Connecting Water to Architecture

Encouraging the interaction between people and surroundings

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Explanatory Document

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Abstract

For a country surrounded by ocean, the edge of the land and the sea has irresistible attraction for people living in New Zealand. However, the social connection to the water and waterfront has not yet been explored completely.

Observing the existing waterfront buildings in Auckland, a widespread problem is that those buildings rarely provide a satisfactory interaction between people and water. In other words, the waterfront buildings do not connect to water. Therefore, the question of this project is how to encourage interaction with water through the architectural atmosphere?

This project explores theories about perception and atmosphere, the existing precedents and water context to lead the design of a public waterfront building in Auckland. The main aim of this project is to encourage interaction between people, place and water through an architectural language of atmosphere, giving the urban waterfront a calming beach vibe and casual lifestyle. Therefore, the sensory engagement and strategies of merging and connecting to the edge are addressed in the design process.
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1. Introduction

1.1 Background of the project

For a country surrounded by ocean, land development and various spontaneous activities at the edge of the ocean have undoubtedly aroused the attention of all inhabitants since early settlement. Although Aotearoa-New Zealand is home to people of diverse cultures, the common love of the unique and fascinating geographical environment and the ocean brings everyone together. In fact, the water has had a deep impact on the development of the major city of Auckland, providing a place for New Zealanders to engage in overseas trade and tied people together with a strong appreciation of the maritime until today.¹

Nowadays, we can see the rapid expansion of Auckland through the test of time and technological development, immigration and tourism. Moreover, Auckland has implemented many activities for port revitalization and development, including the Sea + City project in 2007.² In August 2011, the revitalised Wynyard Quarter (including new public parks, plaza event spaces and pedestrian bridge) opened to much public acclaim.³ Due to this, we can see great opportunities and potential to enhance the unique atmosphere of this waterfront area where the city meets the sea and to reflect the special characteristic of Auckland.

However, the social connection to the water and waterfront has not yet been explored completely. Observing the existing waterfront buildings, a problem is that these structures rarely provide satisfactory interaction between people and water. In other words, the waterfront buildings do not connect to water.

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Figure 1 Pt Chevalier Beach. Photo by David Johnson,
1.2 Project Outline

The waterfront usually can be seen as a unique edge place where water meets land (see Figure 1). The urban waterfront deepens this edge relationship in another aspect; that is, it serves as a significant place where water vibes meet urban vibes. More specifically, the urban waterfront provides an edge condition where water-related and urban-based functions merge.

Auckland City’s Wynyard Point, an important urban waterfront area which has not yet been fully developed, was chosen as the site of this project. The project is a multi-use public building including three functions - an aquatic centre, a gallery and an events centre - and aiming to revive the experience of the waterfront and connect water to the architecture.

1.3 Aims /objectives of the project

The existing waterfront buildings in Auckland have low interaction with water and are quite isolated from the surrounding context. This project mainly emphasizes the unique coastal characteristics of Auckland City that can enrich public life in such a waterfront context. It does so not only through landscape and urban design, but also through architectural language and atmosphere by developing public buildings.

The following statements are the project’s aims:

1. Overcoming the separation between building, water and people by providing the water connection and merging the edge of land and sea.

2. Encouraging interaction between land and sea and increasing people’s exposure to nature, which will address the relationship between people and water surroundings through multi-sensory engagement.

3. Bringing back the classical beach atmosphere to the urban waterfront in a dense city, based on human scale, by giving the building more functions while retaining the free, open and natural atmosphere of the beachfront to fit into the urban dense waterfront.

The following statements are the project’s objectives:

1. Investigating and evaluating existing projects and buildings to indicate ways in which important buildings may positively affect this project and be actively integrated into the whole development of Auckland’s waterfront.

2. Trying to enhance coastal edge attractiveness and livability by opening up the current edge condition to more possibilities.

3. Comparing the different features of beachfront and urban waterfront to lead the design of a new “urban beach”.

4. Understanding patterns of human behaviour to design
quality public building and spaces that create an impressive cultural and artistic atmosphere and increase public access to waterfront area.

1.4 Research Question
How can a better interaction with water be encouraged through the use of the architectural atmosphere?

Or more specifically:
How can an urban waterfront building in Auckland provide interaction between society and nature by combining the marine spirit of the beachfront with an urbanized waterfront?

1.5 Scope and limitation
The study will investigate how public buildings could achieve harmony with their natural and architectural surroundings. An exploration of the atmosphere within architecture will lead to a sustainable proposal enhancing future livability on Auckland’s waterfront.

The site, Wynyard Point (in its current condition), is one of the regenerating proposals for Wynyard Quarter which are the result of a collaboration between Auckland Transport, Auckland Council, Panuku Development Auckland, Auckland Tourism, Events and Economic Development (ATEED) and Regional Facilities Auckland (RFA). Based on the third aim of this project, this is not about designing an iconic building at the waterfront area.

1.6 State of knowledge in the field
The literature review begins by examining the significance and characteristics of the waterfront, then moves on to outlining theories based on phenomena, perception and atmosphere. This section looks specifically at Questions of Perception, Phenomenology of Architecture by Steven Holl, Juhani Pallasmaa and Alberto Pérez, The Eyes of the Skin: Architecture and the Senses by Juhani Pallasmaa  and Atmospheres: Architectural Environments - Surrounding Objects by Peter Zumthor. The purpose here is to investigate the relationship between architecture and senses from both subjective and objective aspects in order to understand how these various theoretical perspectives might be applied to the design of public buildings in Auckland's waterfront.

elements could influence experience and perception. In this way, the design of water engagement can get cues from those methods.

The precedent review is basically an extension of the literature review. Vals Spa and Falling Water are both typical precedents that use various senses to create a lively experience of space and building. Yokohama Terminal is a landform waterfront building, and thus provides a new solution for interacting with water surroundings and merging the edge condition.

1.7 Methods

The methodological approach of this project is research by design. It intertwines research and analysis with planning and design throughout the duration of the project, especially taking aspects from research and precedents that focus on the relationship between architecture and waterfront surroundings. The design is underpinned by an analysis of the architectural theories of phenomenology and perception, atmosphere and multi-sensory experience.

The research points of the project are determined by key characteristics of the scheme; patterns of human behaviour; environmental sustainability issues; and how strategies can be used to improve architectural quality. By combining those points with the literature and precedents, design solutions are generated such that the project will be able to use these results to guide further research.

Many notable academic and professional source references explain architectural terms related to worldwide waterfront regeneration and state specific design guidelines that aim to improve these types of developments. International and local practices of waterfront building were able to be critically observed and compared through data collection. During this kind of evaluation process, successful and unsuccessful design elements would become obvious and as a result feed information back to the project.

