THE MOOD OF WATERFRONT SPACE

- Redevelop harbour area with its own identity/atmosphere -

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Abstract:

Nature improves the quality of our life. We are needed to get to nature in urban life and it is one of the most important factors that make us healthier. After the world has been industrialised and the cities has been developed rapidly, the natural environment has been always argued as a significant issue. It creates the image of the urban environment, its atmosphere, and in further, its identity as well. For that reason, the sense of nature acts as the main keyword of how to form the living area and public space in better condition.

Due to the rapid industrialisation, the natural elements have been developed for the modernised city. In this process, we lost the atmosphere and the beauty of nature in some point. To this extent, there still has been a boundary between the urban context and the natural surroundings in spite of the achievements from the artificial landscape.

In this circumstances, 'Water' has been emerged as a new paradigm for living environment recently. It is not because only water is an existing mediator that can connect the nature and urban fabric, but also it brings various of issues related to the needs of new land due to the urban growth and artificial extension like Palm Jumeirah in Dubai, and redevelopments such as river renaissance and harbour area projects. Especially for the redevelopment projects of harbour area, the function has been changed to residential area or public space because of the moving to the new port or the changes of the boundaries. Accordingly, it leads to the consideration of how to organise the public space related to the waterfront. This is an important issue that can affect directly to their identity in port-related cities like Marseille, Rotterdam, Hamburg, Helsinki and so on.

This thesis focuses on creating public space in old port area and suggests the design strategies that can connect public and nature in daily life by emphasising the natural atmosphere with artificial environments and keeping functional image of the port at the same time. The research is based on the historical studies of the city and its natural atmospheric identity. The project targets on South harbor area in Helsinki, which has potential to be developed in further future. Based on the studies and analysis, the Maritime museum situates on the South harbor area, creating cultural cluster along the waterfront. In conclusion, this project aims to encourage both beautiful and productive way of redeveloping waterfront space.
Living in Finland offers a lot of chances to feel the nature especially from lakes, sea and forest. I am also from coastal city but felt different. Helsinki is organised with natural environment in better way compared with my home town, so being with nature is more natural when staying here. It also reveals to the architectural sense. When I visited Aalto’s architecture, I could feel how he considered about human and nature. Based on his regional background, Aalto’s architecture brings nature into the space mostly through the light. This thesis has been started from deep sympathy and my own interests to his spatial thinking.

During the Master’s studies in Aalto University, it was spontaneous to encounter the projects that have to consider the relationship between nature and architecture. The first Guggenheim project situated in south harbour of Helsinki required to comprehend the citizen’s life in a natural atmosphere which was quite different way that I lived in. When I attend the second project of redeveloping small coastal town near Seattle, I have indicated that now we need to consider about natural disaster and got a chance to design village that can cope with tsunami. Through those various of approaches to natural environments, those projects affected me to get into the water as a topic.

In particular, the exchange studies to TU Delft made me to get interested in waterfront as a public space as a new paradigm. The project I have done was designing embassy in waterfront area, which was a big challenge for me, but also it was a great chance to develop my interests of water boundaries. I could share the opinions of what the architectural idea comes out for waterfront boundaries and attend several lectures about water-related projects, and it was possible because I was in the Netherlands that the cities were settled above the water.

‘Water’ is a great topic that have high potential in various ways and I do convince that it would be an important resource for the future architectural environment that already composites 70% of the earth. This thesis aims to study how the water boundaries and public life can be connected in daily life through architectural designing.
Nature & Sense of Architecture
1.

Aalto’s early paintings offer a window to the formative stage of the development of his artistic imagination. Most often they depict landscapes in his native Finland, often with a carefully placed element that suggests movement through the landscape as a leisurist—on a river, a path or on a ski track—inviting us with our eye to follow the journey as it disappears into the horizon. The ability of “living form” to enter and transform our minds complete its life cycle: from nature to form and back to nature, as it were.1

Why do we need atmospheric sense in architectural design process? The answer can be found easily from Alvar Aalto’s architecture. His architecture has been representative to be with nature and humanism. The base of his architectural thought came out from his background, the nature of Finland, can be read also from his paintings. His buildings have been completed with those surroundings, and it makes visitors to look back to its nature. He has experimented and applied some design elements to several buildings to get rid of the boundaries between exterior and interior space. The most often he brought was to bring natural light to inside, and other various ways of his idea could be found on Villa Mairea and Experimental house in especially. These organic architectures of Aalto’s approach lead natural flows to the beauty of nature and offer restful and cozy feelings. So the feelings from its honest senses make people to stay in.

2.

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 concretizes the cycles of the year, the course of the sun and the passing of the hours of the day. Every touching experience of architecture is multi-sensory: qualities of space, matter and scale are measured equally by the eye, ear, nose, skin, tongue, skeleton and muscle…. Instead of mere vision, or the five classical senses, architecture involves several realms of sensory experience which interact and fuse into each other.2

In the same vein, Pallasmaa explains the relationship between nature and architecture. We feel the nature through the architectural space and move along with its surrounding elements. He goes even further to sensory experience, that can measure the architectural value as more sensitive way. People experience the space in unconscious state but sometimes they remember the place in emotional ways. It can be some kind of actions that happened between people or just by own feelings, but it is certain that any kinds of remembrance were made by the synthetical senses of its space. Everywhere we can easily find the natural atmosphere in the surroundings but spatial experience brings various factors and maximises that move our senses at the moment. It is an important to get the feelings of being moved in our life, so it is needless to say that it reserves to experience our natural instincts from the natural senses.

3.

What do we mean when we speak of architectural quality? It is a question that I have little difficulty in answering. Quality in architecture is to me when a building manages to move me. What on earth is that moves me? How can I get it into my own work?… How do people design things with such a beautiful, natural presence, things that move me every single time. One word for it is Atmosphere.3

Peter Zumthor abbreviates the natural senses of space as ‘atmosphere’. To visit architecture is to feel its own atmosphere. It is not transmitted through images and imagination, it is completely different what we feel only with visual sense. Therefore, the atmosphere itself is a result of harmonised factors that includes environmental elements, building functions and also the sensitivity of each visitors. The quality of the architectural space came out from the user’s reactions, and It is deniable to conclude that they are emerged by the building’s own spatial atmosphere.

4.

Nature improves our life. We are needed to get to nature in urban life and it is one of the most important factors that make us healthier. After the world has been industrialised and the cities has been developed rapidly, the natural environment has been always argued as a significant issue. It creates the image of the urban environment, its atmosphere, and in further, its identity as well. For that reason, the sense of nature acts as the main keyword of how to form the living area and public space in better condition.

Due to the rapid industrialisation, the natural elements have been developed for the modernised city. In this process, we lost the atmosphere and the beauty of nature in some point. To this extent, there still has been a boundary between the urban context and the natural surroundings in spite of the achievements from the artificial landscape.

To sum up, the natural sense of architecture is required to achieve higher quality of our lives. It would be desired to build not only for the functional needs but also to create valuable space for urban public realm.

Waterfront as Public Space
Today, water is not only essential for life, it is imperative to mimic its natural systems to reintegrate waterfront improvements into the surrounding urban fabric as socially and ecologically responsible developments. *

‘Water’ has been emerged as a new paradigm for living environment recently. It is not because only water is an existing mediator that can connect the nature and urban fabric, but also it brings various of issues related to the needs of new land.

| Why Waterfront? |

In the meantime, the waterfront space has been existed in diversified forms in excluded from the urban boundaries. However recently, waterfront is being focused on potential space to be transmitted as different usage. There are several reasons why waterfront is discussed as valuable land.

