

**SPORTS CENTRE**

SPORTS FIELDS, CHILDREN'S PLAY AREAS, COMMUNITY SPACES, GYM AND NURSERY.

**THE COURTYARDS**

RESIDENTIAL

**LATTICE BUILDING**

RESIDENTIAL

**FRAME BUILDING**

RESIDENTIAL

**THE TERRACES**

RESIDENTIAL

**THE GREEN LINE**

MAIN THOROUGHFARE, SHOPS, UNDERGROUND PARKING ACCESS AND BUS SHELTERS

**BUSINESS ISLAND**

OFFICE SPACE AND SHOPS

**GREEN ISLAND**

LIBRARY, GYM, CULTURAL CENTRE, SPIRALING RAMP, COMUNITY CENTRE, NURSERY AND MULTIFUNCTIONAL EVENTS VENUE

**THE WAVE SCIENCE CENTRE**

SCIENCE CENTRE, MUSEUM, RESTAURANTS, GREEN AREAS, CONGRESS CENTRE, HOTEL, LUXURY APARTMENTS AND OBSERVATION FLOOR

**HILL TOWN**

MUSEUM, SHOPS, NURSERY, AND OFFICES

**DECKLANDS**

RECREATIONAL (PICNIC AREAS AND CHILDREN'S PLAYS AREAS) AND MULTI-FUNCTIONAL EVENTS STRUCTURES

**FLYING CITY**

RESIDENTIAL AND RECREATIONAL

**BIRD SANCTUARY**

**LAKE SAIMAA**

**PANORAMIC CITY**

RESIDENTIAL AND RECREATIONAL

# VIEW FROM THE VT5

PANORAMIC CITY

HILL TOWN

THE WAVE

GUEST HARBOUR

THE TERRACES

FRAME BUILDING

LATTICE BUILDING

THE COURTYARDS