Site selection was influenced by the combination of field and research results along with the evaluation of existing developments. The main aim of this project is to emphasize the unique coastal characteristics of Auckland City and enrich public life in such a waterfront context. It does so not only in terms of landscape and urban design aspects, but, more importantly, through architectural language and atmosphere by developing a public building. Wynyard Quarter is identified as a suitable place where the city meets the sea. Its current regeneration plays an important role in the site selection for this project’s waterfront building.

2. Context research

This section briefly explains the reasons why urban waterfront regeneration is an issue worthy of attention from the aspect of people’s desires. The discussion of the wider waterfront area needs to be more specific to achieve the goal of attracting people’s attention back to the unique water edge.

As Richard Toy said in his essay Auckland: Water City of the South Pacific, Auckland’s waterfront has gradually lost its strong character within the modernized urban setting, though the harbours are loved.9

The draft vision, ‘Linking people, city and sea’, which was released for public consultation in February 2005, received relatively comprehensive feedback from approximately 850 people.10 The feedback included a list of wishes about better public access, open space and landscape, public transport in waterfront area, and, more importantly, it showed people are willing to lend their “Support for a range of activities throughout the wider waterfront area; [and] support for specific facilities such as the Viaduct Harbour and Westhaven Marina.” 11

Furthermore, “the importance of opening the water’s edge to the public and how we can achieve this”12 became one of the key issues of waterfront development discussions.

With regard to the wider waterfront area, there are two different types of waterfront, one is traditionally the beachfront, or the suburban waterfront, the other is the urban waterfront. The next section will investigate the reason why waterfront building has less connection with water through a comparison of the urban waterfront and suburb waterfront. This will provide a critique for what has been missing in the urban waterfront.

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11 Panuku Development Auckland, Auckland Waterfront, 7.
12 Panuku Development Auckland, Auckland Waterfront, 7.
2.1 The difference between urban waterfront and suburban waterfront

People seek a waterfront that is a place of public enjoyment. They want a waterfront that is completely exposed to nature, a free public access waterfront with beautiful views, where you can enjoy water and land at any time. This is what the suburban waterfront can offer. On the other hand, people also seek a waterfront that can play a variety of service roles, from work to life, and from leisure to gatherings. This kind of waterfront, the urban waterfront, can encourage diversity and improve the quality of people's lives from different aspects—economic, social, and cultural. (see Figure 2)

In terms of the differences between the urban waterfront and suburban waterfront, it seems like the latter could awaken further people's appreciation and memories of nature. The suburban waterfront provides the vibes of openness and wilderness, brings a sense of adventure into daily life, and is a place that is full of leisure activities. However, the urban waterfront (harbours and wharfs) represents an indispensable transition position between city and the sea. It faces the sea while on the edge of the land and sea, as does the suburban waterfront. On the other hand, it connects the city to the seaside, and has more modern, urban vibes, which attracts people to socially interact and develop relationships.
The Sense of Place model by Montgomery (see Figure 3) shows three important aspects including physical setting, activity and image/meaning. This diagram could reveal the ‘good’ and ‘bad’ of the different waterfront areas.

From a physical setting aspect, the urban waterfront has a more complex and varied context because of its location and the impact of urbanization. On the other hand, the space of the urban waterfront is separated into pieces of small and discontinuous spaces, compared with the complete and open space of the suburban waterfront. From the activity aspect, both waterfront areas are ideal for jogging and walking along the waterline, and a good place for people with different experiences, knowledge and ideas to meet and interact. But the urban waterfront has higher flexibility (relatively speaking) so as to deal with waterfront activities under different weather conditions. From an image/meaning aspect, the urban waterfront has a greater tendency to show the extent of urban development, while the suburban waterfront still aims to assume the role of developing the maritime culture and promoting maritime spirit. That is also the key issue of waterfront revitalization.

Furthermore, these three aspects of sense of place can be divided into more detailed elements to compare two waterfront conditions as shown in the table 1 next page.
### Table 1: Comparison of two waterfront area

<table>
<thead>
<tr>
<th></th>
<th>Urban waterfront</th>
<th>Suburban waterfront</th>
<th>Water</th>
<th>Density</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Surroundings</strong></td>
<td>The surrounding building types are rich and varied which could boost activity in</td>
<td>The surrounding building types are relatively simple, and are mainly residential,</td>
<td>serving as waterscape for citizens’ sightseeing or other public activities. The transformation project needs to be taken care with.</td>
<td>High density of the transition area between city and the sea</td>
</tr>
<tr>
<td></td>
<td>the public spaces</td>
<td>which may undermine the diversity of waterfront use</td>
<td></td>
<td>Low density for the quite large scale of open space</td>
</tr>
<tr>
<td><strong>Activities</strong></td>
<td>Both outdoor and indoor activities</td>
<td>Mainly outdoor activities.</td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Weather</strong></td>
<td>Urban waterfront has a relatively higher flexibility to deal with waterfront</td>
<td>Suburban waterfronts are more affected by the weather, especially rainy or cold</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>activities under different weather conditions. (café/ sports center…indoor space)</td>
<td>days.</td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Access</strong></td>
<td>Easy access by car/bike/foot</td>
<td>Not as easy as urban waterfront, but for residents of the surrounding residential</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>area, it is easy to reach</td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Local Identity</strong></td>
<td>During the industrial era, urban waterfront was used more for working spaces or shipyards instead of</td>
<td>The pure and open waterfront space for residents’ relaxation, thus has relatively perfect scenery</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

On the basis of the above elements, it is clear that we need to shift attention back to the waterfront development, especially the urban waterfront. To render more natural vibes and characteristics, promote social interaction, but also nature interaction, enhance and not obliterate our special ‘place’ so that this can return to us a more vivid experience of this unique edge condition.
2.2 Existing buildings of Auckland waterfront

The two selected waterfront buildings in Auckland below (see Figures 4 and 5) represent typical modern urban waterfront buildings in the wharf area. They reveal some problems related to the building and waterfront surroundings.

a. The Cloud
As an iconic building at Auckland’s most important wharf, The Cloud does offer a strong image of New Zealand and impresses both international visitors and New Zealanders. But as a waterfront building, does it have strong interaction with water?

b. Viaduct Events Centre
The façade of this building consists of a whole glass curtain wall that reflects the surrounding sea and sky; and the undulating roof gives the building a dynamic aesthetic. Although there is a ramp around the building to provide a viewing deck on the northern end, the building is not open for public activities. This restricted viewing deck cannot be used by many people, making people unable to fully appreciate the beautiful sea view.