Firstly, after the rapid deindustrialisation, there were some redevelopments of old ports. The area has been functioned as shipping industrial site, but now the industry were getting declined and the area has been left in empty. Even though those areas has been changed to residential area or public space, it is still main question for what we need to fill up in that forlorn space.

In less economically developed countries, there were not enough land for the residents because of the population growth, now they are living on the water with poor environmental quality. They are going beyond the land, living space extended to water as ground. It is required to reclaim the proper residential environment and the water quality in future developments.

Furthermore, there are some projects that make totally new boundaries on the water. Representatively, the Palm Jumeirah, the project in Dubai shows the feasibilities of artificial extension to the water space. Through this artificial landscape, the waterfront shoreline comes out not only as just a line of the boundary but as a settlement of new boundaries.

Now we are looking at the waterfront in spatial idea beyond the industrial function. It is needed to consider the area as natural element and go further developments. It is obvious that we have to deal with the waterfront space under the natural environment to expand the urban space in harmonised way.
fig.1. relationships of waterfront
| Relationships of waterfront |

‘Waterfront’ has acted as a boundary of urban space and seaside. Each boundaries have contained their own histories as functional or formal elements and they have created their identities in further. Now the means of waterfront are gradually expanding, it is demanded to know the background of overall waterfront areas from the researches of what the relationships between the waterfront and built environment has been remaining. Thus, the studies of waterfront and building, and forms of coastal line will present how those elements are in progress, what the meaning of the places are, and what is for future usage partly.

1. Building settlements on waterfront

It can be divided as 6 categories in overall of how the buildings are settled on water.(fig.1) The most general and traditional constructions are setting the buildings on filled or mounded land and on embedded piles. Other ways that build on the same level of ground below the water level and set the walls to prevent the natural disaster like Tsunami or flood. In these days, there are some different systems that allow flexible moves on water for unstable water level. By those newly developed structures, the boundaries between water and building are getting indistinct. As a consequence, it shows that the meaning of waterfront area is changing in progress.

2. Coastal forms

Among the waterfront area, ‘Sea’ is in high proportion as it accounts for over 70 percent of the earth. There are rivers and lakes that composite the waterfront space but coastal area contains various of geographical patterns that can be debated as land. There are several each different patterns that situated in between land and water (fig.1) As you see the diagrams, they are categorised in two groups, as the natural one and the artificial for the other. There might be some scale differences but in case of the natural forms, they are mostly existing as their own natural environments not as for living purposes.

On the other hand, the man-made lands creates usable land in cope with the water, with higher and flat grounds with barriers on occasion. In many instances, they were made out for port uses. The forms of groins, polders, levees and some of constructed wetlands have backgrounds on harbour area. To that extent, the artificial landscape is related to industrialised uses like port or harbour area. Thus, the coastal lines of it offers lots of chances to transform in different ways. It can be found from those facts that the recent architectural, urban discourses are linked to the harbour and waterfront spaces.
Issue of Harbour Area
Why Harbour?

In modern life, the water zone still has been undertaken important factors in the city landscape. The water zone can be segmented broadly into three groups; sea, lake and river. All of them near cities perform as green space in urban life with providing recreations and mostly connect divided urban space through the shorelines. Without regarding to that, those three act differently with each their own characters, even though they are used as waterfront space in common. Lake, natural seashore and riverside forms freely used as public spaces like park, pathways, some places for water sports and so on. Thus, some places are attraction points for tourism planned with boardwalks and ramps that has been planned for taking pleasure with nature. Those aspects are mostly applied to the urban waterfront in natural landscape.

After the industrialisation in particular, water has offered more functions expanded out of the nature, created wider relationships with the urbanisation. In case of the sea shore accords with this transitions. In conjunction with the previous study of coastal form, it has been known that the harbour area has potential to be improved in various ways. It differs from the other natural elements like lake and river, sea was significant area for the industrialisation. The shipping industry made seashore as active and economically centralised spot. It has contributed to each modern cities worldwide, not only for the natural aspect but also for the urban identies. Focused on harbour area, there are some unique characteristics that only can be specified for the boats and its history compared with other water boundaries like natural seashore, lake and river.

1. Gateway

Initially, industrial ports were gateway destinations where the movement and exchange of goods were facilitated and urban services developed to promote maritime trade. Subsequently, a waterfront served as the focal point of activity, the place where water-related and urban-based functions merged. Anchoring liquid highways of worldwide commerce that carried people and goods from the heartlands to the coasts and then across the oceans, the waterfronts of the world adapted to ever-changing needs of a growing urban population.

The mercantile cities like London, Rotterdam, Hamburg, Genoa has grown with the port and still now keep their civic waterfront identities. For instance, the docklands of London was the largest port at one time and even though now it has been redeveloped as commercial, residential use, still large ships can visit the old docks. Rotterdam and Hamburg are still keeping its one of the largest port cities in Europe, expanding their public use along the waterfront. As the time flows, the harbours were transformed slightly from the old uses, but they all has been preserved the area as the entrance to the cities. Some cities can be found that the coat of the arms is still symbolising the port images as their identities. It is obvious that the maritime cities were getting larger, accompanying with being one of the main attraction points of the cities as a gateway.

2 Artificial Site

The port area were designed for the ships to anchor to the land in straight forms. In coastal line, most of the artificial site were made for the port facilities. Accordingly, the man-made lands made it possible to form in diversified shape as a future developments. Recently, the artificial site that has been expanded beyond the coastal line has been settled on Dubai, called Palm Jumeirah. It is not built up for the port area but it shows the transformation of water's edge. To this extent, as same as the harbour site, there are capabilities to develop waterfront in multiple ways applying to active recreation, water sports and so on. Building on water has no boundaries in fact and it takes advantages when the natural and artificial environments combined affordably.

3. Industrial Site

In these days, there are still lots of cities that are growing with industries on water but also some cities have lost its functions, and its land. Furthermore, some old port areas have been revealed the environmental problems and required to regenerate for further uses. In addition to the potential hazards of machinery from heavy industry, these areas of intense activity suffered from high levels of pollution, making them uninhabitable as well as unsuitable for recreational activities.

It is a significant issues to redevelop industrial site to public spaces. Several port cities already had set up the redevelopment plans as long-term projects, mostly to public buildings and residential blocks. In those plans, the old industrial buildings and facilities have been demolished or some have been transformed to water sports or leisure facilities. In recent, the waterfront future uses focus on the active public space with beautiful sceneries and better living qualities that much closer to water environment than previous industrial uses. The port area is not any more for just industrial site but slightly convert to be combined with living district. According to the analysis of principles of waterfront planning and design by Dieter Grau and Zejika Carol Kekez, it has been explained for this circumstances:

Along with enhanced environmental stewardship, waterfronts have a heritage of serving as central places of political, economic, social and cultural interchange. To varying degrees,
The hallmark of their successful evolution has been a focus on a clean, safe and active public open space, including ongoing management, maintenance or provision of public access to the water’s edge, enhanced continuity rather than increased separation between waterfront urban core and neighbourhoods; the conservation and sensitive development of natural resources; seasonal activities; multi-modal access; the cultivation of a diverse community as well as the preservation of links with the past. Utilising a combination of these practices, waterfronts have evolved from traditional maritime functions to vital nodes in the exchange of ideas and connectivity in the 21st century. 7

To sum up, among the several kinds of waterfront zones, the harbour area has potential to be improved for further growth. The three characteristics of harbour area that differs from other water zones like lake and natural sea-

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7 Grau and Kekez, p.88.

