ROOM FOR THE RIVER

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TIDAN AS A STARTING POINT FOR A SUSTAINABLE TIDAHOLM

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In the course "Planning and design for Sustainable Development in a Local Context" at Chalmers, we as students get the opportunity to immerse and get an overview of a place that we have no previous knowledge about. We had never been to Tidaholm before the course started and it is interesting to see how fast one can get to know a place. During five weeks we have investigated and analyzed the city and looked deeper into strengths, weaknesses, opportunities and threats.

The river Tidan has ever since the city was founded been a central and important factor for its development. In this project we strive to make Tidan more accessible for the inhabitants of Tidaholm. To activate places around the river and to attract people to the water - which is so important for our well-being - as well as to strengthen the green qualities and increase the visual contact with Tidan. Sustainable city planning is about creating a good and safe environment, where our senses are stimulated and which at the same time is aesthetically appealing.

We want Tidaholm to develop as a sustainable city, both socially and environmentally, to be a place where human beings, animals, and plants thrive and flourish.

Clara Ellborg & Stina Hillinge

Chalmers School of Technology Design for Sustainable Development

TIDAHOLM IN ITS CONTEXT

Tidaholm is situated in Skaraborg in the inland of Västra Götaland. Skaraborg is known from the story as the home of Arn, with tourist attractions like Hornborga lake, Läckö Castle, Varnhem Monastery and the Skara Cathedral. Skaraborg today is mostly a denomination of the eastern part of Västra Götaland.

The Tidaholm region border to Skövde, Falköping and Hjo and together they form a larger area linked by its inhabitants that often commute between the different towns for school and work. Tidaholm has developed around the river Tidan. It is one out of few rivers in Sweden that float in a northerly direction and it falls into the lake Vänern.



WATER

Through history human beings have often preferred to settle down close to streams and lakes. The water has served as a source of life with drinking water, cooking facilities, for hygiene and farming as well as transport and energy production and have been essential for our way of life. Water has often been an inspiration and is a common theme in artwork, poetry and musical composition. We are attracted by the sound of ripple, the reflecting light and we are amazed by this substance that can be so fantastic and frightening at the same time. (Rosborg I. Larson R. 1991 pp.18)

Water has been necessary for our survival even though our relation to it has always been respectful. The risk of flooding and drowning accidents is of course present. We try to form and conquer the will of the stream and do all in our power to enclose, cease and steer it to make the water adapt to our planning design. Water have and always will have its own life no matter how hard we try to influence which way it takes. (Johansson Y. Thyberger J. 2007 pp. 17)

TIDAN

The river Tidan has been an important factor in the development of Tidaholm. The industries of the city developed around the water at the end of the 18th century. The waterpower of Tidan supported many preindustrial businesses along the river. The water has also been an important factor for the identity, recreation and water supply of Tidaholm and for its inhabitants. (Persson B. Åkerblom P. 1998 pp 79) Still today Tidan plays a big role in the city character, tourism and environment. The water environment has a great biodiversity and a high nature value.

POSSIBILITIES AND WEAKNESSES

Tidan floats though the center of the city and works as a blue and green passage with great potential. Today the river is visible and accessible in some parts and in other parts not used to its full potential. The newer parts in the north of the city have private lots that go all the way down to the water which makes the river harder to access.

GREEN STRUCTURE

In a long-term sustainable society green areas in cities and densely built-up areas are of great importance. The green areas contribute to a good climate, better air conditions and the possibility to clean and filter storm water in an ecological way. Green areas also work as important social factors for cities and are used for recreation as well as informal meeting places. Different types of green areas fill different needs and supplement each other. (Boverket)

Greenery has a large value but does not automatically create a better built environment. Therefore it is important that a city has a comprehensive view of the importance of green areas. In that way the city can be integrated with the greenery and contribute to activation, sustainable growth, a developed biodiversity and increased welfare. Green structures increase the cities capasity of recovering. (Boverket 2010)



FUTURE PLANS FOR TIDAN

In the municipality's future development plan for 2020 it's written "The local objective is to make Tidan more accessible by connecting the existing walk paths and green areas". Tidan and the surrounding marsh and forests are considered as nature areas with high nature value. Alongside the river there are natural green corridors. For the city's health and climate these areas are of great importance. The green and blue corridors contribute to fresh air, the trees collect water and bind particles in the air. Tidan is also essential for Tidaholm's identity, the citizens and the biodiversity. The river is also a part of the tourism development and increases the attraction, for example for the fishing tourism.

