

## [ *PORTFOLIO* ]

Commercial Mixed-Use Scheme.

Travel Epicentre.

Reconnecting Local Travel Routes Via

Re-designed Interchange.

Championing the Bygone Luxury Era.

*UP888421*



CONTENTS

**NARRATIVE.** *Project Context* ..... 3 , 4

**MASTERPLAN.** *Moving Forward* ..... 5 , 6

**EXISTING SITE.** *Portsmouth Harbour* ..... 7 , 8 , 9 , 10

**TRAVEL.** *A Brief History* ..... 11 , 12

**BRIEF.***Travel Interchange* ..... 13 , 14

**CONCEPT.** *Conceptual Design* ..... 15 , 16

*Precedent* ..... 17 , 18 , 19 , 20

**DESIGN AIM & STRATEGY.** *What the Project will do & How* ..... 21 , 22

*Precedent* ..... 23 , 24

**PROGRAMME.** *Schedule of Accomodation* ..... 25 , 26

*Precedent* ..... 27 , 28 , 29 , 30

**PROPOSAL.** *Proposed Site Plan* ..... 31 , 32

*Proposed Ground Plan* ..... 33 , 34

*Proposed Level 01* ..... 35 , 36

*Proposed Level 02* ..... 37 , 38

*Northern Elevation* ..... 39 , 40

*Eastern Elevation* ..... 41 , 42

*Western Elevation* ..... 43 , 44

*Sections*..... 45 , 46

**CLIENT.** *User, Client & Stakeholders* ..... 47 , 48

**SUSTAINABILITY.** *Environmental Strategy* ..... 49 , 50

**ACCESS.** *Part M Building Regulations*..... 51 , 52

**FIRE SAFETY.** *Part B Building Regulations* ..... 53 , 54

**CONSTRUCTION.** *Structural Strategy* ..... 55 , 56

*Precedents* ..... 57 , 58

**DETAILS.** *Proposed Details*..... 59 , 60

**VISUAL.** *Digital Renderings* ..... 61 , 62 , 63 , 64 , 65 , 66

**FINAL THOUGHTS.** *Summary* ..... 67 , 68

*LIST OF FIGURES* ..... 69 , 70 , 71 , 73





## “The ghost of connection ”

In 100 years, after the turmoil of rising sea levels, natural disasters, and an ever-growing population, the new island city of Portsmouth is born. This new city, smaller and more densely populated, faces daily challenges due to its limited resources. Portsmouth's inhabitants have adapted to a life of constant resource management and community collaboration. Advanced technologies and sustainable practices are integral to their survival. The residents, resilient and resourceful, have formed tight-knit communities that work together to navigate the difficulties of their environment. Despite the hardships, Portsmouth thrives on innovation and a strong sense of unity. The city serves as a testament to human ingenuity and adaptability in the face of adversity. Each day is a challenge, but the people of Portsmouth face it with determination and hope, continually striving to create a sustainable and harmonious future.

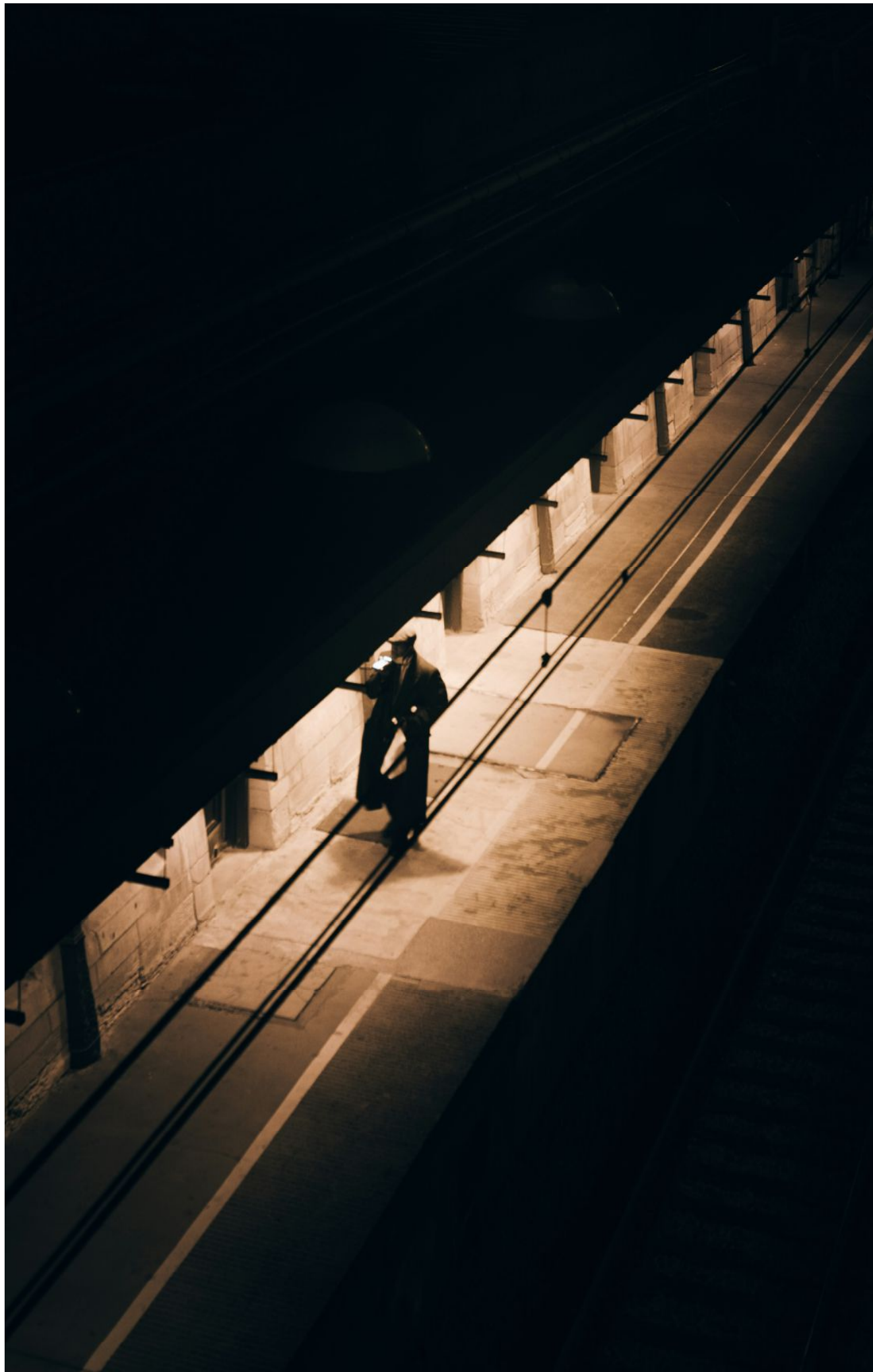


Fig 1.

Image representing the residual remnants of travel from the existing Portsmouth city. A lone attendant walking along a desolate station platform.

The destruction of sections of the original city of Portsmouth has severed former travel routes, rendering them obsolete in this new era. Railway stations stand deserted, with solitary attendants lingering in the shadows. Graffiti and crime have become pervasive in these once bustling areas. Employment has dwindled, leaving a substantial portion of the population unemployed. Only individuals of significant wealth or influence possess the means to journey from the city to the mainland with few private aircrafts.

The restoration of connectivity between the city of Portsmouth and the mainland is imperative for the survival and prosperity of both. The severed linkages have not only isolated communities and hindered economic activities but also impeded access to essential resources and services. Urgent intervention is needed to rebuild and reinforce transportation infrastructure, ensuring reliable pathways for the flow of goods, services, and people. Restoring this vital connection is not merely a matter of convenience; it is a fundamental step towards revitalizing the city's economy, fostering social cohesion, and safeguarding its future resilience in the face of adversity. A newly dystopian city.

Fig 2.

Image representing a bleak reality of over crowdedness, and limited resources threatened by the future.





The proposal responds to a previously determined greater city-wide scale strategy. This strategy is to be implemented to resolve the edges of the new island city of Portsmouth in approximately 100 years time. This aims to battle both rising sea-levels and natural weather catastrophe's. Certain areas of the existing city are to be saved in order to aid repurposed areas, and to home the increasing number of city residents. The strategies outlined involve using berms (man-made earth mounds) and city walls, strategically placed to allow flooding of particular areas of the city that are to be made redundant in the future. This is only made possible with the proposed project drivers that will create spaces with better efficiency. These will include regenerative structures, mixed-use developments and areas of protection and research for future strategy.

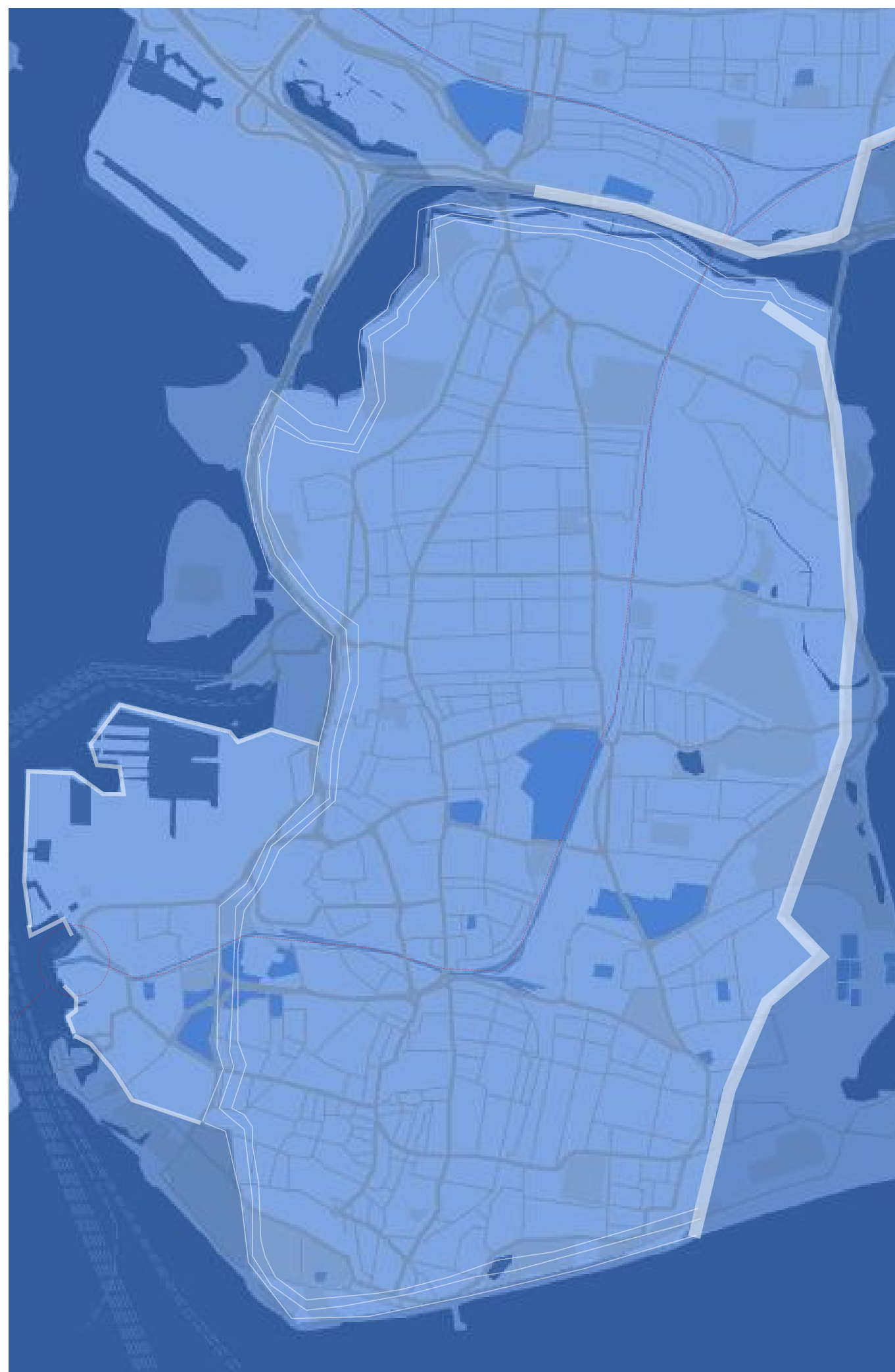


Fig 3.

An abstract image portraying the 'New Edges of Portsmouth' Altered to accomodate a transport hub. Saving and protecting the existing Portsmouth Harbour for possible future development.

*“ Redifying the epicentre of travel. ”*

Since the publishing of the macro-scale masterplan strategy, ammendments have been made to better accommodate the proposals made in the following proposed scheme.

This particular project aims both to reinstate modes of transport, and encourage future modes by creating a set of architectures for the future city of Portsmouth.

The site has been relocated to the existing Portsmouth Harbour, compared to that of the previous chosen site of Boathouse 4 in the Historic Dockyard. Upon further reflection and development, it was clear that Portsmouth Harbour displayed further advantageous features such as existing established access routes etc, which outweigh the Historic Dockyard.

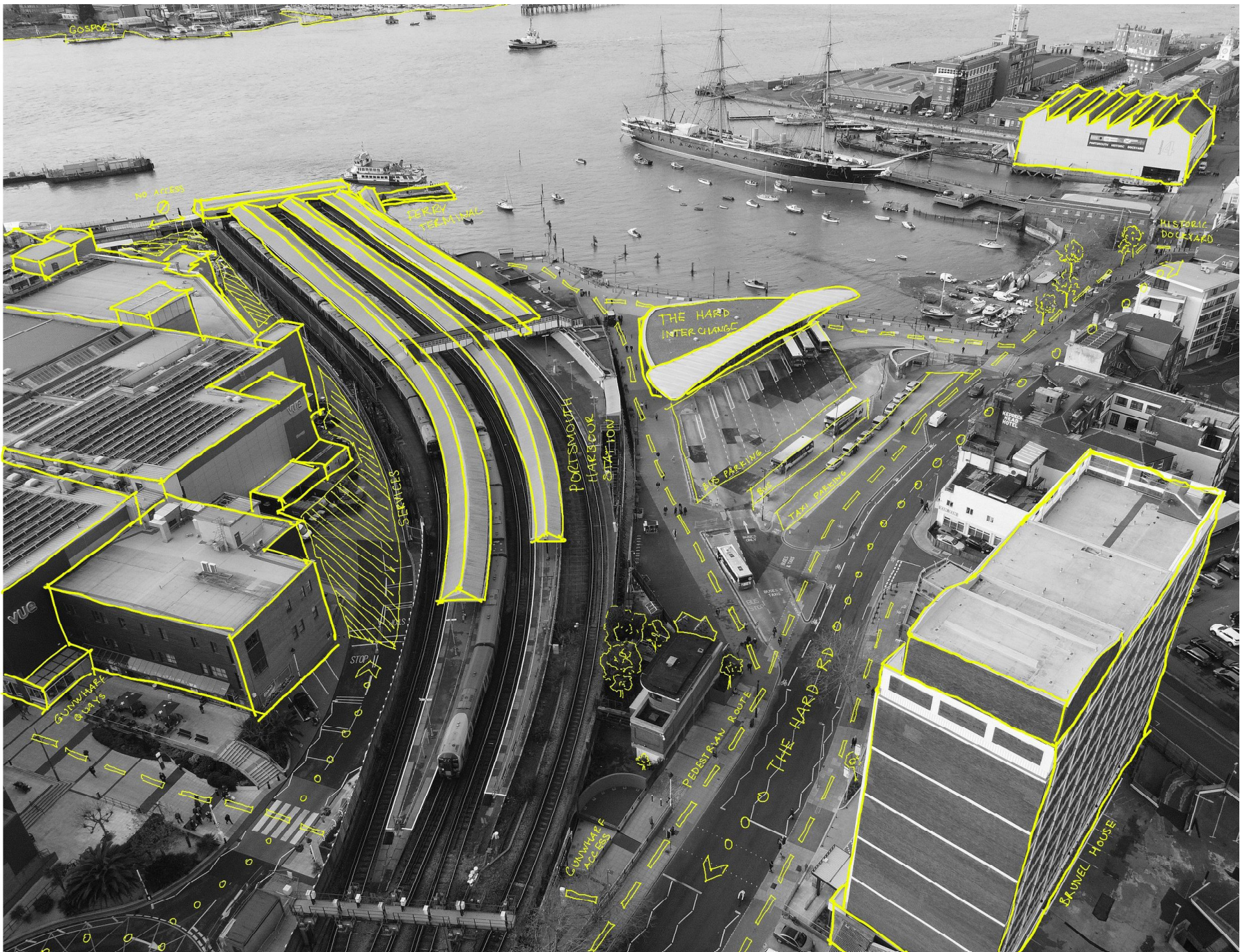
This in turn left the site to act as part of preservation which better enhances the greater strategy of the city. In addition, modes of transport have been revised in accordance to the scale of proposed implemented travel. By reducing the number of transport modes, more attention to detail and quality can be assured for the remaining methods.

Fig 4.

Image of Portsmouth Harbour  
A new specified site of interest located amongst the group-strategy masterplan document.







“Mouth of the Harbour = access to the Solent ”

The existing Hard Interchange, lies nestled between the commercial space of Gunwharf Quays and the vast Historic Dockyard - both being a few minutes walk away. User's have access to a range of ferries, trains and vehicles on the immediate site. The site sits offset to The Hard road and has both vehicular and pedestrian access. Busses and taxis (cars and minivans) circulate via one-way drop-off/pick-up areas. Pedestrian walkways disperse visitors away toward the The Hard road away from site, or in towards Portsmouth Harbour Station and Portsmouth Harbour Ferry Terminal.

The Harbour sits on a combination of timber and concrete decking, with concrete columns creating a foundation for the buildings and infrastructure to be built upon. Below lies a mixture of sand, clay and silt., with sea-water gradually flowing in and out with the tidal current.

Brunel House sits parallel to Portsmouth Harbour, across the road next to a pedestrian walkway. The building is 46 metres high, and the neighbouring HMS Warrior ship is 59.5 metres high. The tallest structure being the iconic Spinnaker Tower sat next to Gunwharf Quays and Portsmouth Harbour Station, which sits at a staggering 180 metres tall. Therefore the current site of The Hard struggles to compete amongst the surrounding cityscape.

Fig 5.

An axonometric view of Portsmouth Harbour, including: The Hard Interchange, Portsmouth Harbour Station, Gunwharf Quays, The Historic Dockyard, Brunel House and the rest of the surrounding location.

“Annual footfall of 13 million people”

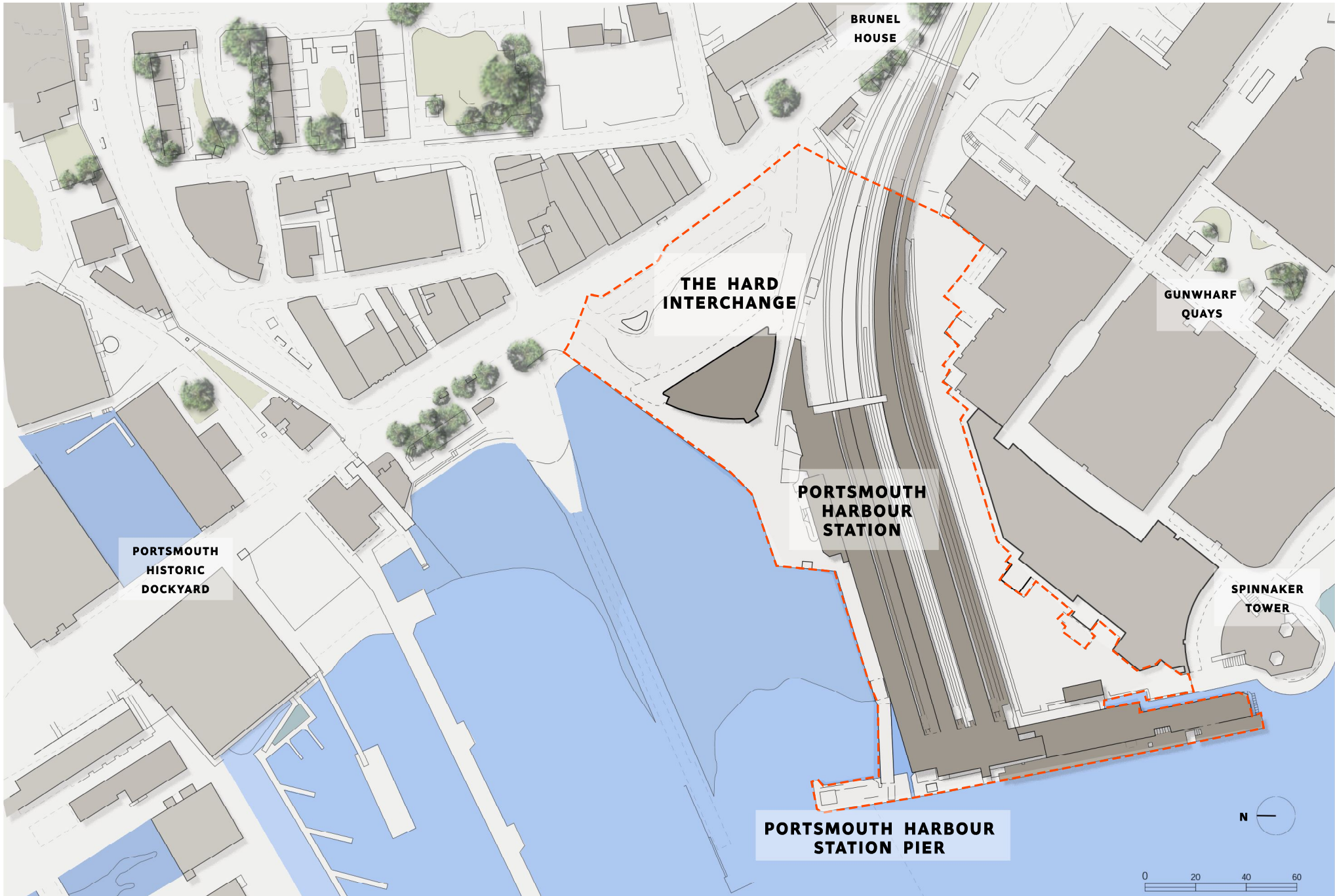


Fig 6.