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### Port Redevelopment Tendencies

The port cities range in worldwide and most of the main port cities have been planning for redevelopments. In overall there are port tendencies in each period and steps which is divided from the birth of the port area to recent circumstances. It has been arranged in theory by Bird (1963) that examines the evolution of ports. fig.2

Bird explains how ports, in a series of evolutionary steps, tend to move away from the cities where they emerged to expand towards river estuaries or open sea. There are three steps have been divided: Setting, Expansion and Specialisation. In the first step, the port is settled and port facilities like warehouses and terminal buildings. They are set on geographical consideration. As of the industrial revolution, urban spreads from the port area. Quays are expanded and docks are constructed. Several port-related activities are increased at the same time. Lastly, the port is required to be specialised and needed to build new facilities. Spontaneously the original old ports are abandoned and become empty site.

At the end, Anyport’s evolution would appear to end in a Barished-port type: a port that has not distances itself spontaneously from the city, but that has rather been exiled by society. It illustrates the process of the urbanised port cities and its affection. While it explains the background of the vacant port sites, there is an advanced model of stepping forward by port researcher Brian Stewart Hoyle. fig.8

This model is focused on the relationship between

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8 Grau and Kekez, p.10.

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the port and the city. It also the separation point from the industrialisation, analysing how the abandoned port area could be linked again with the city. It highlights that when the port was born in 19 century, the city was associated with the port. But when the city industrialised, the port has been enlarged beyond the city district, and getting divided in 20 century. After the division between the port and the city, there was a trial to retreat water space and started to be redeveloped. Later 80s to the recent, the needs of the waterfront space bring the renewal by enhancing port and city integration as the initial old port.

To summarise, the tendency of the port redevelopment is that the initial port site has been functional joint withindustrialisation and redevelopment. From the fundamental port facilities were used for the warehouses, port-related activities and there were some docks and wooden piers built on. The commercial and industrial growth transform the area for harbour with public uses including boardwalks, some amusements and even casinos. When the small and old port remains in vacant, it has been once transformed again mostly as residential blocks and recreational uses leading to innovative contemporary designs and some are renovated to re-use the former industrial buildings.

The functional changes of the waterfront has been evolved since the water has been utilised for human life. It has served the resources, transported, supplied even-

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<table>
<thead>
<tr>
<th>STAGE</th>
<th>SYMBOL</th>
<th>PERIOD</th>
<th>CHARACTERISTICS</th>
</tr>
</thead>
<tbody>
<tr>
<td>I</td>
<td>○ City</td>
<td>Ancient/medieval to 19th century</td>
<td>Close spatial and functional association between city and port.</td>
</tr>
<tr>
<td>II</td>
<td>● Port</td>
<td>19th - early 20th century</td>
<td>Rapid commercial/industrial growth forces port to develop beyond city confines, with linear quays and break-bulk industries.</td>
</tr>
<tr>
<td>III</td>
<td>○ City</td>
<td>mid - 20th century</td>
<td>Industrial growth (especially oil refining) and introduction of containers/re-to-re require separation/space.</td>
</tr>
<tr>
<td>IV</td>
<td>○ City</td>
<td>1960 s - 1980 s</td>
<td>Changes in maritime technology induce growth of separate maritime industrial development areas.</td>
</tr>
<tr>
<td>V</td>
<td>○ City</td>
<td>1970 s - 1990 s</td>
<td>Large-scale modern port consumes large areas of landwater space; urban renewal of original core.</td>
</tr>
<tr>
<td>VI</td>
<td>○ City</td>
<td>1980 s - 2000+</td>
<td>Globalisation and internationalism transform port roles; port-city associations renewed; urban redevelopment enhances port-city integration.</td>
</tr>
</tbody>
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**fig.8. Different stages in the traditional port-city interface (Hoyle, 1988:47)**

**fig.3. Changes of the port usage**

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the city centre and then separated as being larger scale, finally the vacant original port has been back to the part of the urban elements.

Leading to these steps, the port facilities also have been shifted their uses and characteristics. Those changes can be arranged as following chart below(fig.6) This is due to the combinations of analysis before, the functions can be divided into three steps: before industrialisation, after

baths. It is now one of the most attractive issues what we can draw for the next uses in port area. Thus, in our 21 century globalised world, there are many things to be considered, both for the citizens living near the site and the visitors that comes anywhere. As the researches above, the history of port usage notices that the old port area has potential to be assorted platform in any directions.
The Trends of waterfront

Back to the current situation, there are some existing waterfront plans in several port cities. Among the port cities, the European countries have been framework in similar trend. The models of large port cities in Europe have been rearranged and refurbished during long periods. The most representative case would be one of the largest and most active port cities like Rotterdam, Hamburg, Marseille, Helsinki and so on. To compare with those cities, it can be shown the recent flows of the perspectives. There is a synthesis table with the dimensions of several port cities by Schubert below (fig.5).

All of them were focused on the industrial waterfront near city, planning for the long-term projects. As you can see, most of them are designed to be used as mixed-use, including cultural and some renovation strategies. The notably striking point is that Helsinki is targeting to housing renewal while other cities are concentrated on public uses. In previous waterfront projects, they were usually processed together with housing and cultural innovations. It could be found that some other cities were reformed in residential blocks or cultural metamorphosis to improve the economical circumstances and that kinds of redevelopment stages stand in needs of beautiful waterfront in common.

On the other hand, in case of Rotterdam, they have been scheduled for elongated period than others, but they are leading the trends that already preparing for the related projects to the port industries. It is quite unexpected idea of trying to keep the port images that represented the identity of the city. The former projects, also including Rotterdam, they were successful to make beautiful waterfront space, but they were lost their primitive functional identities in some way. The original areas were represented the port but the places were transform a lot as cultural places that concealed their own history. Thereafter, it has been revealed that Rotterdam waterfront project aims to find the way of mixed-use including port related industries to become productive way of developing. It is not necessity to follow the trends, but it needs to have a relationship to consider in connection with the network of the port cities.

In conclusion, the analysis the redevelopment projects between near 2000 and the recent, there is also a certain sequence. Except Helsinki, all the others were targeting to the mixed-used or public space. The most up-to-date projects of Rotterdam and Genoa are taking out the productive ways that are linking to the original functional images of the site. If previously the main goal was to develop green public spaces, cultural venues or mixed-used and housing developments, what could be named the “beautiful waterfront”, now it seems we have an alternative “productive waterfront” model, where the industries are considered important for the city and the effort has to be made for the compatibility and coexistence between the port and the city.11

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11 J. Sanchez, The port and the city-on board diary, Frankfurt am Main, Hafencity University, 2016, p.236.