Some of the local strategies mentioned in the future plan of Tidaholm 2020 (framtidsplan 2020 pp. 70):

- Green corridors through the city are important areas for distribution for flora and wild life and no other usage of the ground should be permitted.
- It is important to preserve and develop areas with unique and high nature values as a resource for the biodiversity and for recreation.
- The city's parks, green areas and surrounding countryside shall be included as a part of the city's ecological system.
- Stadsparken, Kyrkparken, Bruksvilleparken and Strandpromenaden shall be protected through plan regulations.
- Removal of trees and greenery shall be carefully considered in relation to consequences for both the urban environment as well as for the habitat of animals.

NATURA 2000

The area around Tidan, north of Tidaholm is what is called National interest of nature and a Natura 2000 area (areas with specific recommendations and rules). The area is well attended by ornithologists, school classes and the public on account of a great bird life. More than 200 species have been observed in the area. The qualities can be used in the work of developing Tidaholm as a tourist city. (framtidsplan 2020 pp. 69)

FISH

The turbines used for hydroelectric power in Tidan, were previously an important asset for the city. As a result of the remaining turbines, there are reservoirs that capture the fish in river pools. There are plans to remove the obstructions and facilitate for the fishes to swim without obstacles (Arnesen Bjerenius). This is a part of the development of Tidan, but since it is already planned for, we chose not to develop this further.



FLOODING

High flows and varying water levels is a natural phenomenon caused by heavy rains, wind and the melting away of snow. Flooding is a part of the nature that has existed at all times and that can be both positive and negative. Many eco systems are dependent and adapted to be flooded now and then. (Stigande vatten, pp. 11) When undesired areas are flooded, the consequences can be devastating.

The management of the flooding risk in undesired areas has become more and more important with the climate change that we are facing in the future. Flooding is expected to happen more often and to become worse. (Stigande vatten, pp. 8) The water levels will raise, the temperature and precipitation increase and in extreme cases the flooding can destroy both the nature and the built environment. Statistics from the global database EM_DAT shows that half of the large natural disasters are caused by flooding. (L. Nyström, pp. 4) This will lead to a number of consequences for our cities. Therefore it is essential that we adapt the planning of cities to these conditions, to decrease the risk of flooding in the cities.

Since the 80's Sweden has been affected by a large number of flooding, causing damage on the infrastructure. (Stigande vatten, pp. 11) According to climate prognosis the western part of Sweden is estimated to be mostly affected by the increased precipitation in the future. In 2001 the flooding around Vättern caused much trouble and the region around Göteborg was affected hard during the storm Gudrun in 2006. The flooding risk is largest around Vänern and Göta Älv. (Stigande vatten, pp. 11)

WAYS TO HANDLE FLOODING

A common way to protect cities against flooding has been to build embankments, place parking lots on the ground and put buildings on pillars. The result is often a solution not so well integrated in the environment and the embankments can create unattractive and unsafe urban spaces. Barriers can protect against flooding, but at the same time there is a risk for physical and visual segregation. In many cases the protection wall can be a barrier for people to reach the water.

The last decades new kinds of protection strategies have become more common, especially in countries often affected by flooding. In the Netherlands and Great Britain they have developed strategies called "room for rivers" or "space for water". (Stigande vatten, pp. 16) Instead of going against the nature with technical solutions, these strategies let the water be present during periods of heavy rains. This means that some areas in the city are designed to stand a flooding now and then. This can be applied in areas of different scales and is a resilient and sustainable solution, both for the environment and the people. These areas often become attractive areas for recreation and can support the biodiversity.

PRINCIPLES FOR DEVELOPMENT OF AREAS BY THE WATER

MULTIFUNCTIONAL COLLECTION POINTS

During heavy precipitation and extra high flows in Tidan the water can be stored temporarily in so called multifunctional collection points. When these spots are not used as water storage it can instead have another function tolerate of the water. This could for example be a playground, skate park or other kinds of public space. (Stigande vatten, pp. 68)

WATER OUTFLOW

Ways for water outflow make it possible for flooded areas to in a controlled way lead away and get drained of water. This could be through housing areas, parks and streets. They can be designed in many different ways. (Stigande vatten, pp. 66)



The water square, Rotterdam. De urbanisten

The water square combines water storage with the improvement of the quality of the urban public space. Most of the time the water square will be dry and in use as a recreational space. When heavy rains occur, rainwater that is collected from the neighbourhood will flow visibly into the water square. (www.urbanisten.nl)



ANNUAL AVERAGE PRECIPITATION

In Västra Götaland the largest flow of heavy rains during 100 years and the average precipitation during 24 hours is expected to increase. The precipitation will be largest along the coastline and minor in the inland. Tidaholm will therefore be proportionately spared from the heaviest rains.

