MIKKELI ECO CITY

A NEW ECO-FRIENDLY LANDMARK OF SOUTH SAVO

Dossier

Concept Explanation

The Mikkeli Eco City will be the new touristic and urban landmark and quarter right in the heart of Mikkeli. Right along the shore of the Savilahti Lake there will be a variety of urban interventions to create a diverese urban area. Park benches, street lighting and further street furniture will implemented along the promenade. The pavement will vary with stone and wood elements refelecting the local material and nature. Close to the Rokkalanjoki river stone steps will lead to the lake and will create an inviting recreational area along the lakeside.

Urban Structure

The new urban layout of the Savilahti area will follow the outline of the old city grid from the 19th century and will be visually linked with the harbour area by maintaining the axis of the streets and link the old with the new city area. The urban structure is based on the perimeter block development principle. The block will be opened towards the lake, embracing the lake. Throuh this opneing the lake will be visually linked with the green yards inside each block and enable all residents to have a view to the lake from their apartments. Additionally most blocks are divided into two zones by a north-south orientated vivid and lively meandering green ribbon whcih simultaniously functions also as a connection for pedestrians and cyclists throught the whole Savilahti area. The divided blocks create a more open semipublic area close to the lake and the promenade with a focus on a more mixed use development and use. Here one can find small shops and restaurants. The western block area, the U shape distinguishes themselve through a more private atmosphere with semi-private green yards perfectly suitable for all kinds of leisure activities either for young and old. The perimeter U - shaped 5-7 storey blocks will have a good surface/ volume ratio therefore enable them to be more energy efficient than a more fragmented urban layout.
All the edges of the urban blocks will be slightly diagonal at the edges to give way for some small places. This will create more distinctive entrance situation for each block. Furthermore because each shape will be slightly different it will create several different urban situations in creating a vivid urban volume pattern seen form the street level.

Mikkeli Science Center

The new landmark clearly visible from the VT 5 Highway and by boat will be the modern and avant-garde Mikkeli Science Center. Integrated in the urban landscape with its distinctive architecture it will represent the future image of Mikkeli. The building will be conceived as a highly dynamic geometric solid representing the dynamic and future development of a growing Mikkeli as a administrative and touristic center within South Savo province. Its formal outstanding language will also work as icon to be remembered by both visitor s and residents of Mikkeli.
The Science Center using environmental friendly materials such as engineered timber will be divided in two blocks. In between the extension of the green corridor will pass through the Satamalahti Plaza andlink the Science center with the northern and future southern area around the old locomotive shed behind the Vilhonkatu street.

Existing Structure

The existing customs house will be transformed into a tourist information center and extended by a pavilion-like structure to give the building a more inviting atmosphere.
Concerning the existing warehouses we recommend to remove some structures were theyl interfere with the future street and pavement layout. For those structures who will be kept, we propose a densification of the building mass by adding up to 4 more levels to create a more urban atmosphere. The lower structure therefore will remain as a reminder of the history of the harbour area and create an interesting mix of old and new architectural elements

Vetruillat Area Zone 2

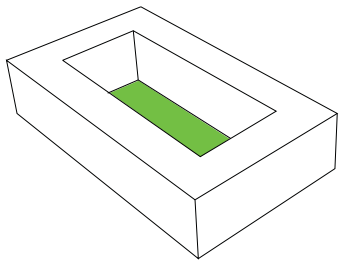
The area south of Vilhonkatu Street will be mainly used for office and service functions. The old locomotive shed will be transformed in a high quality conference+convention center mainly targeting business activities additional office space will be available as well.
The layout of the Vetruilllat area is composed of a more campus-like area. Five 4-storey office buildings, all surrounded by an innner courtyard will form a new quarter here targeting mainly service industries . The buildings can be rented out to several businesses or function as a representative headquarter for a single company. Even a private run school or premises for severeal educational purposes are possible.

Zone 3

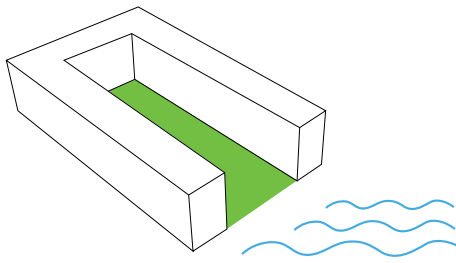
The area south of the VT 5 highway will have a well balanced mix of residential housing units and similar to the subarea 2, office complexes. Along the shore of the Saimaa lake 4- storey apartments buildings will follow the shorelin in a natural pattern. North of it a densely forested area in combination with a noise protection wall along the VT 5 highway will function as a noise buffer to reduce the noise levels caused by traffic.
The office buildings adjacent will have a very convienient location close to the street coming from Ristina and the VT 5 highway making it very suitable for businesses to relocate to this area.