Figure 4 The Cloud

Figure 5 Viaduct Events Centre
2.3 Summary
Auckland’s urban waterfront has been commercialized and urbanized, while its suburban waterfront still keeps its unique maritime spirit.
The existing waterfront buildings indicates the interaction of people and water should be focused more to make a good use of this unique marina characteristic.

3. Literature Review
3.1 Waterfront and “aquatecture”
As Christian Norberg-Schulz advocated, architecture aims to understand and convey the true nature of the environment intuitively for creating meaningful places where one can identify him/herself. 13 Kenneth Cumberland discussed the “essential nature” of a place in his paper The Essential Nature of Auckland, and suggested that although Auckland is experienced differently by various people, “unusual physical attributes of Auckland (site, location, environs and hinterland) contribute to its essential nature”.14

It is the interplay of land and sea that forms a part of the charm of Auckland. Water is a fundamental feature of self-identity for Auckland and its people and should therefore be a feature of its architecture.

Georges Seurat’s painting(see Figure6) depicts a popular weekend destination for Parisians. People enjoy the free and leisurely atmosphere at the waterfront as well as fishing, boating, picnicking and promenading.15 Here, the waterfront becomes the

centrepiece of the activities, where water-related and urban-based functions merge.\textsuperscript{16}

According to Anthony Wylson, the term “aquatecture” is adopted for architecture associated with the water element.\textsuperscript{17} Moreover, aquatecture, with the lively, reflective or experiential element that water contributes to the surroundings, can enrich civic life and leisure.

3.2 Why atmosphere?

Christian Borch states that contemporary architectures have the common problem that they cannot successfully fit into the surrounding environment from an atmosphere aspect.\textsuperscript{18} For a long time, the atmosphere has been rarely taken into account in the architecture industry. It is only in the past two decades that an experienced view that can express a formal understanding of atmosphere has occurred. What do we want to express when talking about the quality in architecture? When a building successfully touched me, what is the quality in that architecture? What really touched me? How can I make it fit into my own work? A suitable word is atmosphere. “I enter a building, see a room, and – within only one second – have this feeling about it,” confesses Peter Zumthor.\textsuperscript{19}

The atmosphere is often used in the context of architecture to measure the quality of the sensory experience in space, which is an important part of the architectural space entity that distinguishes it from the architectural model. However, Mark Wigley points out that the atmosphere is a vague concept, an

\textsuperscript{16} Ryan, Building with Water, 26.
\textsuperscript{19} Peter Zumthor, Atmospheres: Architectural Environments - Surrounding Objects (Basel/ Boston/ Berlin: Birkhäuser Verlag, 2006), 15
intangible material form that consists of a variety of properties (such as temperature, touch, moisture, etc.). Some mainstream views believe that the atmosphere is an aesthetic phenomenon; others think that the atmosphere is expressed by space, “mood”, “aura”, “Genius Loci”, and “Ambience”. Some scholars believe that the atmosphere is an imitation of nature.

Interestingly, the concept of atmosphere derived from Zumthor is not confined to the interior of the building. In other words, the architectural atmosphere is not just a physical contact with the building itself, but also refers to how the building relates to its environment, or how it "becomes a part of its surroundings". Similarly, Pallasmaa concludes that architects should pay less attention to the visual characteristics of their work, especially how their designs are visually presented, and focus on multisensory gesture informing an atmospheric approach. The atmosphere is something between the subject and the object, which establishes a connection between the two in a special way. Therefore, the atmosphere is a bridge between the connected subject and the object, and closely relates to the individual's experience, feelings, and emotions. It is, thus, difficult to explain in a logical language. Discussions of atmosphere often relate to multi-sensory experience, which can representationally express the perception of architectural space. The atmospheric view emphasizes the relationship between architecture and experience, and explores how architecture and urban design provide a multi-sensory experience, which means that the building is a part of larger atmospheric surroundings rather than a single object.

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3.3 Architecture perception: sensory system

3.3.1 Subjects of perception

a. Visual sense
Architecture is not only just a space art, but also a visual art. When people perceive the external environment, vision plays a major role. The perception of architectural space is inseparable from the guidance of the visual system. Among the architectural elements, colour and material affects the feeling and the sense of distance and scale of the building.

The visual perception of material in space determines whether the material is expressive in space. In Kiasma Museum of Contemporary Art (see Figure 7),\(^2\) Steven Holl uses different materials whose properties are stimulating to people's vision. The interior wall is made of light-coloured cement mortar, the ground is made of darker concrete, and the sculpture stairs and ramps are made of dark concrete. In the interior space of the building, the colour and texture define the range of space, making the space more vivid. Moreover, the curved slope of the dark concrete material forms a strong contrast with the colour of the overall light-coloured architectural environment, evoking the feeling that

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the body wants to move upwards.

Pallasmaa pointed out that as buildings lose their plasticity and their connection to the body, they become isolated in calm and distant visual relationships. Therefore, the exploration of other senses related to architecture becomes more important.

**b. Auditory sense**

People feel nature through sound, experience space through sound, and different spaces have their own unique sounds. People use these differences to determine the state of the space and the position of the body. Pallasmaa not only considers sound as one of the spatial attributes, but also believes that sound can help people measure space and make the scale of space easier to grasp.

In addition, since sound has the characteristics of continuity and penetration, it can connect space and guide space; therefore, the sound in the space can shape a variety of spatial perceptions. Pallasmaa believes that sight can isolate space, and hearing has the ability to connect space. Sound can connect independent spaces that are visually isolated from each other, shortening the distance between spaces, thus creating a perception experience inside the space. Moreover, sound usually constitutes a relatively vague and open image that stimulates people's memories and imagination, therefore the space created by hearing is more poetic than the visual.

The sound can be used to mark the place, and Peter Zumthor draws an analogy between space and a “large instrument”, stating that “every building has a different tone.” The sound can form a sound field space, so that even if the person closes his/her eyes, he/she can recognize a specific place through the auditory system.

**c. Tactility sense**

Touch is a perception model that blends our experience of the world and of ourselves. All senses, including vision, are extensions of touch.