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<table>
<thead>
<tr>
<th>Dimension</th>
<th>Size</th>
<th>Start and completion of the project</th>
<th>Property led / Plan led</th>
<th>Geography / Location</th>
<th>Plan culture / Nat. Framework</th>
<th>Dominant uses / planning targets</th>
</tr>
</thead>
<tbody>
<tr>
<td>City/Project</td>
<td></td>
<td></td>
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<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Helsinki (West Harbour + Kasatsama)</td>
<td>200 Ha + 177 Ha</td>
<td>2005 - 2030/2035</td>
<td>Plan led. Public - private partnership</td>
<td>WH: near the city center, K: expansion area</td>
<td>Decentralized model with participative planning, Flexible implementation</td>
<td>Predominance of housing</td>
</tr>
<tr>
<td>Oslo (Fjordcity)</td>
<td>200 Ha</td>
<td>2000-2030</td>
<td>Property led. Public - private partnership</td>
<td>Complete Urban Waterfront</td>
<td>Decentralized model with participative planning</td>
<td>Mixed use including several key cultural projects</td>
</tr>
<tr>
<td>Rotterdam (Stadshavens)</td>
<td>1600 Ha (600 Ha Land)</td>
<td>2007 - 2040</td>
<td>Plan led, adapted to existing contracts</td>
<td>Urban and industrial waterfront, not in the city center</td>
<td>Decentralized model with participative planning, Flexible implementation</td>
<td>Mixed use including port related industries</td>
</tr>
<tr>
<td>Marseille (Euroméditerranée 1+2)</td>
<td>480 Ha</td>
<td>1995 - 2030 (2e act)</td>
<td>Plan led. Public - private partnership</td>
<td>Central location. Reduce waterfront usage.</td>
<td>Centralized model regarding port government. Project is considered of national interest</td>
<td>Mixed use including several key cultural projects</td>
</tr>
<tr>
<td>Genoa (Blueprint)</td>
<td>85 Ha Approx.</td>
<td>2015 (concept planning + pilots tower)</td>
<td>Plan led for port section. Private partnership for urban section</td>
<td>Port Industrial waterfront near city center</td>
<td>Centralized model regarding port government. Regional institutions hold planning capacities</td>
<td>Industrial areas refurbishment and urban renovation</td>
</tr>
</tbody>
</table>

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fig.5. Dimensions of waterfront (re-)development for comparative perspectives, adapted from Schubert (2011)
The Beauty of waterfront

![Image of Bilbao Before and After]

fig.6. Bilbao Before and After

![Image of Masterplan Haften city Hamburg 2000]

fig.7. Masterplan Haften city Hamburg 2000

It was the first attempt to reform the waterfront and has attempted to turn the area back to the cultural uses for public. The Bilbao and Hamburg projects are one of the typifying ones for it.(fig.6, 7) Although both examples were planned in different period and stages, their approaches are in common.

In 1990s, Bilbao presented the waterfront redevelopment plans along the riverside. It has been succeeded to be active and economical growth, became one of the representative projects in that period. The Hafencity projects go after the Bilbao’s one, investing cultural centre in waterfront space to be shown up the beauty of waterfront with distinctive architecture and its attraction. Both cities were trying to revive the old harbour site by linking to the urban fabric and considering the public access to lively waterfront. Those have been both achieved prosperous results from the outstanding architecture, even attracted the place architecture so far, bringing back the natural views and amusements to public and the cities.

Bilbao, a river port that extends uninterruptedly for 20 km from the city to the sea, grew over time with the port, without creating interferences in urban activities. When the port moved from the inside of the river towards the outside and several industrial areas shut down, it became possible to revitalise the riverfront and several other areas near the mouth of the Nervion, and restore an extraordinary scenario of great public and social value to residents and tourists. 19

The Hafencity reestablishes the connection between the River Elbe and the city centre, giving Hamburg a new direction for growth down to and along the river. 15 In 2008, the Maritime museum was opened in Speicher B (warehouse B). The most spectacular project is a concert hall (Elbphilharmonie) on top of Speicher A (warehouse A). This landmark project has attracted a good deal of international attention, not only because of the spectacular architecture but also because of rapidly increasing costs and delays in construction work. In the planning and construction phase, it became a distinctive international trademark of the city.14

14 Schubert, Revista Dimensión Empresarial, p.16.
During the late 90s and early 2000s, the plans were getting altered to take into account the urban identity as a port. The new plans were turned into second stage that refurbish the functional factors. For instance, the port of Rotterdam and Marseille, both were designed old port area to renovate the warehouses with keeping its facilities and images, and use the site for institutional and educational functions related to the port industry.

Especially, regarding the interrelation with the port such as the appearance of the port institution offers to reach the innovative redevelopment in productive way. Those establishments have perfectly located the port into the urban fabric and also port economical revival.

In case of CityPorts, in this area, where the city and the port meet, space has been created to develop new activities which are important to both the city and the port. During the first wave the urban transformation of abandoned port areas were not so much meant to bring the port back into the city, but to bring the river back into the identity or DNA of the city. In terms of changing relationships between port and city, both inner city waterfront redevelopment program and the Rotterdam Cityports project show that new relationships have been emerging during the past decades, although both in a fundamentally different way.

The port of Marseilles is characterized by the fragmentation of its spaces across a metropolitan reality in which the city and the port appear clearly divided because of a process of specialization of the productive and commercial spaces that excluded the city centre with its constant and disorderly growth. The Euroméditerranée project represents a great opportunity for regenerating and ‘stitching together’ a strategic bond between port space and public space along the waterfront, and for the ambition to create a “coexistence” between an active port and an inhabited city preserving its historic and cultural resources and its identity as a port.
fig. 10. Comparison of World Ports
Beyond the each redevelopment tendencies, comparing with other major European ports like Rotterdam, London, and Hamburg, only Helsinki has no specific changes during several years. Other cities were already much improved in environmental, cultural, recreational, functional approaches, transformed in modern outlook. The aerial photos show that the redevelopments have been focused on the waterfront of each cities, filled up with adequate uses from the empty lands. The view of the Helsinki harbour status seems that there are some constructions going on in west harbour area but the other waterfront site has not been developed, having strong outlines between water and lands. The desire to get rid of those outlines were ongoing inside of Helsinki, stepping from the Guggenheim Museum international competition. Afterwards, the Next Helsinki, the recent international competition has also announced the needs of changes in south harbour area. According to the announcement from the Next Helsinki, the competition has called upon architects, urbanists, artists, and environmentalists to imagine how Helsinki and the South Harbour site allotted to the proposed museum can be transformed for the maximum benefit of the city’s residents and visitors.

With the exception of the south harbour, there are more ports in active near Helsinki. The existing West harbour and North harbour were one of the active ports of Helsinki, but those are about to move to new harbour to Vuossari that located in further East of Helsinki. Its circumstances were mentioned in detail by Eric Van Hooydonk, Professor at the University of Antwerp:

Helsinki, one of the most important sea ports in Northern Europe today, is due to undergo a metamorphosis in 2008. Freight handling is to be transferred to a brand-new, state-of-the-art port area at Vuossari, approximately 15 kilometres from the city centre. Existing terminals near the centre are to be closed to freight traffic and to be redeveloped for various non-port-related functions... In addition to the relocation to Vuossari in 2008, the Lampa oil terminal at Kruunuvuoren rantta is due to be closed down in 2010, after which this area too will be transformed into a new city district.

The current circumstances, the closure of the port areas would affect to the city dramatically, but it will definitely give great possibilities to rebirth of better waterfront spaces. In case of the other ports, the West harbour and some part of the North harbour are ready to be converted as residential flats, shopping malls, markets, parks, and some extended transportations. There is no doubt that the place is demanding for residential use, but also it is necessary to be tied as cultural cluster. To this extent, for the South harbour, it could be a starting point to redevelop in positive direction as a new wave of a seaport city. It is demanded to analyse Helsinki and the ports carefully and step forward for the new generation.