Saksala Area Zone 4

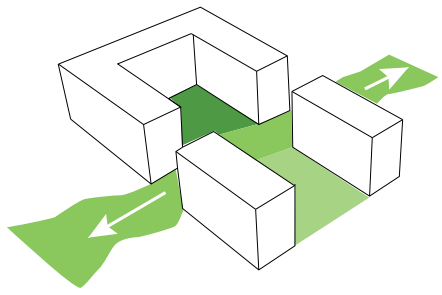
Right opposite the Harbor area we propose a high quality, upper level residential area in a fragmented lively pattern. Villa-like 4 storey apartment building blocks wil be organized along a ring road A pier with a small cafe not only visually combines the quarter with the lake but also serves as a possible stop for steamers coming from the Saimaa.
Linked by new built pedestrian bridges over the Rokkalanjoki river and the small bay north of subarea 4 and a bicyclelane this area is as well perfectly connected to the city center while keeping a certain distance, making it suitable for more calm residential area.



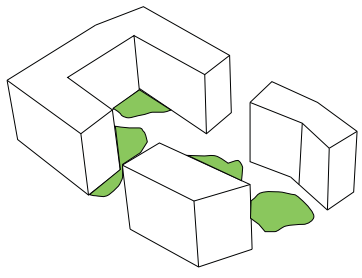
CLOSED BLOCK



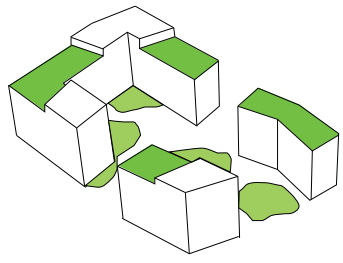
OPEN TO THE LAKE



GREEN CORRIDOR



GREEN YARD



GREEN ROOF

Block + Area Density and Floor Area Ratio

Subarea 1

app. area: 140000m²
built area: 34870m²

ratio: 0,25

Floor area ratio : 1,09

Subarea 2

app. area: 81120m²
built area: 9645m²

ratio: 0,12

Floor area ratio: 0,45

Subarea 3

app. area: 88700m²
built area: 12365m²

ratio: 0,14

Floor area ratio: 0,46

Subarea 4

app. area: 37600m²
built area: 5377m²

ratio: 0,14

Floor area ratio: 0,63

Overall Area Density

overall area: 694442m²
built area: 62257m²

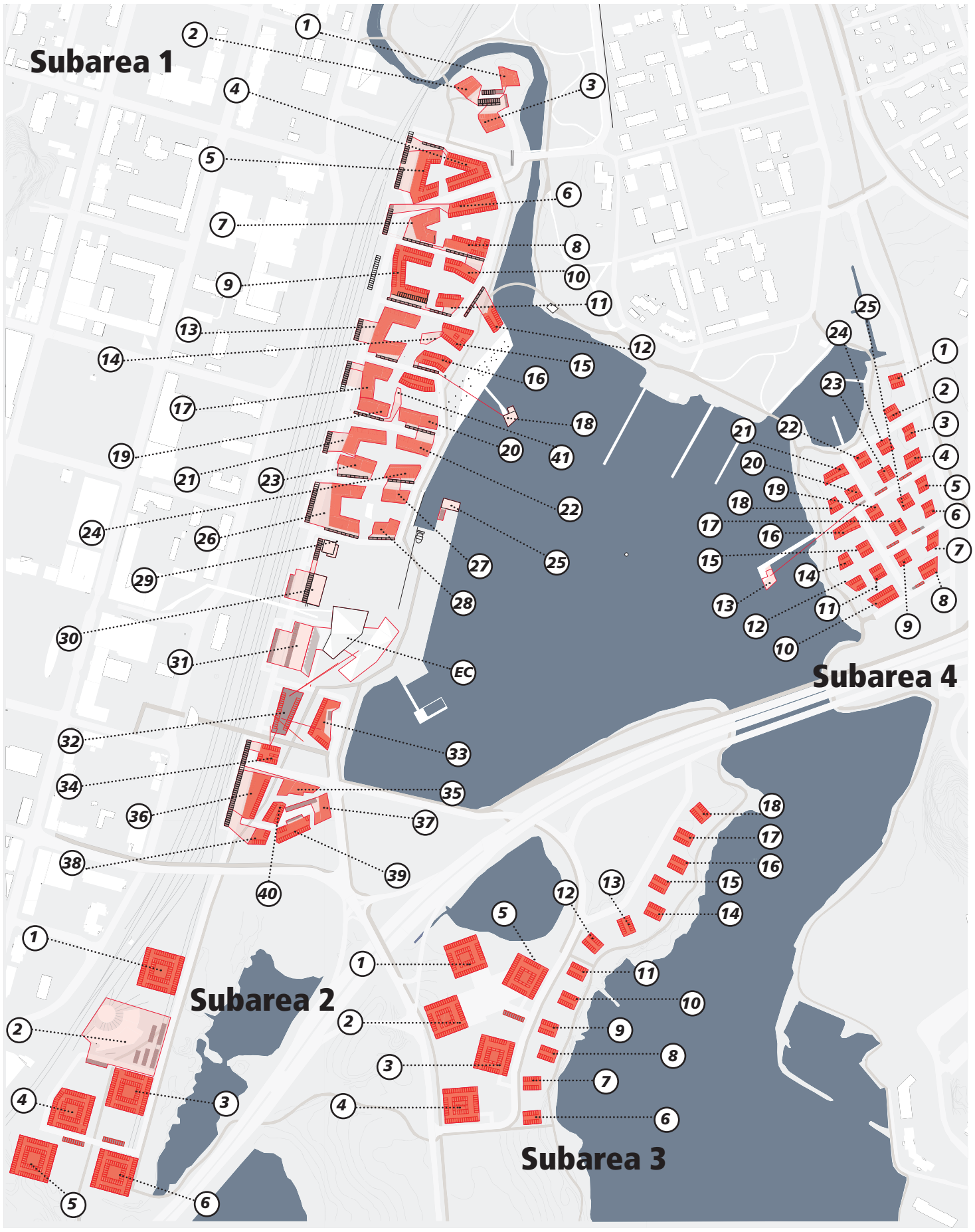
ratio: 0,09

Parking Areas + Gross Floor Area

Subarea 1

No.	GFA in m²	parking lots total	parking lots above ground
1	2292	27	10
2	2256	26	8
3	2514	30	10
4	6714	79	10
5	6774	79	16
6	4884	57	12
7	3822	45	5
8	4008	47	5
9	9000	105	11
10	2988	35	4
11	1866	22	2
12[1]	4080	40	8
13	8004	94	15
14	85	1	
15	3414	40	
16	2376	28	1