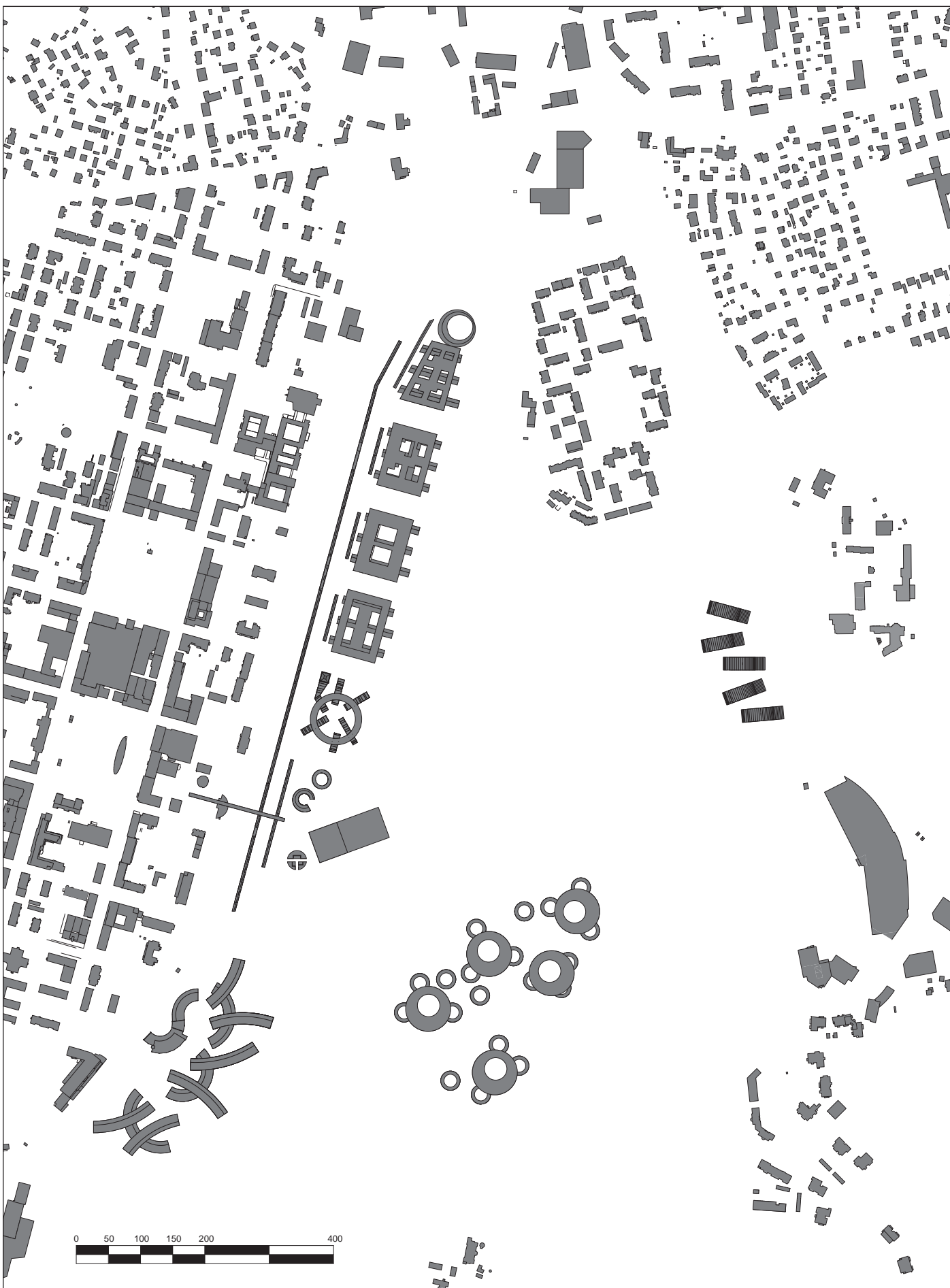
BALANCE OF INTERESTING BUILDINGS  
AND HARMONIOUS GREEN AREAS

## URBAN ART TRAIL

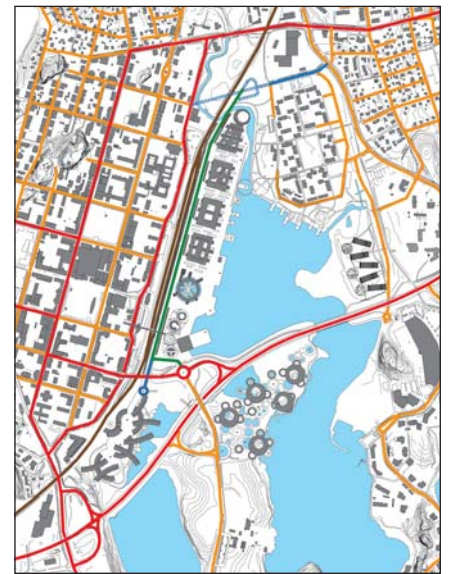


- PROPOSED ART CIRCUIT
- NEW URBAN ART
- EXISTING URBAN ART

## GRANULARITY PLAN - SCALE 1:4000

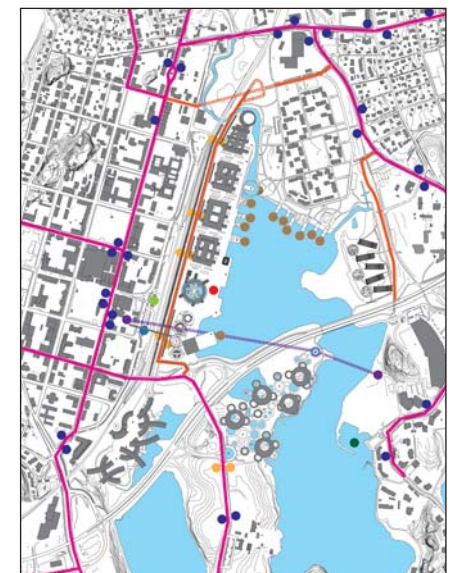


## ROAD NETWORK



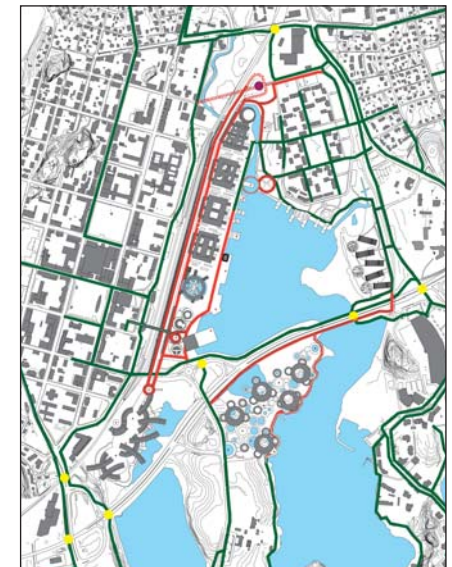
- PROPOSED NEW THOROUGHFARE
- PROPOSED SECONDARY STREETS
- PROPOSED UNDERGROUND ROAD CONNECTION
- EXISTING THOROUGHFARE AND HIGHWAY 5
- EXISTING SECONDARY STREETS
- EXISTING RAILWAY

## PUBLIC TRANSPORT NETWORK



- PROPOSED NEW BUS ROUTES
- PROPOSED NEW BUS STATION
- PROPOSED NEW FLOATING TERRACE
- PROPOSED NEW CABLE CAR STATION
- PROPOSED NEW CABLE CAR LINE
- PROPOSED NEW UNDERGROUND ROAD CONNECTION
- EXISTING BUS ROUTES
- EXISTING MAIN BUS STATION
- TRAIN STATION
- BUS STATION
- EXISTING HARBOUR
- EXISTING MARINAS FOR SMALL BOATS

## PEDESTRIAN AND CYCLE NETWORK



- PROPOSED PEDESTRIAN AND BICYCLE PATHS
- PROPOSED CROSSING POINTS
- EXISTING PEDESTRIAN AND BICYCLE PATHS
- EXISTING CROSSING POINTS