Existing Site Plan\*. Showing relationship to and proximity with the waters edge and mainland of Portsmouth. The area of interest includes the rear of Gunwharf Quays, Portsmouth Harbour Station, The Hard Interchange and the Portsmouth Harbour Ferry Terminal

Portsmouth Harbour has a rich transport history making it a well-suited location as a travel epicentre for the city of Portsmouth. The previously established access routes and proximity between the edge of the water, Solent and mainland creates the opportunity for a group of structures and an architecture to move city patrons in, out and around Portsmouth. Distance between each terminal allows for users to efficiently jump between modes, and ultimately travelling a further distance.

Other than modes of transport, the site feels somewhat disconnected from the rest of the island city, with a range of residential and commercial structures dispersed around it. Greenery is minimal, with few tree's scattered along The Hard Road, with little to no greenery on the immediate site of Portsmouth Harbour itself.

Taller surrounding structures have their own identities, whereas the Harbour has little sense of place, other than that of sitting between gunwharf Quays and the Dockyard. A sense of grandeur is lost from the scale of the current buildings.

Each structure strictly homes it's own function and use. Various semi-small waiting rooms occupy the site. These spaces offer little to the user other than short-waiting areas with scarce facilities.

The foundations and structure of Portsmouth Harbour is some-what 'run down' and 'shabby'. Currently taking the weight, tension and stress of the various terminals. These would need to be updated or replaced to facilitate a larger scheme in its place.

\* Refer to Design Diary for further site information



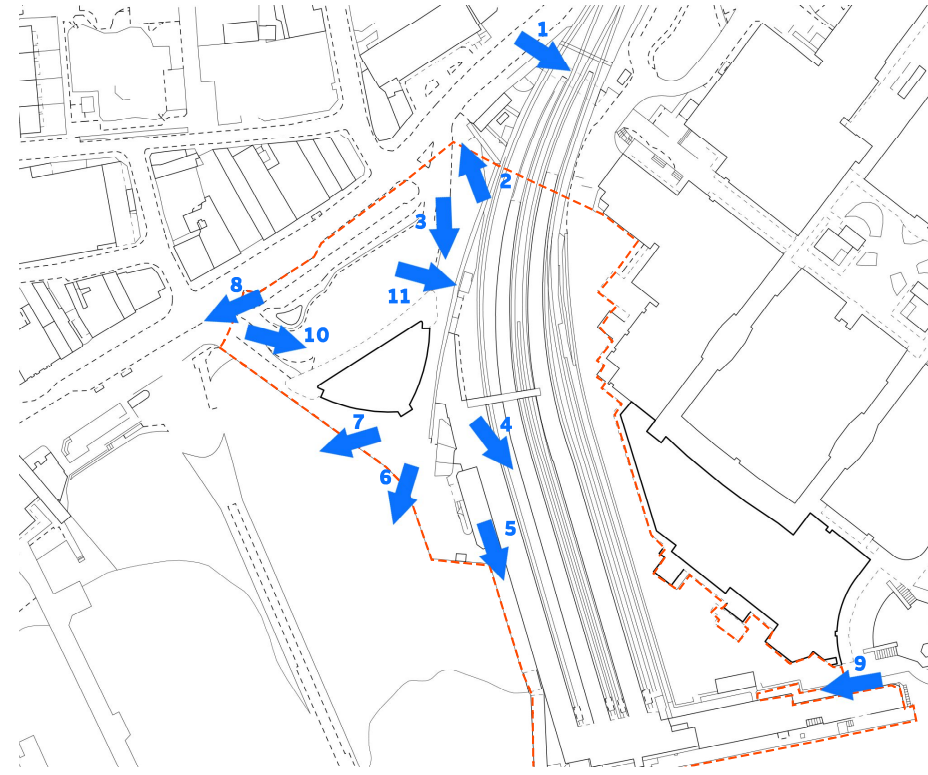


fig. 7



fig. 8

1



fig. 9

2



fig. 10

3



fig. 11

4



fig. 12

5



fig. 13

6



fig. 14

7



fig. 15

8



fig. 16

9



fig. 17

10



fig. 18

11



Fig. 19

Historic map from 1931. Showing a portion of the old city of Portsmouth before the flooding and ruin. Including the site of Portsmouth Harbour and the Dockyard.

Much of Portsea and the surrounding coastal areas in Portsmouth are built on top of pier structures. Many of these can still be seen today. Some, such as the Royal Albert Pier, cannot due to demolition. This particular pier ran through the site of the current Portsmouth Harbour Station. At the time Portsmouth Harbour Station was situated approximately 90 metres north to todays location. Royal Albert Pier was built in 1846, used mainly as a landing place place by the Gosport ferries and other vessels. The new Portsmouth Harbour Station was built in 1876. Other demolished railway stations include East Southsea Railway Station, which was formally closed in 1914. Portsmouth was not always limited to pedestrian, rail, ferry and vehicular movement; Portsmouth Airport situated on the Eastern side of the existing Island officially closed in 1937 after multiple crashes.



“The ghost of connection”



Fig. 20

1860's historic map representing Portsmouth Harbour. This shows changes to the site between the late 1800s and early 1900s.

Fig. 21

A picture of the dockyard railway line, looking toward Gosport and part of Portsmouth Dockyard.

Fig. 22

A picture of Portsmouth Harbour Station probably early 1900s.





“Providing a re-considered multi-modal transport interchange for the new island city of Portsmouth”

A Reconsidered Brief

“To consider the context of the new city of Portsmouth, as a response to a time of disaster from flooding and progressive damaging weathers. To consider how the design may aid against this by providing city residents and visitors a place of respite in between the act of journeying. Creating a place of reflection and where time seems still in a context of great hardship and struggle. A eutopian response by its very nature. To harbour movement throughout the city in response to the existing and past connections with the surrounding locations. To reimagine a center of travel with a new architecture that should act as a generator for its site, with complex buildings that are able to evolve and will anticipate changes and can reconfigure themselves in order to adapt and survive  
- not dissimilar to the residents themselves...’

Project Aims

- \* Creating an epicentre of travel
- \* Providing a seamless and cohesive transport interchange, that is multi-modal at its core
- \* Bringing regenerative buildings to the new island city of Portsmouth
- \* To renovate and rejuvenate the existing site of The Hard
- \* To reconnect the city back to the Solent and extended surrounding areas
- \* To honor and respond to the travel history, and its architecture, of the existing site
- \* To respond to the ever-increasing city population, considering limited space and resources.

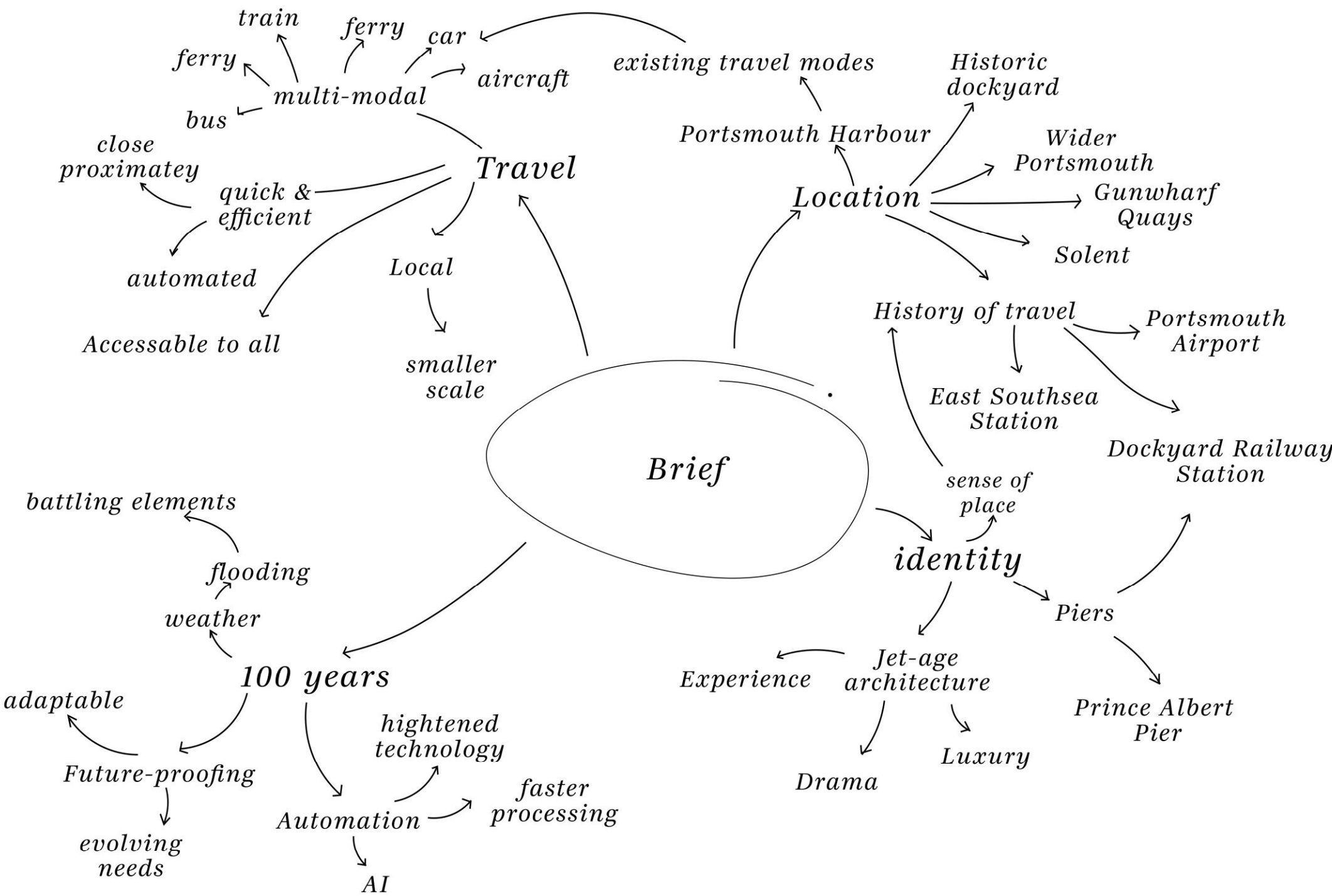
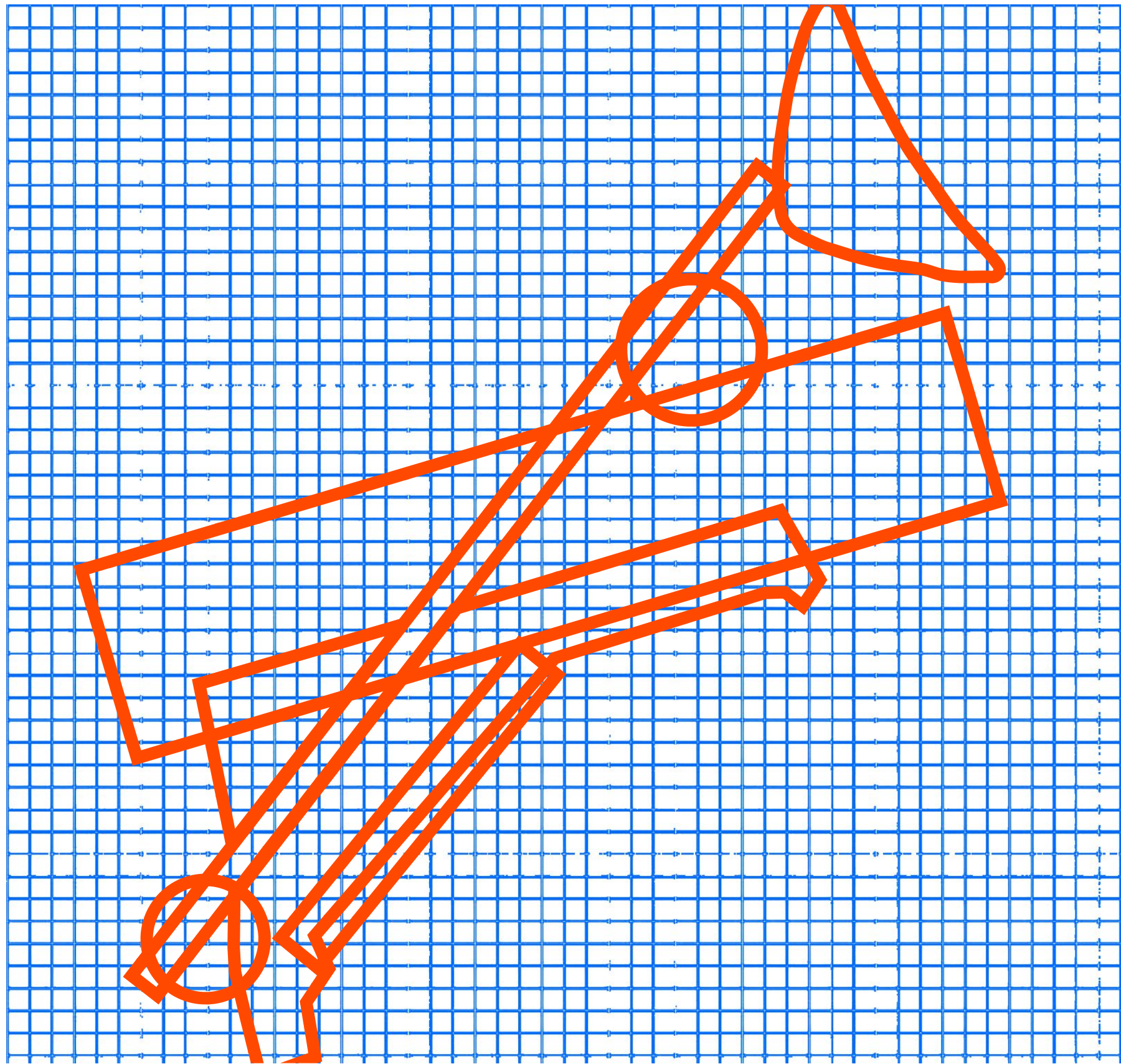


Fig. 23  
Preliminary mind map considering the needs, issues and opportunities that will ultimately drive the project brief





“An Architecture of Reinstated piers ”

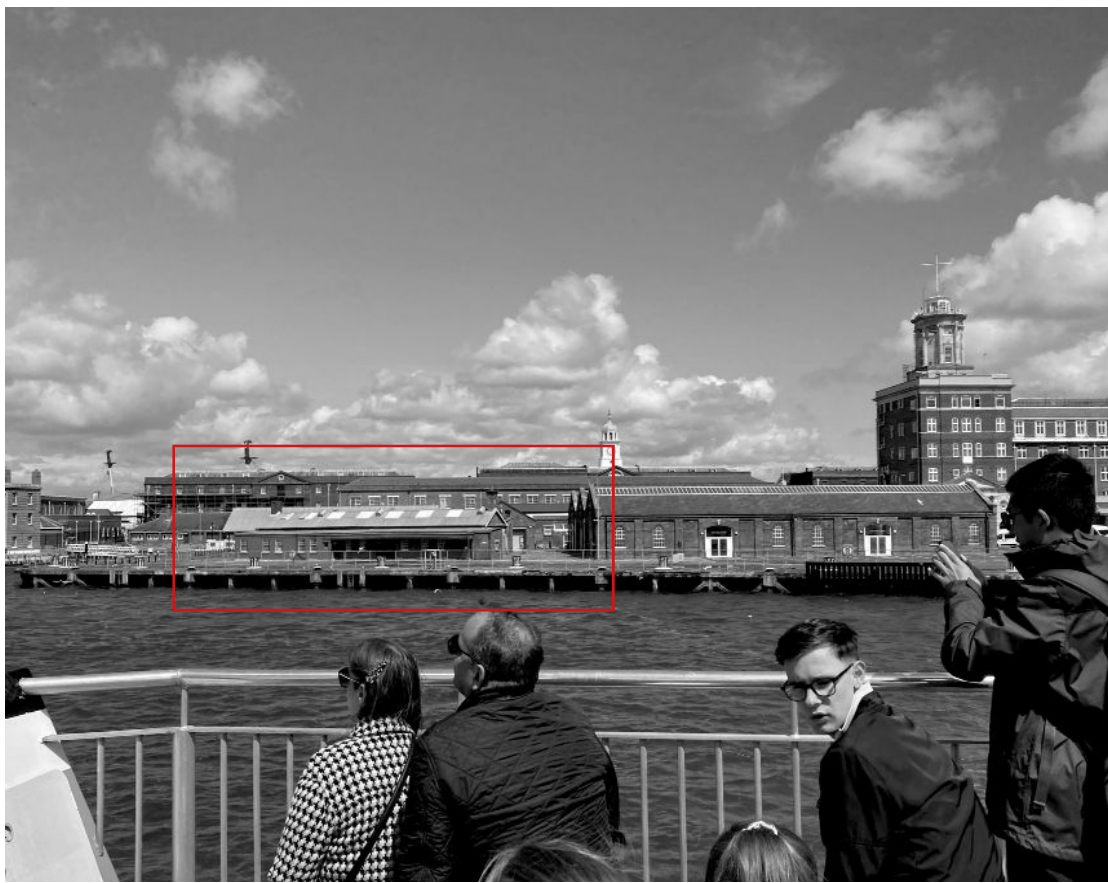
The concept of project 'PERA' is to bring city users in, out and around of the city by local means of travel. Using the ever-evolving technology of the future to create a seamless journey for all. The proposal will reinstate the escense of long-lost piers from the surrounding site. In particular, Prince Albert pier that once stood in place of the current Portsmouth Harbour Station.

Circulation is a key element, with user movement visable throughout the scheme. The scheme layers the idea of piers to create a new scheme that will act as a place to move, rest and play. Unused areas of Portsmouth Harbour and the surrounding area will be linked via harmonius architecture and infrastructure.

With a crossover of useability in various areas, but clear use of space for each 'piece'. A Focus on the luxury of bygone jet-age era, and taking time with the process of travel. There will be a contrast between high-tech structure, and jet-age interior. 'PERA' will ultimately act as a regenerator for Portsmouth Harbour. The architecture should have a sense of 'lightness', and flexibility; Ready to evolve with the changing island.

<sup>\*</sup> Refer to Design Diary document for full design development.

Fig. 24  
Conceptual diagram representing layering of pier-like structures amongst proposed architectures.



“pier (n.)

late Old English, pere, “support of a span of a bridge,” from Medieval Latin **pera**, a word of unknown origin, perhaps from Old North French pîre “a breakwater,” from Vulgar Latin \*petricus, from Latin petra “rock” (see petrous), but OED is against this. Meaning “solid structure in a harbor, used as a landing place for vessels; mole or jetty projecting out to protect vessels from the open sea” is attested from mid-15c.

Fig. 25  
Current day photograph of remains of Portsmouth Dockyard Station at Historic Dockyard. Old station highlighted in red. Image taken from Harbour Boat Tour.