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21 Hooydonk, Helsinki, North European port icon, p.9
Future Helsinki
Helsinki Atmosphere

"We always have dual feelings when walking around Helsinki's coastline: is this incredible city emerging from the Baltic Sea, or is it perhaps going to leave the land to marry with the more than 100km of seashore? This tale of the water must be the great secret of Helsinki." 22

"The first impressions on entering the Finnish harbour of Helsingfors were very pleasing; there was a certain indefinable charm about the scene as we passed in and out among the thinly wooded islands, or dived between those strong but almost hidden fortifications of which the Russians are so proud. Once having passed these impregnable mysteries, we found ourselves in more open water, and before us lay the town with its fine Russian church of red brick with rounded dome, the Finnish church of white stone, and several other handsome buildings denoting a place of importance and considerable beauty." 23

22 H. Mäntymäki and T. Liljelund (eds.), Helsinki urban guide, Helsinki, Helsinki City Planning Department, 2006, p.132.
1. A Maritime city is born

"Gustav I of Sweden established Helsinki in 1550 by the sea, along good trade routes, to serve as a port city and a rival to the Hanseatic city of Tallinn. The city rests on a peninsula, with the sea surrounding it on three sides. This unique location makes Helsinki a truly one-of-a-kind city, even on the global scale. The marine connections resulting from this unique location are the reason why the Helsinki metropolitan area has grown into a bustling metropolis. Today, these marine connections play a significant role in business, foreign trade, the development of services and the pleasantness of the city. It is safe to say that Helsinki has thrived thanks to the business provided by its port, and this growth has shaped the image of the city. The majority of Helsinki’s coastal areas are constructed, and the city has been expanded out to the sea with the help of landfills. In addition to ports and residential areas, the city’s coastal areas feature marketplaces, beach promenades, parks and small boat harbours, used by residents for marine recreation."

According to the post by Port of Helsinki, Helsinki has been established to serve the port. It has also illustrated on the coat-of-arms and seal of Helsinki. They are one of the oldest symbols that present Helsinki since 1639, and especially the coat-of-arms is still in use on the road of Helsinki that has been granted officially from 1951. Both of them describe Helsinki with a crown above the boat on the water. All of those remained documents point out that Helsinki was born to be waterfront related city and how the port was important to the city to be settled down.

2. The Appearance

The waterfront identity gives the powerful impact to Helsinki, the water, ships, and nature are associated with. It is not only refers to the functional image, it also makes the impressions of the appearances. There are written references that mentioned about the outlook image of Helsinki:

* In the preface to a recent evocation of Helsinki’s cultural history, Laura Kolbe writes:
  Many of Helsinki’s strongest meanings are embodied by waterways. This capital city is shaped and defined by the Baltic Sea. The river, the ocean waterfront areas, the bays, shores and coast lines, as well as the isthmus site have, to varying degrees, figured prominently in the historical development of the city. The sea has played a role in building the city’s economic and symbolic image, as well as its spiritual urban essence, its blue-whiteness. ... Extensive harbour and industrial areas express the economic vitality of the city. With the rapid industrialisation in the early twentieth century, land was reclaimed from the sea for harbours and dockyards. Suburban planning has also moved along the coastline."

* In his book The port of Helsinki-With Love, Seppo Palminen writes:
  It’s sometimes said there are only a few really big buildings in Helsinki. By day they can be found down in the South Harbour. In the evening they set off for Stockholm. The ferries, luxury floating hotels, horizontal skyscrapers, pleasure centres. Nobody has called them "ships" for years. They look like buildings. Ships look like SHIPS."

3. International Connections

As a port, there are still several connections between the neighbours. There are four terminals in Helsinki: West, Makasiini, Olympia and Katajanokka terminals, except new port in Vuossari. West terminal serves to Tallinn, St. Petersburg, and Stockholm. From Makasiini, the ship depart to Tallinn and Stockholm from Olympia. All the same, Tallinn and Stockholm also can be reached from Katajanokka terminal.


Boundaries of Helsinki

It can be seen the changes of boundaries from the maps of Helsinki from 1820 to 2014. In overall, the territory of Helsinki has been getting wider during almost 200 years of its history. Firstly, the region has been expanded to the north and later broadened beyond the islands near the original land. It tells the story of how Helsinki has been grew up with waterfront along the coastal line.

As you can see, there is already existing site that seems to be used as a port, as a strict shoreline, in the map of 1820. Since 1990s, it can be assumed that there has been big changes by industrialisation, due to the evidence of new infrastructures like railways. Being affected to that, until around 1925, the living area has been rapidly developed. As the industry grows, also there are a lot of transformations in waterfront boundaries in 1990s. In 1940 to 50s, the urban structure has been set to the neighboured islands. Continuously, from the map of the end of 90s, there has been further developments have been processed to the eastern part of Helsinki, which also can be found that several artificial waterfront boundaries have been placed.

By the comparison between the maps of 1820 and 2014, the coastal lines have been changed a lot by industrial developments, mostly for port uses. The studies from the records of map of Helsinki indicate that the land we are living in today has been formed corresponding to the modernisation and notably some expansion was for the port industry.
This diagram illustrates the changes of the boundaries of Helsinki based on the previous maps (fig.1-4). Through the arrangements of the coastal lines, the result emphasises that the urban expansion or man-made construction has been focused on three harbour areas which act as a main port of Helsinki.

Those three location can be listed as Katjanokka, Kalasatama, and Länsistama in chronological order. Katjanokka, the South harbour, has been stretched out to the sea in earlier stage mostly in early 1900s and little bit wider later. In similar period, the Kalasatama that located on the north of Katjanokka has been arranged with artificial edges slightly from eastern part, but the western has been improved broadly from mid of 90s to the end. The Länsistama, the West harbour has been started to be constructed recently compared with others. The real construction has been begun from the mid of 90s, being connected to the neighboured island. It spread out in greater scale in 1999 and still ongoing process.
From the previous research about the changes of Helsinki’s boundaries, we have known it is deeply related to the port area and the newly developed boundaries were obviously man-made lines. Through the overall map of Helsinki, it can be simply figured out the issue of the relationship between the port cities and artificial lands.

The wider map of Helsinki gives information about regional boundaries and its story. (fig. 16) The borderline of Helsinki is divided along the coastal line. Its direction is rather horizontal to be expanded than to the inland. Thus, the boundary is linking to the port locations, from the West harbour to the new harbour on Vuossari. It is revealed by the map repeatedly that the city is centralised to the port industry. It is not about only for the connected lands, also applied to the surrounded islands. The lines drawn on the map is visualising the urban infrastructure that connects the archipelagoes beyond the body of water. Those connections fulfil as bridges between several port areas. Based on this analysis, there is no doubt to say that the city can be divided as waterfront and inner area. To the end, it can be concluded that Helsinki is appreciable to resource of water environment. As a consequence, we have to pay attention to what is needed for this environment of this port city at this point.

In fact, what is the most striking point from this wider picture of Helsinki is that sub-continental lands are forming cluster, lands are spanning along the continuous waterfront path ways. Focused on the central Helsinki, including the three harbour areas where the active developments have been processed, it can be realised that the man-made shoreline aggregates almost half of overall seaside. (fig. 17) This result has come out from the identity of the city and it is obvious that it would be one of the most meaningful factors for the seascape as a port city. Even though it is natural circumstances for most of the port cities, however, there is needed to consider seriously what is missing for our living environments. Originally, the seashore was fully in natural element while artificial waterfront edges are widespread that we are losing natural atmosphere of waterfront in other point of view.

Linking to the prior discourses of waterfront and port redevelopment issues, in same manner, it is necessary to recover the urban context in natural way to achieve valuable and better quality of city life. Helsinki shows the appropriate concerns of port cities for today. Moreover, in some point, this is not only limited to the port cities but it leads to the general questions of natural and artificial relevance.
Then what is the influence of the artificial lands to urban landscape? In waterfront space, water provides its own atmosphere with the natural elements such as the light and green. In case of the natural boundary, it fully projects its mood at its natural coastal sceneries. Whereas the built waterfront forms also opened to the view to the sea but there is no touchable natural feelings due to the artefacts for the functional reasons. However, the natural atmosphere is essential for the urban life so it is needed to be filled.