17	4446	52	11
18	434	5	5
19	2400	28	
20	3162	37	3
21	4476	53	10
22	3072	36	4
23	2880	34	7
24	2616	31	3
25	420	5	5
26	7122	83	23
27	2226	23	3
28	2340	27	6
29	392	5	5
30[2]	2108	25	25
31[2]	3192	37	37
32[3]	4232	130	
33	4908	57	7
34	2724	32	4
35	2994	35	10
36	5082	59	19
37	2473	29	15
38	1812	21	8
39	3108	36	4
40	1686	19	19
41	240	3	3
total :	137279	1675	

incl Science Center : 153279m²



Subarea 2

No.	GFA in m²	parking lots total	parking lots above ground
1	6048	88	
2[2]	6291	74	50
3	6048	76	
4	6000	70	
5	6048	70	
6	6048	70	
total :	36483	448	

2) No. 2 shares 18 lots from building No. 1 and 6 lots from building No. 3

Subarea 3

No.	GFA in m²	parking lots total	parking lots above ground
1	5300	63	
2	5300	63	
3	5300	63	
4	5300	63	
5	5300	63	
6-18	1224	14	
total :	42412		483

Subarea 4

No.	GFA in m²	parking lots total	parking lots above ground
1	904	11	
2	904	11	
3	752	09	
4	1180	14	
5	752	09	
6	752	09	
7	844	10	
8	1304	15	
9	904	11	
10	1824	22	
11	904	11	
12	860	10	
13	340	4	4
14	836	10	
15	904	11	
16	1428	17	
17	904	11	
18	836	10	
19	904	11	
20	904	11	
21	1348	16	
22	904	11	
23	904	11	
24	904	11	
25	904	11	
total :	23904	298	

TOTAL: **GFA 256.384 m²** **parking lots 2918**

Annotation to Subarea 1: 1) Building with 2 levels undergound parking 2) m² refer only to added building mass above warehouses 3) Parking garage: 100 lots for Science Center, 17 lots belong to block 33, 11 lots belong to block 34

Green Areas and Parks

Subarea 1

green area: 33115m^2

Subarea 2

green area: 41170m^2

Subarea 3

green area: 44723m^2

Subarea 4

green area: 20582m^2

Other Areas

green area: 27952m^2

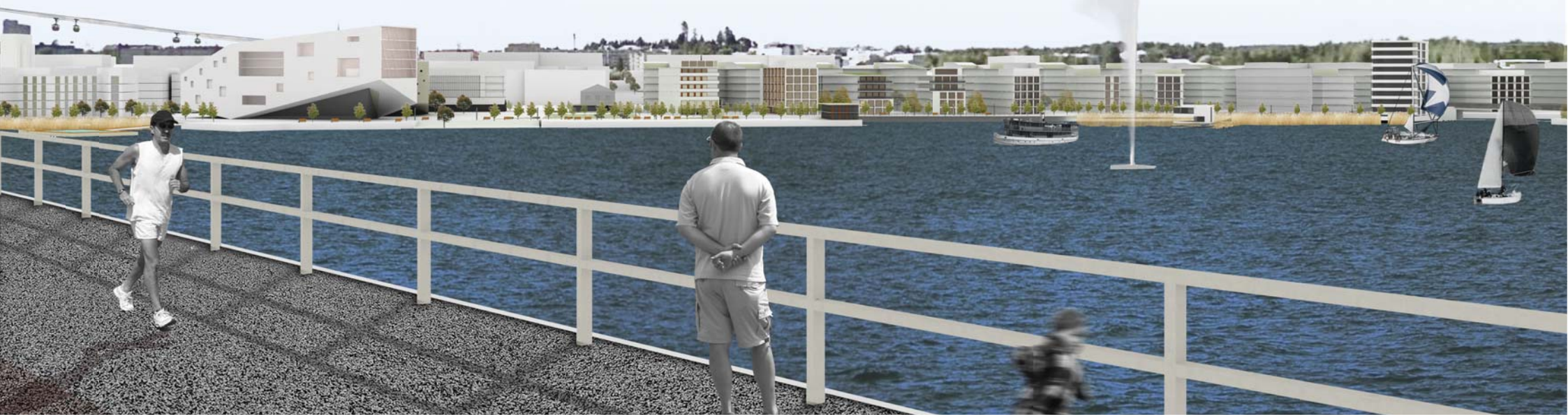
Total Green Area:

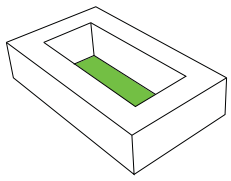
green area: 167.542m^2

Mikkeli Eco City

A NEW LANDMARK OF SOUTH SAVO

VIEW FROM HIGHWAY





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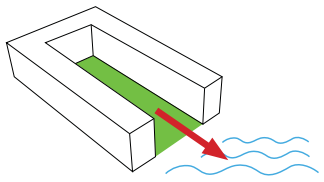

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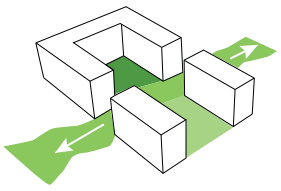

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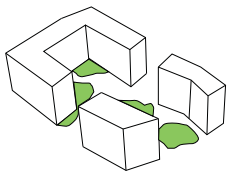
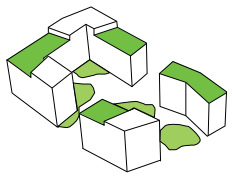


GREEN YARD



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Concept

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BIRD VIEW

Mikkeli Eco City

Context

Mikkeli+ Harbour Area

Mikkeli is the administrative and touristic center and at the same time the largest municipality in South Savo. It is situated in the heart of the Saimaa lake area.

The City is well connected with Finlands public transportation network by rail and bus and just app. 230km away from the finnish capital Helsinki.

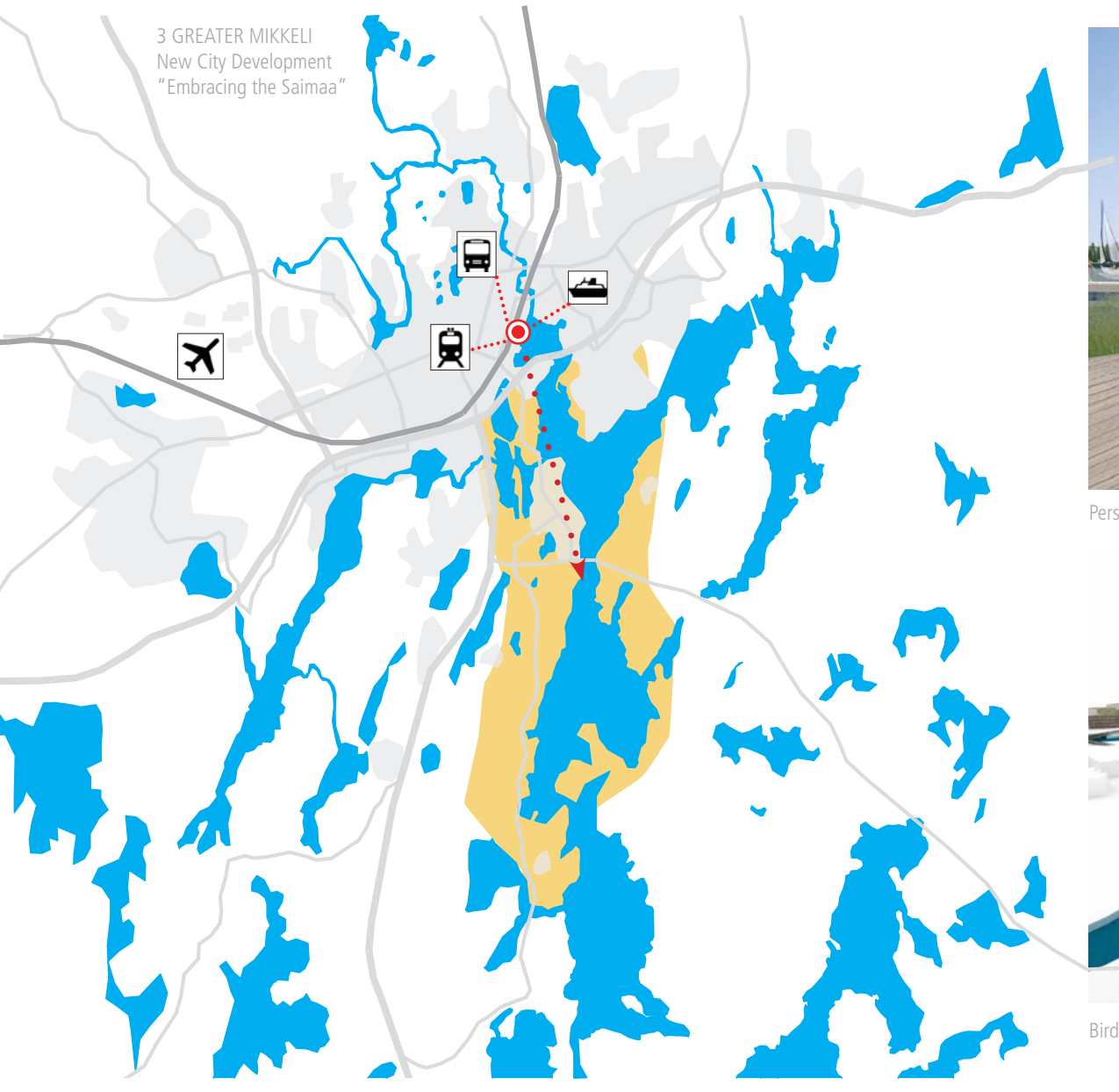
The New Harbour Area will be perfectly linked to that network by direct links via two pedestrian flyovers to the train and express bus terminal. Furthermore there will be a new local city busline connecting the harbour waterfront area with the rest of the city.