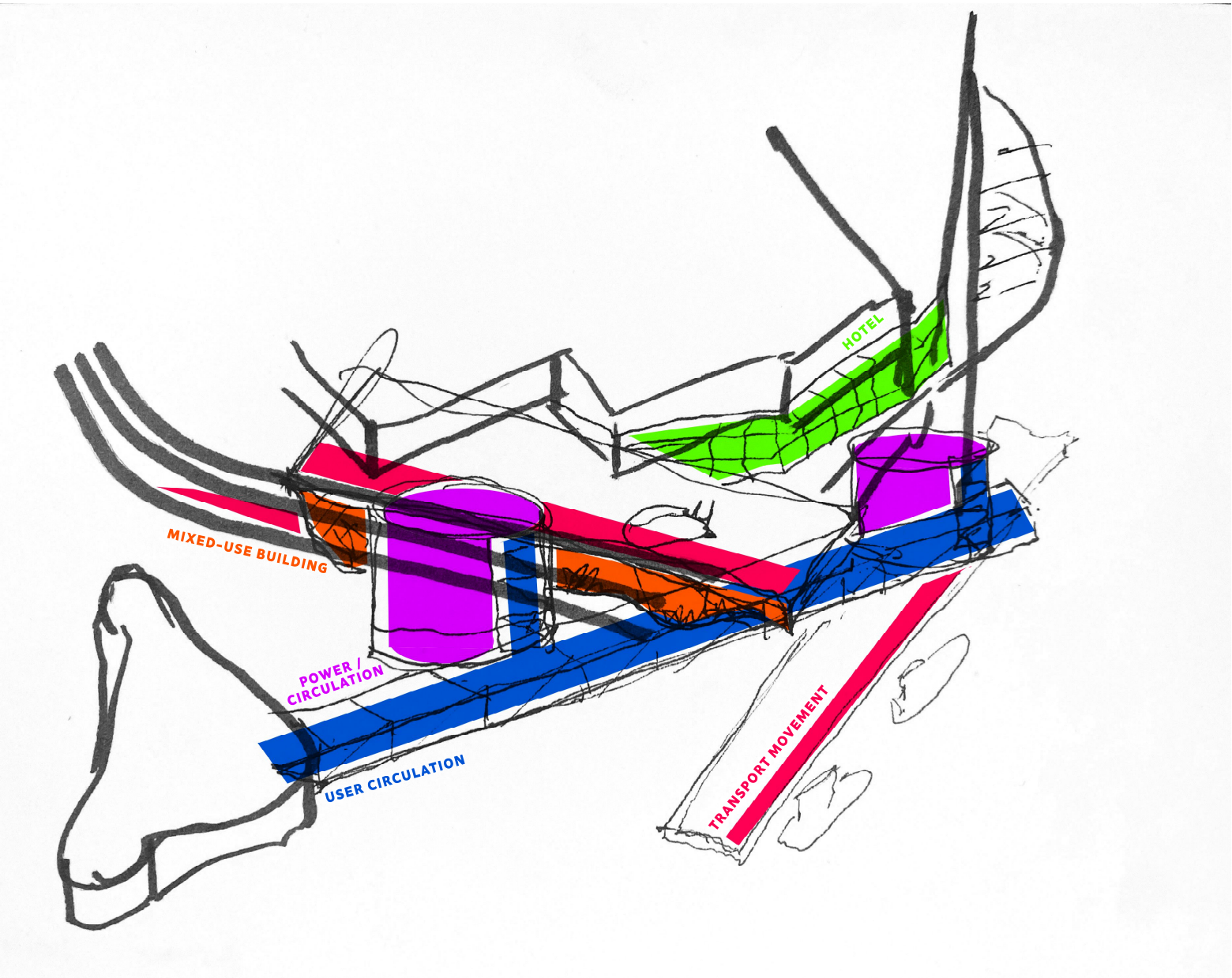


Fig. 26  
Scheme concept sketch showing overlapping of circulation routes and



# EERO SAARINEN

## - TWA Hotel & Flight Center

Based in JFK airport, New York. The original Flight Center houses the hotel's main lobby and amenities including reception, a coffee bar, a fully refurbished Sunken Lounge, state-of-the-art gym, and numerous restaurants. Set back on either side of the building are two newly built wings for the 512 guestrooms and suites. Inspired by the year 1962 (when the Flight Center originally opened) and by Saarinen and his contemporaries, the hotel blends Midcentury Modern design with the contemporary guest experience.



Fig. 27  
Image of main lobby.  
Expressing sunken floor  
space and canopies for  
circulation.  
Views looking out toward  
airport.

Fig. 28  
Image of main hallway.  
Expressing a luxury feel  
from red velvet floor  
finish.



“Grandour & splendour”

Fig. 29  
Image of airport  
employee seemingly  
using TWA for a layover  
stay.

Fig. 30  
Continuation of luxury and  
jet-age era in the flight  
waiting area.

STRATEGY: *CONTRASTING STRUCTURAL MATERIAL AND FINISHING MATERIAL*

ACTION : There is a stark contrast between the heavy use of concrete (left to be seen by the user), steel, glass and soft furnishings. This draws the eye along the horizontal access to the wings of the building.

STRATEGY: *RECREATING A THEME*

ACTION : It is clear that the scheme has been heavily influenced by the architecture of the Jet-Age. A sense of luxury and richness that would have once been seen plentifully is expressed in this instance. This is achieved by components such as sunken seat pits, luxury upholstery & an emphasis on circulation.





EERO SAARINEN  
- SAS Hotel Raddison

The building, which was Copenhagen's first skyscraper, was designed as a hotel and airport terminal for the airline SAS. When it opened in 1960, it was seen as the symbol of a new era of prosperity, travel and international outlook.



Fig. 31

Exterior image of SAS Hotel Raddison from street view. Shown next to modes of transport

Fig. 32

Interior image of hotel showing specially-designed chairs and considered lighting in the main lobby area providing a comfortable and welcoming traveller experience.

STRATEGY: *CONTRASTING STRUCTURAL MATERIAL AND FINISHING MATERIAL*

ACTION : Circulation corridors and staircases are seen to be cutting through the solid canopy. This configuration makes for interesting forms with increased apace usability.

STRATEGY: *RECREATING A THEME ( VIA MOVEMENT)*

ACTION : The configuration of a hybrid-tower and cantilevered base is typical of that Googie (Jet-age) Design

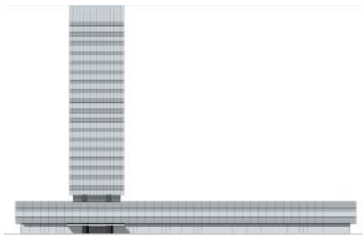


Fig. 33





STRATEGY : *TURNING THE EXISTING INTO A DESIGN GENERATOR*

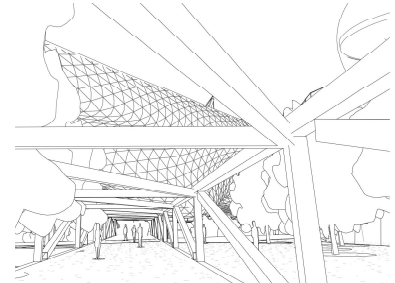
ACTION : The design focuses on enhancing the strengths of the site. The vast amount of space makes for a well-suited layered scheme, as well as the existing travel connections and history. Concept of external airport/ hotel lobby.

STRATEGY : *RECREATING A THEME*

ACTION : Using the concept of piers, corridors and canopies for the design elements the once significant act of journeying in the bygone jet-age era is mimicked to create a sense of grandeur.

STRATEGY : *INDUCING EXPERIENCES*

ACTION : Proximity of each device (green-canopy, walkway, hotel, transport modes & runway) creates different views and opportunities for movement.



STRATEGY : *ALLOWING INTERDERMINANCY*

ACTION : Spaces like the green canopy could be used for those waiting for their own flight, or maybe by a local resident on their lunch break... it is down to the user to interpret the use of space which is set out by the design.

SOCIO - ECONOMIC

STRATEGY : *ACTIVATING INTERSTITIAL SPACES*

ACTION : Areas of the existing site are utilised in the proposal to create more usable area without enlarging the site itself. These are in the form of piers/corridors, circulation routes and holding space that move both vertically and horizontally.

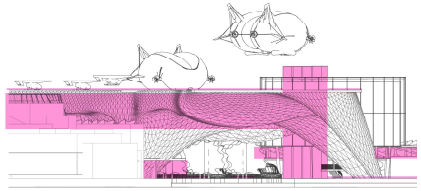


Fig. 35

STRATEGY : *MAKING CONNECTIONS*

ACTION : Gunwharf will be accessed from the immediate site via the area between the hotel and ferry terminal. Each component is connected via piers/corridors.

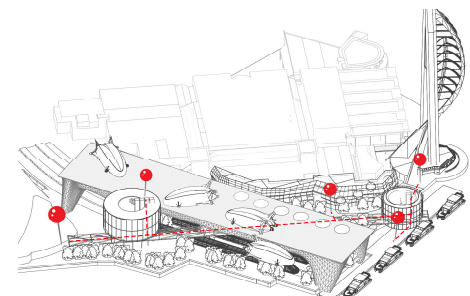


Fig. 36

STRATEGY : *MAKING LANDSCAPES*

ACTION : Green landscaping at street level and a green canopy make for a new landscape that provides new micro-climates to Portsmouth Harbour.



Fig. 37

STRATEGY : *APPROPRIATISING THE ROOF*

ACTION : The new canopy sitting over the railway lines of Portsmouth Harbour Station is a mixed-use building and piece of infrastructure by nature that acts as a runway and holding area for aircrafts and users alike.

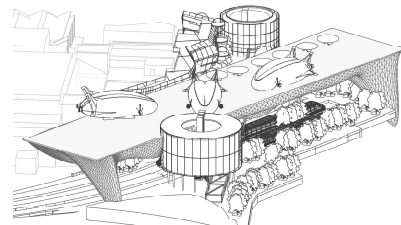


Fig. 38

SITE / CONTEXT

STRATEGY : *USING A CORRIDOR AS STRUCTURE*

ACTION: Utilised by both a walkway which is in response to the old Prince Albert Pier, and a canopy holding a runway and used as movement/ holding space.

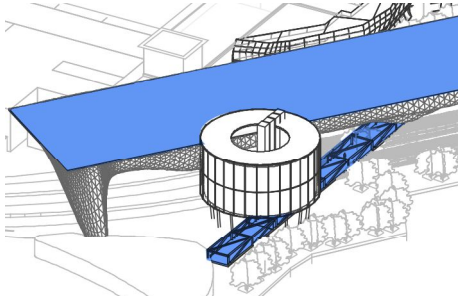


Fig. 39

STRATEGY : *'INSIDE-OUT' CIRCULATION*

ACTION: To allow for adequate space to be programmed for movement and usage, main circulation corridors, staircases and elevators are located seperately from the primary buildings, and outside.

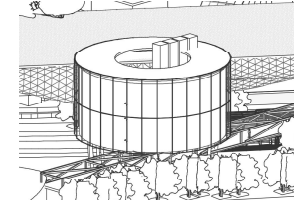


Fig. 40

STRATEGY : *APPLYING A GENERATOR MATRIX*

ACTION : The simple cylindrical and rectangular form are replicated in both structural and design components, encouraging theme and continuation.

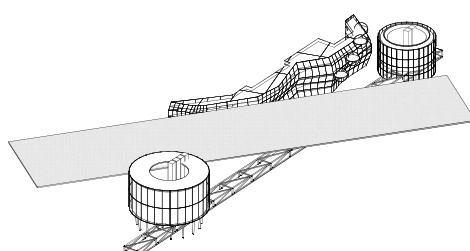


Fig. 41

STRATEGY : *BLURING THE LIMITS*

ACTION: By bringing the landscaping essentially to the train door a continuous view is achieved from the street and waters -edge.

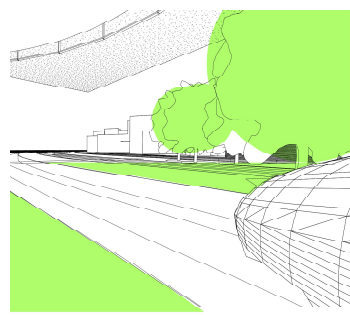


Fig. 42

AESTHETIC



RENZO PIANO, RICHARD ROGERS  
& CO.  
- Centre Pompidou

The centre Pompidou, designed by Renzo Piano, Richard Rogers and other high-tech architects was built between 1971-1977. It can be said that the building may have been a response to the 'Fun Palace' conceptual scheme, which was an interactive and adaptable, educational and cultural complex to be located in London, England. The aim of Centre Pompidou was to act as a regenerator of the Les Halles district of Paris. The structure is famous for its impertinent zeal for programmatic freedom. There are 3 main uses within the single building: the largest museum for modern art in Europe, the Bibliothèque publique d'information, and a centre for music and acoustic research. The concept involved 'lightness' of the facade which would change over time.

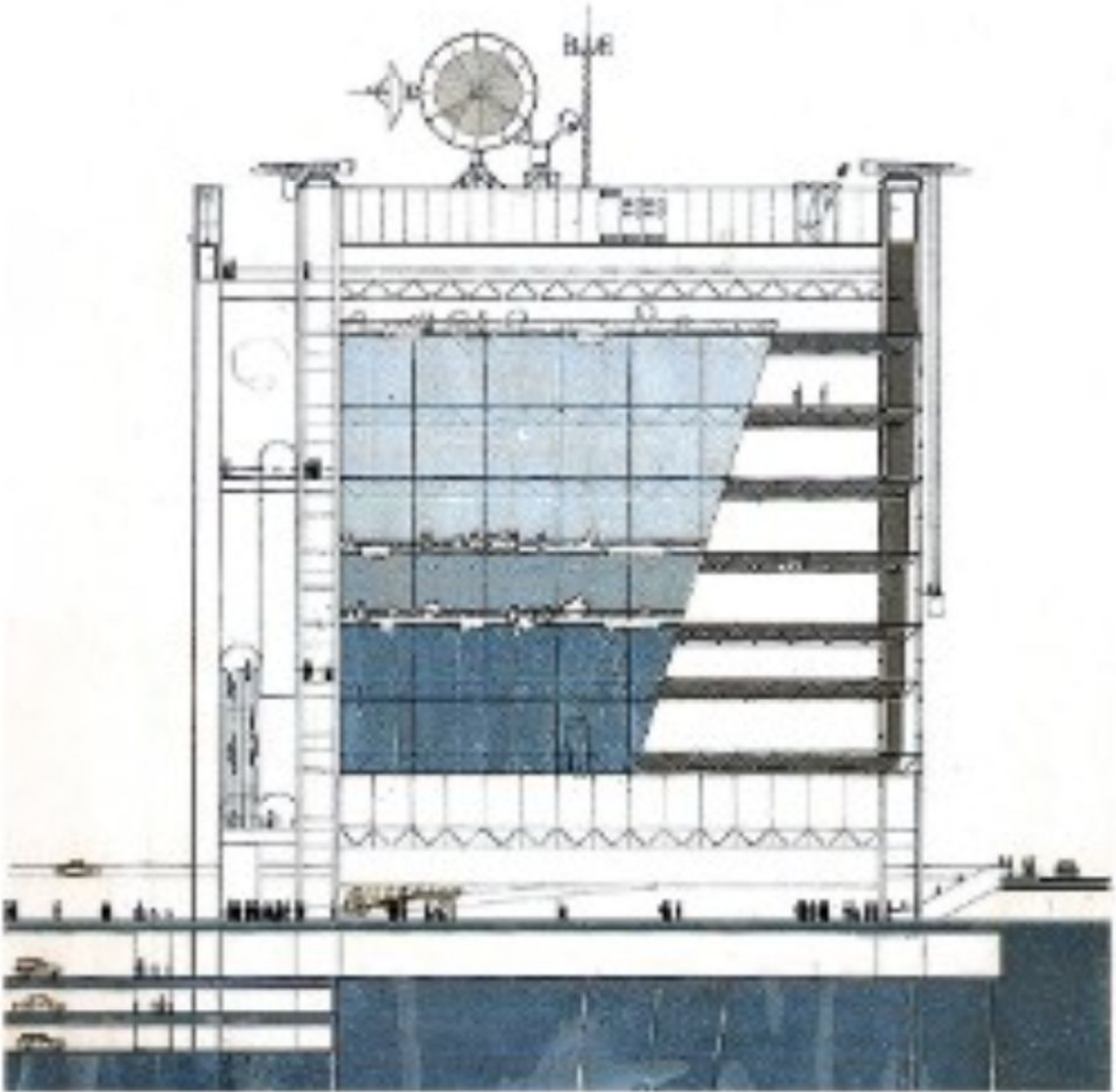
Fig. 43

Partial short sectional drawing representing programmed usable space. Services shown external to the building.

“ Machine - age Masterpiece. ”

Fig. 44

Conceptual diagram representing levels responding to the surrounding site.



STRATEGY: *INSIDE-OUT BUILDING*

ACTION : To create the large, adaptable, uninterrupted floor areas that would allow for the circulation of large numbers of people, the design team created an 'inside-out' building.

A 3D model of the Centre Pompidou, showing the building's external structure and internal spaces. The model illustrates the 'inside-out' building strategy, where the internal spaces are designed to be large and adaptable, and the external structure is visible.

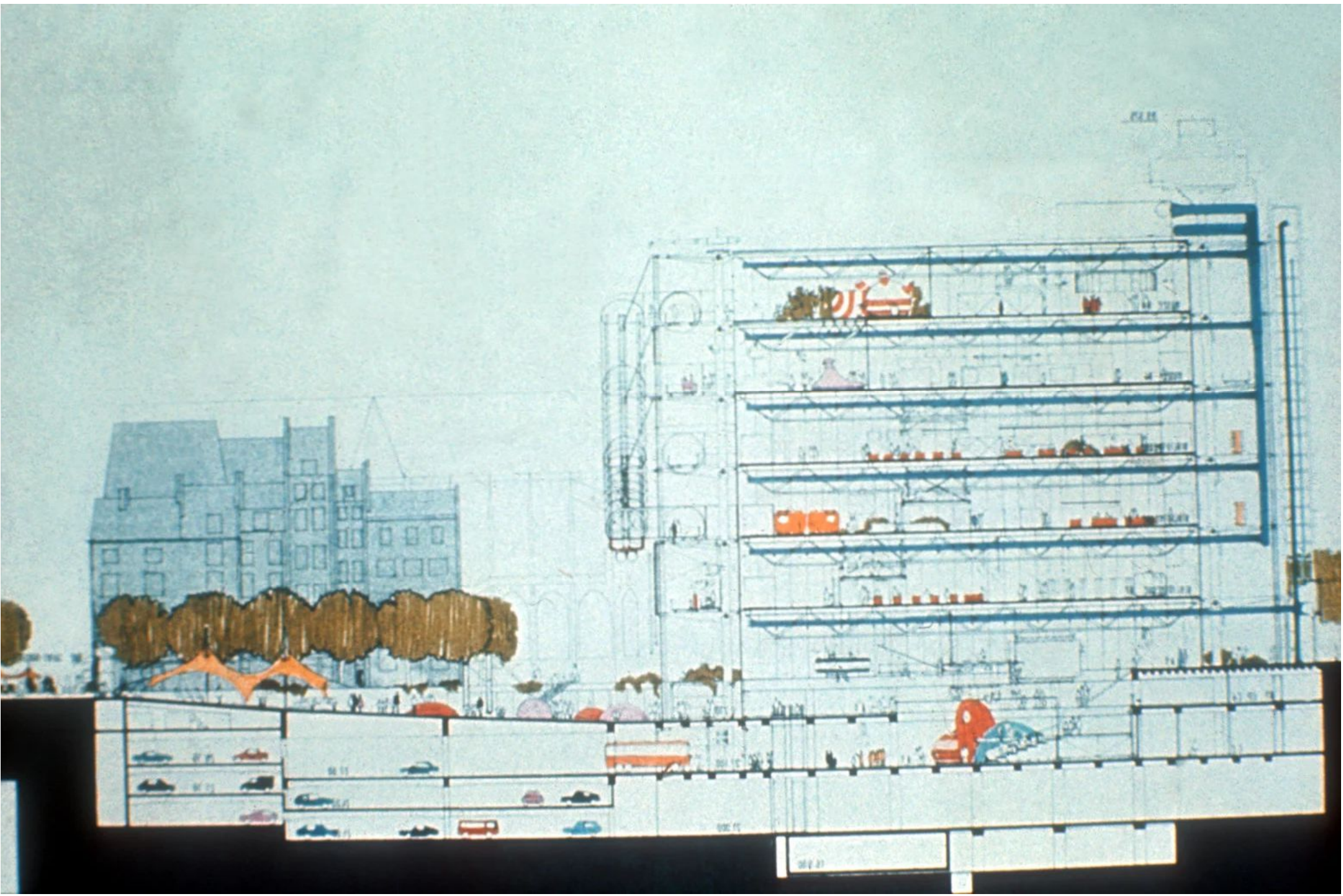
Fig. 45

STRATEGY: *HORIZONTAL & VERTICAL CIRCULATION*

ACTION : Facing the square, the west façade is given over to vertical and horizontal movement, taking advantage of spectacular views over Paris.

A 3D model of the Centre Pompidou, showing the building's external structure and internal spaces. The model illustrates the 'horizontal & vertical circulation' strategy, where the building's facade is designed to facilitate movement and provide spectacular views over Paris.

