Enjoy Life, Enjoy The City!

An Urban Design Proposal of Frihamnen, Gothenburg, Sweden

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Master's Thesis at Chalmers Architecture
ABSTRACT

As the second largest city of Sweden, Gothenburg is transforming from an old industry harbour city to a new sustainable river city. Frihamnen, which is located at the heart position of Gothenburg, will become a crucial area for one of the future city centres. The main purpose of this thesis is to propose an urban design proposal that has a great vision for how Frihamnen will develop as one of the new public meeting places in the city to provide dynamic, diverse, green and healthy urban space for everybody, in order to provide a scenario for urban plan with an overall perspective for the future. The proposal of the thesis attempts to introduce a green belt slightly melting from the water area on the southwest to the public parks, green roofs, and courtyards of the piers on the northeast. And also linking the current city centre from south side to future city centre by various way of using waterfront space, and supporting with residence, institutes, offices, campus, and also commercial shopping malls with restaurants, shops, gyms and exhibition museums etc. to create quality meeting place that functions 24/7 as well as essentially to encourage more citizens to enjoy the diverse, social and sustainable city life.

By referencing to the "Towards an Urban Renaissance" by Urban Task Force, learning from experiences in UK, I got a general idea about how to attract people who are already living in urban peripheral areas to get back to the city by using the brown land to build up and support pleasant and mixed urban spaces. Also studying "River City Gothenburg - The Outcome of the International Workshop", comparing proposals from different groups through inspiration during my Master’s Thesis work. The proposal of this thesis sees the city centre of a series of islands rather than one continuously connected fabric as the planners and the workshop proposed. The interesting in this concept is how to leave the river side as an open space. Analyzing the study is illustrated and explained in the thesis as well.

To be able to do this, visiting the site and interviewing urban planning office and municipal company staff together with city life experience collecting in the beginning phase helped to establish the foundation and a well understanding of the city context. The thesis discusses the urban issues at different levels, such as city scale, district scale and building scale. The learning in and out of visiting offers the opportunity to give the site as a whole urban area without losing human-dimensioned detailed design. The evolution of the physical models gradually tested the ideas of how to build the connection between the two riversides within the city centre area, how to use waterfront area as both challenge and opportunities to involve the future urban life, and how to create a human-dimensioned accessible future city centre based on a complex context situation.

The thesis will be presented at Chalmers and hopefully could be used by the city planning office or municipal companies, also as a reference for researchers, teachers and students. The final result will be presented as urban models in different scales, long urban sections and a booklet report, the most important thing is, hope the report may attract more interests concerning future city development from public, such as local citizens, foreign students and so on.

Key words:
Urban development, Urban Space, River City, City Centre, Gothenburg

Note:
River City Gothenburg - The outcome of the International Workshop, Gothenburg, November 2011
“Nothing is experienced by itself, but always in relation to its surroundings, the sequences of events leading up to it, the memory of past experiences.”

-Kevin Lynch - THE IMAGE OF THE CITY
Introduction of GOTHENBURG city
West coast of Sweden
- Urban density 1,200/km²
- 2nd largest city in Sweden
- 937,000 inhabitants (metropolitan area)

What kind of city Gothenburg is?
What kind of city Gothenburg will be?
Before & Now  Future

Peripheral City
Global City
Swedish City
Logistic City
Scandinavian City
Harbour City
Shipyard City
Poly-centric city

Dynamic City
Livable City
Industrial City
Dense City
Social democratic City
Attractive City
Diverse City
Shipyard City
Post-Industrial City

Efficient City
Green City
Industrial City
Security City
Inclusive City
Logistic City
Swedish City
Scandinavian City

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Livable City
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As a harbour and shipyard city, Gothenburg was one of the first Swedish cities that experienced, in a fundamental way, the process of structural change that is often called “post-industrial.”

Gothenburg has a long industrial history, with large manufacturing plants, such as shipyards, automotive and ball bearing industries. However, during the process of the industry transformation, more factories and harbour warehouses are abandoned. These have issues related to industry and harbour site.

In social science, it is commonly argued that economically advanced societies have experienced a transformation from industrial society to post-industrial society. Transitions from industrial to post-industrial are often characterized by a shift from a "production" society to a "service," "knowledge" or "information" society. In this case, the employment changes are often taken as main indicators during the process.

Daniel Bell's theory

Before him, others had assumed a continued employment shift, from agriculture to manufacturing and then to services. A distinction is hence often made between a primary, a secondary and a tertiary sector.

Bell emphasized that the growth of the service sector is to some extent due to requirements in the production and distribution of goods. Transports, finance and insurance are typical examples.