In addition Mikkeli has the potential to become a even more popular destination since through his new landmark the Mikkeli Science and Eco center. Since the harbour area is directly linked with the Savilahti and Saimaa Lake system and via the Saimaa Water Channel with Vyborg in Russia and further on with the Baltic Sea it is highly suitable for as starting point for touristic activities by boats, sailing ships and steamers.

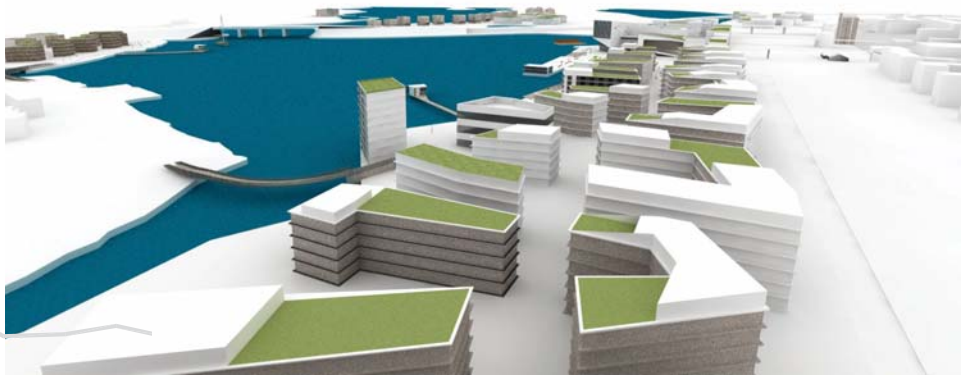
Since it is the logical goal to further develop the cityscape around the savilahti and saimaa area, the new harbour area at Savilahti area can will be the nucleus and initator for the further expansion of Mikkeli. Also the new cycling network will be linked to the further extensive network around the lake area in the south.

