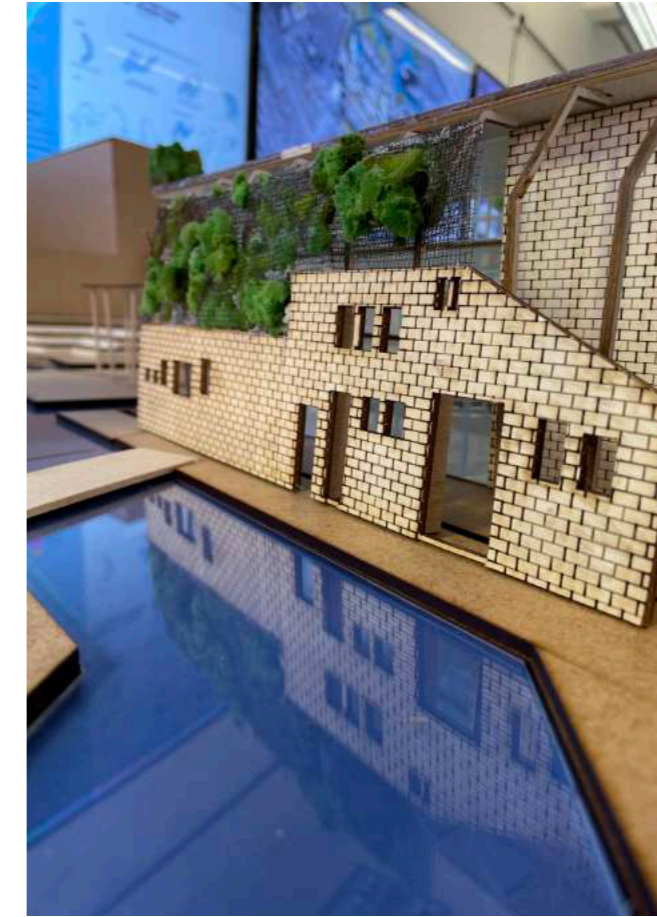
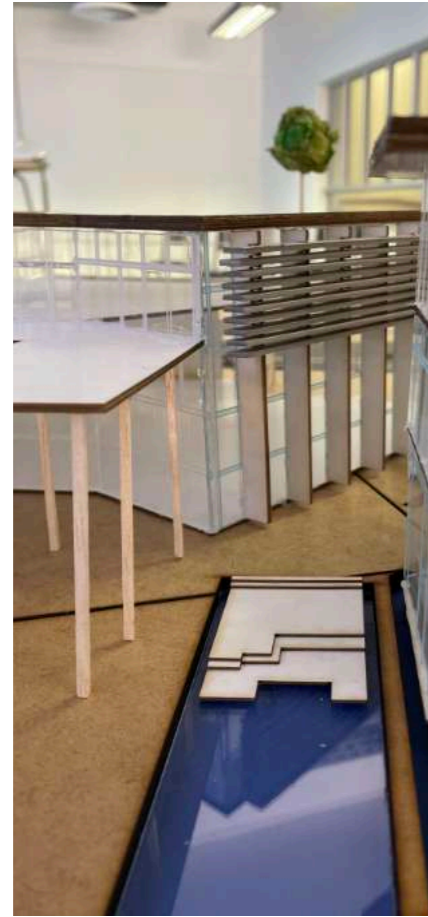


Fig. cvx. Images of final model and crit space (Author 2021)

“There are no systems in place that I am aware of. I am not sure that the “ design review panel” even exists anymore. Thus the architectural language is at risk. From a sustainability point- I echo the same sentiment. Perhaps you should talk to a set of Port principles around sustainability etc that this precinct can subscribe to.” (Allopi 2021)