The sense of touch is not only direct contact with the substance in space through the hands, feet, skin and other parts of the body, but also a passive perception; that is, the perception of various environmental elements, such as humidity, temperature, ventilation and sunlight. As Pallasmaa writes,

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26 Juhani Pallasmaa, *The Eyes of the Skin*, 54.
27 Ibid.
29 Pallasmaa, *The Eyes of the Skin*, 12.
Standing barefoot on a smooth glacial rock by the sea at sunset, and sensing the warmth of the sun-heated stone through one’s soles, is an extraordinarily healing experience, making one part of the eternal cycle of nature. One senses the slow breathing of the earth.\footnote{Juhani Pallasmaa, \textit{The Eyes of the Skin}, 62}

As part of the perception system, touch is combined with other perceptions to make people feel at one with themselves and their environment. Tactile sensations cannot exist independently when we experience architecture, but it is the intertwined experience of various perceptions.

d. Smell and taste sense

Vision, hearing and touch are dominant in the perception of spatial atmosphere, but scent brings about subtle feelings in the space environment and has its own special function in the perception of place. The effect that taste has in the architectural and environmental experience is far less than those brought about through the other senses. However, the direction of olfactory sensations can be used to understand the phenomena existing in space and spatial organization. Taste can convey information about smell, evoking certain memories of people’s past experiences.\footnote{Anna Barbara and Anthony Perliss, \textit{Invisible Architecture: Experiencing Places through the Sense of Smell} (Milan: Skira; London: Thames & Hudson distributor, 2006), 107.}

3.3.2 Objects of perception

a. Light

Pallasmaa states that in an emotional state, sense stimuli seem to shift from a more refined sensation to a more ancient sensation, from vision to hearing, touch and smell, from light to shadow.\footnote{Pallasmaa, \textit{The Eyes of the Skin}, 52.}

Visual perception of space must involve light, which not only satisfies people's requirements for viewing architecture, but also participates in stimulating people's visual senses and shaping the atmosphere. As Steven Holl writes, the quality of light and shadow created by different spatial forms, that from solids to voids, from opacity to transparency, leads the emotional spirit of architecture.\footnote{Holl, \textit{Questions of Perception}, 63.}

Light can shape spatial sequences, the innate curiosity for light makes the movement of people in space affected by light, such as the entrance space sequence of the Vals Spa.

Many inharmonious elements in the shadows can get along very harmoniously. The shadows have the ability to merge architecture with nature by unifying the tone of various parts of the building and the tone between the building and its surroundings. The organic architecture advocated by Frank Lloyd Wright uses high-raised eaves to create a strong shadow that makes the indoor and outdoor compatible.\footnote{"Organic architecture," Wikipedia, last modified August 8, 2018, accessed}
b. Water
Holl considers water as a “phenomenal lens” because of the characteristics of reflection, refraction, and transformation that water has. The use of water in the architectural space can both increase the sense of space and create an illusory sense of symmetry.36

The Moon Stage designed by DL Atelier in China (see figure8), is an open-air stage designed for the children in the village. The architect placed the simplest stage above the water, opposing the circular auditorium. As night falls, the semi-circular water stage and its semi-circular reflections together create the illusion of a full moon.37 The refraction of water not only activates a stage that should be normal, but also provides a vigorous playground for the children in the village.

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36 Holl, Questions of Perception, 80.
Holl states that modern urban life and the complexity of urban architecture unfortunately keep people away from some moving life details and perception brought by unpredictable weather. He uses his housing project in Fukuoka as an example, through the water courts, people can easily discover the different feelings and influences brought by different weather conditions. The sound of raindrops, the wind blowing the water and the reflection of the clouds on the calm water, all enable people to connect more with nature amidst the hustle and bustle of city life.

3.4 Atmosphere and multi-sensory experience

Peter Zumthor believes that the architectural atmosphere is not only a collection of physical properties of the site, but also the “Human Surrounding, a product of the interaction between people and places, a product of ‘sense senses’, and the things themselves, the crowd, the air, sound, colour, material, texture, and form”. He divides the means of building the architectural atmosphere into nine aspects in his book *Atmospheres: Architectural Environments - surrounding objects*.

Furthermore, the nine aspects of atmosphere that Zumthor proposed can relate to the various effects of water in urban settings (see Figure10).

<table>
<thead>
<tr>
<th>Waterfront design</th>
<th>Elements of “Atmosphere” from Zumthor</th>
</tr>
</thead>
<tbody>
<tr>
<td>Visual Effects</td>
<td>The body of architecture; Surrounding Objects; The light on things</td>
</tr>
<tr>
<td>Tactual Effects</td>
<td>Material Compatibility</td>
</tr>
<tr>
<td>Audial Effects</td>
<td>The sound of Space</td>
</tr>
<tr>
<td>Climate Comfort Effects</td>
<td>The Temperature of a Space</td>
</tr>
<tr>
<td>Circulation Effects</td>
<td>Between Composure and Seduction</td>
</tr>
<tr>
<td>Psychological Effects</td>
<td>Tension between interior and exterior (private? public?); Levels of Intimacy (human scale, distance)</td>
</tr>
</tbody>
</table>

Figure 10 Water effects and Atmosphere

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39 Zumthor, *Atmospheres*, 25
Zumthor’s Vals Spa emphasizes the senses and perceptions of buildings, and his views here are similar to the architectural theorist Juhani Pallasmaa. Pallasmaa believes that the “life-enhancing” architecture should pay attention to all the senses at the same time and clarify our experience in the world while reinforcing our sense of reality and self. Pallasmaa believes that the “life-enhancing” architecture should pay attention to all the senses at the same time and clarify our experience in the world while reinforcing our sense of reality and self.40 Zumthor concerns about the sequence of spatial experience in his works a lot, Holl holds the similar design method as well. However, Holl focus more about perception and external shaping. This working method encourages him to twist edges, contours and surfaces; to deal with light and shadow; to look forward to the transformation caused by rain, fog, sun and wind. In the book question of perception, He talks about the overlapping perspectives, which enrich the view and experience from multiple horizons in modern urban life with open-ended feature.41

As Pallasmaa writes, “architecture is essentially an extension of nature into the man-made realm, providing the ground for perception and the horizon of experiencing and understanding the world. It is not an isolated and self-sufficient artefact; it directs our attention and existential experience to wider horizons.”42

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40Pallasmaa, The Eyes of the Skin, 12.
41Holl, Pallasmaa, Pérez-Gómez, Questions of Perception, 48
42Pallasmaa, The Eyes of the Skin, 45
4. Precedent Review

4.1 Yokohama International Port Terminal

Yokohama International Port Terminal is a new type of urban transportation facility, suggesting that the building designed as the continuation and extension of the wharf landscape, rather than an object separating from the texture of the dock base. A large urban park built on its roof can meet all the functions of the terminal.

In order to maximize the experience of urban life, the terminal organizes space based on a circulation system, thereby posing a challenge to the linear structure of the dock base station. The non-interference and multi-direction architectural space is organized by a series of detailed planning and interconnected loops, rather than the use of the traditional entrance design of fixed flow direction. As an extension of the city's texture, the building systematically transforms the linear elements in the circulation system, making it a folding double interface that is suitable for the above-mentioned improvement scheme.