Another point from Bell is that with rising incomes, people become increasingly willing to spend money on activities such as travel, entertainment, eating in restaurants and sports. Besides, they are also more interested in improvements in health care, education and environmental issues.

**FROM INDUSTRY TO POST-INDUSTRY CITY**


Bengt Furåker analyses the employment developments in Gothenburg in his article “A Post-industrial City?”

**Suitable function of Frihamnen in a Post-industry city**

In order to define the new functions in a post-industry city, Frihamnen – an industrial area in Gothenburg – is used as an example.

<table>
<thead>
<tr>
<th>PRIMARY SECTOR</th>
<th>AGRICULTURE</th>
</tr>
</thead>
<tbody>
<tr>
<td>SECONDARY SECTOR</td>
<td>MANUFACTURING</td>
</tr>
<tr>
<td>TERTIARY SECTOR</td>
<td>SERVICES</td>
</tr>
</tbody>
</table>

**Source:** SCB Database
Among mega cities such as Paris or Shanghai, the mono centre of the city normally could not afford such huge populations at big urban region. So the sub centres appear during the urban development to support the nearby daily service for citizens.

Comparing to metropolis, Gothenburg is a relevant small city, although it has its own old city centre surrounded by canal, still the public meeting places are to some extent distributed over on both sides of Göta river, mainly at the south, existing as poly centres in the city.

Frihamnen - One of the future Poly Centres in City

Formed by certain reasons, these poly centres play deeply important roles as crucial nodes supporting citizens' activities. A small square, an old historical street with handcraft shops, a high technology science park, a street full of cafes and restaurants, a big shopping mall block etc.

Further more, there are different streets to connect populations and business centres together. By vehicle road, such as trains lines, buses, ferries; by small scale streets mainly used by bicycle and pedestrian

This gradually formed the main road, the small paths during the development of the city. Besides, ensures there are good accessibility and convenient transportation in between the poly centres.

According to their function and target group, they have different size of service radius to serve certain numbers of nearby people.

Frihamnen will function as one the poly centres in future.

MONO-CENTRIC CITY VS POLY-CENTRIC CITY

Service Radius of city poly centre

Map of Göteborg city poly centres

Frihamnen

Lindholmen

Kungsportsplatsen

Korsvägen

Landala

Nordstan

Järntorget

Haga Götaplatsen

Gustav square

City center

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Introduction of FRIHAMNEN
SITE FRIMHAMNEN | WHY?

- It is said that river is the soul of city, such as La Seine of Paris, Thames of London, however Gothenburg city developed from Göta River. As a harbour city, trading and industry were the tradition, thus river plays even more important role here.

- Frimhamnen is a former harbour area along Göta River, situated at central position of the city. It contains 3 piers for loading goods before. The 3 piers give unique shape to Frimhamnen, it looks like a dragon foot, thus making it distinguished in the satellite photo over Gothenburg city.

- On the other hand, it provides more opportunity to integrate the land with water, creating interesting waterfront areas when compared to the other areas near the river.

- Meanwhile, there are not so many people who are living, studying or working here. These piers are somehow empty, with a few dispersed factories, parking lot, and large non-used flat ground.

- A big contrast showing up between empty Frimhamnen and old city centre areas, that includes commercial malls, shopping streets, culture institutions, administration offices and so on.
EVOLUTION OF FRIHAMNEN

On southern side of the river, the urban fabric is slightly changed, especially old city inside of canal. While on northern side, the waterfront area developed a lot:

- Around 1880, Frihamnen used to be a wetland.
- In 1922, the land was filled in and piers of free port were built. The free port was utilized until 1996.
- From 1980s, industries and harbor activities started to move out, at the same time, the planning and development of Norra Älvstranden started.

FRIHAMNEN consists of three piers: South Frihamnspiren or Line pier, Northern Frihamnspiren and Kville pier.

Line pier, which is in the southeastern, served until the end of the 1990s as a port for Sweden’s banana import of custom-built boats.

Northern Frihamnspiren, which is the middle, is an additional site for DFDS Seaways ferry to Harwich.

Kville pier, which is the westernmost, is additional space for rail ferry Stena Line, which operates on the route Gothenburg-Frederikshavn.
LOCAL ACTIVITIES OF GOTEBURG CITY DEVELOPMENT

STUDY TRIP ON SITE
**WONDERFUL WATERFRONT**

Frihamnen enjoys an excellent location in Gothenburg.

The water is a consistent feature which goes through and breeds the City. The fringed river line offers multiple opportunities for buildings with a nice water view.