To keep both the functional identity of the city and the original mood of its waterfront space, it is desired to seek the ways for harmonising natural atmosphere and artificial land. It is to be sure that this would be the most critical issue in the near future.
1. Helsinki urban development area

Fitting into the new stage, there is ongoing urban development planning in Helsinki. (fig. 18) According to the Helsinki City planning department, the waterfront areas of Länsisatama, Kalasatama, and Vuossari have been planned until around 2030. They are aiming to arrange residential zone with job offers. 22,000 inhabitants and 8,000 jobs are proposed in Länsisatama. Similarly in Kalasatama, there is expected to have 20,000 inhabitants and 8,000 jobs. The Vuossari, the new port area is looking forward to be with 7,000 inhabitants and 1,000 jobs which is less than other areas, being supposed to perform the functional act as a new port. Representatively, looking through the plans for the West harbour and Kalasatama, it can be read the trend of the waterfront area plans.

2. West harbour

There is a detailed plan of Länsisatama, the West harbour. (fig. 19) The West harbour project is from Ruoholahti to Hernesniemi. On the whole, the residence is the main purpose with some port renewals. Ruoholahti is one of the successful example of transform as residential blocks. Following to this, there is the commercial district is coming in Salmisaari. The example of using old port facilities to new alternative method is Telkkaranta, where the old industrial buildings are going to converted into office, business and cultural facilities. The Jätkäsaari will be a waterfront inner city district. So the area is designed to diverse of housing blocks in waterfront and several sport facilities, parks and resting places will be placed together. Some sport and activity centre will be located in former harbour warehouse building Bunkken, transforming old harbour facilities as well. This part is also going to serve the port functions, being able to feel a bit of marine atmosphere. The old dockyard will be remained and huge ocean cruisers are coming to Hernesniemi in summer time. Moreover, the Jätkäsaari harbour continues to serve the cruises to Tallinn and St. Petersburg and the new sailboat harbours are going to added. The West harbour is actually enlarged its area to offer residential area but it is shown that the city tries to keep its port atmosphere partially. 27

3. Kalasatama

One of the largest urban development projects in Helsinki, Kalasatama is in the process of expanding to link up with the central city area. (fig. 20) Seaside locations that used to be industrial and harbour areas will gradually transform into a city district where homes, services, jobs and culture are all close by. As well as the West harbour, Kalasatama is also targeting to make versatile liv-

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28 Kalasatama—Culture and life close to the heart of the city, Helsinki, City of Helsinki, 2018, p.2,9.

fig. 18. Urban development area

fig. 19. West harbour planning

fig. 20. Kalasatama planning
Katajanokka
Katajanokka, its another potential

During the long history of Katajanokka, there has been a lot of changes in its territory. Even though the two of three areas where the urban expansion has been mostly developed as previous research have been prepared to redevelop, Katajanokka has no exact further plan after the port industry has been done. However, this area is located in central part of Helsinki so it is obviously able to serve the active public space. From the city centre, it is easily reaching to the area passing through Esplanadi park. Also, Helsinki Cathedral, the main attraction is connected to market square, Kauppatori, directly. Uspenski Cathedral is finally bridging the market square and Katajanokka.

Thus as one of the main port, the South harbour has been existed since 1800s that is deserved to keep its functional image. There is Katajanokka Terminal heading to Tallinn and Stockholm at the opposite site of the Olympia Terminal. Still There is also Scandic marina congress centre, so the area act as a significant seaport.

In overall view, Katajanokka is combined with residential area. In the back side of the port, the houses are spread in the centre. Some of them have historical value as art-nouveau style and the rest of them are quite recent modern buildings filled in. The waterfront spaces are surrounding its area from the port to a longitude park and yacht dockyard in a row.

Above all, Katajanokka is a land coexisted with both natural and artificial boundaries. In addition, it is an important location that can affect to urban identity getting along with the city centre, so it has great potential to be valuable public space. Simply, it is obviously a prospective area to bring back the nature to public as an artificial surroundings.
fig.22. Ages of Buildings

Katajanokka has wide range of years of buildings. The old buildings built on 18-19c in art-nouveau style has been situated on the central part of this area. Whereas, the comparatively recent ones were constructed on the land of the eastern part. Terminal and port facilities were stood on from the period of 30-60s. It is no exaggeration to say that Katajanokka is the existing history of the architecture.
fig. 23. Functions of Buildings

As the functional mapping above, most of the part is consisted of the residential purpose. Some are used for the public including Katajanokka terminal and the offices are put along the terminal district. There are not enough public uses along the waterfront even the city centre and residence area is linking together.
fig. 24. Green area

Along the waterfront at the back side of the residences, the green pathway is wrapping. The green area is linking to the waterfront directly and used for the residents, but it is closed for the public in some way due to the lost of the public use.
According to Port of Helsinki, the port facilities are outlining around the Katajanokka area. From K6 building as storage shed, Marina congress centre is placing between the Katajanokka terminal. Continuously, the cruise quay and inspection building is located until the park. To the back side, there is a dock for the ice breakers and harbour for visiting boats coming back to the starting point. Some port facilities are planning to change and transform depending on the port uses.
International competitions and Master Plan of South Harbour

fig. 26. South Harbour International Competition Area
The waterfront space of South Harbour is on the rise, seeking for the new ideas of future developments. Ahead of the Guggenheim competition in this area, again there was South Harbour international competition had been held including the waterfront of Katajanokka organised by the City of Helsinki. The competition area fully contains the site from where the alas project going on to the whole part of the port-related area.(fig. 26) The competitions for this area has been taken afterwards. It shows a strong willingness of the City to develop the waterfront space as distinctive.

The master plan of Helsinki in 2002 which is still valid, indicates some part of the Katajanokka as a city centre boundary as a black line.(fig.27) The most of the area is planned as housing blocks that is including housing, commercial and public services and recreation use. The back side of the waterfront will be renewed as recreation area by the city in terms of significant outdoor area as urban structure. This area is considered to be necessary to build community facilities and also keep the harbour uses. The half of the boundary categorised as waterfront, which is now for only port uses, will be developed to service area and community facilities. This valid zonning plan intends to tell the potential of the waterfront as public uses in South harbour area. 29

Analysis of the waterfront route

7. Atlas project  8. Bridge
9. Sky wheel/ Parking  10. Storage shed
11. Blocked view  12. Fences
These arranged photos are taken following the drawn route. The journey was to investigate how the waterfront is utilised for the public. It has been started from the market square where one of the most popular attraction point in Helsinki. In a first row, it can be recognised that the liveliness is coming into the various of action. The space of parking lots and some empty space is not really good for the waterfront and obstructs the view to the beautiful nature. However, there is ongoing construction for the Allas project which is a pool and some recreation will be get in. Due to the new waterfront public space, it is expected to be transformed to enjoyable spot.