The most inspiring aspect of the building is that it is closely linked with its urban waterfront area, which, in turn, is close to a fully open public square. The passenger centre is seamlessly integrated into the Yamashita and Akaranega Park, making it a city park that is completely undisturbed and accessed at will. Also, the height is precisely calculated, so that it can appear as an extension of the coast to ensure that the sight of the coastal landscape of inland part is not affected as well.

The Yokohama International Port Terminal, due to its landscape techniques and the scale of the building, provide a good example of a waterfront design that architecture can learn from.\(^4\) As an object on site, the boundary between interior and exterior is fluid and permeable which strongly expresses the interaction between people and building or between water and land. Thus, the

\(^4\)Allen, McQuade and Princeton University: School of Architecture, 28.
waterfront of Auckland could use this kind of solution to maximise the impact of water on people's lives. 

4.2 Vals Spa by Peter Zumthor

Vals Spa evokes the perceived theme of the experience as much as possible by designing and applying various elements. Vals Spa is located in the town of Vals, Switzerland, and was constructed in 1996. The roof of the building is at the same height level as the entrance area of the hotel. The building is like a simple rectangular box that is embedded in the mountain and is like a cave situated in the quarry that is hidden in the mountain as well. Therefore, the baths are placed in a semi-underground space, covered with turf. “Boulders standing in the water”, that was Zumthor's original idea for the baths, the stone and water became the motivating force for this project. “The rays of light falling through the openings in the starry sky of the cupola illuminate a room that could not be more perfect for bathing: water in stone basins, rising steam, luminous ray of light in semidarkness, a quiet relaxed atmosphere, rooms that fade into the shadows; one can hear all the different sounds of water, one can hear rooms echoing.” Natural elements have become an important starting point for the design of Zumthor.

44Sigríður Hauser, Peter Zumthor and Hélène Binet, Peter Zumthor: Therme Vals (Zürich: Scheidegger & Spiess, 2007), 27.
4.2.1 Block studies

The so-called block studies of the quarry sketches are an original creation and a spirited form of research. After breaking up the construction site, water began flowing and collecting in every void space that emerged. And various characteristics of space—mass and hollow, openness and density, rhythm, repetition and variation—became main concerns when drawing those block studies. In the process of developing the plan, Zumthor did not avoid pure geometric composition. The plan seems to be free and arbitrary, but there are also certain laws to obey. Zumthor sets some subjective rules so that geometrically logical relationships are created between freely distributed bodies. Large blocks, tightly connected to the narrow gaps, blend into the imaginary rocky cliff of the mountainside; on the side facing the valley, the stones are lighter and the spaces between the blocks become larger. What Zumthor hopes for in the composition is contradistinction: contrast between tension and relaxation, and between freedom and control. (see Figure 14)

4.2.2 Space composition

Zumthor’s description of the interior space of baths is very time-sensitive, leading visitors to a sequence of spaces, step by step, space open and space closed. In general, the interior space is divided into two categories: the meander space and the intimate space. The meander, which is more like a designed negative space, is the empty space between those solid blocks,

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flowing through the entire baths. Two basic rules were used in the organization of the meanders. One is the “pinwheel principle”, which guarantees interlocking between the spaces; the other is the “zipper principle”, which guarantees the axis of movement between the interlocking spaces. It can be seen in Figure 15 and Figure 16 that Zumthor’s consideration of internal space is divided into two levels, one is the spatial experience, and the other is the plan structure.

In the organization of the intimate space, he pays more attention to the design of the spatial sequence, guiding the movement and emotions of people through the rhythm changes of the perceptual object elements in the space. The spatial sequence entering the baths involves spatial experiences under the combined effects of multiple sensory systems. Zumthor hopes to create a sequence of spaces like exploration through walking in caves; as the body moves, the awareness of space becomes clearer and deeper.

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47 Hauser, Zumthor and Binet, Peter Zumthor: Therme Vals, 80.
48 Hauser, Zumthor and Binet, Peter Zumthor: Therme Vals, 82.
4.2.3 Space sequence and perception

The selected five sequences of space can be analysed through senses and perception aspects:

a. *The entrance*

The entrance to the sequence (see Figure 18) is hidden in the mountainside, and people walk through a low, narrow, dark, long, windowless walkway touching the gneiss wall. In this first space, haptics play a major guiding role, and hearing plays a secondary role. People explore the mystery of the cave, slowly moving forward along the slender ramp (only 1.5m wide), accompanied by a faint sound of running water in front.

![Figure 18 Entrance](image)

b. *Fountain hall*

After the dark passage at the beginning, visitors can turn left and follow a few steps down to the open fountain hall (see Figure 19). In the second space of the sequence, vision plays a major guiding role. When people enter, there is a relatively open and bright strip-shaped space that has a higher floor height and plenty of light compared to the front passage. Enough light allows people to see the full picture of the space directly. In this space, if people
stayed for a short time then their attention would be attracted by five small ‘caves’.

c. Changing room
Five changing rooms(see Figure20) are the third space of the sequence, and vision still plays a major guiding role at this stage. People enter a bright and warm changing room, take off their clothes and shoes, and walk barefoot on the warm red wooden floor to feel the texture and temperature of the floor. They touch the space with their body, and feel the warm atmosphere of this space.

d. Linking space
Moving forward to the fourth space, Zumthor still weakens the role of visual guidance, which is similar to the first space of the sequence(see Figure21). But there is natural light in this space, and the sun can pass through the strip-shaped glass roof and scatter its rays in the dim passage. Therefore, vision plays a major guiding role, and the sense of touch plays a secondary role in guiding the sequence. At the same time, hearing and smell also affect people to a certain extent. It is essentially an open space,
although the direction of movement of the body in this space is linear. During the process of slowly moving forward and backward with the body, the eyes cannot directly see the open bath space but can see the scene of the next space that they are about to enter. At the same time, the ear hears the hot spring, and the skin feels the temperature and humidity of this space filled with water vapour.

e. Public bath

Finally, the visitor, accompanied by excitement, reaches the final sequence - the baths - after crossing a series of rhythmically changing spaces (see Figure 22). All perceptions including taste guide this space.
4.2.4 Summary

It is precisely because of the influence of various senses that the Spa experience becomes extremely rich and interesting. Zumthor delicately arranges and combines the perceptual objects in different spatial segments, so that the perceptual subject receives different stimuli in these segments. It is precisely because of this series of changes that people can explore this sequence naturally and consciously.

In addition, Zumthor focuses on creating a mysterious scene of continuity, linking the perceived feelings (elements) in space with the feelings (elements) that are to be perceived - implicit new content through known perceptions.