# THE WAVE SCIENCE CENTRE

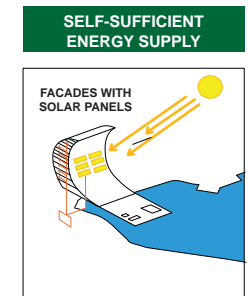
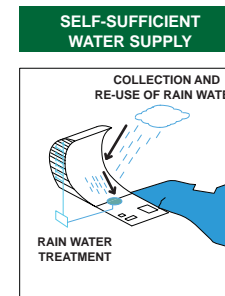
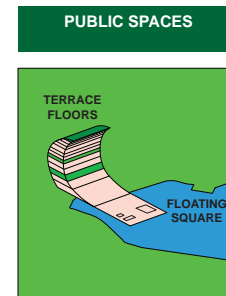
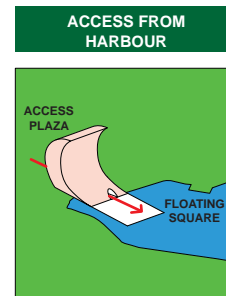
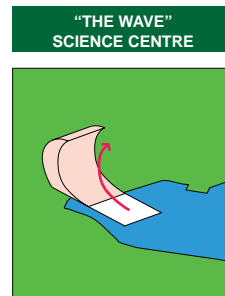
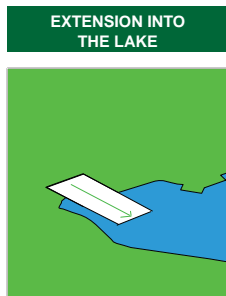
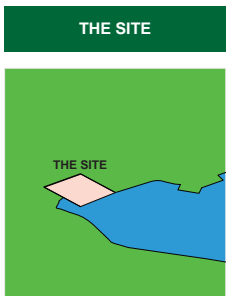
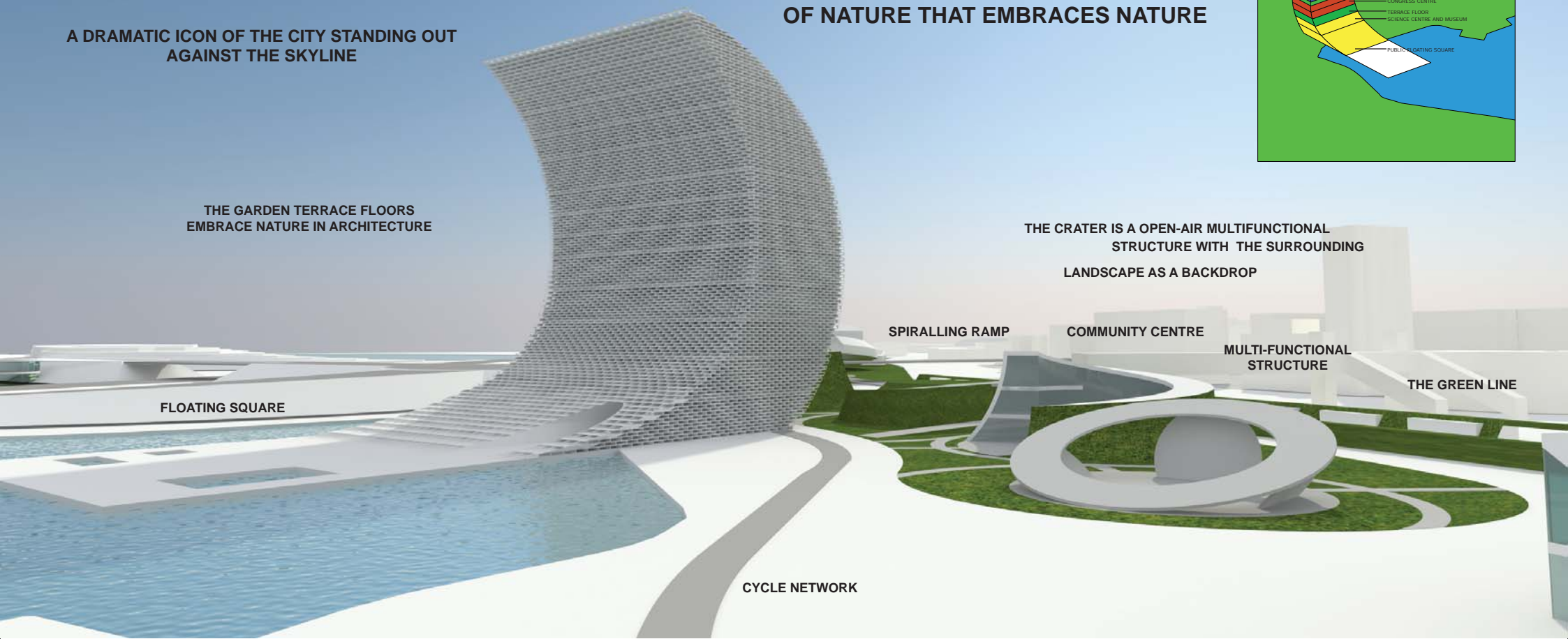
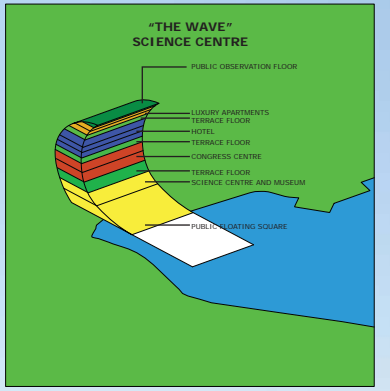
THE WAVE SCIENCE CENTRE