Fig. 46





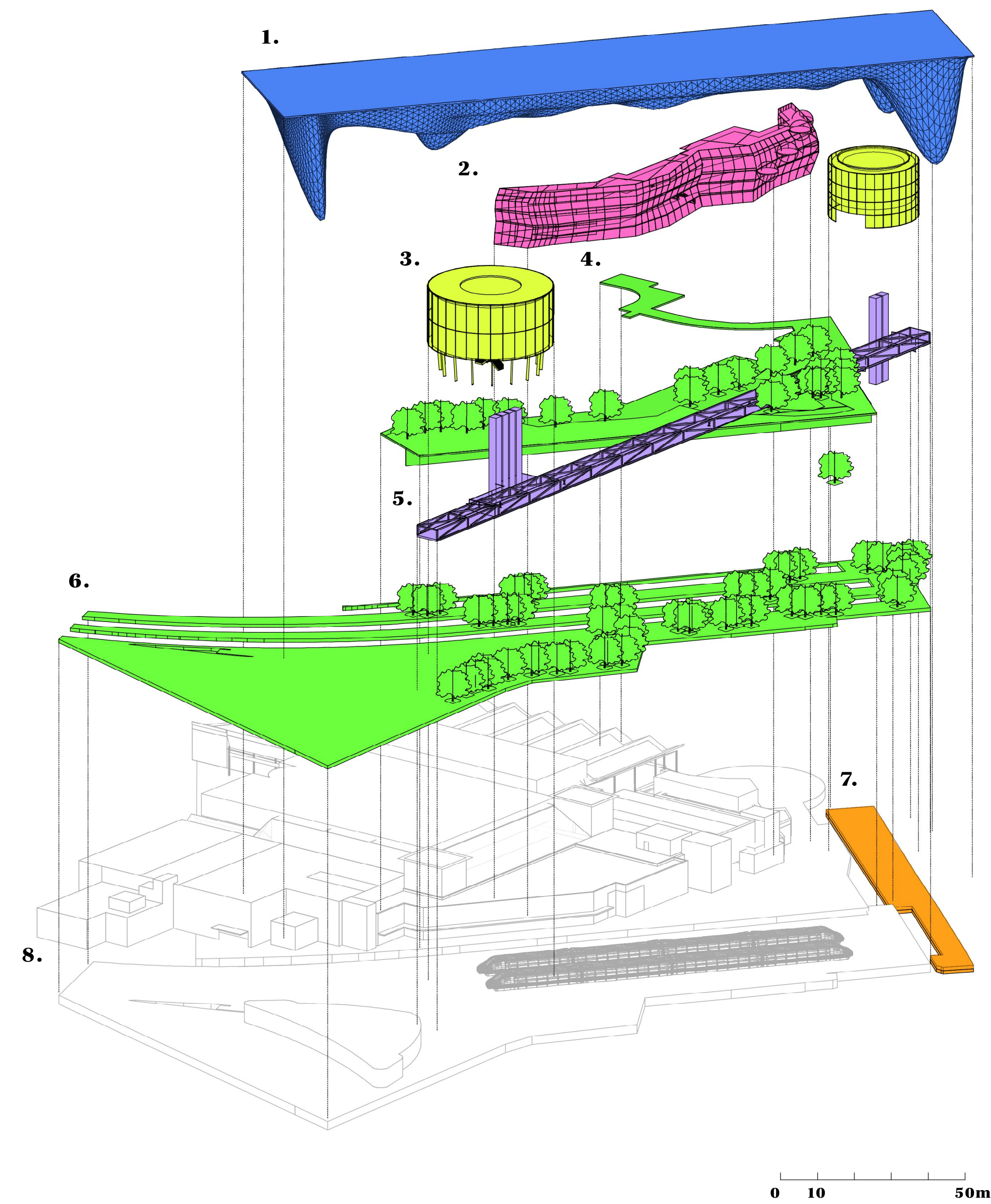


Fig. 47

The adjacent exploded axonometric diagram interrogates the intended programme and use of space within the scheme.

- 1 Aircraft Canopy
- 2 Hotel
- 3 Generator Cylinders
- 4 Green Canopy
- 5 Pier Corridor
- 6 Landscaping
- 7 Ferry Terminal
- 8 Existing Bus Terminal, Railway-line & Gunwharf Quays



# UNSTUDIO - Arnhem Central Masterplan

Multi-modal transport interchange in Stationsplein 38, Arnhem, The Netherlands with Transfer hall, Underground parking, Bus terminal, Two office towers, Bicycle storage, Railway platforms.

Building surface :  
ca. 160,000 m2 (GFA)  
Client :  
ProRail, Ministry of Infrastructure & the Environment, the Municipality of Arnhem  
Delegated principal: ProRail

mimi hopkins



Fig. 48

Nighttime visual showing a lit railway canopy with a sloping perforated form.

Fig. 49

“The twist “unifies the whole confluence of different modes of transportation coming together into an exhilarating celebration of movement, shot through with light.”  
- Aaron Betsky, ARCHITECT Magazine Online, 2016

Fig. 50

Visual of scheme from street view.



STRATEGY: *UTILISED TRANSITORY SPACES*

ACTION : In compact, mixed-use complexes like Arnhem Central, it is essential that transitory spaces are as equally considered as spaces dedicated to longer stay programmes.

Fig. 51

STRATEGY: *COMPACT STACKING OF PROGRAMMES*

ACTION : The compact stacking of programmes enabled triple ground use. Passenger flows for six different modes of transport are organised by the central transfer terminal. Here, a large twisting central column enables a day lit, open hall that forms the heart of the station and guides foot, bicycle, car, bus, trolley-bus and train traffic along its way.





## WOLFGANG TSCHAEPELLER - Babyn Yar

Babyn Yar is a proposed competition entry put forward by Wolfgang Tschapeller Architekts. Entered for Competition project phase 1 2019, based on a site in Kiev, Ukraine. Seamingling designed to sit sensitively on the uneven land. Unusual assymetric columns hold up a large structure with external circulation elements.

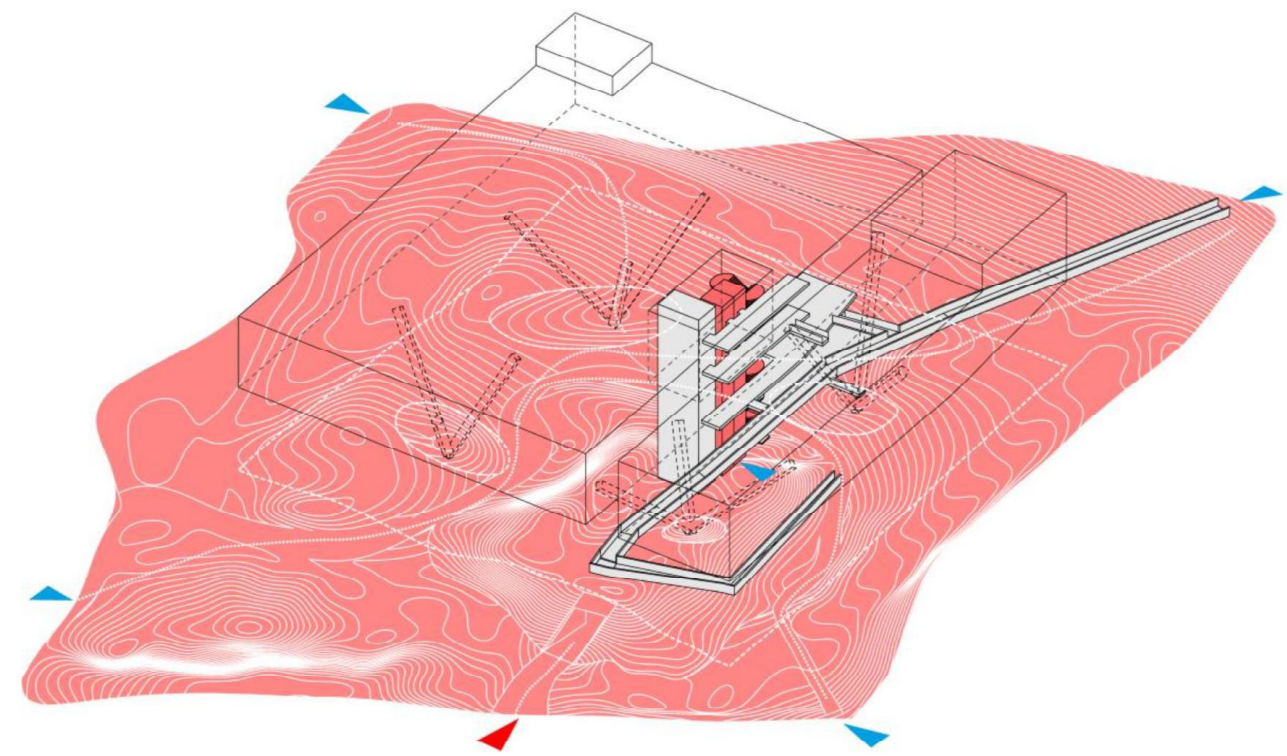


Fig. 52

Conceptual diagram conveying circulation.

Fig. 53

Project render representing solid and void with circulation. Also shown is the proximatey of the structure with the ground.

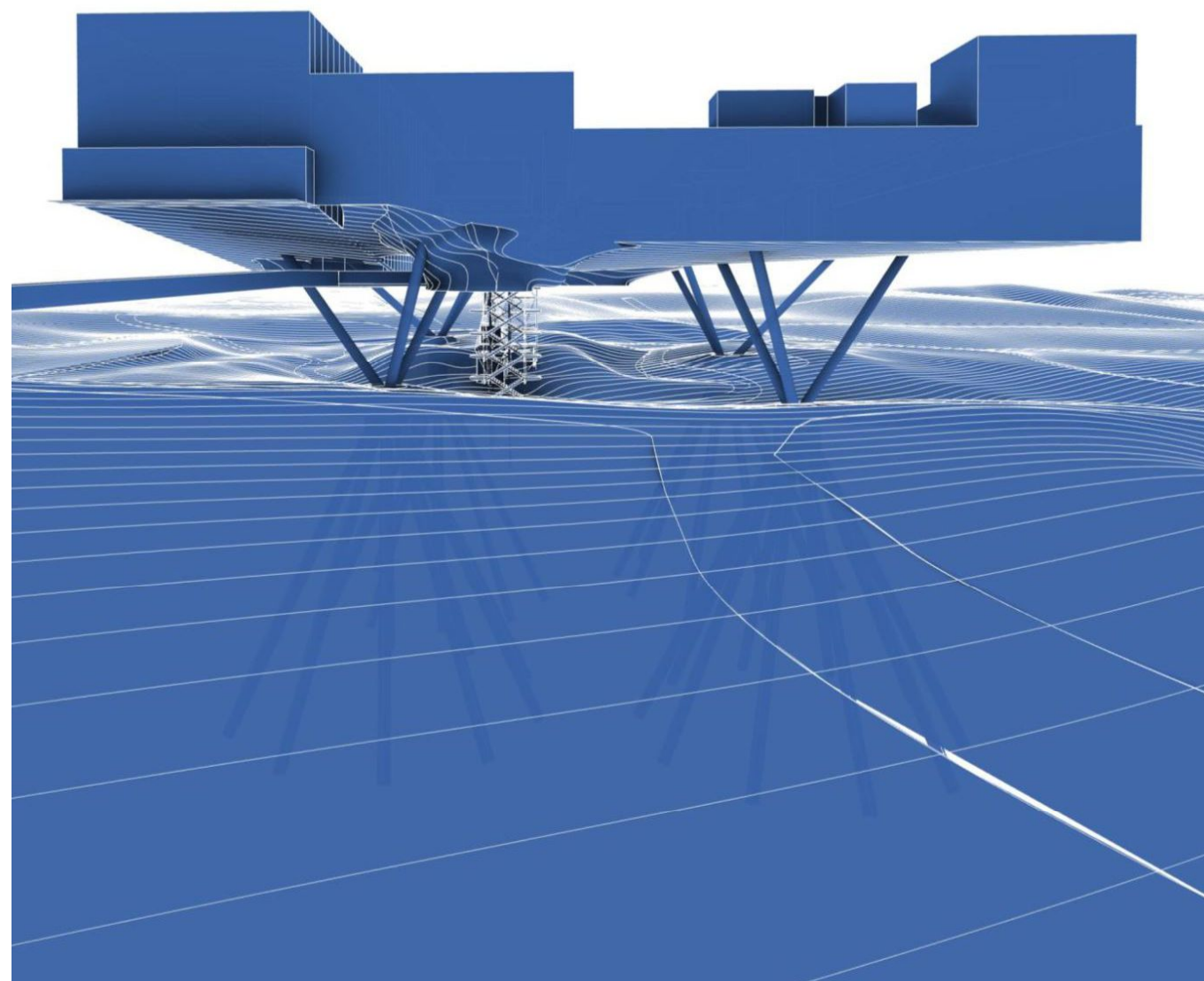


Fig. 54

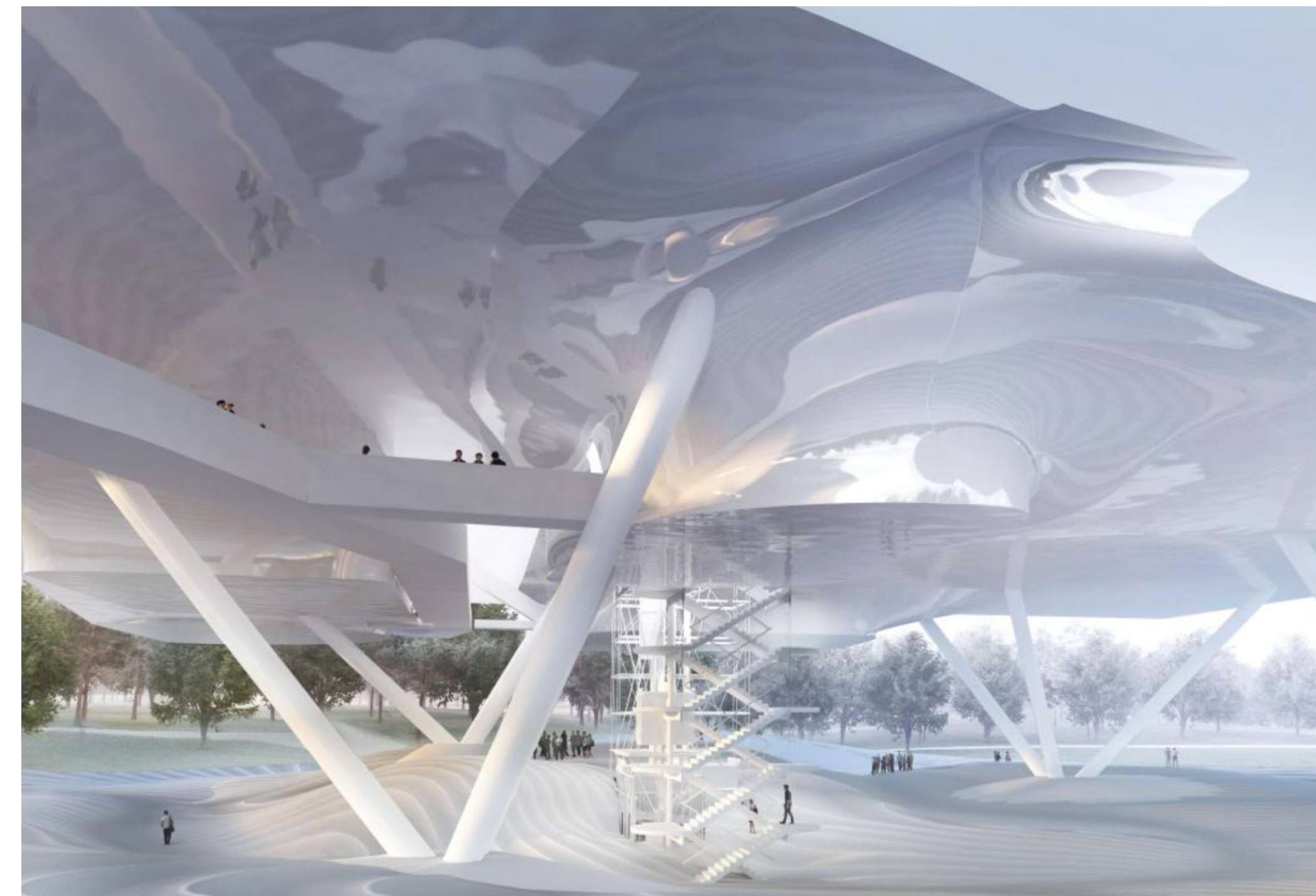
Rendered visual of the Babyn Yar project. Showing material finish and relationship between user and scheme.

STRATEGY: *CIRCULATION PUNCHING-THROUGH STRUCTURE*

ACTION : Circulation corridors and staircases are seen to be cutting through the solid canopy. This configuration makes for interesting forms with increased apace usability.

STRATEGY: *COMPACT STACKING OF PROGRAMMES*

ACTION : The compact stacking of programmes enables external ground floor space to be used. External corridors lets users interact at differing levels.







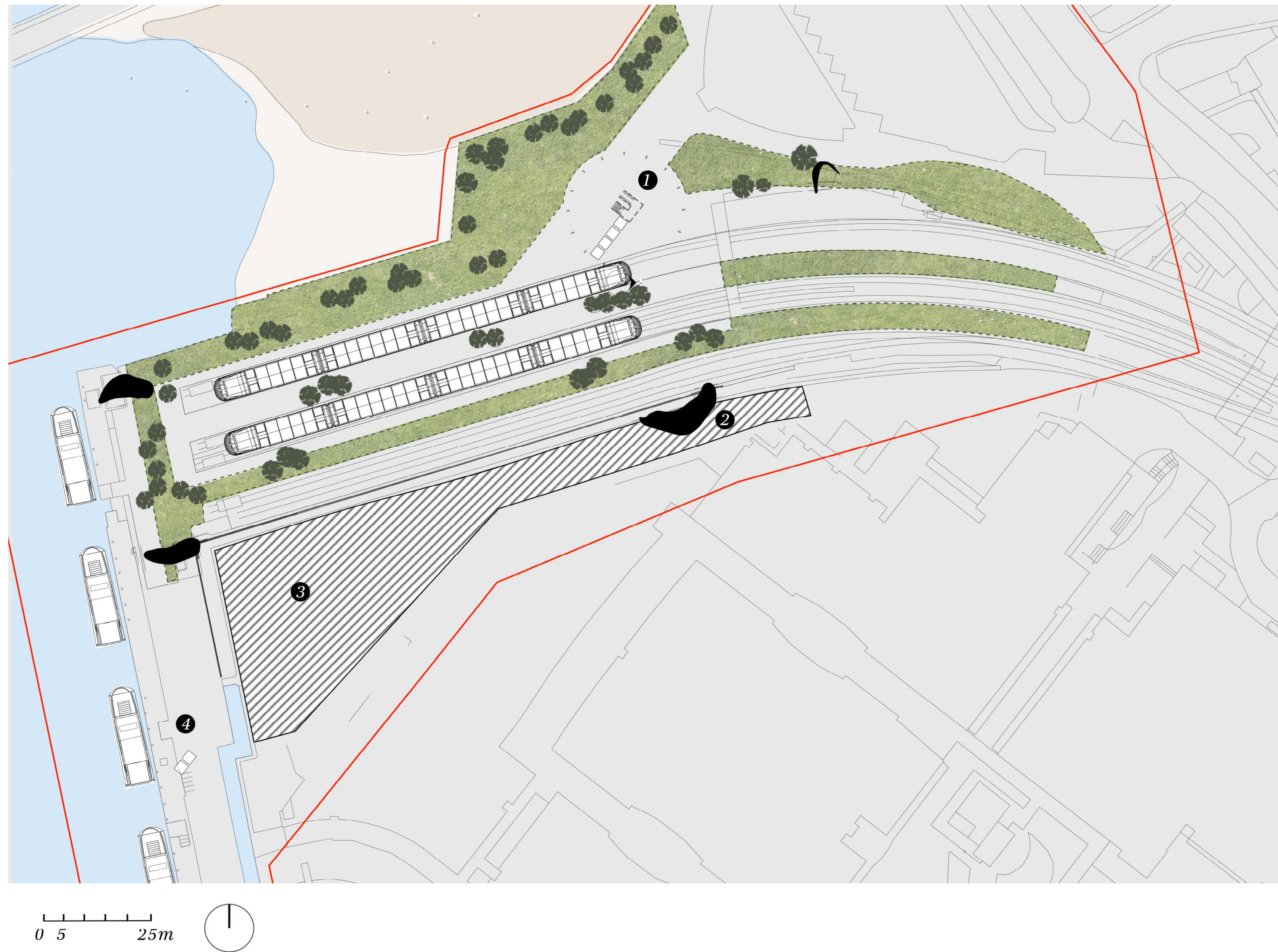
- 1 Existing Bus Station with Green Landscaping
- 2 Main Corridor Circulation Route
- 3 Energy Generating Cylinder & Battery, Staircase, Elevator Holding area
- 4 Aircraft Canopy & Holding/Service area
- 5 Green Canopy over Service area
- 6 Hotel
- 7 Relocated Ferry Terminal
- 8 Energy Generating Cylinder & Battery, Staircase, Elevator

Fig. 55

## Proposed Site Plan

Transport Interchange with green landscaping situated on Portsmouth Harbour, linked with the existing Hard Interchange. Including a proposed hotel building sitting on rear of Gunwharf Quays structure.





- 1 Staircase Leading to other Levels
- 2 Canopy Cut Plane
- 3 Services
- 4 Staircase & Elevator

Fig. 56

## Proposed Ground Floor Plan

At this level we see how the railway station, ferry port and bus station interact amongst the proposed landscaping.