This energetic urban atmosphere suddenly has gone from the red lined route. The parking lot on the ground conceals the sky wheel and it makes hard to access to the waterfront. Thus, the storage shed and port facilities are arranged along the waterfront. The buildings were apart from the waterfront edge for the road of port uses. Eventually, the waterfront is fully prohibited to be accessed by people and even the scenery to the ocean is blocked by both the port and the fences that placed in several layers. Passing the desolate street to the terminal, modern residence buildings are shown. Keep walking through the residential area, the park is appeared in a very restful and beautiful view with fully opened waterfront. Though, it felt the lack of the accessibility that it was hard to find those peaceful park for the public in general. It would be have better accessibility if the waterfront on the way to the park is more free to the public and attract people from the market square or the pool that is going to be open.
fig. 28. Site selection

Based on the walking research of the waterfront, it has been concluded that it is needed to open the site from the blocked activeness and the view to the nature. The site has been selected between the Allas project site and Marina congress centre that is able to connect each public and port images of the area at once. The original building was originally used as storage shed but has been suggested as different function in several ideas for new outlook of South harbour. The site will perform significant factors for the new generation of both South harbour and also Katajanokka area.
fig.29. Cultural Cluster

If the site and the waterfront space of South harbour open to the public, the area on the whole will get closer to form cultural cluster along the shoreline. Public route can be made from the city centre and back to the market square, creating public ring by enjoying the whole waterfront space. The site would perform momentous role of linking the cultural functions in the end. Furthermore, it is in between the port buildings, Marina congress centre and Katjanokka Terminal, and Allas and sky wheel which are going to be one of the most popular attraction point in near future, so the area will act as a channel to connect the port function and the publicness.
fig. 80. South Harbour
Waterfront for the public as a port-related city

South harbour was one of the main ports of Helsinki for the international trades. Over time, the port industry has been declined and nowadays, South harbour is about to be turned into public space. The site has potential to keep the port identity of Helsinki and to be transformed as active public space at the same time.

To bring the place back to public, it is required to open waterfront to lead people to feel the nature closer. In process of turning into the natural boundary on the man-made land, it is demanded to encounter the natural atmosphere. The atmospheric waterfront public space will attract visitors to enjoy the waterfront and generate active harbour link to the city centre. The site also can promote Helsinki as a port city with port-related activities keeping its identity. This approach to the site would attain the aim of both beautiful and productive waterfront at a time.
Maritime Museum
In terms of new port city trends, it is inevitable to find the way catering for beautiful and productive. The beauty of the waterfront is spontaneously coming out from the natural atmosphere and it has to be settled port-related functions for the productive waterfront. In consideration, maritime museum of Helsinki is prerequisite for the site. It would be an important step to revive the publicness to the waterfront by the port stories.

As pointed out above, Helsinki presently has no port museum, while its maritime museum was actually closed down not long ago. In our opinion, it is essential that the fascinating history of Helsinki as a port city should be appropriately exploited. More specifically, one ought to explore possibilities for establishing a permanent port museum in the city centre (e.g. in the customs building at South Harbour), on Suomenlinna or in the new cruise terminal at West Harbour. As we have indicated, such a museum could be combined with a port education centre.30

Looking into the programmatic relationship of South harbour, it can be much easier to figure out how the maritime museum is going to perform together. As the illustration next page, originally the markets has been existed for the longest period until today. (fig.31) Market square is the oldest public uses before 1800s, and after old market hall has been built around 1850s. Three terminals were in use also until recently, but one of them is about to turn into Guggenheim museum due to the loss of its function. Following to this trend, Alas project has been joined as cultural flow currently, so almost entire part of South harbour area is shifting in direction to the cultural movement beyond any doubt. In current situation, Katajanokka terminal is remote from the cultural flows because of the site has been blocked in several reasons. Maritime museum is the key of joining each others as the publicness of a port city.

The future redevelopment of South harbour is expected to complete the cultural cluster in a port enhancing Helsinki’s identity. Maritime museum will be the significant factor to reinforce the terminals uses, South harbour and Katajanokka area in wide range, accessed from the city centre.

30 Hooydonk, Helsinki, North european port icon, p.64, 65.
fig. 31. Open with port stories
fig. 32. Maritime museum, Copenhagen, Denmark, BIG

fig. 33. Maritime museum, Porsgrunn, Norway, COBE Architects

fig. 34. Maritime museum, Texel, The Netherlands, Mecanoo

1. Copenhagen, Denmark

2. Porsgrunn, Norway

3. Texel, The Netherlands

fig. 35. Spatial composition of programmes
There are representative maritime museums in each port city. Those three different maritime museum show how to respond to their context and status. Firstly, maritime museum in Copenhagen, Denmark, has been built on the old dock by BIG. (fig. 32) It has been transformed to look under the remains of the port industry. The whole museum buildings are constructed underground to avoid hiding the Kronborg castle of the surroundings. This project has been located like a park, so that people can freely access to the museum and easily catch the feeling of marine. Also the circulation of the museum is naturally joined the large exhibition space as ramps, so it is reckoned as an extension of the public paths.

In case of maritime museum in Porsgrunn, Norway, it presents another approach to emphasise its character. (fig. 33) The building has been built recently by COBE Architects, simply making clear the beautiful scenery of waterfront. There is no specific access point to the waterfront boundary, but the building contributes to intensify the natural atmosphere harmonised with the surroundings. It fulfils to organise elegant horizon in the port city.

Lastly, in Texel, the Netherlands, Mecanoo has built small scaled maritime museum in small town. (fig. 34) This building is not placed in waterfront, neither old port facilities, but it represents the town’s identity. The ground floor is fully opened to public, so it is easy to get closer to the maritime stories. What makes this museum exclusive is creating community in port-related area, keeping its existence of town’s own character as port city.

The studies of the maritime museums shows the composition of the programmes. (fig. 35) On the whole, the museum obviously have the largest portion of the exhibition space in common. In particular, the museums are offering educational space for kids and marine organisations, approximately 7% of the overall areas were for that. (fig. 36) In average, almost half of the space were used for the exhibition space including the other temporal exhibition space and some auditoriums.
The Maritime Museum of Finland

There was a maritime museum in Helsinki, but it has been moved to Kotka, operated in Maritime Centre Vellamo since July 2008. Kotka is located in the eastern part of Finland, apart from Helsinki. It is also one of the main ports of Finland, serves the foreign trade of Finland and Russia. Visiting the place is demanded to figure out the seaport stories of Finland and the museum has contained various of port-related exhibits.

The Maritime Museum of Finland is a national maritime museum operating under the National Board of Antiquities whose role is to preserve and interpret the history of Finnish seafaring. The Maritime Museum collects and preserves objects, photographs, archival material and literature pertaining to seafaring and boating. Mercantile marine and the history of the Maritime Administration of Finland are among the special interests of the museum.

The exhibition consists of three parts: the maritime museum, the museum of Kymenlaakso, and temporal exhibition. Kymenlaakso is the region of Kotka, and the exhibition contains the history of this area as a port city. The coastal road, sea route and the lifestyle has been displayed mainly. As the main exhibition part, the boat halls and the sailor’s life has been arranged in the largest area. To this extent, several ships were also exhibited outdoor space in addition. Continuously, some interior displays of the ship has been made as a model, showing the equipments and life supplies. Furthermore, the stories of the sea presented with in details such as commercial history, trade and war for instance. Finally, some temporal exhibitions are held occasionally. The museum is filled with diversified records. It shows the future direction of the maritime museum of Helsinki.

The contents for the new maritime museum of Helsinki would have similar approach to the museum in Kotka, but there is capacity to be distinct as a port museum of Helsinki by containing the information of the cruise route, about Viking line and Silja line. Moreover, it would be an opportunity to get closer to the Katajanokka area, getting rid of the invisible walls between residential area and port facilities. It is expected to have a great effect on both urban growth and publicness of waterfront space.

fig.57. Kotka Maritime Museumn
Rebuild the Boundary
Natural Atmosphere & Artificial Land

Beauty + Productivity

Natural elements + Maritime Museum

Waterfront for the public as a port-related city
fig. 38. Site status

fig. 40. Elevation of the original site (A-A')

- Has been demolished and turned into Allas
- Storage shed on the site originally
fig. 39. Current status of the site

The position of the site can be seen from the aerial photos of South harbour (fig. 38). The current situation of the site has been blocked by layered fences and can be accessed only by car. Heading to the waterfront, the site is used for car parking, already have invisible wall installed.