Figure 24 Bath corridor
4.3 Fallingwater

The design of Fallingwater (see Figure 25) combines visual, auditory and tactility experiences together as an integrated feeling for people.\textsuperscript{49} The architecture joins the benefits with nature and landscape, which gives an ingenious effect.

For the sense of sight, the walls of glass connect the interior and exterior spaces, and the interior pavement also stimulates the water, glazed and reflected through the light. In terms of the auditory aspect, the concealed brook sends an audible signal to encourage people to go into the forest and get closer to the house before it is seen. The sense of touch is another influential point of Falling water. The spring water collected to form a pool with stone steps extending under the house ties the building with water.

The structure engages our senses of vision, sound, and touch, and induces us to see, hear, and feel not only the architecture but also nature beyond.\textsuperscript{50}


\textsuperscript{50} Moore and Lidz, \textit{Water and Architecture}, 197.
4.4 Aquatics Centre on Copenhagen

Kengo Kuma reveals the proposed plan for the aquatics centre in Copenhagen. This shows the inspiring strategies that can link people to water and celebrates water through its different forms: steam, flow and the reflection of light and shadow.51

Shadows and light will be the crucial part of the pool expression, as the skylight at the top provides reflecting light and shadows on the water (see Figure 27).

The terraced pools (see Figure 26) along the edge of water and land can blur the boundary for a spread-out and continuous perception of the water.

5. Design

5.1 The Site

5.1.1 Site Selection

From the early history of Auckland, it can be seen that the waterfront area is full of a trading and industrial atmosphere. Along with the gradual transformation and advanced development of port activities, reclamation of Auckland’s waterfront extended into the western edge near the current harbour bridge. The Western Reclamation (now known as Wynyard Quarter) was originally used by the timber trade; the last part of the reclamation was completed in 1930. After that, the area began to be used for the storage of large quantities of petrochemicals, so it was known locally as "tank farm".52

Auckland has implemented a large number of activities in relation to port revitalization and development, including the Sea + City project in 2007. In August 2011, one of the revitalised parts of Wynyard Quarter (including new public parks, plaza event spaces and pedestrian bridge) opened to much public acclaim.

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52Panuku Development Auckland, “Walk around Wynyard Quarter.”
Figure 29 Current situation of Wynyard Point
Figure 30 Photos of the site
Auckland Council has proposed a series of revitalization plans for the waterfront, one of which proposes a large public green park at the northern end of Wynyard Point so that a green axis extending from Victoria Park to Wynyard Point would be strengthened. These proposed changes will make the city and waterfront transform into a great place to live, a place to easily reach and navigate, and a very exciting place to explore.


Why this site?

Since the aim of this project is to create a kind of ‘urban beach’ atmosphere by designing a public waterfront building, the building needs to provide public greenery space for people to enjoy as much as possible, while retaining its own functions. Therefore, this kind of landform building could perfectly fit into the site of Wynyard Point, which proposed greenery space at the water edge and keeping the strong maritime and open space characteristics.

5.1.2 Site Analysis

From the larger scale context, the site has its unique conditions. It is surrounded by sea on three sides, which could provide three different views from nature to modernized urban context. The Northwest side of the site faces the harbour bridge, providing a fantastic ocean view; the Northeast side of the site faces Devonport and Mount Victoria across the harbour, providing a volcanic cone backdrop; and, when standing at Wyynyard point and looking back to the city, a bustling and modernized urban scene appears.

This larger scale context(see Figure32) provides cues for design strategies; that is, the building should open and extend towards three different directions to enjoy the ocean view, volcano view and city view.
Existing waterfront precincts

Auckland’s waterfront supports a wide range of activities and functions, and every precinct has its own features to some extent. The Westhaven Marina mainly provides boating activities, other water-related activities and public promenades along the waterfront. The Viaduct Harbour has become a popular recreational and entertainment destination.

These existing waterfront precincts provide cues for design strategies. The first is to put recreational functions at the east side of the site to ensure continuity with the entertaining atmosphere along the viaduct harbour. The second is to put the water-related functions at the west side of the site to respond to the Westhaven’s marina atmosphere.

Figure 33 Existing waterfront precincts
The waterfront axis

The Waterfront Axis is an important waterfront ‘spine’ that connects Wynyard Precinct in the west along Quay Street to Port of Auckland land in the east. It is an axis that people in Auckland cannot ignore in their daily life as not only does it provide recreational and entertainment spots but also it is an important place for public transport.

Figure 34 The waterfront axis
**North-south connections**

The Park Axis is an important north-south connection that connects Victoria Park in the south to the proposed Headland Park at the northern end. To reinforce and strengthen this green axis is a key point when it comes to design strategies since this can activate the waterfront area from a wider context.

![Reinforce North-South Connections](image)

Figure 35 North-south connections
Public access

Figure 36 shows the key pedestrian and cycle routes, basic pedestrian and cycle connections and important spots around. This public access network reveals how it connect people from city center to waterfront edge.
Space contrast

The space contrast here mainly explores the different space characteristics of two adjacent harbour areas. The Viaduct Harbour is an inward space that delivers the feeling of closed and intimate, while Wynyard Point is a totally outward space that offers an atmosphere of openness and freedom. These great differences in the effect of space derive from various design strategies. In this aspect, an open and permeable building edge which blurs and coordinates with the surrounding atmosphere is an appropriate solution for reinforcing the open and free features of Wynyard Point.

Figure 37 Space contrast
5.2 Concept Design

This project’s concept (see Figure 38) is based on bringing the beachfront (suburban waterfront) experience and atmosphere to the urban waterfront to enrich the sensory experience of the water’s edge in the dense, urban waterfront, forming an atmosphere similar to an ‘urban beach’.

The undeniable attraction of the ocean always leads people to gather on the open coastline, which not only offers a place for recreation and entertainment, but also one where people can feel relaxed and contented in the company of family and friends. The shoreline with its surrounding beach and greenery is a place which seamlessly provides various water-related activities and engagements which mostly involve horizontal actions. Swimming, bathing and other water activities give people the opportunity to reach for, and immerse themselves in the water; wandering and strolling along the beach offers encounters with water directly and interactions with water through a series of approaching actions; and surrounding greenery is the focal point for people gathering, meeting and relaxing, an open and unobstructed place that exposes people to nature and enables them to enjoy the clear imagery of the sea.

According to Holl, our perception develops from a series of overlapping urban scene perspectives, and the horizontal space gradually merges with the vertical dimension. As the body moves, it triggers a series of experiences and perceptions of an urban space that constantly hops and changes. These spatial experiences are open-ended, forming an overlapping perspective network. Thus, this theory inspired the design strategy of ‘urban beach’, which extends and moves horizontal actions vertically to provide multiple horizon views and overlapping perspectives so that people have the opportunity to appreciate the attractive water edge experience and ocean view from different height levels. At the same time, the other important aspect that caters to the idea of ‘urban beach’ is giving the building more functions while retaining the free and open atmosphere of the beachfront to fit into the urban waterfront, which has relatively higher density.