The future development of Frihamnen provides the possibilities of experience the city from riverside, placing outdoor recreational activities along the river.

**FLAT TOPOGRAPHY**

Frihamnen has a flat feature since it is located on plain. Compare with some other areas which are built upon landscape contours in the city, Frihamnen is primarily situated on plain. The flat character provides a big open space near the river.

**RELATIVELY EMPTY VOID**

There is no urban structure here before, so it is a perfect area under feasible for future Frihamnen with the other nearby city neighbourhood, because it is rather big area.

Nowadays, there are offices, warehouse and industrial uses.

**LANDMARKS**

As other cities, Gothenburg has some famous landmarks, including the Lipstick, the Opera, Central Station, which is speaking the language that Göteborg is an industry city and has some old well protected traditional buildings.

These four see sights are located near Frihamnen area, which becomes a potential visual attraction.
PRESERVING HERITAGE

Gothenburg has succeeded in preserving some heritage buildings in the city. The old buildings add character to the environment and encompass the history and culture of the city. There are some great examples along the Göta River, such as Röda Sten Art Centre that previously was a boiler house, Quality Hotel transferred from an old shipyard.

Some heritage buildings should be converted as part of the developments in Frihamnen, while they are mainly warehouses and sheds.

WHAT TO KEEP ON SITE?

1. Customs House
   Wooden building. Characteristic landmark from the 1920s
2. Magazine D
   Built in 1938
3. Office
   At the entrance, from 1938
4. Sheds 107
   An important focal point from the little boom was built in 1944
5. Rowing Club
   Built in 1942 in the functionalist style and is still in use. It has a thoroughly value memory of the extensive boating which occurred on the river.
**SURROUNDING SITUATION**

The site of Frihamnen is about 92 hectares and it is defined by:
- **South:** Göta river
- **North:** Highway Lundyleden
- **East:** Götaälvbron & Hjalmar Brantingsgatan highway
- **West:** Lindholmen area

The two highways isolate this area from the other neighborhoods.

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**TRANSPORTATION & ACCESSIBILITY**

If we look at the connection how Frihamnen linked to the city through public transportation, we find that:
- The city major road create big barriers around Frihamnen.
- Almost all the tram lines, main road for buses and cars and also ferry lines are only passing by Frihamnen, but none of them really go through this area. Except the old harbor rail way which is nearly abandoned today.
- It is also hardly accessible by bike or walking, though so close to city center and there are some big public transportation stations not far such as Hjalmar Brantingsgatan.

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**Additional Information**

- Lindholmen used to be an old shipyard, today it is mixing of business, educational institutions and housing.
- Ringön & Gullbergsvass also used to be industrial shipyards, is planning to be developed by government.
- Kvillebäcken is going to be developed in to a housing area.
TYPOLOGY STUDY FROM CURRENT GOTHENBURG CITY AREA

The start point to think about scale and density

SKETCH THE POSSIBILITY OF CONNECTIONS BASED ON CURRENT CITY TRANSPORTATION

The start point of pedestrian links and infrastructure vehicle links in design proposal
MODEL STUDY 01

"+" Method is to add volume on an empty site. For example buildings, parks, bridges...

1-1

First model aiming at getting familiar with the site by thinking what kind of area it should be according the urban context around.

The scale of the buildings is big with fewer connections.

open green space
doubling with yard
regular blocks as of floor
up-living
down-commercial
big square with water
front building around

1-2

Considering the factories or warehouses conserved, building up a link through the whole site, creating different space feeling by building the second floor in various way.

The volumes of buildings are still large, the boundary between the land and the water hasn't been well developed.

regular blocks
open green space
corridors, blocks & yards

1-3

Dividing site into relevant average unit area, creating small scale interesting volume on the corner of each unit to link them rather than building a high rise landmark of the whole site. Also considering building heights, which the site, should be lower on the river side and higher on the big bridge side.

Density of the buildings in this proposal should be enhanced, in addition, more connections should be established.

site divided into units
split up big landmarks into small ones

MODEL STUDY 02

"-" Method is to reduce some parts from a whole big volume. For example streets, squares, courtyards...

2-1

This model tried to develop the idea of links, also see how it could be integrated in to buildings which fill the area.

The volumes are mostly the same height, the density is still enough though. It seems that the round shape doesn’t really fit the existing urban fabric around.

integrated the links into buildings

2-2

Using "-" method, cutting out the streets, and let some area free to be square, there are more urban fabric characters displayed here.