- 1 Staircase & Elevator Leading to Corridor/Ground
- 2 Canopy Cut Plane
- 3 Merging Space between Green Canopy & Corridor
- 4 Hotel Circulation
- 5 Proposed Access to Gunwharf Quays

Fig. 57

## Proposed Level 01 Plan

At this level the walkway and hotel ground floor are of significant interest. The walkway brings users between the front and rear of the scheme. It is at this level in the hotel where the user can circulate up and down via staircase well and elevators. There is an intentional use of continuing red velvet floor blurring the limits of the scheme.





- 1 Passenger Concourse with  
Cafe and ticket machine
- 2 Boarding / Departing Bridge
- 3 Hotel Floor
- 4 Luxury Hotel Pod

Fig. 58

## Proposed Level 02 Plan

At this level users can relax in the comfort of the waiting area before boarding the aircraft. Similarly, arrivals may use the space after departing the aircraft. The level gives an example of some of the internal hotel and pod arrangement.



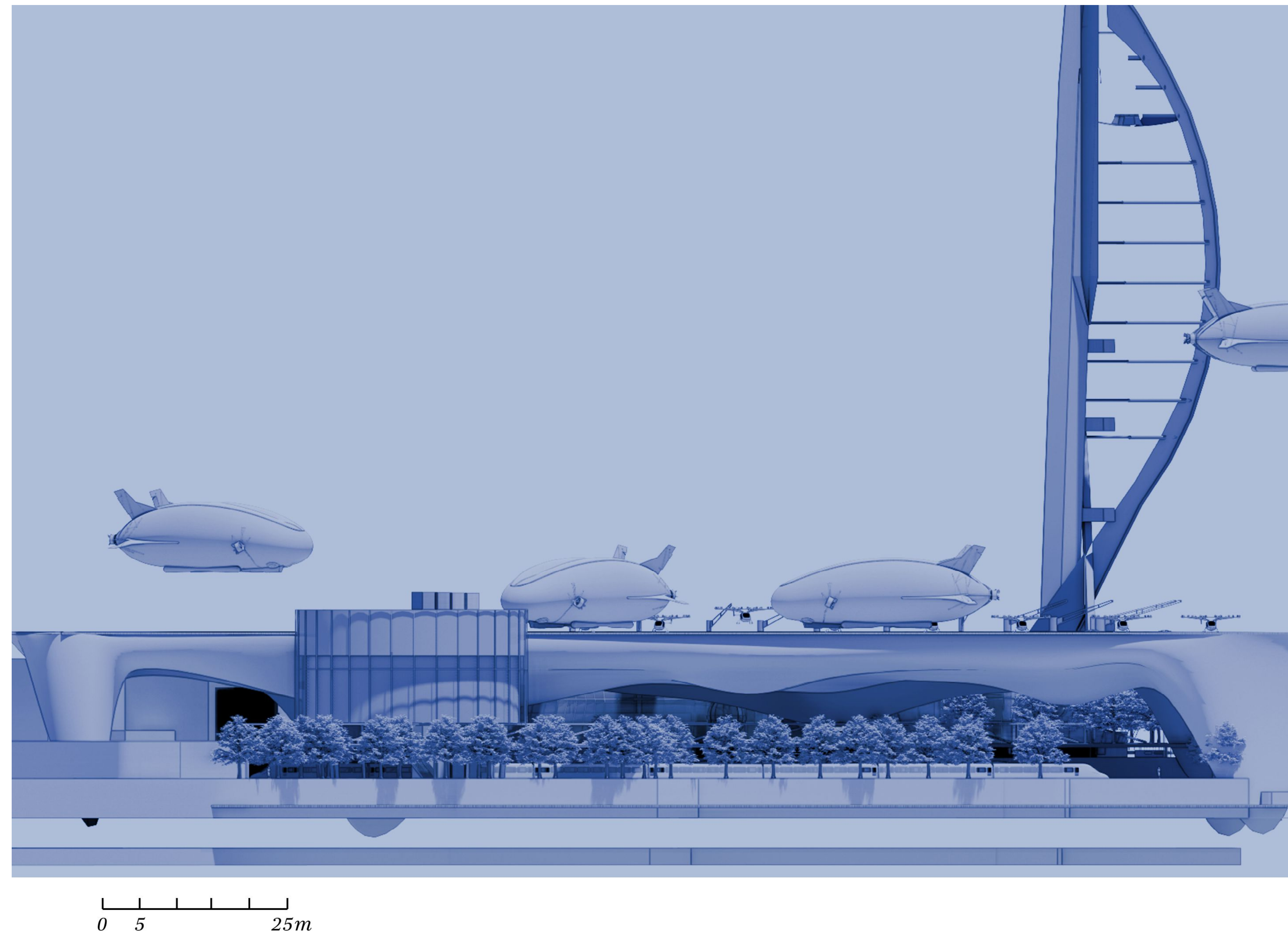


Fig. 59

Proposed Partial  
North Elevation (Dockard  
Side)

Showing the entirety of the  
scheme from the perspective  
of the dockyard.



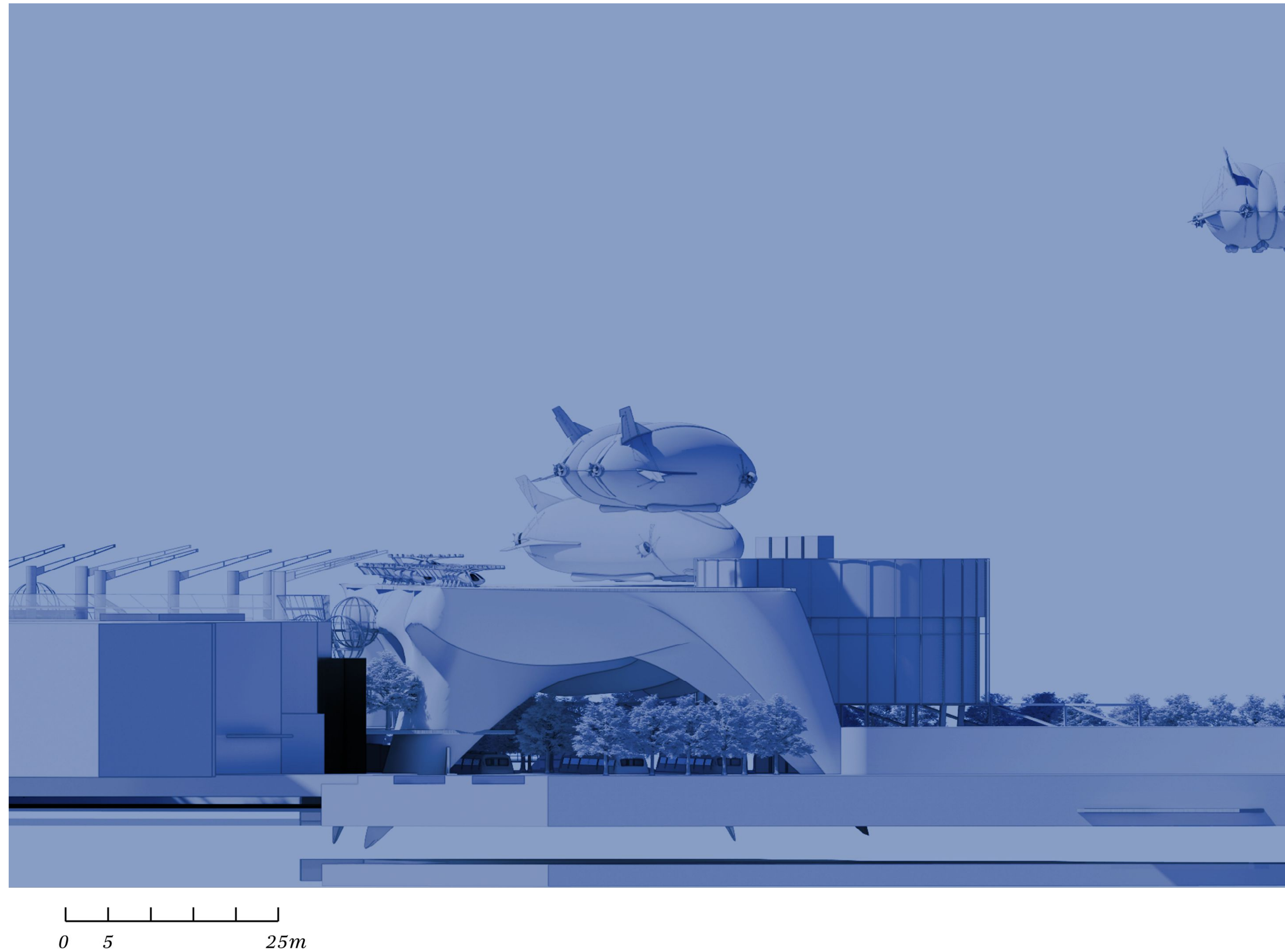


Fig. 60

Proposed East Elevation  
(Front)

Showing the entirety of the  
scheme from the perspective  
of The Hard street. Including  
the entrance via the existing  
Hard Interchange and  
proposed railway canopy.

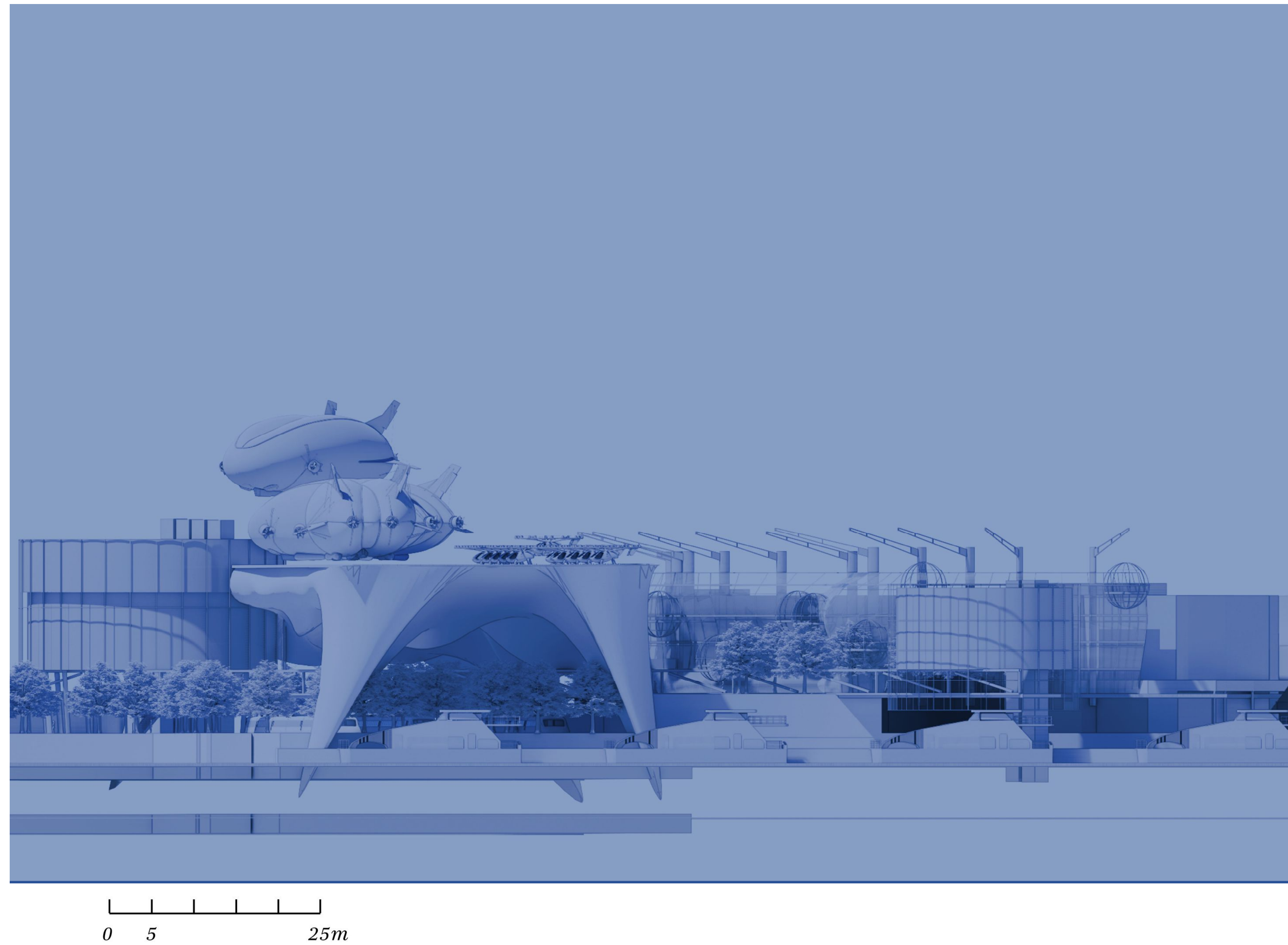
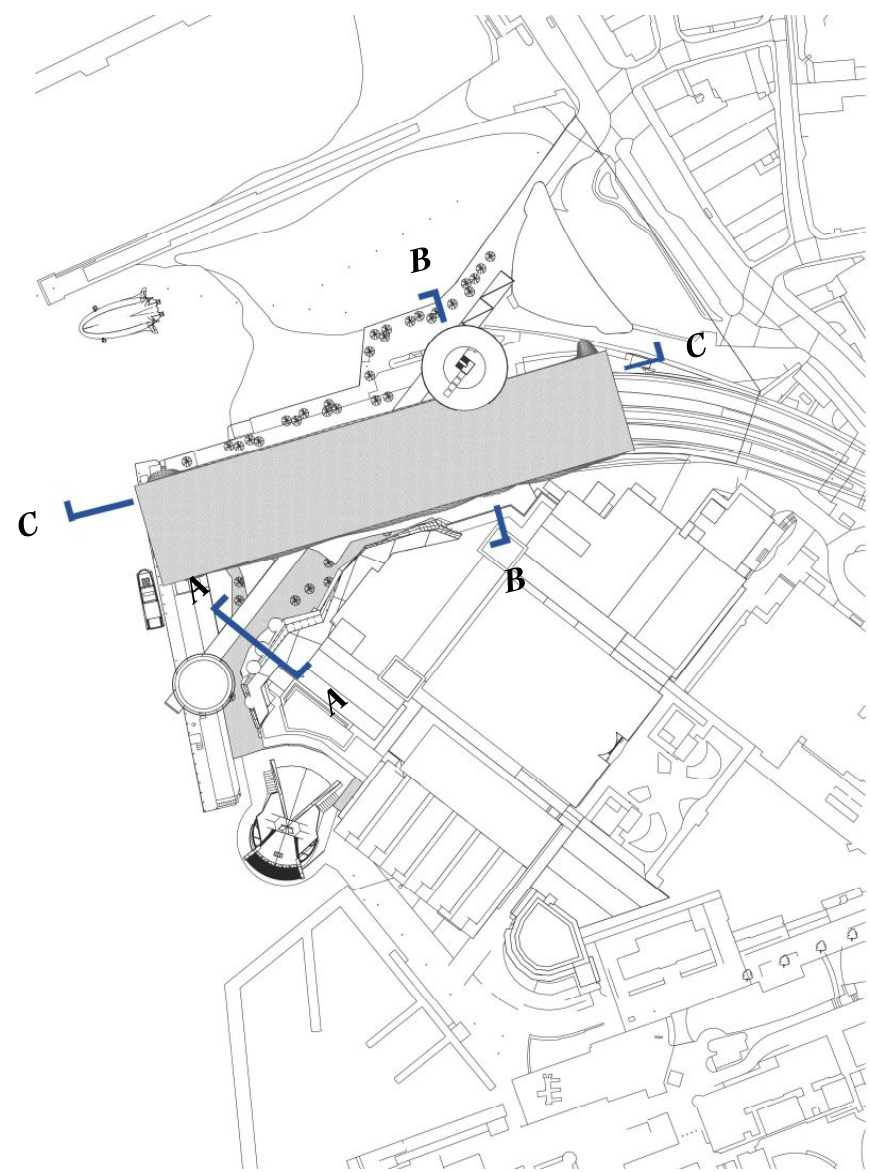


Fig. 61

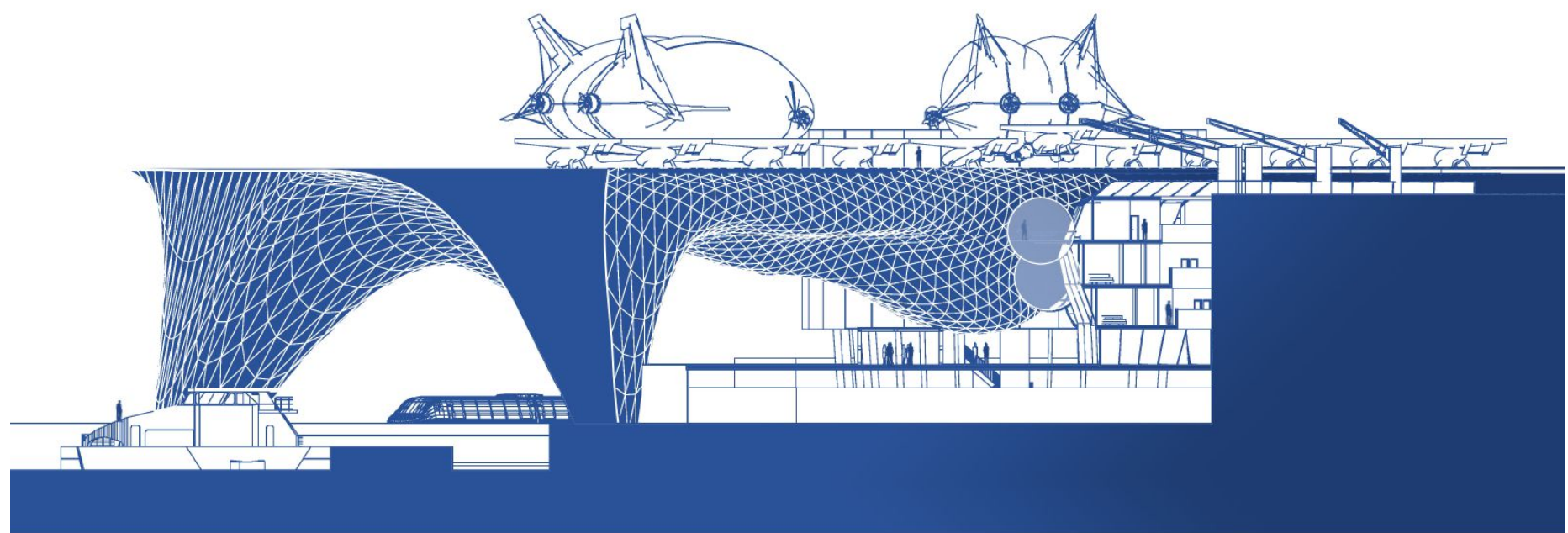
Proposed West Elevation  
(Rear)

Showing the entirety of the  
scheme from the perspective  
of the waters edge at the rear  
of the scheme. Including the  
proposed Gunwharf Quays  
entrance and proposed  
relocated Ferry terminal.