54 Holl, Pallasmaa, and Pérez-Gómez, Questions of Perception, 48.
55 Holl, Pallasmaa, and Pérez Gómez, Questions of Perception, 48.
Extend the horizontal functions vertically

**URBAN BEACH**

Giving the building more functions while retaining the free and open atmosphere of the beachfront
to fit into the urban dense waterfront

Figure 38 Concept diagram
5.3 Engaging with water

People's senses and perceptions is the bridge connecting people and the world around them. Juhani Pallasmaa compared two completely different urban patterns, one is the city of sensory engagement which offers a different scale of space so that people can engage and participate actively with their surroundings; the other one is the city of sensory deprivation which shows a solid urban architecture and settings that are similar to each other without spatial diversity.

The different urban patterns emphasizes the fact that spaces and activities of different morphological scales profoundly affect different sensory experiences, and that is an important part of designer’s desire to create a livelier community. Therefore, what people need is a variety of different ways of interacting and engaging so, in this project, it is clear that all forms of engagement with water at this edge condition need to be activated.

Figure 39 (top) the commercial section of Brasilia, Brazil, 1968. Photo: Juhani Pallasmaa

Figure 40 (bottom) Pieter Bruegel the Elder, Children’s Games (detail), 1560, Kunsthistorisches Museum with MVK and OtM, Vienna
According to this notion of activating the edge condition, the exploration of the ways people engage with water is based on the intimacy between people and water, including visual, auditory, tactility, smell and taste senses.

a. Climbing (see)

Viewing the vast ocean and horizon in the distance at a higher point. In the beach context, this can entail going up the surrounding mountains or cliffs; in the urban waterfront context, it can flexibly refer to going up to the building roof or rambling on the tidal steps thus offering various views and feelings about the water from different heights.

b. Passing by (see)

Driving or cycling quickly, passing through the waterfront area such that you hardly interact with water or leave with a deep impression of the water vibes.

c. Covering (see/hear)

Sitting, watching and walking under a shelter for a closer observation of the water.

d. Approaching(see/hear/smell/touch)

Basically, a typical lateral movement along the shoreline and directly interacting with water, such as wading and playing at the beach or down the tidal steps.

e. Reaching(see/hear/smell/touch/taste)

Swimming, surfing and exploring in deeper water, immersing oneself in the water.
Figure 41 Conceptual section
5.4 Programme and Function

One of the starting points for this project is to create a place that enriches people’s experience at the waterfront area as much as possible and attracts people’s attention down to the water’s edge. Therefore, the programme here could be the multi-use building that provides a range of different functions from the cultural to the recreational, instead of a single-used iconic building, like a theatre, which comparatively cannot offer public access easily.

The function of this project divides into three core parts which closely relate to people’s daily life: the recreational part, the educational part and civic amenity. More specifically, the recreational part mainly refers to the aquatic centre that provides a public swimming pool and hot bath; the educational part refers to the gallery hall that provides exhibitions of maritime or other arts; the civic amenity refers to the event centre that offers a place where people can hold various activities.

This project seeks to bring new vitality to the waterfront building from the perception and atmosphere aspects, though public buildings with similar functions as described above already exist near Wynyard Point, such as the Tepid Baths on Custom Street (see Figure 44), the New Zealand Maritime Museum (see Figure 42, and the Viaduct Events Centre (see Figure 43).
Schedule of functions:
Aquatic Centre:
- Ocean pool
- Hot baths
- Lap pool
- Change room, showers, toilets
- Administration

Gallery Hall:
- Exhibition rooms (3)
- Office
- Storage
- Toilets

Event Centre:
- Outdoor event stage
- Backstage space
- Gathering place

Commercial facilities:
- Retail shops
- Cafè

Public green park on roof

Figure 44 Tepid Baths
5.5 Edge Merging Solutions

5.5.1 Weaken the edge

Small volume infrastructure along the edge provides a positive interaction with water. It can be seen as a meaningful way that extends some functions of the building to the edge to draw people’s attention and encourage the use of this edge space.

a. Ocean Pool
The collage test below shows how the Copenhagen Aquatics Centre by Kengo Kuma can work on the site of this project. The outdoor swimming pools seamlessly connect ocean to the land and building, thus weakening the border of the site. In addition, the outdoor ocean pool can be seen as a floating infrastructure which usefully activates the edge space and emphasizes the spirit of water.

![Image of Kengo Kuma Copenhagen Aquatics Center](image)

Figure 45 Kengo Kuma Copenhagen Aquatics Center > Wynyard Point

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b. Tidal cubicle

Tidal steps (see Figure 46) are seen as a great landscape means of dealing with the edge of a waterfront. However, tidal steps actually can be seen as a kind of semi-private gathering place, achieved by adding an enclosure around the roof on top so that the steps become an extension of the building on the land that connects the edge.

In general, the strategy of weakening the edge is about openness and privacy of space. The building itself, tidal cubicles and ocean pools actually present three different space features from private, to semi-public, to public. And that can make people perceive the constant change of space.

Figure 46 Oriental bay tidal steps

Figure 47 Proposed Tidal Cubicles
Weaken the edge

Private  · · · · · · · · · · · · · · · · Semi-public  · · · · · · · · · · · · · · · · Public

BUILDING  TIDAL CUBICLES  OCEAN POOL

Figure 48 Weaken the edge
5.5.2 Breaking up the edge

The collage test below (see Figure 49) shows how Astrup Fearnley Museet by Renzo Piano\(^{57}\) can work on the site of this project. The building seamlessly connects to surrounding water with human-scale pedestrian bridges which also allow water to pass throughout the site. Therefore, breaking up the edge and bringing more water into the site can be a useful way to merge the edge of sea and land.

Moreover, the human-scale space at the edge condition encourages people to interact with the environment and water. The water in that kind of space becomes the centrepiece of the waterfront area.

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5.5.3 Merge with surroundings

As discussed in 3.4 Atmosphere and multi-sensory experience, architecture is essentially an extension of nature into the man-made realm; it is not an isolated object, according to Pallasmaa. Therefore, the landform building which caters to the aims of blurring inside and outside, merging the boundary between land and the sea, fits into this project both functionally and physically. The green roof on top (see Figure 51) provides a raised park at the waterfront and links nature to the building both physically and visually. In this way, the building becomes part of the surrounding environment.