When looking at different streams and rivers the variation between the estimations is big. For Säveån, Ätran, Viskan and Upperudsälven the estimations show an increased 100year flow by the end of the century. For Örekilsälven, Strömsån, Nossan and Tidan no clear tendency can be observed. (Klimatanalys för Västra Götalands Län, pp. 49)

When working with water and planning for a sustainable future it is important to look into possible risk scenarios that will impact the environment. Flooding is one of these risks although the risk of flooding in the area surrounding Tidan is not immediate, instead expected to be moderate. In this in-depth project we will therefore not focus more thoroughly on flooding risk. Observed 1961-1990 (mm/year)



Observed 2069-2098 (mm/year)



Source: klimatanalys för Västra Götalands län pp. 104

ROOM FOR THE RIVER

In the In-depth project Room for the River focus is put on Tidan and its possibilities for development. To start with what exists today in terms of walk paths and promenades, activate the public space along the water and in that way attract people to Tidan. The river should be a central part of the city that combines neighbourhoods rather than being a barrier. It should be present in the city center of Tidaholm.

It is important to strengthen the green qualities and increase the visual contact between the city and the river. Tidan is a great asset that is not used to its full potential today.

In the proposal of Room for the River we have worked with visions and projects along the river for a sustainable future in Tidaholm.



COMMON ANALYSIS

In the course Planning and Design for Sustainable Development in a Local Context, overall objectives and goals, as well as a common SWOT-analysis for Tidaholm were formed.

RELATION TO THE OVERALL OBJECTIVES

Listed below are all the objectives. The ones written in black are the ones affected by this in-depth project.

"Tidaholmers choose to walk and bike within the city"

- Facilitated in this project by a new bike and walkingpath to Madängsholm. Also the new promenade along the river and a nicer outdoor environment.

"In Tidaholm people from different socioeconomic groups & different generations meet for mutual learning"

- More meetingplaces that encourage social interaction.

"In Tidaholm it is easy to commute to work in a sustainable way"

- New bikepath to Madängsholm.

"By 2030, Tidaholm has a diversity of "green businesses" supporting local production and economy"

- Madängsholm becomes a new center for ecologically produced food and goods.

"Happy, healthy and diverse"

- In Tidaholm there is space for recreation along Tidan. The green and blue structures are good for both citizens, animals and the nature. Green structures increase a citys capasity of recovering. "Tidaholm is a no-waste municipality by the year 2030

- Garbage and pollution"

"The ecological footprint of the average Tidaholmer is below 1 [not more than one Eart"

"To the furthest extent possible, food consumed in Tidaholm is produced organically and within the region"

"Tidaholm produces more energy than it consumes, all of which is from renewable resources"

"All buildings in Tidaholm, whether built, used or transformed, take both cultural heritage and energy consumption in consideration"

"In Tidaholm, it is easy to find housing that suits your needs"

"Tidaholm benefits from and contributes to regional cooperation"

RELATION TO THE OVERALL SWOT-ANALYSIS

The points written in black are the ones affected by this in-depth project.

STRENGHTS

- Natural assets
- Recreational areas, biodiversity, Tidan, farmland
- Short distances and flat area
- Strong social community
- Trust, strong engagement, networks, family and generations, sports, culture, church (leisure activities), events
- Tradition in industry and farming
- Existing building stock/Cultural heritage
- Low land and real estate price
- The ring road
- Informal political system
- Garden space

WEAKNESSES

- Frozen housing market
- Lack of strategies for sustainable development

 transportation, recycling etc.
- Car culture, -dependency and priority
- Isolated from main network
- Highways and trains, poor public transport
- Ageing population
- Lack of diversity in politics/among decision makers
- No young politicians
- Underused public space
- Unused buildings
- Segregated built environment
- Economy dependent of large companies and industry
- Closed community and difficult for newcomers
- Informal political systems
- Miss-match between education and labor market
- Lack of local jobs

OPPORTUNITIES

- Tourism
 -Eco tourism, new job opportunities
- Self-sufficiency -Energy, food
- Increased regional cooperation
- Increased information flow -Raised awareness of sustainable development
- Small scale family branding (Ruralization)
- Immigration
- Ageing population
 - Knowledge society -New jobs? -Research and industry connection
- New economical movements

 Prosperity without growth, slow citta?, transition, etc.