THE WAVE IS A BUILDING BORN OUT OF NATURE THAT EMBRACES NATURE

A DRAMATIC ICON OF THE CITY STANDING OUT AGAINST THE SKYLINE

THE GARDEN TERRACE FLOORS EMBRACE NATURE IN ARCHITECTURE

THE CRATER IS AN OPEN-AIR MULTIFUNCTIONAL STRUCTURE WITH THE SURROUNDING LANDSCAPE AS A BACKDROP

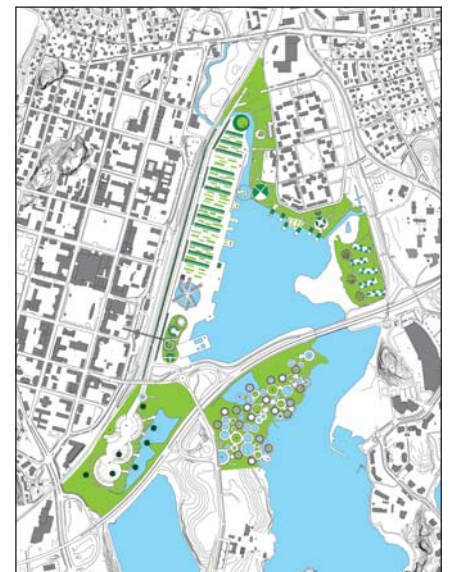


# THE WAVE SCIENCE CENTRE

THE WAVE SCIENCE CENTRE



## GROUND FLOOR GREEN AREAS

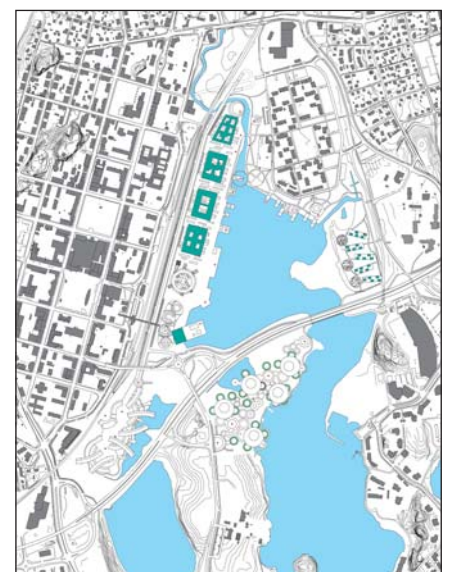


# THE WAVE SCIENCE CENTRE

THE WAVE SCIENCE CENTRE