1 FINLAND

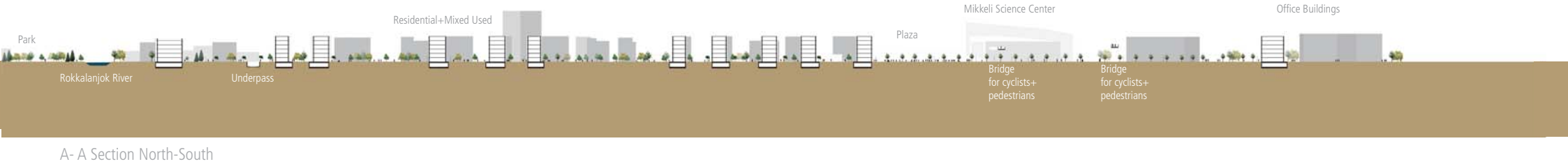
2 SOUTH SAVO
+ SAIMAA LAKE SYSTEM



Perspective Promenade 1



Birdview from North



A- A Section North-South
scale 1:2000

Mikkeli Eco City

MASTER PLAN

Master Plan 1:2000

VERCORS 1980

Mikkeli Eco City

ANALYSIS

FIGURE-GROUND DIAGRAM SCALE 1:4000

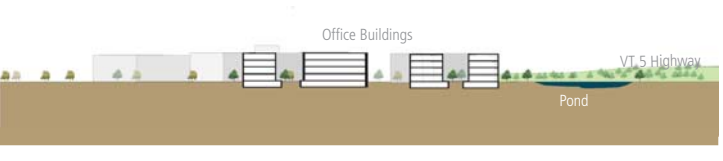
Street System

Pedestrian Network

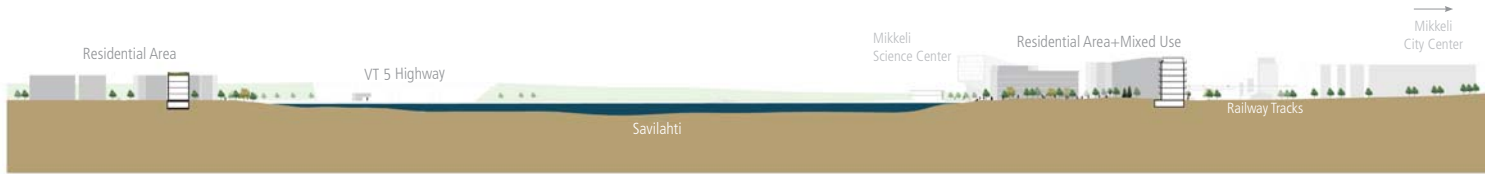
Visual Links with Savalahti

Green Zones and Parks

Bicycle Lane Network



D-D Section Subarea 3
scale 1:2000



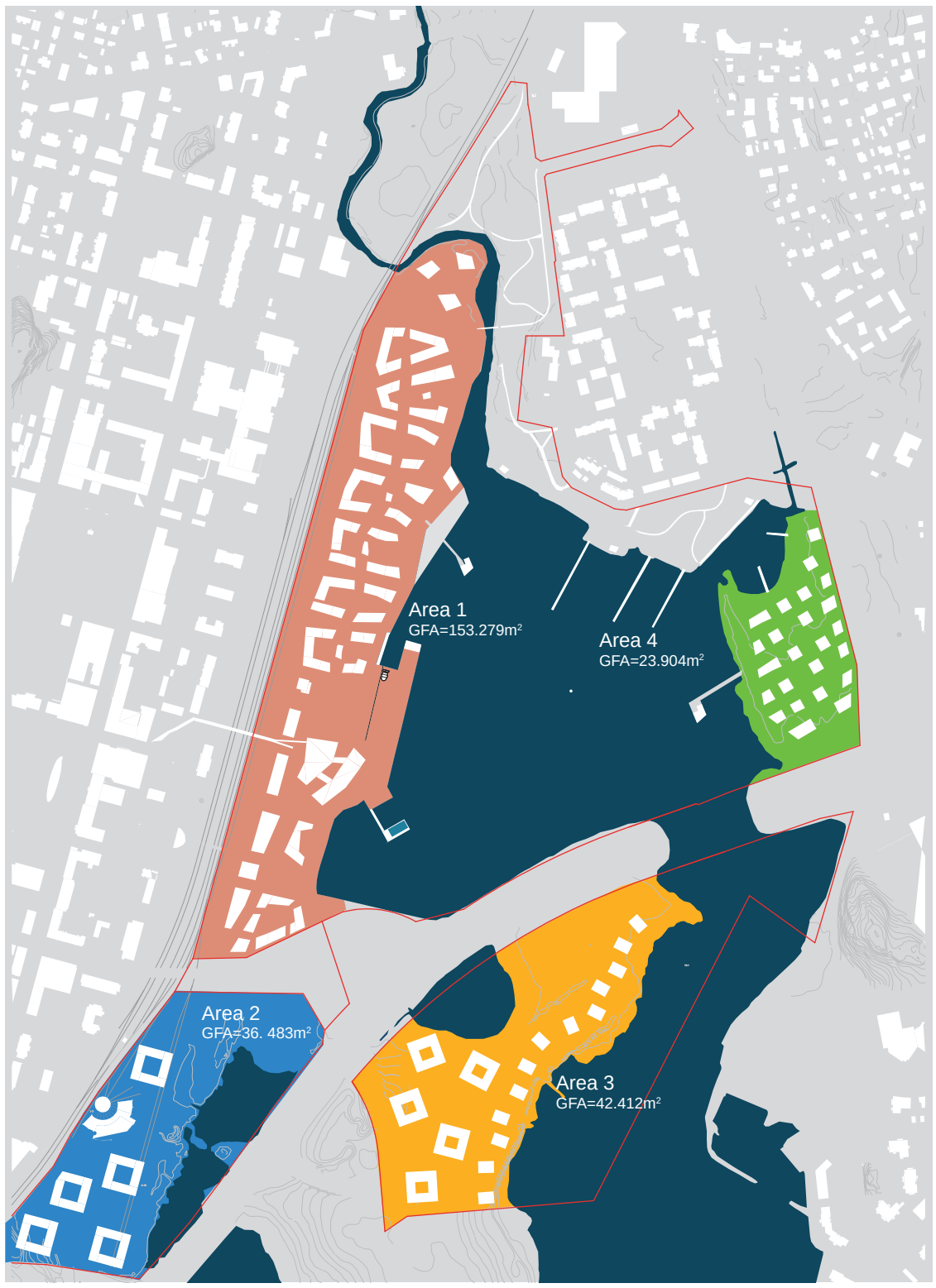
C-C Section East-West
scale 1:2000

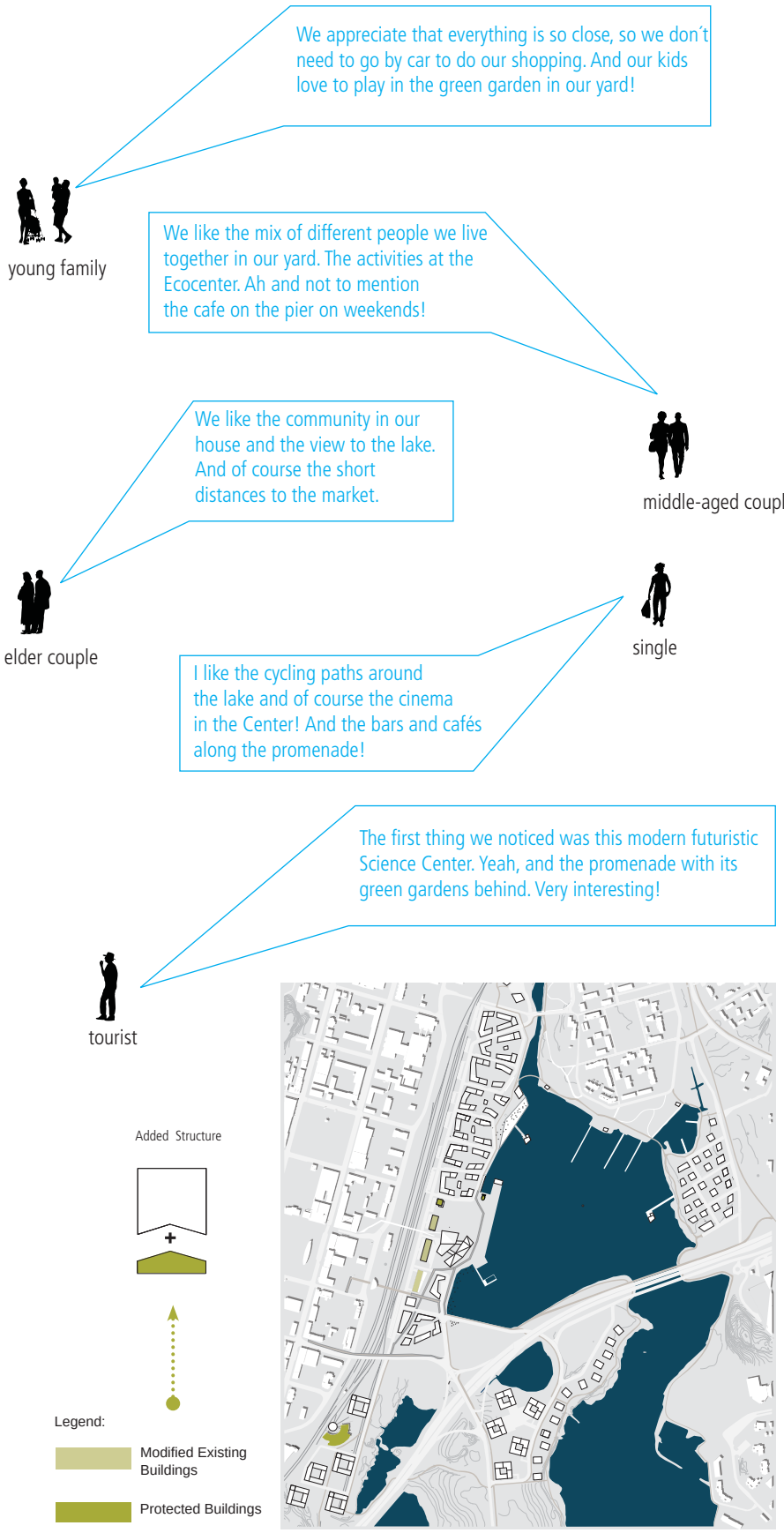
Mikkeli Eco City

ANALYSIS FUNCTIONS

Perspective Plaza by Night

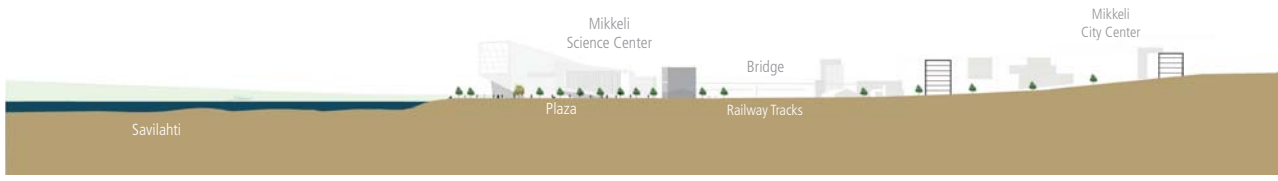
Perspective Promenade 2





Existing Buildings

B-B Section Subarea 2
scale 1:2000



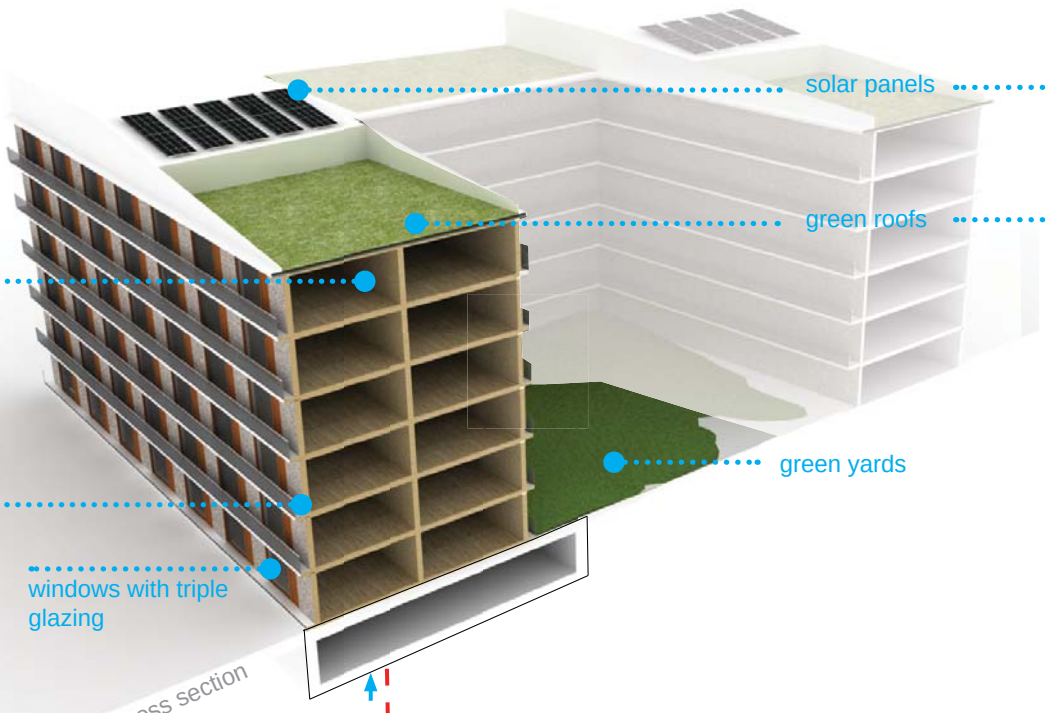
Section Plaza
scale 1:2000

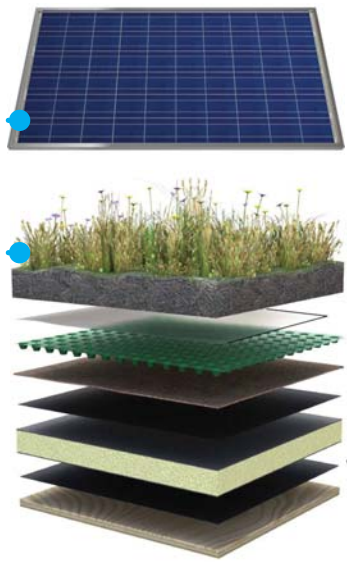
Mikkeli Eco City

ECOLOGICAL CONCEPT

locally made timber panels
and slabs made of CLT timber

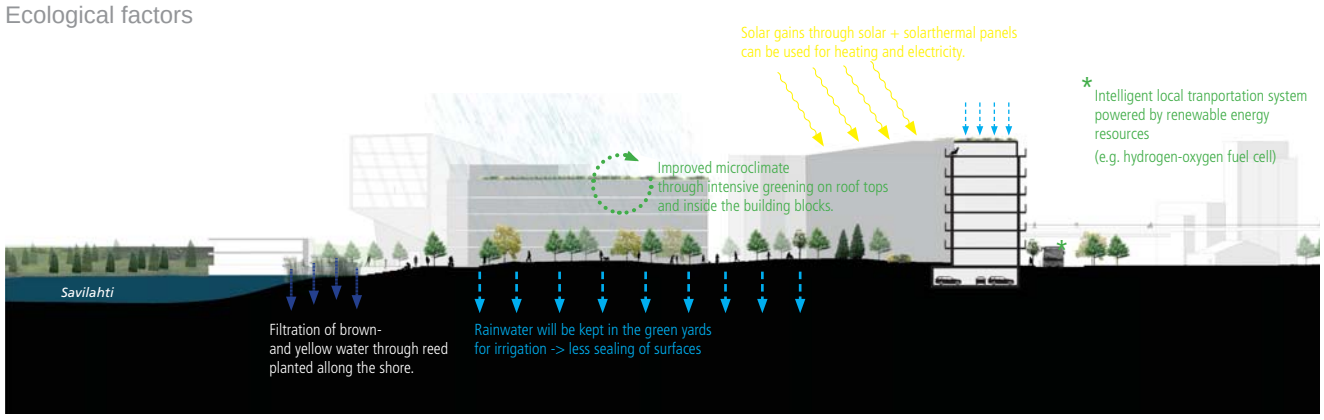
outer clt timber walls
covered with cellulose
insulation





schematic cross section