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58 Pallasmaa, *The Eyes of the Skin*, 45
Figure 52 Perspective of green roof
5.5.4 Permeable boundary

The models here explore the relationship between the form and the space (See Figure 53). The composition is breaking the building into several parts forming some gaps or alleys in between, which offers alternating indoor and outdoor experiences. The idea is that people can immediately and deeply feel the changing atmosphere and views.

This spatial composition divides the building into stripes that directly extend to the water, connecting the land and the sea. The purpose here is to ensure that the building is not isolated from the surrounding environment.
5.6 Function organisation and plans

5.6.1 Function distribution

The building is firstly divided into two major parts in order to respond to the site analysis (see 5.1.2): the recreational facilities are located on the east side of the site to ensure continuity of the entertainment atmosphere along the viaduct harbour; and the Aquatic center is located on the west side of the site to respond to the Westhaven’s marina atmosphere.

More specifically, the recreational facilities then are divided into three parts based on the different usage and requirements of the different spaces. The gallery hall as an exhibition place needs a quiet and private atmosphere to some extent, therefore it can be relatively further away from the real water edge compared to the other recreational facilities. As such, it offers indirect interaction with water, for example through sight and hearing. The commercial part (retail shops and café) are located along the water’s edge to activate the waterfront vibes. The event center (outdoor event stage) is located on the northern edge to ensure people have a fantastic ocean and mountain view while enjoying the performance. A central courtyard is surrounded by these three parts, to enrich the experience of that place. (see Figure 54)
5.6.2 Multi-directional circulation

The multi-directional circulation (see Figure 55) aims to create a free and open atmosphere for the urban waterfront. The building is not a single closed object; alleys between the buildings let people freely pass through whole site. It is an open and permeable boundary that provides more options to explore and more chances to appreciate the sea view.
5.7 The journey of exploration

The main aim of this project is to encourage interaction between people, place and water through the architectural language of atmosphere, giving an urban waterfront a calming beach vibe and casual lifestyle. The building can be described as a journey of exploration that provides a series of spaces and activities for people gathering at the water’s edge.

5.7.1 Gallery Hall

The journey can start from the gallery hall. When entering the lobby, you can see the dynamic ripples of the water that are reflected on the roof skylight to the floor (see Figure 60). Visitors can have a first impression of this water-related gallery through visual perception. After passing through the two relatively closed exhibition rooms connected by the upward ramp, there will be a relatively open platform, where the visitor can hear the water flowing underneath the building and catch a glimpse of the outdoor water courtyard (see Figure 60). The staircase continues upwards leading people to visit the last exhibition room. Finally, people can climb the roof to enjoy the completely open sea view.
5.7.2 Event Centre

Under the roof top are the stepped seating platforms, opposite the outdoor performance stage across from the water courtyard (see Figure 62). As discussed in 3.3.2 Objects of perception, the use of water, especially in the outdoor condition, enables people to gain a greater connection with nature in the hustle and bustle of city life. The reflection of water has the ability of making the space around and the activities on that outdoor stage more appealing and vivid. The experience of having the ocean in view while enjoying the performance is unique. This place provides various sensory engagements: visual, auditory, smell and tactility.
Figure 62 Event Centre
5.7.3 Aquatic Centre

The outdoor ocean pools that are arranged along the edge will strongly catch people’s attention (see Figure64). The space composition of the aquatic centre is derived from Zumthor’s “pinwheel principle” and “zipper principle” as discussed at 4.2 Vals Spa. It connects the spaces intimately to each other with free and altering circulation that provides different spatial perceptions from private to public, from closed to open.
Figure 64 Perspective of aquatic centre
6. Conclusion

The research and design process undertaken in this project attempts to answer the question: How can a better interaction with water be encouraged through the use of the architectural atmosphere?

The waterfront usually can be seen as a unique edge where water meets land. The urban waterfront provides an edge condition where water-related and urban-based functions merge. Wynyard Point, where an important urban waterfront area has not yet been fully developed in Auckland City, was chosen as the site of this project. The project proposes a multi-use public building with three functions: the aquatic centre, the gallery and the events centre. The aim of the building is to revive the experience of water and connect water to the architecture.

The literature and precedent reviews endeavoured to guide the design of this project, from the analysis of the perception and atmosphere method to an exploration of existing precedents.

How this project achieved the aims can be summarized as below:

The aim of merging the edge of land and sea and encourage the interaction of people with the water was achieved by the adoption of four strategies. The first one was to weaken the edge by using ocean pools and tidal cubicles along the edge; these offer positive interaction with water as the continuation of building. The second strategy was to break up the edge by bringing water across and into the site to attract people to engage with the surrounding water. The third one was to merge with the surroundings by using a landform building with a green roof, which caters to the aims of blurring inside and outside, merging the boundary between land and the sea, and links nature to the building both physically and visually. This makes the building become part of the surrounding environment. The last strategy involved human-scaled alleys between buildings that offer alternating indoor and outdoor exposure, which can be experienced as a permeable boundary. The stripes form directly extend the building to the water connecting the land and the sea, fitting into the surrounding environment.

The aim of encouraging interaction between land and sea, between people and water was achieved by providing a journey of exploration that offers a series of spaces and activities for people gathering at the water’s edge. Such explorations use various ways to enrich people’s perceptions, giving them a multi-sensory experience.

The aim of adding a calming beach vibe to the urban waterfront and promoting a casual lifestyle was achieved by providing a human-scale, multi-use building with modest and non-iconic characteristics.
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Appendix——Final Design Work

CONNECTING WATER TO ARCHITECTURE
AQUATIC CENTER
HOT BATH
Declaration

Name of candidate: Meng Gong

This Thesis/Dissertation/Research Project entitled: Connecting Water to Architecture; encouraging the interaction between people and surroundings is submitted in partial fulfillment for the requirements for the Unitec degree of Master of Architecture (Professional)

Principal Supervisor: Matthew Brodbury

Associate Supervisor/s: Kerry Francis

CANDIDATE'S DECLARATION

I confirm that:

• This Thesis/Dissertation/Research Project represents my own work;
• The contribution of supervisors and others to this work was consistent with the Unitec Regulations and Policies.
• Research for this work has been conducted in accordance with the Unitec Research Ethics Committee Policy and Procedures, and has fulfilled any requirements set for this project by the Unitec Research Ethics Committee.

Research Ethics Committee Approval Number: ..................................................

Candidate Signature: Meng Gong Date: 11/10/2018

Student number: 1481460
Full name of author: Meng Gong

ORCID number (Optional): N/A

Full title of thesis/dissertation/research project ('the work'):
Connecting Water to Architecture; encouraging the interaction between people and surroundings.

Practice Pathway: Architecture

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