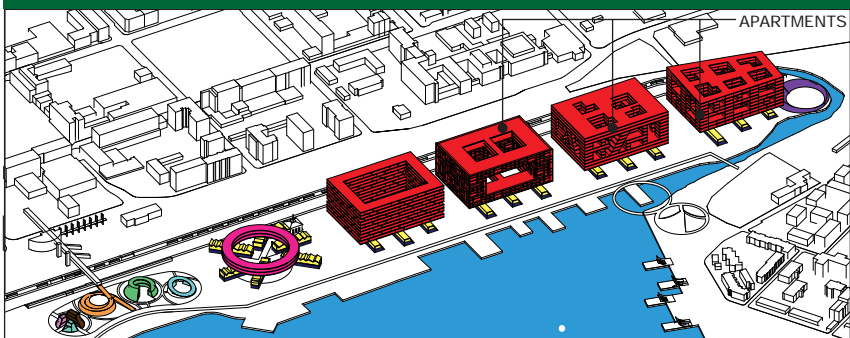
## UPPER FLOORS GREEN AREAS



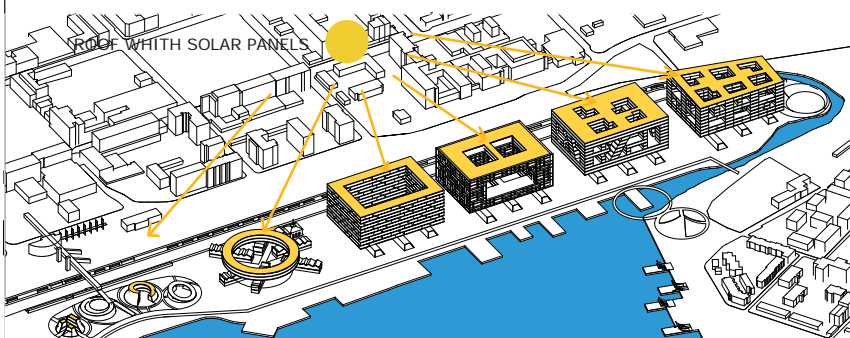
# THE HARBOUR



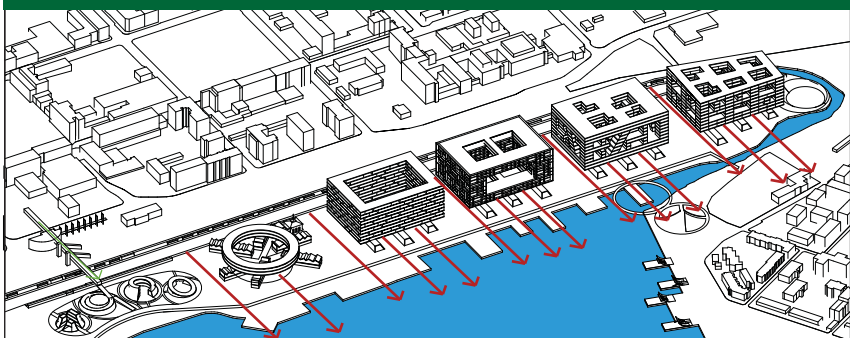
## THE HARBOUR



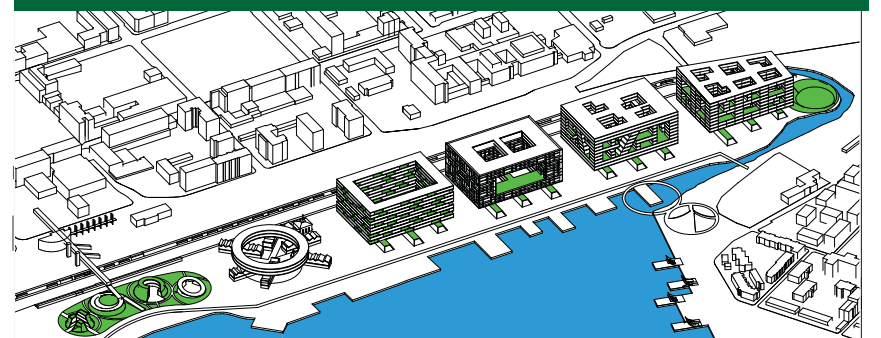
### SELF-SUFFICIENT ENERGY SUPPLY



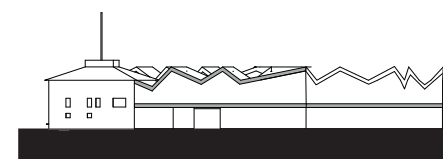
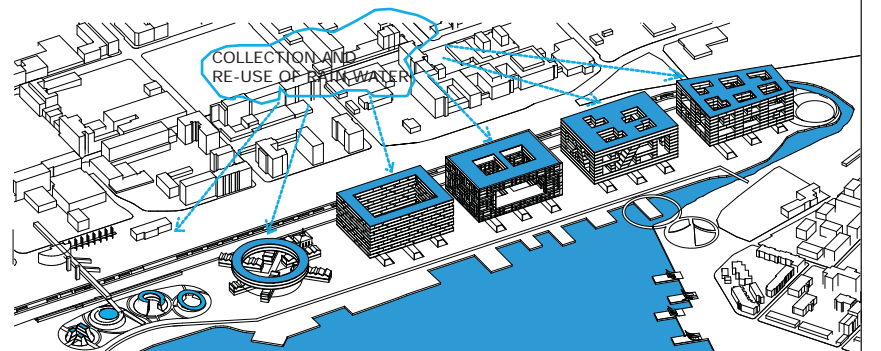
### CONTINUITY BETWEEN THE GREEN LINE AND THE HARBOUR



## INTERIOR AND EXTERIOR GREEN AREAS

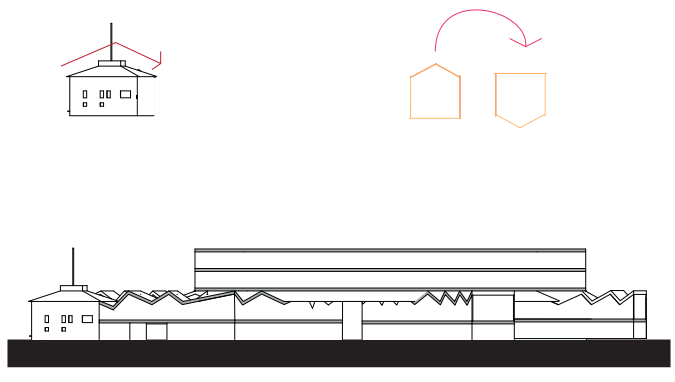
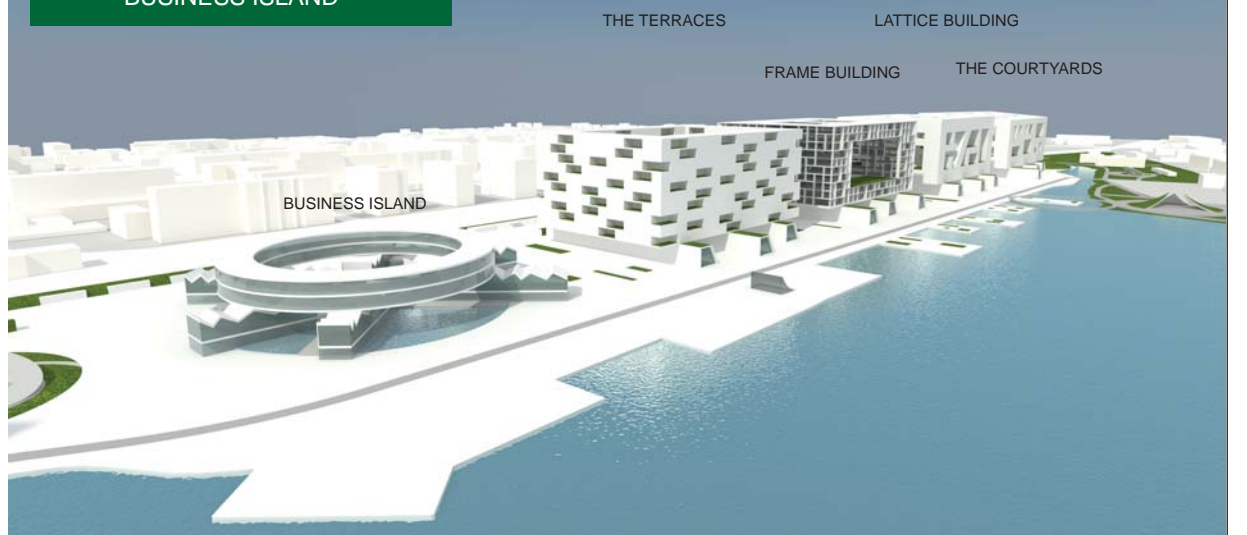