Ecological factors



schematic section green courtyards + promenade

ECOLOGICAL CONCEPT

In order to reduce the emission of CO^2 we propose a concept based on a variety of combined actions to reduce the carbon footprint within the area.

The new urban structure is designed to enable new residents to fullfill their daily needs within a walking distance and tries to reduce the use of cars.

A good connection to the public transportation system and a new bridge over the railway tracks will link the harbour front with the city center.
All the residental housing blocks are designated to have a mixed-use function with shops and premises for services and social and other activities.

A new busline powered by renewable energy resources (e.g. hydrogen-oxygen fuel cell) can help to further integrate the area with the rest of Mikkeli especially for elder or handicapped people. Furthermore special ly designated parking lots close to the buidlings can be reserved only for hybrid electric vehicles.

For all the new construction the use of timber (e.g. engineered cross-laminated timber) for multistorey buildings will help to fullfill the goal of a low-carbon quarter since it is one of the most renewable and enviro-mentally ressources. In addition windows with triple glazing and insula-tion made of celluose (e.g. recycled paper) will be used to avoid thermal losses.

A high percentage of the roofs will be transformed into extensive green areas in order to replace the sealing of ground for the new buildings and for retaining rainwater which can also be filtered and used as greywa-ter in households. Furthermore it creates an additional elevated garden for each block. Tthe layer of soil will provide an aditional roof insulation avoiding further thermal losses. Furthermore we propose the use of solar panels and solarthermal panels for heating of water and electricity on the roof as additional measures.

In additon an analysis of potential exploitation of geothermal energy needs to be determined. Biogas through transformation of yellow water in the area can be used heat and power generation. The biogas plant can be situated in the in the green area up north of Rokkalanjok River.

The reed on the river bank and shore of the river can be used to retreat brownwater for irrigation of parkland or clean lake influent as well as giv-ing the shore a distinctive visual nature.