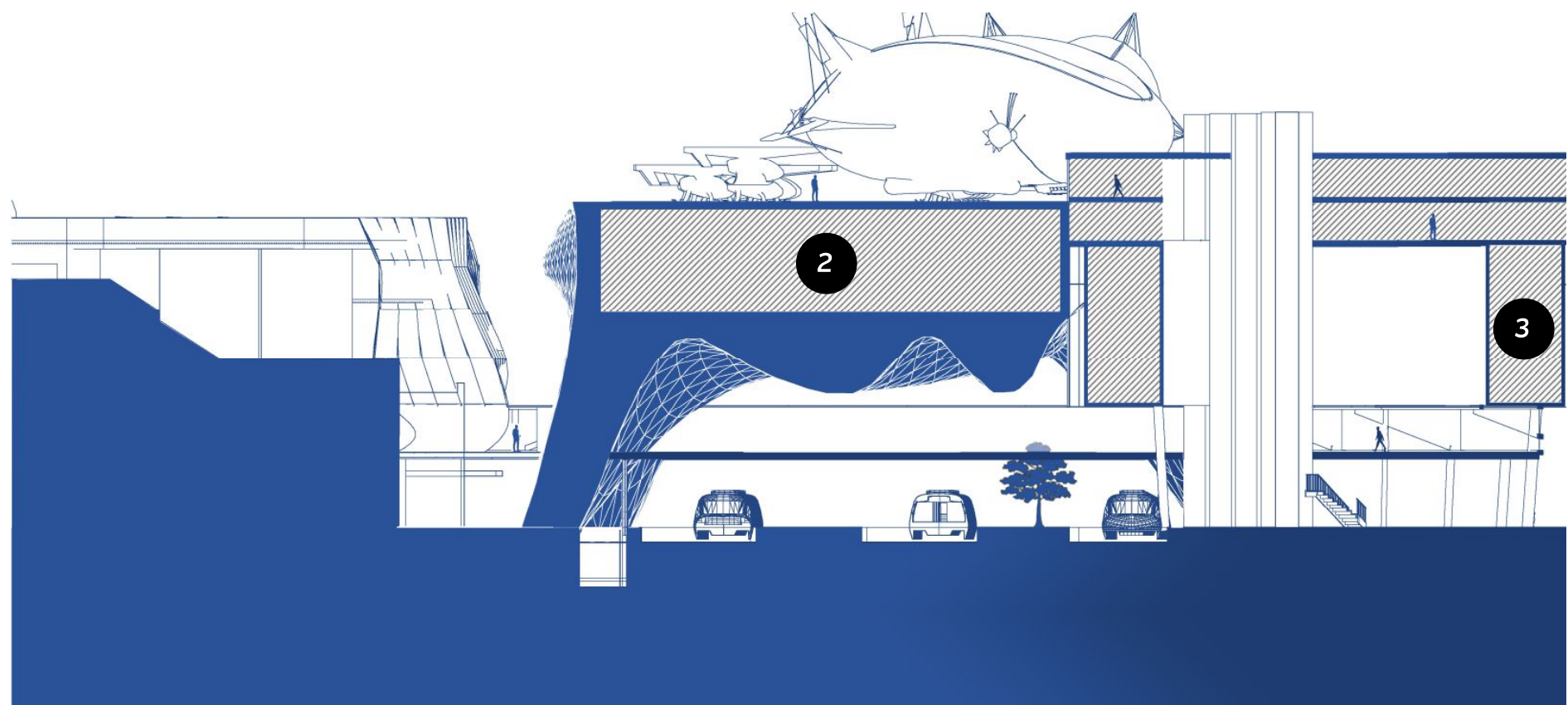




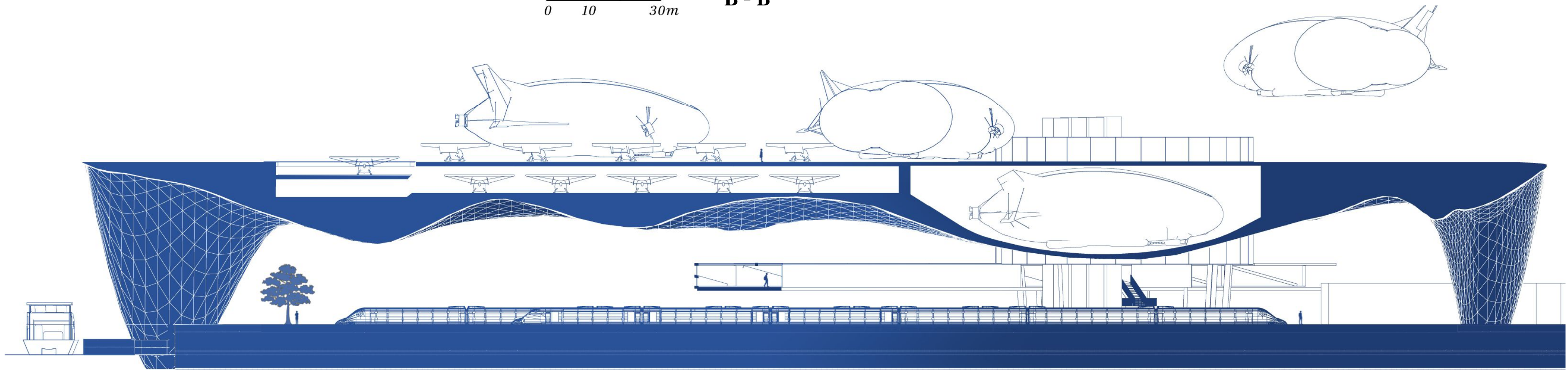
- 1 Concourse Lounge / Restuarant Ticketing Area
- 2 Maintenance Shed
- 3 Power Generator / Batteries



A - A



B - B



C - C

Fig. 62

Proposed Cross Section

Through Hotel structure  
Demonstrating framing  
sat upon existing Gunwharf  
Quays building

Fig. 63

Proposed Cross Section

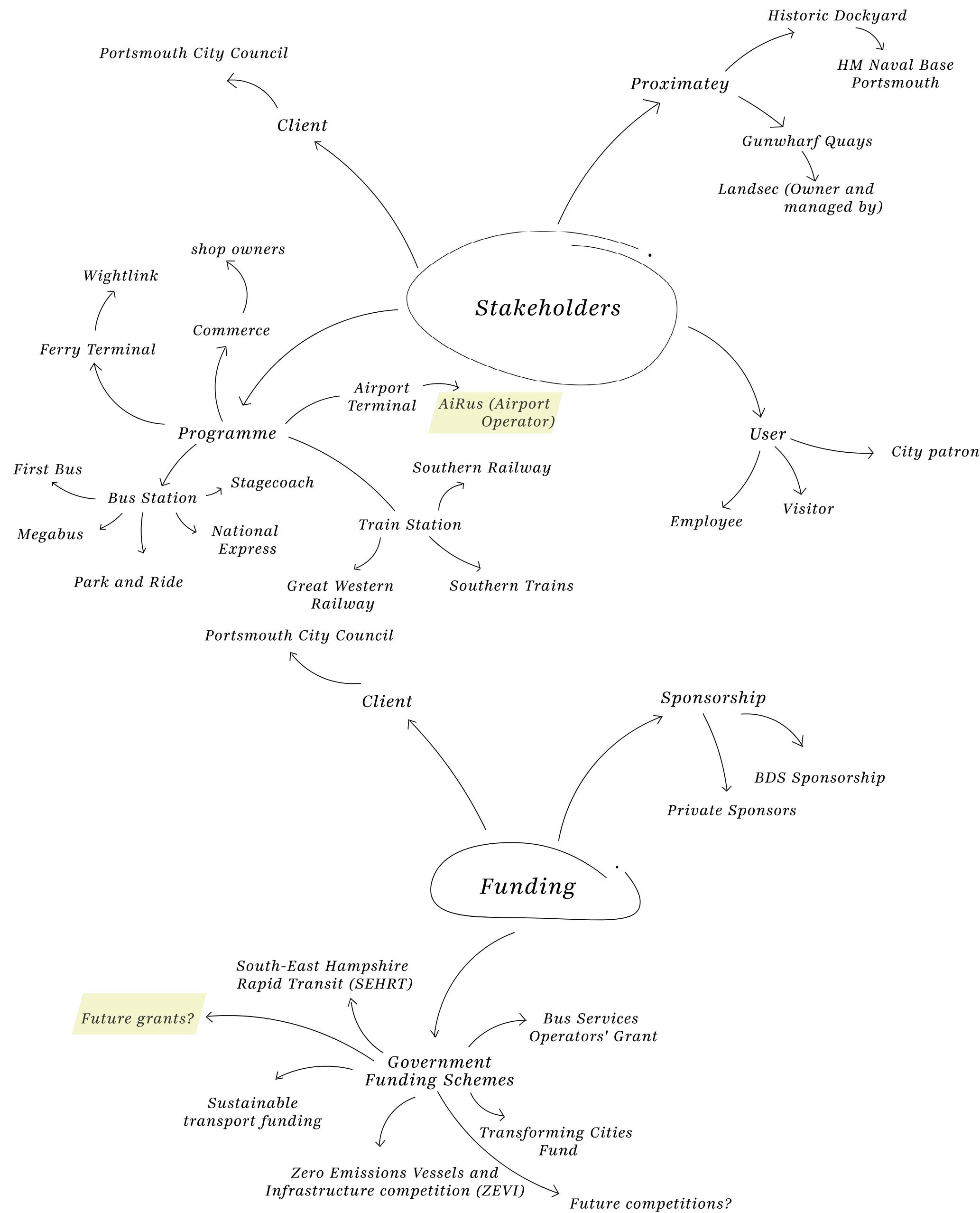
Through Canopy, walkway  
& cylinder  
Spaces specified for  
programme

Fig. 64

Proposed Longitudinal  
Section

Representing the internal use  
of the railway canopy, in  
relation to the existing  
railway, proposed walkway  
and circulation cylinder





User : City residents, visitors and employees of various organisations on site.  
Client : Portsmouth City Council.  
Stakeholders : There are various stakeholders involved in the proposed scheme. The brief responds directly to Portsmouth City Council and the users of the site. Though it is important to consider the needs and ideas of whom will be involved with the daily operations of scheme. Each transport mode is run by various operators taking the user to specific locations on pre-programmed routes. The existing bus terminal has 5 operators including: First Bus, Megabus, Park and Ride, National Express and Stagecoach. Similarly, the existing train station has 3 main operators which will use the proposed scheme: Southern Trains, Southern Railway and Great Western Railway. The proposed ferry terminal will move people along the solent, therefore the proposed operator will remain as Wightlink. The proposed airport will carry travelers in one of two types of aircraft: 30 person 'baloon' or 6 person 'personal' carriage. This operation will be carried out by one particular speculated operator named 'AiRus'. To efficiently run each organistions the needs of the employers & employees alike must be well considered and met.

funding : Adequate funding must be procurred to begin and complete the scheme. Various components and programmes will acquire funding in various ways. Primarily, the client, Portsmouth City Council, will fund a large propoition of the project. However, this may be via various private or government funds. Some of these are listed adjacent. Currently running schemes like Transforming Cities Fund, or Sustainable Transport Funding may be able to account for a propoition of the fees. Other design strategies such as the green landscaping may help bring the city towards specific environmental goals set out by the council, and therefore gain grant. These are just a couple of methods of funding for the project 'Pera'.

Fig. 65  
Mind maps exploring those involved in the design project, and funding options. The project responds to the needs of the stakeholders.



STRATEGY : *ENERGY SAVING*

ACTION : Power generated by cylindrical towers used to run mechanical means of heating, cooling & lighting and power. Solar powered lighting scattered throughout the scheme captures direct sunlight and is converted to lighting used along circulation routes when natural lighting levels drop.

STRATEGY : *POWER GENERATING*

ACTION : Cylindrical towers use magnets to create energy that will power the scheme, and give back to the main grid. The generated energy is stored in on-site batteries. Helping to raise funds for upkeep and maintenance.

STRATEGY : *LIGHTING PRIORITIES*

ACTION : The steel framing with structural glass and double skin glass facade create well-lit spaces that reduce the need for mechanical lighting. The use of void space in the hotel floorplans makes for bright-spaces with little need for artificial lighting.

STRATEGY : *REUSING EXISTING*

ACTION : Keeping and reusing structures in the existing site, such as the bus shelter, reduces the energy required for demolition and lesser construction results in minimal carbon being released from one scheme.

STRATEGY : *REGENERATING ECOSYSTEMS*

ACTION : Trees planted and grown on the site will later be relocated within the city. This will be a continuous cycle. Insects such as bee's will benefit from the strategy.

STRATEGY : *CREATING MICROCLIMATES*

ACTION : Green-landscaping and a green canopy along with planted trees create their own microclimates at different levels along the site.

STRATEGY : *CONSIDERED MATERIALS*

ACTION : By considering materials life-cycles, cost, skill to fabricate, and the effect the weathering from the chosen site will have, an increasingly sustainable scheme can be reach. This will later manifest in minimal maintenance and little need to components unless for adaptability needs.

STRATEGY : *LOW MAINTENANCE LANDSCAPING & GREY WATER RECYCLING*

ACTION : Wild meadow and wildflower seed are to be sprinkled across the various parts of the green landscaping. By its very nature it will grow unruly and conceal specific areas of the scheme. There should be little need to cut and maintain this. The landscape will be watered by a recycled grey watering sprinkler system taking from hand basins.

STRATEGY : *FRUGALITY*

ACTION : The buildings are already defined by the very concretion of the brief. In this scenario, other than the structural materials, there are only place for minimal finishing details such as the continuous red velvet walkways, the glass skin facades and landscaping. This frugality keeps the scheme to a minimal cost, ensures it is simple in its concept, easy to maintain and readily adaptable for future-proofing.

Fig. 66

Image below represents dedicated green landscaping carefully considered and scattered throughout the site.

A child can be seen mechanically watering the greenery. Whilst being a strategy to keep the landscape watered and healthy, it also induces experience for the user.





Accessibility is of paramount importance in this proposal – it is vital that all are able to use and circulate throughout the scheme. Especially in this instance whereby movement via differing datums and layers is required to access each mode of transport.

The existing access at The Hard street level is taken advantage of, keeping and using the already established vehicular looped-access for taxi drop off and bus stop termination. Additionally, the pedestrian access remains the same as existing, via The Hard from both directions.

Each level of the scheme is accessible by large staircases, or elevator shafts, moving all efficiently.

The proposal includes increased accessibility to the retail park at Gunwharf Quays, alongside the hotel, ferry port and Spinnaker Tower. Allowing all using the transport interchange to transfer directly to the quays.

A dedicated services and plant area sits at street level to the rear of structures on Gunwharf Quays.

A slightly green canopy sits above the area to reduce visibility. Vehicle access to the services area remains the same as the existing, via the Gunwharf Quays entrance and taxi drop-off.

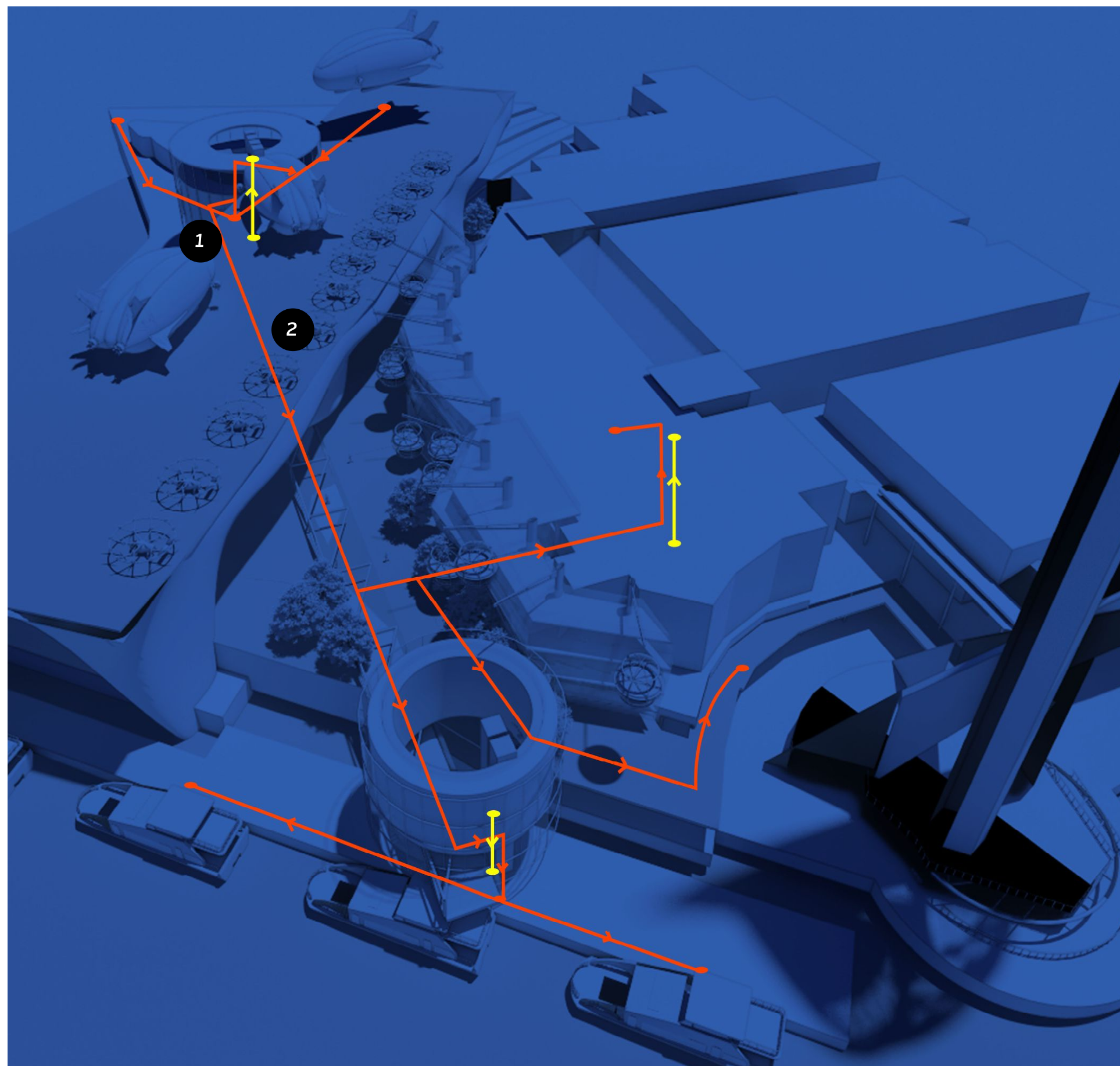
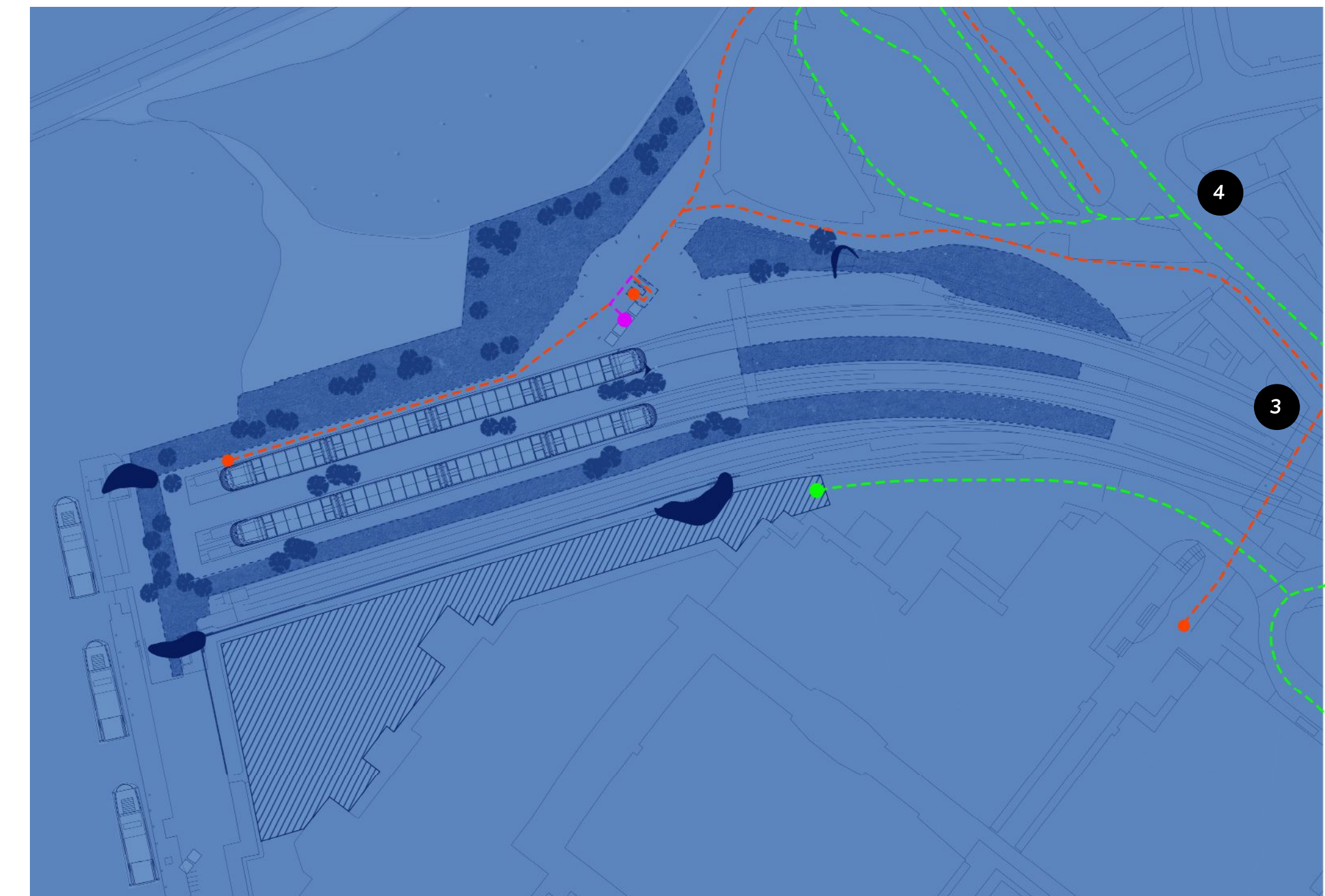


Fig. 67

Image adjacent to the left indicates the main flow of movement throughout the entirety of the scheme. Red presenting pedestrian access. Yellow indicating elevators.

Fig. 68

Image adjacent to the right illustrates main pedestrian and vehicular access at street level throughout and around the scheme.



- 1 Pedestrian Access Throughout Site
- 2 Wheelchair Access Between Levels
- 3 Pedestrian Access Around and On Site
- 4 Vehicular Access Around and On Site



The proposed fire escape plan illustrates some of the zones designated for use in the case of a fire around the scheme. The principles used here are to be replicated throughout the site, ensuring a high level of safety in according with Building Regulations Approved Document B.

Fire sprinklers and smoke vents are to be installed, which will turn on or open automatically in the event of a fire.

Thus reducing flames and allowing the smoke to escape efficiently from the building. These mechanical means are necessary in reducing damage to both the user and building itself.

On either end of the floor plan, firefighting shafts and fire exits can be seen. These spaces include elevators/ stairwells to be used by firefighters if needed for accessibility.

Additionally, the wall between the void and corridor is to be of at least 1.6m high, to stop damage from flames in the case of fire.