### SELF-SUFFICIENT WATER SUPPLY



ZIG-ZAGGING ROOF FROM EXISTING BUILDING

## BUSINESS ISLAND



ZIG-ZAGGING BUILDING

# PANORAMIC CITY

THE WAVE SCIENCE CENTRE

FLYING CITY

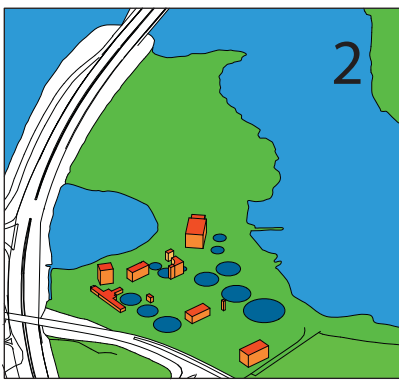


WASTE WATER TREATMENT PLANT



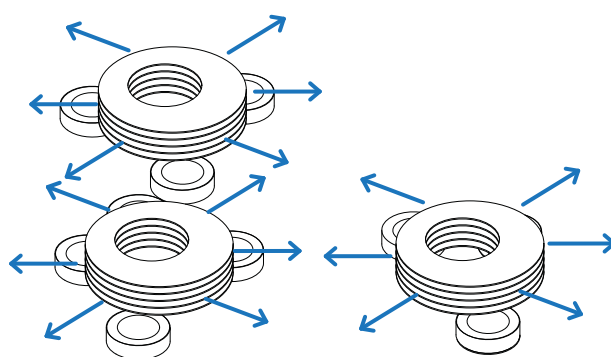
WATER TREATMENT TANKS

EXISTING BUILDINGS TO BE DEMOLISHED

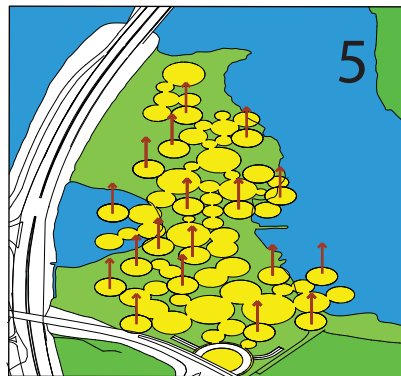


CREATION OF CIRCULAR PUBLIC AREAS

360° VIEWS

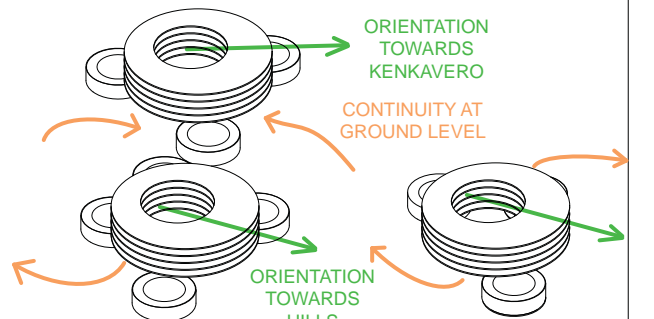


EXTRUSION OF PUBLIC AREAS

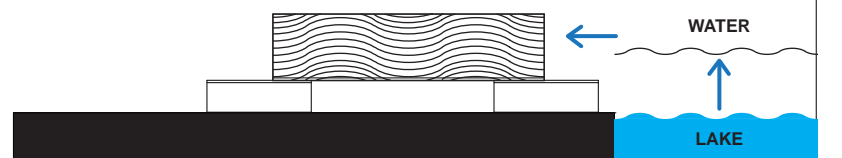


RAISED MAIN BUILDING TO CREATE MORE PUBLIC AND GREEN AREAS AND CONTINUITY AT GROUND LEVEL

ORIENTATION OF RAISED BUILDINGS TOWARDS LANDMARKS



WATER FACADE



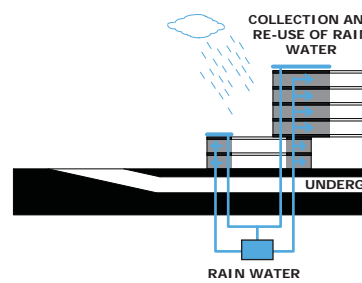
CREATION OF CIRCULAR BUILDINGS



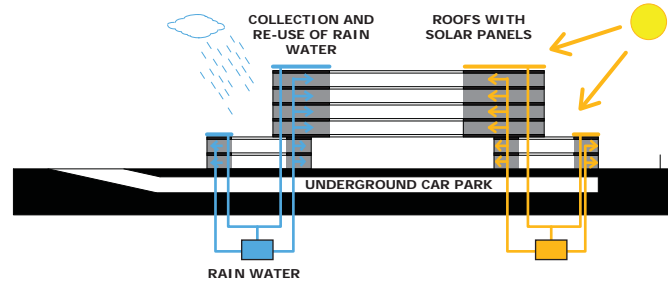
RAISED APARTMENT BUILDINGS



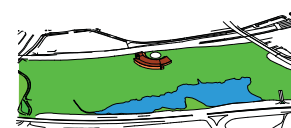
SELF-SUFFICIENT WATER SUPPLY



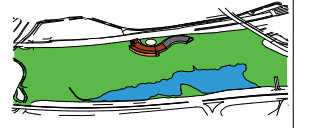
SELF-SUFFICIENT ENERGY SUPPLY



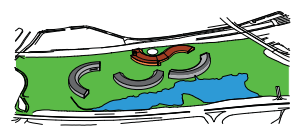
# HILL TOWN



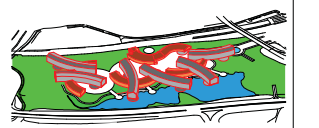
EXISTING BUILDING



EXTENSION TO THE EXISTING BUILDING (MUSEUM)