THREATS

- Fossil fuels price raise might isolate Tidaholm
- Unsuccessful integration / increased xenophobia
 - Tourism -Stress on eco systems -seasonal use -not for all?
- Global competition, specialization and maximum profit
- Regional competition rather than cooperation
- Renewable energy stressing natural resources
- Ageing population
- Decreased biodiversity due to large scale mono culture farming
- Global trend of individualization threat to local social networks
- Decrease in public transport service (acc. to Västtrafik)
- Emigration due to centralization/urbanization

In Room for the River the zoom-ins are divided into three different levels.

LEVEL 1 is on a comprehensive level. Focus is on all of Tidaholm and all the way down to Madängsholm.

- Walk- and bike path as an extension of Ånarundan and a connection between Tidaholm and Madängsholm.
- Tidan is accessible through the whole city of Tidaholm and the promenade continues north of the city.

LEVEL 2 is more zoomed in and focus is put on planning of a limited area.

- Square/City center
- Visitor Center
- Beach/Winterbath
- Flooding park
- Madängsholm

LEVEL 3 is on a detailed level with relevant drawings and details.

- Rest stop along the central parts of the promenade that ties the walk together.
- Lighting and feeling of safety in the city.
- Inspiration of outdoor furniture.



METHOD

Examples of procedures and moves that can be done to make the area close to the water activated and more accessible in a sustainable way.





ZOOM-INS LEVEL 1

In level 1 focus is put on a comprehensive level. Focus is on all of Tidaholm and all the way down to Madängsholm.

- Walk- and bike path as an extension of Ånarundan and a connection between Tidaholm and Madängsholm.
- Tidan is accessible through the whole city of Tidaholm and the city promenade continues north of the city.
- The wetland north of Tidaholm.





MADÄNGSHOLM

CITY PROMENADE

Ånarundan will also be extended north of where it goes today. This part is called the city promenade and is more "city like". The path is covered with gravel, possible to bike on but mainly planned for walking.

TIDAHOLM

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All along the path it is provided with light that will increase the feeling of safety for the walkers. There will also be plants and greenery, both for the well-being of the inhabitants that use the walk path but also to increase the biodiversity in the city. It is important to not plant too much and block views, everyone should feel safe when using the walkpath.

Recurrent through the walk are the new rest stops as social meeting places. These give a sense of recognition as they are all a little different but still in the same style. (Further discription in Level 3.)

The city promenade should be reachable from many sites in the city and a typical feature in the Tidaholm everyday life.

MADÄNGSHOLM

extended ånarundan

Ånarundan is a very popular feature in Tidaholm today. In this proposal Ånarundan is extended to go all the way down to Madängsholm as a bike and walk path. The walk path of today is very simple. A path that goes up and down covered with bark and needles and with roots to step over. The simplicity of the path is part of its charm and should be taken into account when working on the extension and remodelling, making it more bike friendly.

Ånarundan and the extension to Madängsholm will be illuminated to increase the feeling of safety for its users. Some parts will be made as foot-bridges. This to limit the interference with nature and to prepare for possible flooding.

The part of the existing Ånarundan that does not go along Tidan will have a new eligible way close to the water. Also a new bridge to enable shorter walks.









ACCESSIBLE WETLAND

The area along Tidan, north of the Ringroad, is mostly wetlands and not very accessible by foot today. The area is known for the many bird species and two bird watching towers are situated here. To connect the area with the city, tie it together with the walk path and make it more accessible footbridges runs over the wetlands as a continuation of the city promenade.

The photos on the next paige are examples of footbridges, from wetland parks in China (Mengunjungi and Tin Shui Wai), ponds in Flygsfors and paths along Rocksjön in Jönköping.







ZOOM-INS LEVEL 2

In level 2 focus is put on planning of a limited area along Tidan. The chosen areas are:

- Square/City center
- Visitor Center
- Beach/Winterbatch
- Flooding park
- Madängsholm



CENTRAL TIDAHOLM

Even though Tidan floats through central Tidaholm it does not feel very present in the city center. In this proposal Tidan is linked together with the central square which is extended to connect to Stora Hotellet.

Pedestrians and cyclists are prioritised in the city and Drottningvägen made into a slow speed street. This makes car traffic less present and the street a part of the square. To concentrate the city and give Drottningvägen more of an urban feel, new small scale buildings frame the street and make it narrower. These buildings will have the function of small shops and cafes.

The connection from Gamla torget, to Vulcan island are important and in this proposal worked with through a constant ground cover and walkways.

Storm water collection in Gamla torget protects against flooding and takes the water into the square and makes a nice addition to the already existing fountain. It frames the square and makes a nice meeting place in the city.



West and North Drottningvägen is made into a slow speed street and becomes a link between Gamla torget and the new part of the square. New buildings gives the street an urban feeling. The whole citycenter becomes more homogeneous.