Compartmentalisation makes for 3 compartments in this instance, reducing the spread of potential fire. Fire doors are to be implemented to meet the Part B approved documents.

In the case of this space, the main staircase well and elevator shafts in the centre of the floorplan are to be discounted due to their open nature. The combination staircase is not protected as they cannot provide a smoke-free environment.



- 1 Fire Escape Stairwell & Designated Firefighter/ accessible elevators
- 2 1.6m Wall to Reduce Flame Damage
- 3 Discounted Staircase (not protected)
- 4 Compartmentation

Fig. 69

Proposed Fire Escape Plan for Hotel Floor

The image to the left indicates zones designated for fire safety in according with Building Regulations.



STRATEGY: *CONCRETE DECKING & PILE FOUNDATIONS (1)*

ACTION: The existing structures on the site currently sit on concrete decking with concrete piles that divert the forces down into the ground below. The proposed structures will sit on new concrete decking and pile foundations to bare the proposed weight.

STRATEGY: *LIGHTWEIGHT STEEL FRAMING (2)*

ACTION: The hotel and walkway framing is constructed from lightweight steel. This allows the large structure to be lighter, and therefore putting less stress onto the foundations. Also a design tool to allow for an exoskeleton configuration.

STRATEGY: *DOUBLE SKIN GLASS FACADE (3)*

ACTION: To create climate controlled enclosed spaces that are inhabital in the hotel, a double skin glass facade is applied. This further reduces the risk of thermal-bridging.

STRATEGY: *SINGLE SKIN GLASS FACADE (4)*

ACTION: The walkway however, does not require such comfort at all time. Therefore in this instance just a single skin glass facade is implemented.

STRATEGY: *CAST INSITU CONCRETE FORM (5)*

ACTION: The canopy itself consists of a large cast insitu concrete form. This is adequate for the weight that will be applied to it, and can be cast into the desired form. To achieve the desired finish, the concrete is then cladded on-top of.

STRATEGY: *ALUMINIUM PANELS (6)*

ACTION: To achieve the wanted finish, alluminium panels are used to clad over the cast concrete form. These panels are lightweight, inexpensive, and can battle-well the elements faced by the site itself.



Fig. 70

Axonometric Visual communicating the various parts of the structure of the entirety of the scheme.



WOLFGANG TSCHAEPELLER  
ARCHITEKTEN - University  
of Applied Arts Vienna

Between 1st and 3rd district in Vienna on the Ringstrasse a few buildings of different authors and times are collected on a block. The original urban intent for this group of buildings follows a subtle and precise idea. Although being part of a block, or standing on a block, they were always meant to keep their independency and autonomy by simultaneously allowing for a visibility of the space in between them. On the roof of the University two optional, temporary structures are proposed. Two pneumatic balloons indicate and signal special occasions at the Angewandte to the surrounding City. Raised transparent balloons means a special day, like flags on a building.

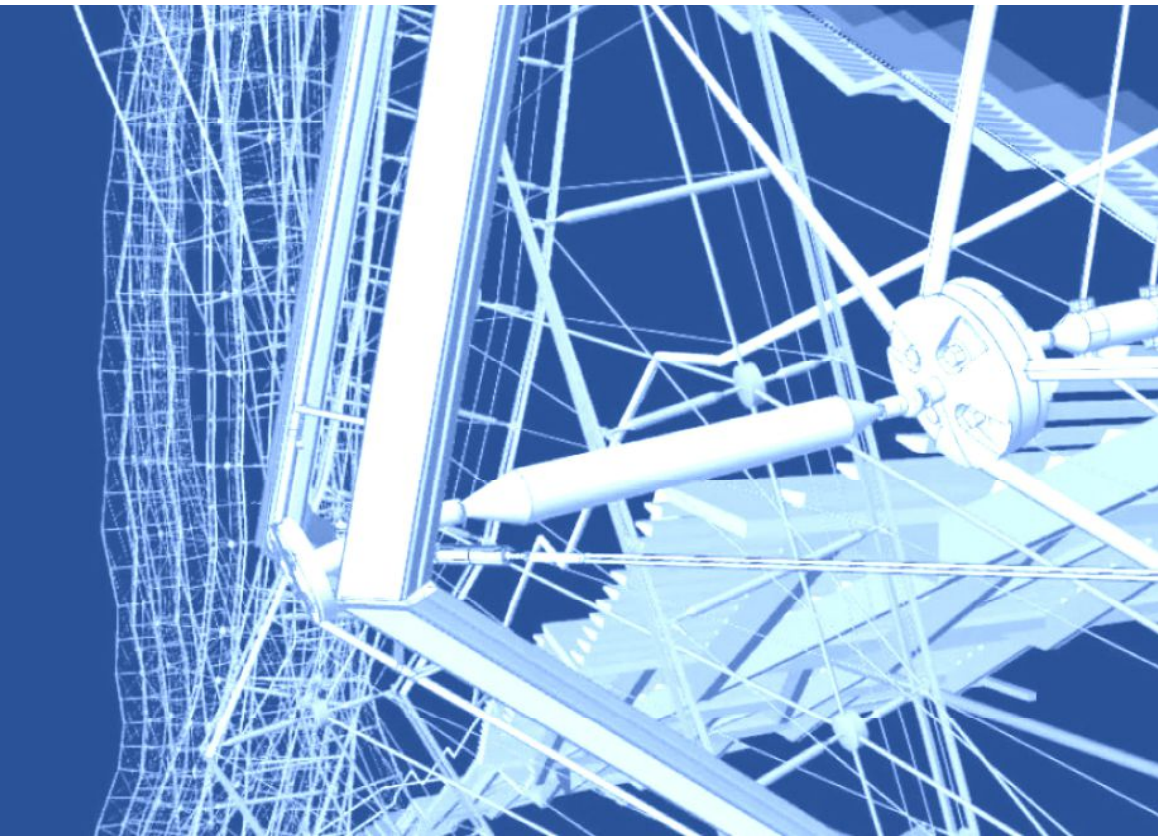


Fig. 71

Visual render of the University of Applied Arts Vienna. Representing the relationship between existing structure, external space and circulation.

Fig. 72

Digital model by Wolfgang Tschapeller Architektures. Micro-scale junctions of steel frame. Various levels of framing.



STRATEGY: *EXO-SKELETON STEEL FRAME*

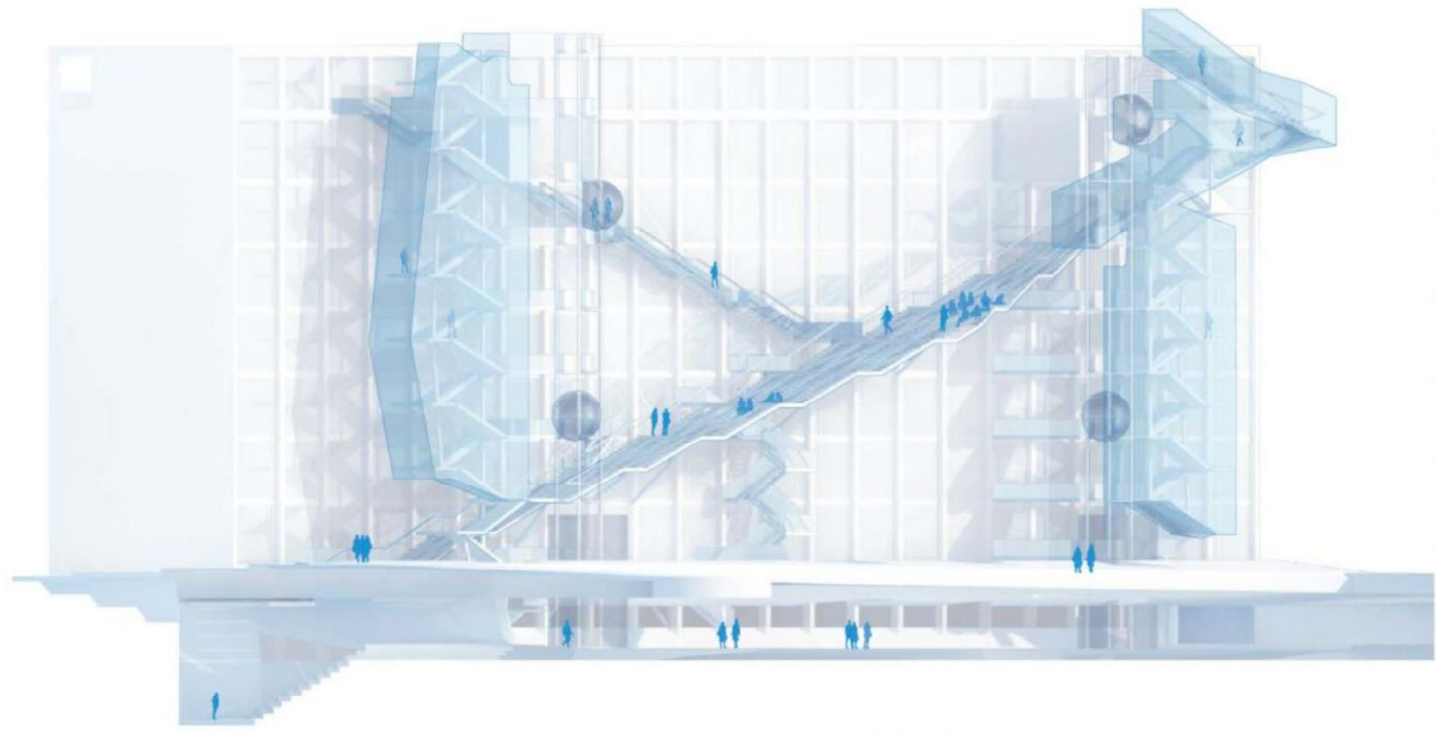
ACTION : In this scheme, a primary steel frame allows for a piece of architecture to be attached upon an existing building. This is a lightweight and minimally invasive structural strategy. Steel sub-framing creates partitions and programmed space.

STRATEGY: *CLIMATE CONTROLLED SPACE WITH OWN SKIN*

ACTION : A double skin facade lets particular areas within the structure act as usable climate controlled space, whilst not wasting energy controlling the redundant areas. Also reducing thermal bridging in the usable space.

Fig. 73

A conceptual diagram illustrating an exo-skeleton frame with movement away from the centre of the building leaving usable space to be programmed.





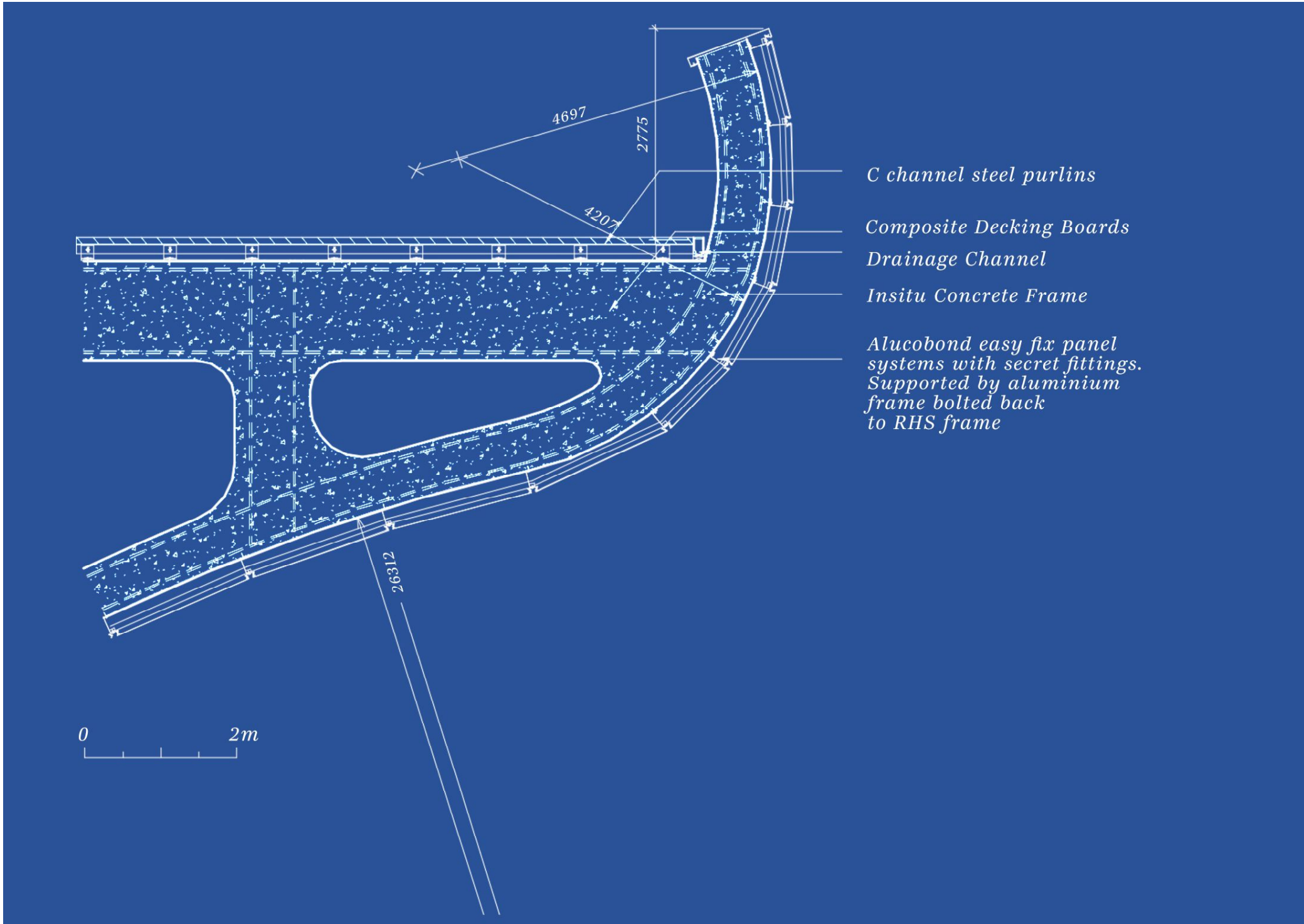
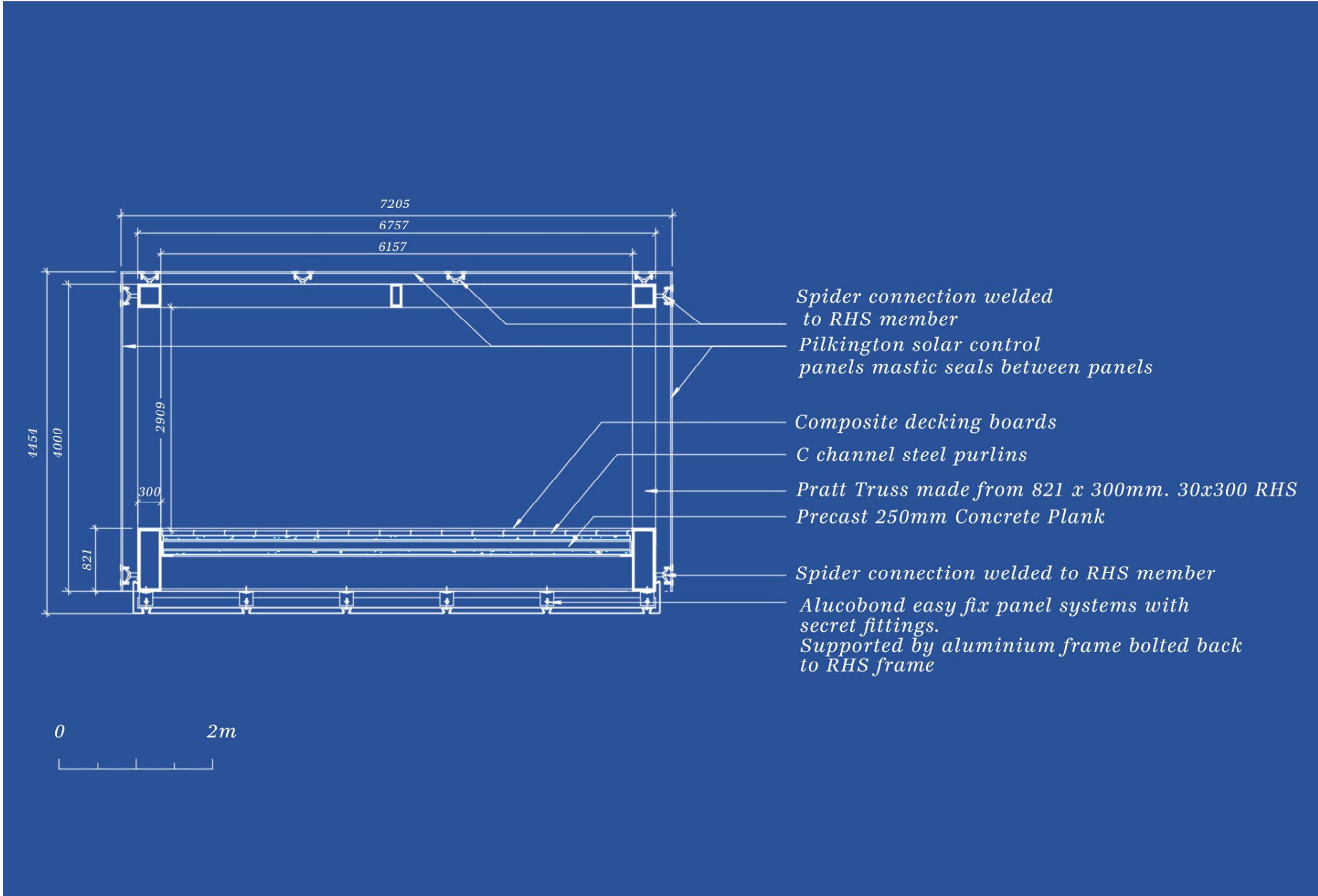


Fig. 74

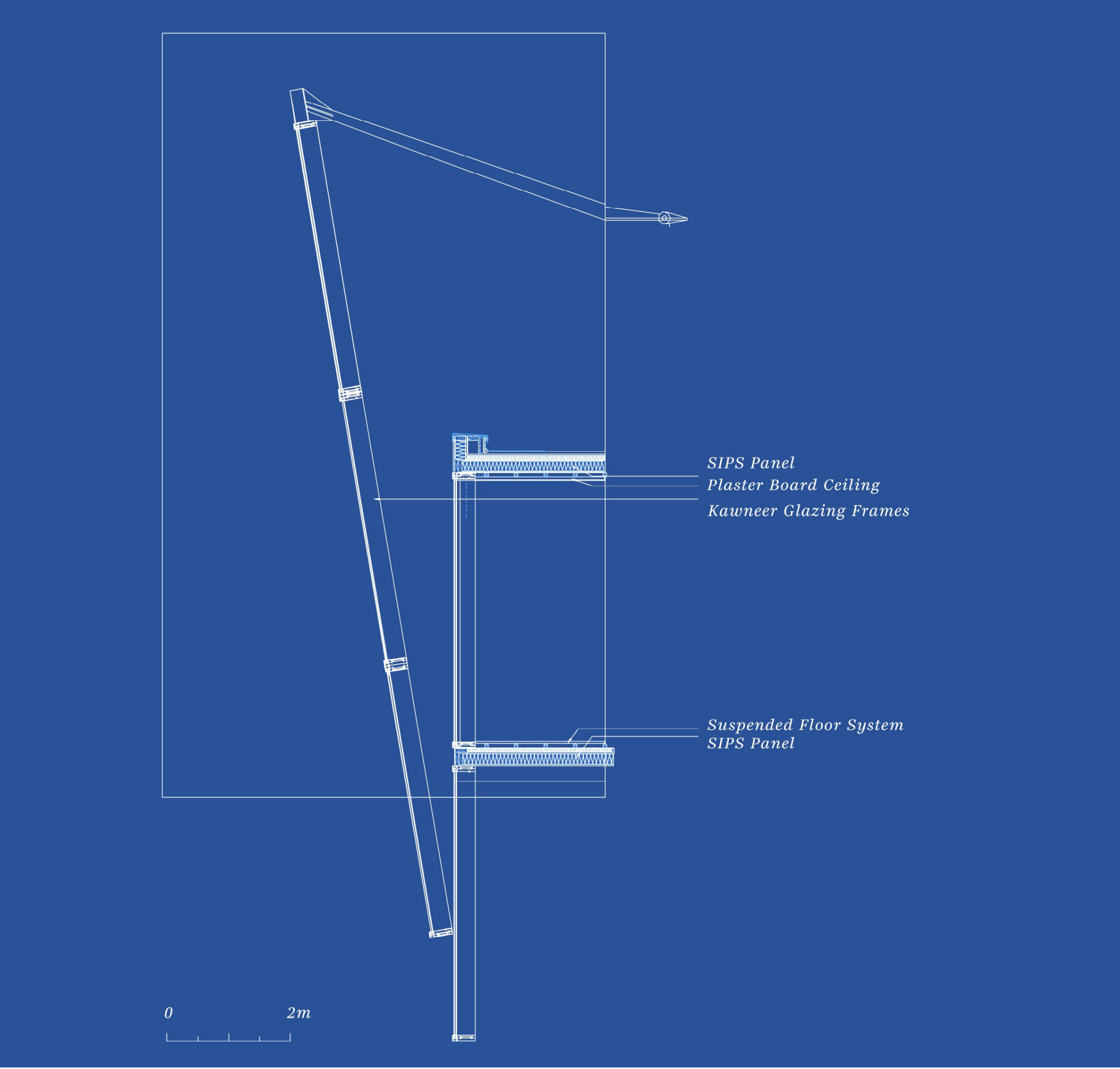
Proposed Detail of Section of Main Walkway with Floor, Framing and Solar Panel Skin