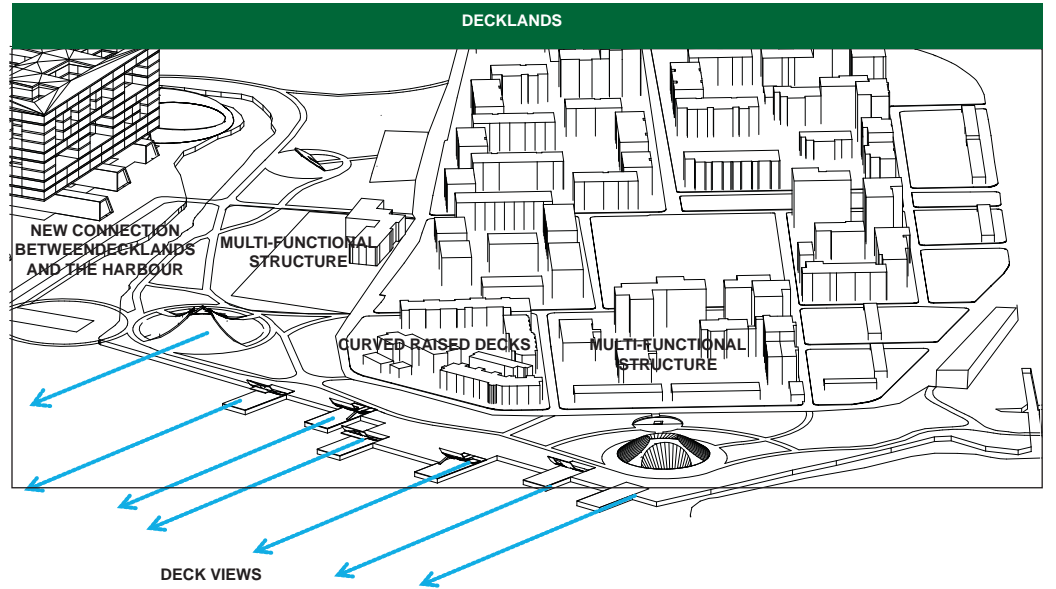
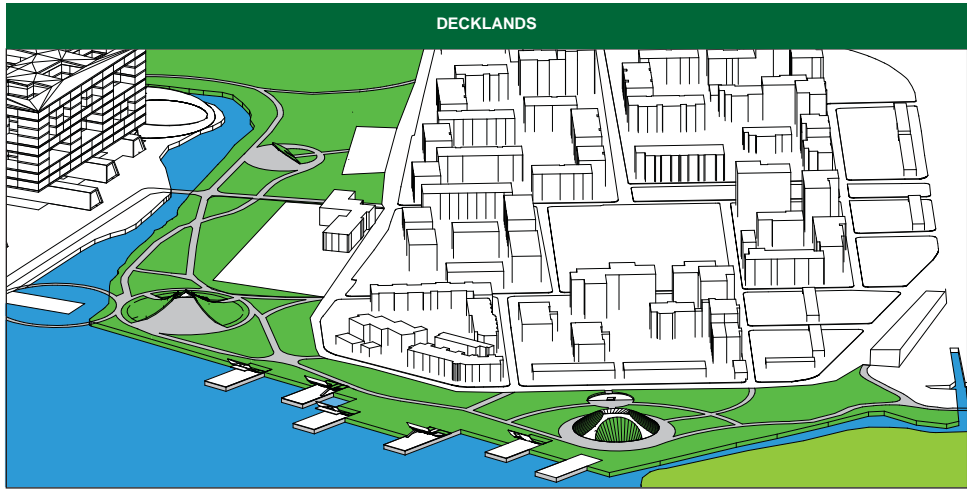
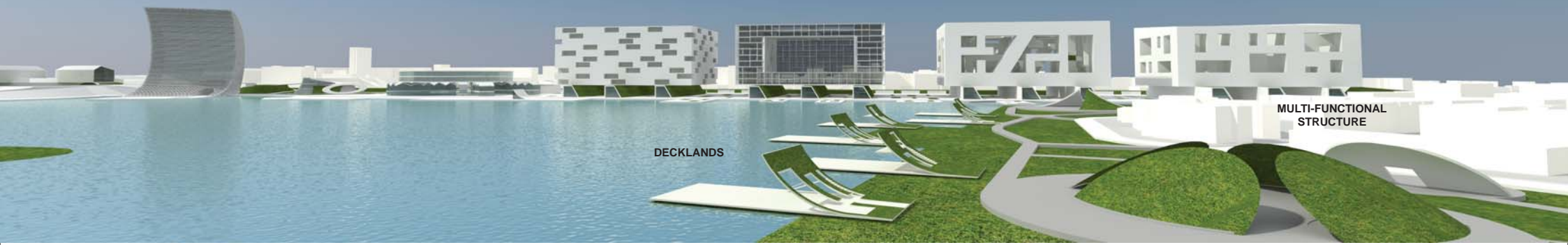
NEW GROUND LEVEL BUILDINGS (SERVICES)