Can’t see enough design regarding to buildings height, and the zones are relevant average.

block street
building street
start showing the urban fabric

2-3

Develop the 2-2 urban fabric model by creating more courtyards and squares in between, considering private and public quality in urban spaces.

The urban fabric is slightly lost here.
MODEL STUDY 03
Focusing on the relationship between the river and piers.

3-1  
Testing how the flow from the riverside can be integrated into the water.  
The scale of the building is too general.

3-2  
Lower the height of the volume on land, tend to shift to inhabitant bridge.  
The scale of the building is a little bit general.

3-3  
Precise the volume by making them smaller, considering the edges and boundaries around water front area.  
The scale of the building seems mixed and similar to the real one, but the connection could be more diverse.

3-4  
The result model based on evolution models 3-1 to 3-3, including various of connection ways, step in different ground levels. Besides adding a glass corridor as the second skin of several buildings on site.
An urban space is like a theatre. It provides the stage of daily life for citizens, visitors, ...
Varied activity requires diverse spaces, to take the advantage of Model group 1-3, there are some experimental practices in Model 4, which leads to the Frihamnen urban design proposal.

The street pattern is not horizontal nor vertical, instead it partly attempts to create some curved alleys, that allows people to experience "Medieval streets" in the modern urban space.

Big streets, narrow paths, closed courtyards, semi-opened, public green space, connected corridors, totally opened squares...

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MODEL STUDY 05
Hierarchy of buildings and sites
Proposal MODEL    Scale 1:2000

New Götaälvbron

Site area: 39.5 ha
Building area: 10.5 ha
Total building area: 44.4 ha
Building footprint area to site area ratio coverage = 44%
Building area to site area ratio coverage = 216%

44% ensures that the concept provides more open and green space within certain areas to meet the aim in the beginning.
216% presents the building density in certain areas, towards the dense-mixed-used urban structure and serve more people in a limited space with advantages in social sustainability.

Wetland
Underground Car Park

Open Air Cinema
Maze Park
Waterfront Park

PLAN

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Mixed-use urban structure - 3 BANDS

The indication for function of building is the mainly percentage, but there are other properties such as residence are mixed in between.
MAIN CONNECTIONS

To be able to become one of the poly centres, tight connection and good accessibility are required.

- Vehicle connection is the infrastructure link which mainly including New Göta Bridge to support the heavy transportation of tram, bus, car, bike and pedestrian from other side of river.
- Pedestrian bridge links Opera with Kvilletorget together and also in a big scale, connects city main street Avenyn and Lindholmen area where nowadays a large flow moving in between.

- Skyline of Pedestrian connection
PARKING AREA
Three main parking types include: near vehicle connection on north, cars can be parked at the several bottom floors of commercial malls; understand the two green parks; and near square, courtyards, outdoor parking is provided.

To encourage bicycle riding, many bike stations are settled in Frihamnen, not only around public meeting space for visitors but also on more private courtyards for inhabitant.

GREENERY
A wetland is provided on south to enhance the biodiversity in urban space; two green parks bring more nature circumstance into this area; there are also waterfront parks along the river side for jogging, having a walk; green roofs give opportunities to grow plants in vertical space; besides almost in all the courtyards, there is small gardens where people can have their own local food growing.
Sun study in spring equinox
Sun study in autumnal equinox
The hierarchy of the volume creates the various urban space experiences for visitor and inhabitant when traveling within the area.
Yu is studying at Chalmers as an international student. Her friend Mauro came to see her from Portugal. They rent two bikes to visit Gotenburg on weekend, passing by Frihamnen.

M: Oh, look! Yu, what are they doing here?
Y: Hmm... It looks like street art. Normally there are some art events happening nearby the museum.
M: Museum, is that one with funny graffiti on the wall?
Y: Yeah! The modern art museum was transformed from an old warehouse. Would you like to have a look inside?
M: Sure, let’s go!!

M: What a nice square! You see many children are playing.
Y: Yeah, the column square is designed by an artist actually.
M: I really want to try skateboarding now.
Y: Oh, you are playing skate board?! How cool! Let’s rent one from the sport shop nearby...
M: Yu, do you know which movie is going to be shown tonight?
Y: Hmm, as I remembered, it is a documentary called "China" by Jia Zhang Ke.
M: Sounds interesting! Is Gothenborg film festival an annual event? Seems it is quite popular. See many people are already sitting around!
Y: Yeah! It holds every summer for 3 weeks, and usually draws a lot of locals in the area where the festival takes place during the festival. Let’s start having food.
R: Great! I am getting hungry. Oh, "China" starts, hush...