Fig. 75

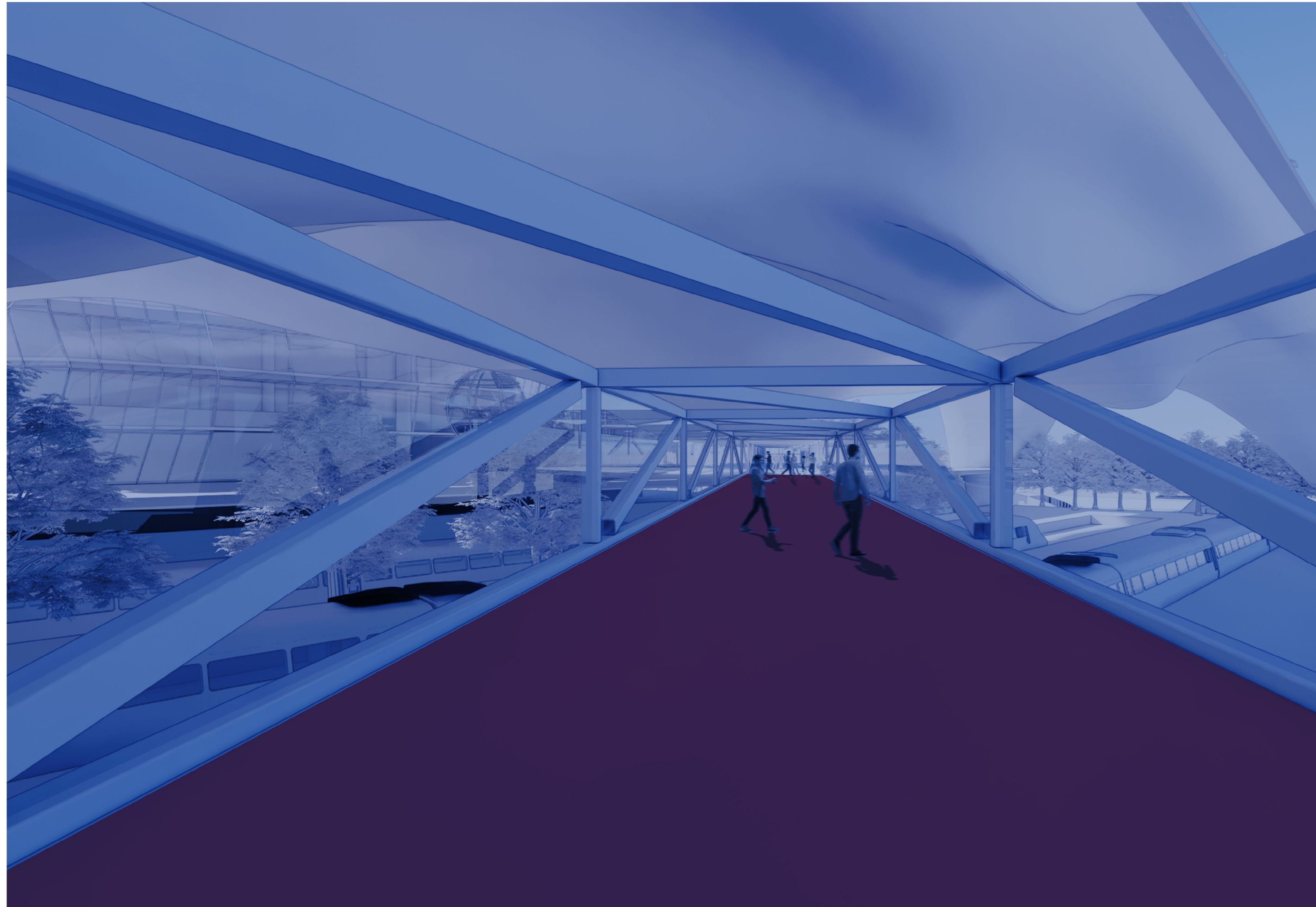
Proposed Detail of Section Through Aircraft Canopy Edge

Fig. 76

Proposed Detail of Hotel Frame and Floor Slab. In this detail the external diagonal glass wall acts as a rainscreen and reduces thermal bridging at the internal glazing skin. A T-bracket not seen in this section holds the external glass wall to the steel framing.



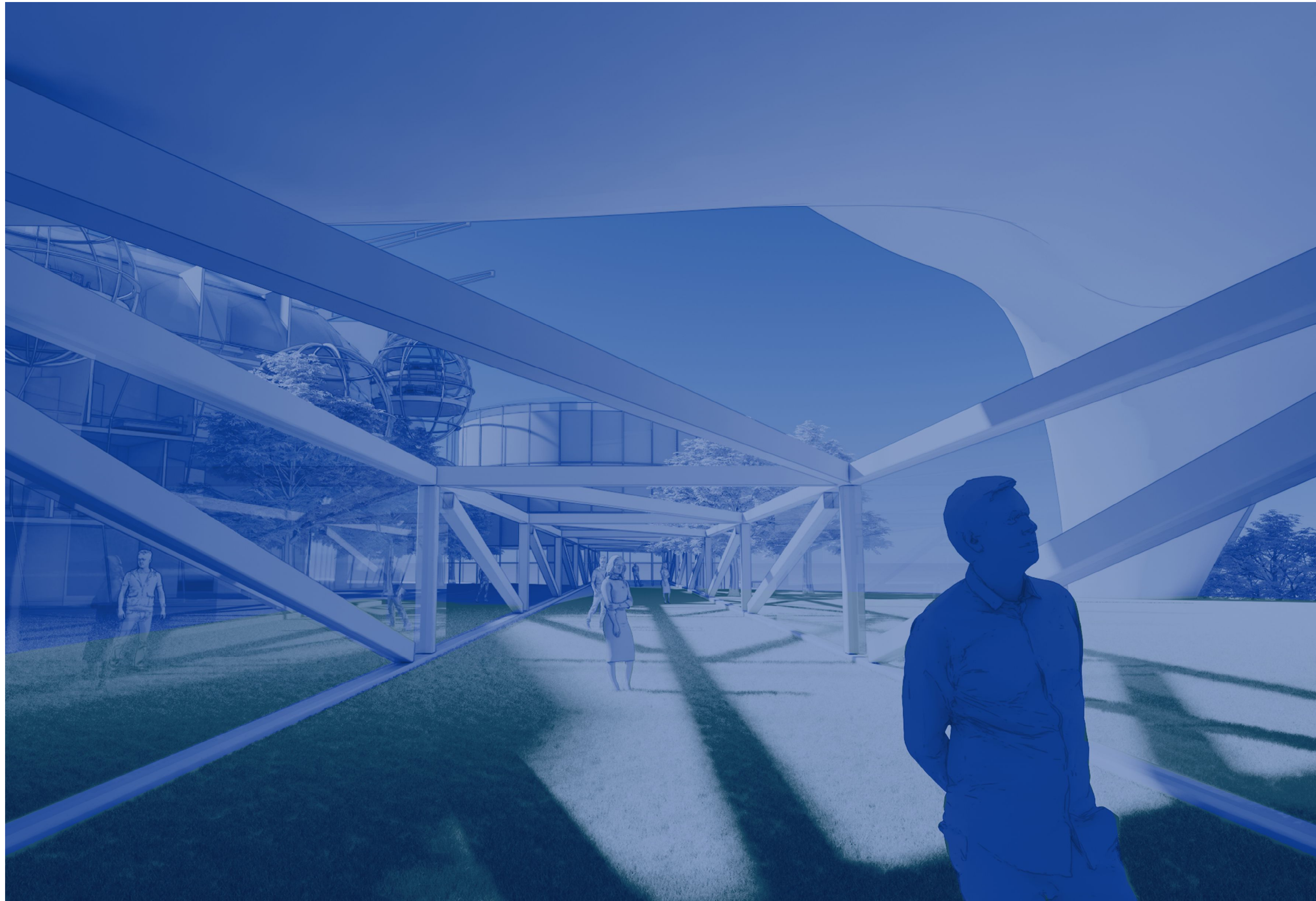




*Fig. 77*

Rendered Visual  
Suggesting a  
Perspective view  
From within the  
Walkway travelling  
over the existing  
railway-line.





*Fig. 78*

Rendered Visual  
Illustrating the  
Change in floor  
Finish Along the  
Main Walkway.

In this instance,  
the high levels of  
natural light are  
visible.





Fig. 79

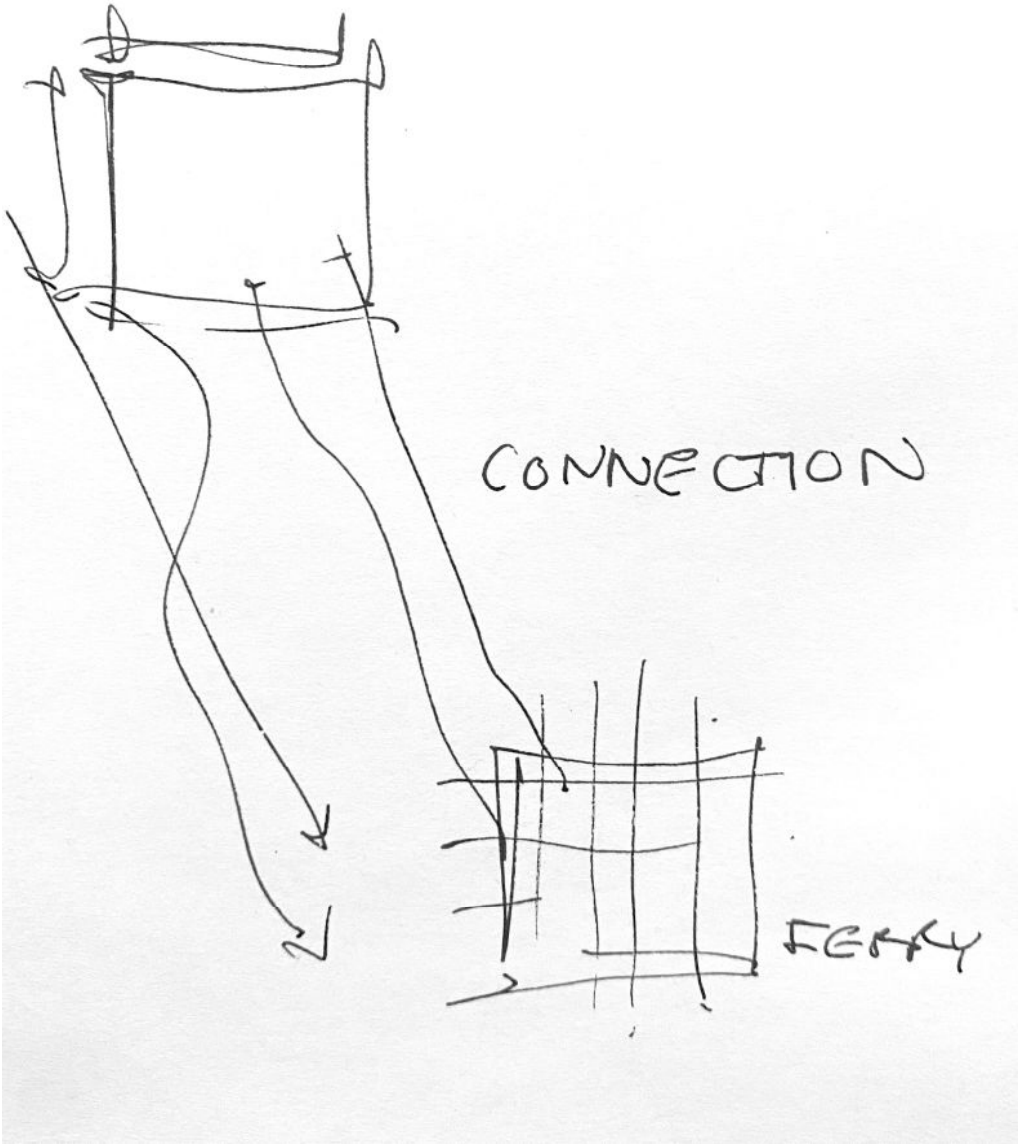
External Visual Render  
Proposing the Change  
in Thresholds  
Between the Green  
Canopy, Walkway  
and Hotel.



*“Providing a re-considered multi-modal transport interchange for the new island city of Portsmouth”*

<p><i>Is there a need?</i></p> <p>The need for transport infrastructure will be as consequential in 100 years time, as it is today. In this instance, the project responds to a city that has been and will continue to be effected by increasingly damaging weathers and flooding that has shaped it into the new island city of Portsmouth 100 years into the future.</p> <p><i>The Viability</i></p> <p>Increasingly progressing technologies will make for simpler, cheaper and more efficient construction. Paired with the use of lightweight and readily available materials, a scheme of this scale and rationale should be no problem whether it be built today, tomorrow or in a 100 years time. Additionally, an increasing number of city patrons and visitors must be able to circulate the city. The proposed scheme would allow for far more effective local travel than that of today.</p> <p><i>A Form of Expression</i></p> <p>Project ‘PERA’ brings a greater sense of identity to the existing site of Portsmouth Harbour and The Hard Interchange.</p> <p><i>The Effect on the Greater Community</i></p> <p>Greater accessibility for all, new access to Gunwharf Quays. More people in the area makes for a socio-economic generating scheme.</p> <p><i>Is it adaptable?</i></p> <p>An early observation in the design phase called for a building that could be erected quickly, and altered if needed. The propsed steel structure is future proof by being readily adaptable.</p> <p><i>Taking it further</i></p> <p>Due to the sensitivity of the location, further surveys and investigation should be carried out on the existing structures both on and around the site. Scale of the project may want to be reassessed in accordance to the rise of city residents.</p>
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Fig. 80  
Preliminary sketch  
exploring connections  
and existing site to  
enrich and assist  
a proposal scheme





<i>Fig. 1</i>	<a href="https://unsplash.com/s/photos/future-travel">https://unsplash.com/s/photos/future-travel</a>
<i>Fig. 2</i>	<a href="https://unsplash.com/s/photos/portsmouth-harbour">https://unsplash.com/s/photos/portsmouth-harbour</a>
<i>Fig. 3</i>	Author's own image/drawing
<i>Fig. 4</i>	<a href="https://www.rocconsulting.com/projects/hard-portsmouth-interchange/">https://www.rocconsulting.com/projects/hard-portsmouth-interchange/</a>
<i>Fig. 5</i>	Author's own image/drawing
<i>Fig. 6</i>	Author's own image/drawing
<i>Fig. 7</i>	Author's own image/drawing
<i>Fig. 8</i>	Author's own image/drawing
<i>Fig. 9</i>	Author's own image/drawing
<i>Fig. 10</i>	Author's own image/drawing
<i>Fig. 11</i>	Author's own image/drawing
<i>Fig. 12</i>	Author's own image/drawing
<i>Fig. 13</i>	Author's own image/drawing
<i>Fig. 14</i>	Author's own image/drawing
<i>Fig. 15</i>	Author's own image/drawing
<i>Fig. 16</i>	Author's own image/drawing
<i>Fig. 17</i>	Author's own image/drawing
<i>Fig. 18</i>	Author's own image/drawing
<i>Fig. 19</i>	<a href="http://www.starzina.com/Starzina%20Z%20Railways%20Portsmouth.htm">http://www.starzina.com/Starzina%20Z%20Railways%20Portsmouth.htm</a>
<i>Fig. 20</i>	<a href="https://digimap.edina.ac.uk/roam/map/historic">https://digimap.edina.ac.uk/roam/map/historic</a>
<i>Fig. 21</i>	<a href="http://www.starzina.com/Starzina%20Z%20Railways%20Portsmouth.htm">http://www.starzina.com/Starzina%20Z%20Railways%20Portsmouth.htm</a>
<i>Fig. 22</i>	<a href="http://www.starzina.com/Starzina%20Z%20Railways%20Portsmouth.htm">http://www.starzina.com/Starzina%20Z%20Railways%20Portsmouth.htm</a>
<i>Fig. 23</i>	Author's own image/drawing
<i>Fig. 24</i>	Author's own image/drawing
<i>Fig. 25</i>	Author's own image/drawing
<i>Fig. 26</i>	Author's own image/drawing
<i>Fig. 27</i>	<a href="https://www.twahotel.com/">https://www.twahotel.com/</a>
<i>Fig. 28</i>	<a href="https://www.twahotel.com/">https://www.twahotel.com/</a>
<i>Fig. 29</i>	<a href="https://www.twahotel.com/">https://www.twahotel.com/</a>
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<i>Fig. 31</i>	<a href="https://arnejacobsen.com/works/sas-royal-hotel/">https://arnejacobsen.com/works/sas-royal-hotel/</a>

<i>Fig. 32</i>	<a href="https://arnejacobsen.com/works/sas-royal-hotel/">https://arnejacobsen.com/works/sas-royal-hotel/</a>
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<i>Fig. 34</i>	Author's own image/drawing
<i>Fig. 35</i>	Author's own image/drawing
<i>Fig. 36</i>	Author's own image/drawing
<i>Fig. 37</i>	Author's own image/drawing
<i>Fig. 38</i>	Author's own image/drawing
<i>Fig. 39</i>	Author's own image/drawing
<i>Fig. 40</i>	Author's own image/drawing
<i>Fig. 41</i>	Author's own image/drawing
<i>Fig. 42</i>	Author's own image/drawing
<i>Fig. 43</i>	<a href="https://rshp.com/projects/culture-and-leisure/centre-pompidou/">https://rshp.com/projects/culture-and-leisure/centre-pompidou/</a>
<i>Fig. 44</i>	<a href="https://rshp.com/projects/culture-and-leisure/centre-pompidou/">https://rshp.com/projects/culture-and-leisure/centre-pompidou/</a>
<i>Fig. 45</i>	<a href="https://www.cityanatomy.com/centre-pompidou-portfolio">https://www.cityanatomy.com/centre-pompidou-portfolio</a>
<i>Fig. 46</i>	<a href="https://www.youtube.com/watch?v=QVa4ljHlu6o">https://www.youtube.com/watch?v=QVa4ljHlu6o</a>
<i>Fig. 47</i>	Author's own image/drawing
<i>Fig. 48</i>	<a href="https://www.unstudio.com/en/page/12109/arnhem-central-masterplan">https://www.unstudio.com/en/page/12109/arnhem-central-masterplan</a>
<i>Fig. 49</i>	<a href="https://www.unstudio.com/en/page/12109/arnhem-central-masterplan">https://www.unstudio.com/en/page/12109/arnhem-central-masterplan</a>
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<i>Fig. 52</i>	<a href="https://www.tschapeller.com/en/babyn-yar">https://www.tschapeller.com/en/babyn-yar</a>
<i>Fig. 53</i>	<a href="https://www.tschapeller.com/en/babyn-yar">https://www.tschapeller.com/en/babyn-yar</a>
<i>Fig. 54</i>	<a href="https://www.tschapeller.com/en/babyn-yar">https://www.tschapeller.com/en/babyn-yar</a>
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<i>Fig. 56</i>	Author's own image/drawing
<i>Fig. 57</i>	Author's own image/drawing
<i>Fig. 58</i>	Author's own image/drawing
<i>Fig. 59</i>	Author's own image/drawing
<i>Fig. 60</i>	Author's own image/drawing
<i>Fig. 61</i>	Author's own image/drawing
<i>Fig. 62</i>	Author's own image/drawing

( Please refer to design diary pages for full list of references. )



Fig. 63	Author's own image/drawing
Fig. 64	Author's own image/drawing
Fig. 65	Author's own image/drawing
Fig. 66	<a href="https://aplust.net/full/a-t-52_Paradise/#page=47">https://aplust.net/full/a-t-52_Paradise/#page=47</a>
Fig. 67	Author's own image/drawing
Fig. 68	Author's own image/drawing
Fig. 69	Author's own image/drawing
Fig. 70	Author's own image/drawing
Fig. 71	Author's own image/drawing
Fig. 72	Author's own image/drawing
Fig. 73	<a href="https://www.tschapeller.com/en/uak-wien">https://www.tschapeller.com/en/uak-wien</a>
Fig. 74	<a href="https://www.tschapeller.com/en/uak-wien">https://www.tschapeller.com/en/uak-wien</a>
Fig. 75	<a href="https://www.tschapeller.com/en/uak-wien">https://www.tschapeller.com/en/uak-wien</a>
Fig. 76	<a href="https://www.tschapeller.com/en/uak-wien">https://www.tschapeller.com/en/uak-wien</a>
Fig. 77	Author's own image/drawing
Fig. 78	Author's own image/drawing
Fig. 79	Author's own image/drawing
Fig. 80	Author's own image/drawing



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