Movement patterns in central Tidaholm show that it is important to link Gamla torget to Vulcan island.









TIDAN VISITOR CENTER

Tidan and the nature areas around the water are important for the biodiversity. In the city centre a new Visitor Center (naturum) inform about the water environment and about the history of Tidaholm. The Visitor Center is placed next to the river and emphasizes the importance of the water as a resource for the city.

The Visitor Center can be used in educational purposes, work as a tourist attraction and be a meeting place for the inhabitants.











BEACH & WINTERBATH

The little beach, called Koma among the citizens of Tidaholm, is connected with the walk path, improved with wooden decks for sunbathing and with a small café. East of Kärleksbron there is a small winterbath with bathing huts and a sauna. In the beach park there is also a small farm for hens and goats.







FLOODING PARK

The flooding park combined the water issues with the improvement of the quality of urban public space. Most of the time the park will be dry and in use as a playground and skate park, a playful recreational space. When heavy rains occur, rainwater that is collected from the neighbourhoods will flow into the park, which work as a buffer space, and fill some parts. In the winter the park can be used for skating at the ice.



Scale 1:1500



MADÄNGSHOLM

The former industrial area in Madängsholm is transformed to a creative and inspiring place for artist, small-scale business and tourists. In the unique brick buildings there are lots of things happening. The bakery has started to use the old mill in Tidan. Associations and companies use the conference rooms and artists all over the country come here to rent a studio or a workshop for a period. During the weekends and summers the area is a popular tourist attraction. Local farmers sell their vegetables at Madängsholm's market and the canoeists stay for a coffee at the café.























The photos are from similar projects in Sweden, where former industrial buildings have been transformed to something else; Leva Kungslador in Visby, Nääs Fabriker in Alingsås and Fengersfors bruk in Dals Långed.

In **Fengersfors** there has been cooperation between the municipality, the School for Design and Art, the tourism organization in Dalsland and the county curator with the purpose to develop the area into a meeting place for art, culture and small-scaled businesses. Now the buildings are filled with studios, workshops, café, architectural office and some other business.

Leva Kungslador is a meeting place in Visby, situated in barns from the 17th century, where playgrounds are mixed with shops for organic food, farming, café and restaurant.

Nääs fabriker are a former industrial area, today filled with a flourishing mix of companies, education, shops, hotel and conference and restaurants.



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Madängsholm

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ZOOM-INS LEVEL 3

In level 3 the focus is put on a detailed level and presented with relevant drawings and details. Also inspiration of furniture and lighting.

- Rest stop along the central parts of the promenade that ties the walk together.
- Lighting and feeling of safety in the city.
- Inspiration of outdoor furniture and lighting.



REST STOP

The areas along Tidan are tied together through a continuous walk and bike path. Alongside the central parts path there are places for rest, small-scaled meeting places with benches and decks over the water. The rest stops vary in size and form, but have the same materials and furniture to create recognition. The whole path is lined with lighting, to make it more safe and attractive.













NOT LET GREENERY CREATE AN UNSAFE ENVIRONMENT





Section 1:100



Skala 1:200

48

LIGHT & SAFETY

A badly lit place often brings the feeling of insecurity. Just adding lights is not always the solution. Sometimes too much light can have an opposite effect and dazzle instead of making things more visible (Almén, M 2010).

The walk paths and rest stops should be well lit to welcome people to use them. Preferably the surrounding vegetation, the river and close by buildings should also be lit. as well as the walk path itself.

Examples of light columns:



Lighting: Pin L30, Veksoe



Sombrero L805, Veksoe

FURNITURE

Suggested furniture along the walk. The furniture can make the walk hang together and be uniform and playful.



Bench: Origami, Nola





Bench: Porto, Vestre



Chair: Share, Nola



Litterbin: Outfit, Veksoe





Litterbin: Hinken, Nola

SUMMARY

Starting out this in-depth project we asked ourselves the questions "how come Tidan is not more central and visible in Tidaholm today?". Tidan, being such an important factor in Tidaholm should get more attention and be used by the citizens in Tidaholm. The river is also a tourist attraction, especially for fishing tourist and canoeists, and this can be developed further.

Our aim of this project wasn't to create a finished design proposal, but instead give some ideas that could work as a inspirational tool for the municipality in their work with Tidan and its surroundings.

During our work we have read a lot about water issues and green structures and this have been very interesting. We think it is important to have knowledge about these issues when working with planning for a sustainable development in cities.

We hope our in-depth project can be useful for the municipality in Tidaholm and that Tidan's potential will be fully used in the future.

Make room for the river!

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