Malin comes and picks up her daughter Anna from preschool.
A: Hej, mama, are we going home now?
M: Yes, did you have a nice day today?
A: Very good, I was on a plane today!
M: Oh, on a plane? Where?
A: Yes, we saw green trees on the house roof, we saw cars and people and... M: Why, you mean you were standing on the balcony? Yes, Ill take Malin next time when you are flying again!
Malin’s husband Jonas is on the way home, calling her:

J: Hey, Malin, I am driving on the way home. I have just passed the supermarket. Can we buy some vegetables now, but can you bring some vegetables from supermarket?

M: Sure, I can near the shopping mall now. I will just park my car and go into Willy’s on the 3rd floor.

J: Great! Waiting you at home then, see you soon.

After supper, they go out to have a walk with Anna:

J: It is really cool to walk near the water in hot summer.

M: Yes, I also like the soft music with the colourful singing on water. What a nice life we are having!

A: Look, mama, papa, “rabbit and wolf”!!!

J & M: #&/???

A: There, there, on the glass stage in water!

J: Anna, a children playing show there, let’s go to see what happened...
METHOD
Various methods and approaches have been used during the thesis process.

COLLECTING IMAGE
To take one day per week to go round the city could help build the local urban impression, while accumulating the mental map of a city and makes it more and more clear.

STUDY TRIP
Having a study trip on site including its surrounding environment at the early stage gives more accurate dimension feeling of an urban area.

PHYSICAL MODEL
Physical models are useful tools to experiencing different scales of urban area, seeing and creating urban fabric on direct 3D dimension. Shortage and challenge could as well be explored according to the suitable models.

INTERVIEW
Visiting city planning office and municipal company and interviewing the staff there helps to get an whole vision of the city future development base on the governmental policy view, taking bars when planning views of a top-down perspective.

SKETCH DIARY
By rising questions such as how people use the urban space, what sort of urban space is more popular by citizens and why, sketching in one paper per day can be a good way to catch the flashing ideas during thinking process.
SUMMARY

As we all know that Gothenburg is expanding, Frihamnen, was a typical industry site before, though located at the heart position of Gothenburg, and transport simply today, it is obsolete. Gothenburg has the character as a poly-centric city, could Frihamnen be develop- ed as one of the city centres supporting diverse, sustainable city life both locally and globally?

The "Enjoy life, enjoy the city" urban design project answered the question.

The purpose of this project was to initiate a series of projects rather than one continuously connected fabric as the planners from international workshop proposed during 2011 summer. So it has to do the opposite, taking this such big empty urban void that has no urban structure left as the challenge, designed small scale pedestrian link near the water front, meanwhile most of the urban large public buildings near infrastructure road.

The interesting point of thesis proposal is how to leave the river side as an open space.

By doing this, the three bands urban structure are created, when people come to this area, it is unavoidable to crossing over the bands, so that obtain diverse urban space experience.

The thesis supposed to be a frame work for urban development, and could be enhanced by different architecture forms further more regards to individual building design.

I hope the design proposal could support diversity urban life meanwhile achieve certain urban density. I am willing, in future, Frihamnen will become a comfortable river room for citizens and visitor to enjoy life, enjoy the city, besides become a new window to open Gothenburg to the world.

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The book documented the international workshop of design for an already existing city during the summer of 2011. There were totally eight proposals from various teams, most of the teams tried to link the city centre with the Frihamnen area by building more buildings to continue the urban fabric. I also used it as a background book to know more about river side on Göteborg in the future.

Towards an Urban Renaissance - A final report of the Urban Task Force

As the name of the book, Urban Task Force was trying to figure out the new way of city planning towards an urban renaissance based on UK background. The main aim is encouraging building mixing use in urban life, also explaining the important role of the city centre that it should attract people which moved out from urban space to suburb going back to the lively downtown and enjoy the urban life there. Also utilizing the brown land to increasing the density of the city at the same time reduces occupying the farm land.

Typological Urbanism

The book is one of "Architectural Design" magazine 01/2011, discussed the relationship about Type, Typology and the City. The buildings are not only independent from their function, but also have their own social function. The reduction prevents other knowledge that can be obtained from type by considering it as belonging to a group of formal, historical and sociocultural aspects.

An architecture of dissolution

Japanese Architect Kengo Kuma raises his idea of dissolution architecture by writing this book. He brings forward his opinion about the way of seeing architecture, buildings should create a harmony and comfortable feeling for people, especially in the public building, it should establish a close relationship between human and nature.

IMAGE SOURCES

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Gustaf Adolf Square- http://www.flickr.com/photos/swedish_heritage_board/6052484220
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