As in site plan, Public can only access through the back side of the buildings which are mostly occupied of office areas (fig. 39). Residents are available to access to the site from similar direction and the route can be connected to the park next to the terminal.

Between the sky wheel and the site, there is a car park located in, the corner of the area is a Gate A for the terminal entry of cars. Cars line up along the waterfront when there are waitings, they are fully blocking the waterfront easily. Currently, the waterfront is used for cars, not for human.

If the site is opened without the obstacles, the view would offer to City, Market square, South harbour in opposite site, Valkosaari Island, and even further horizon of the land, water, and nature.

According to the elevation of 'A-A' that has been drawn the original site before the Allas has been constructed, it tells that there has been demolition previously (fig. 40). And now, it has been starting point to transform the South harbour as a characteristic space with a port.
fig. 41. Rebuild waterfront boundary and attract the public

Rebuild the existing waterfront boundary to the inner side to make closer to the public. Few part would be filled with water for creating recreation area on the ground floor.

fig. 42. Forming with organic lines

Based on the rebuilt boundaries, the outline has been creating. The curved line presents the spontaneous connection of the facades, featuring natural feelings of the site. The form makes reasonable to connect the public and the port and to make natural public flows. It maximises the views to the sea, heading to the Market square, South harbour and further horizon of the sea.
fig.43. Vertical relationship diagram

Not only for the ground floor, the natural feelings can be mixed up to the vertical flows. It attracts people as a space, tying all the space with waterfront atmosphere. The vertical relationship would make a flow as a interconnected public space.

| Beautiful and Productive Waterfront |

| Sky light       | Port museum | Open with the light | Waterfront |

fig.44. Vertical functional diagram

1. Overall scheme
The aim of this project is to make active waterfront with natural atmosphere. To reach this idea, the light has been used to deliver the atmosphere of the water by reflecting water and the surface of the space. The delivered natural feelings will join all the space as a port museum on the nature.

2. Key factor
The light is the significant element for this project, to accomplish the beauty of waterfront space, and the light will work in several ways. The ground floor will be fully free space with the natural elements: water and the light. The sky light will come down from above by reflecting through the mass.

fig.45. Conceptual diagram
From the aerial view, the port museum is placed on the line along the Helsinki Cathedral, the Market Square, the Allas, and the terminal at the end. It creates the cultural route that can be made on foot. The waterfront in front of the site is opened to the public instead of the gate for the car's entry. The gate can be placed alternatively in between the Port museum and the Mari- na congress centre. The waterfront would be active with long walk way following the original shoreline. The port museum would be harmonised with the surroundings associated with the elevation flows of the urban facade. These spontaneous public route and the flows affect to create programme layers of the building synchronising with the city atmosphere.
Programme Layers

2F
The public & port

1F
Identity of the area

GF
Open to the Public

Education & recreation
port library
ship excursion
restaurant/cafe

Port museum
port history
Hatananokka history
temporal exhibition

Waterfront recreation
seasonal recreations
pool
ice skating
floating exhibition cafe

Sky light

fig.48. Programme
 Movements

Fig. 49. Movements

- Public route
- Fire escape
- Art delivery
- Inner route
fig. 50. Public Flows
Divided inner spaces are layered in rhythmic flows fitting into the organic form as a whole. It leads the movement in spontaneous ways from the ground to the top of the building.
fig. 52. organic space
The sky light is coming down from the circular glass roofs passing through the circular cone to the bottom. The natural light reflects on the aluminium panels put on the inner surface of the circular cone. Continuously it reflects on the water and reflecting panels on the ceiling of the ground floor, maximising the light dramatically. Furthermore, the light will be shining following the waves on the seashore, create beautiful atmosphere naturally.
fig.54. light reflection on the water and its atmosphere
fig. 55. Light cone section (scale 1:100)
A. Glass roof and reflection

- 10mm laminated glass roof
- Steel plate
- 10mm aluminium panel

B. Glass floor

- 9.5mm laminated glass roof
- 160mm supporting plate
- 10mm aluminium panel

C. Glass floor and ceiling

- 9.5mm laminated glass roof
- 10mm aluminium panel
- 20mm aluminium panel
fig.56. partial elevation (scale 1:100)
The building facade composite with white concrete basically. The whole facade has been diversified with different glazed units. The museum facade is surrounded by insulated channel u glass units, in transparent and translucent alternately.
Views
fig.58. outdoor sculpture park
fig.59. auditorium
Plans:
1. entrance
2. ticket sale/ cloak room
3. administration
4. museum shop
5. delivery of art work
6. cafe
7. small water park
8. open-floating exhibition
9. small pool/ ice rink
10. pool administration
11. walking path
1. deck
2. open-floating exhibition
3. boat hall
4. exhibition
5. auditorium
6. library
7. glass floor
8. library entrance
9. cruise excursion
1. deck/ water space
2. pool administration
3. exhibition
4. glass floor
5. temporal exhibition
6. office
7. cafe
8. sculpture park
9. library
10. walking path
white concrete

safety glass
double glazing

translucent channel U glass

reflecting ceiling panel
1. parapet capping
   - sheet metal clip
   - sheet metal flashing 10mm
   - vapour barrier
   - reinforced concrete
2. overflow
   - sheet metal gutter
3. waterproofing
   - sheet metal flashing 18mm
   - 6mm wood fibre
   - timberboard
   - 100/200 mineral wool insulation
   - vapour barrier
   - reinforced concrete
4. 20mm plaster
   - 600*960 concrete beam
1. laminated double glazing safety glass in aluminium frame
2. extended concrete slab structure
3. 80mm thermal insulation
4. 80/160mm channel U glass with thermally insulating coating
5. translucent thermal insulation
1. concrete floor panel
   100-500mm sloping concrete slab
   bituminous sheeting
   separation layer
   300mm reinforced concrete
2. drainage channel
3. 8mm elastic finish
   2mm PUR heated screed
   94mm calcium sulphate
   11/145mm EPS
   bituminous sheeting
   single layer
   500mm reinforced concrete
4. 50mm acoustic panel, ceiling plaster board
   25mm reflecting panel
1. 80/10mm channel U glass with thermally insulating coating + 30mm translucent thermal insulation
2. elastic finished concrete flooring
3. concrete panel flooring
1. 40mm laminated glass
2. waterproofing
   6mm wood fibre
   85mm insulation
   10mm steel membrane
   10mm aluminium panel
1. 24mm glass floor
2. 130mm supporting membrane
3. 200mm concrete
4. 10mm aluminium panel
1. 10mm steel bar
   6mm steel frame
   95/ 145mm insulation
   bituminous sheeting
   single layer
   reinforced concrete
2. 6mm steel frame
   bituminous sheeting
   single layer
   85mm insulation
   10mm steel membrane
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fig.1, 2: Drawn by author


fig.4: Drawn by author


fig.7: Masterplan Hafencity, [online image], www.hafencity.com, (accessed 26 Sep 2016).


fig.15: Drawn by author


fig.22, 23, 24: Drawn by author


fig.28, 29: Drawn by author


fig.31: Drawn by author

fig.32: Hjortsbjerg, R., Danish National Maritime Museum/ BIG, [online image], http://www.archdaily.com/440541/danish-national-maritime-museum-big/52633267e8e44ef4c2000188-danish-national-maritime-museum-big-pho-


fig.35, 36: Drawn by author

fig.37: Photo by author


fig.39, 40, 41, 42, 43, 44, 45, 46, 47, 48,49, 50, 51, 52, 53, 54, 55, 56, 57, 58, 59, 60 : Drawn by author
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