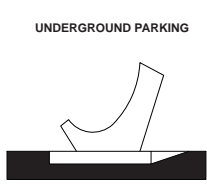
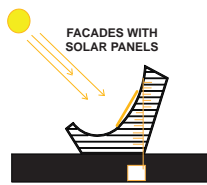
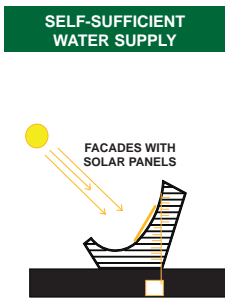
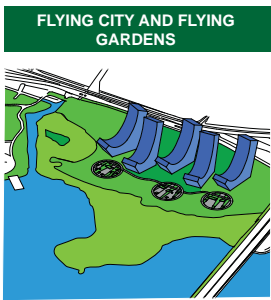
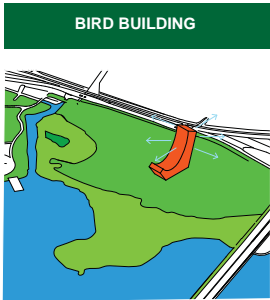
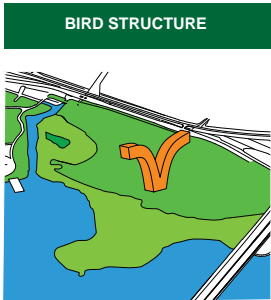
RAISED BUILDINGS (BUSINESS USE)

# THE WAVE SCIENCE CENTRE

HILL TOWN THE WAVE SCIENCE CENTRE GREEN ISLAND BUSINESS ISLAND THE TERRACES FRAME BUILDING LATTICE BUILDING THE COURTYARDS



## FLYING CITY



BUSINESS ISLAND THE TERRACES FRAME BUILDING

## FLYING CITY



## **Floating Gardens - Satamalahti area, Mikkeli**

One of the principal overall themes of this master plan that of floating gardens, either “floating” over the lake in the form of decks and platforms, or gardens over which the buildings themselves “float”.

### **Site 1**

#### **The Green Line**

In order to give continuity between the buildings and the lake, the two-way street giving access to the project area has been moved to the outer western limit of the project area. Connecting the with the highway VT 5, the main road to the north of the Satamalahti area and the city road network

This road forms part of the north-south Green Line, stretching nearly 1 km, with a grassy embankment running along the entire length of its west side and a broken line of embankments along the eastern its east side. The north-south embankment forms a tunnel giving access to the underground parking beneath the four apartment blocks located along the east side of the Green Line, with private parking for residents and public parking for visitors. The north-south Green Line embankments also house shops and bus shelters are situated along them. One of the principal functions of the embankment on the west side is to provide a sound and visual barrier to the railway.

The gaps between the north-south embankments on the east side give access to the east-west Green Lines, further grassy embankments that form the bases of four apartment buildings and house restaurants, cafés, bars, shops and market stalls on the ground floor and office space on the first floor, with walkways that give direct access to the harbour area from the street.

Each embankment will have a series of solar panels and a rainwater collection and reuse system.

### **Harbour area**

#### **Layout**

The entire harbour area layout continues the 19<sup>th</sup>.century grid layout of Mikkeli.

#### **“The Wave” Science Centre**

This building has four functions:

The ground floor and first floor are set aside for the Science Centre for ecological design and the museum, whereas the second floor is a terrace with public access, with restaurants, bars, cafeterias and green areas.

The third and fourth floors make up the congress centre for holding international events.

The fifth floor is a terrace floor, again with restaurants, bars, cafeterias and green areas.

An international hotel covers the following three floors (6<sup>th</sup>, 7<sup>th</sup> and 8<sup>th</sup>).

The ninth floor is a terrace floor, again with restaurants, bars, cafeterias and green areas.

The tenth and eleventh floors are set aside for luxury apartments.

The top floor has been set aside as a observation floor with gardens, restaurants, cafeterias and bars, which will become a tourist attraction in the city of Mikkeli, with views of Lake Saimaa to the east and the city centre to the west.

Each floor has views both of the lake and city centre.

On the three garden terrace floors, there will be a series of openings to allow the maximum sunlight and ventilation.

The garden terrace floors embrace nature in architecture.

#### **Concept of the Wave**

The Wave is a building born out of nature that embraces nature. It rises out of the water, joining with the land and curving up towards the sky.

It actually is actually a reversed wave, the idea being that it is a wave that embraces nature and Lake Saimaa, creating a close relationship between nature and architecture.

The floating platform out of which the Wave rises is a public square with swimming pools that transform into children’s skating rinks in the winter, gardens and seating areas. The square will serve for open-air festivals and other events such as concerts and plays, with the lower section of the concave curve forming an amphitheatre-style seating area.

The ground floor of the Wave Science Centre has a tunnel opening that leads from the Centre's access plaza to the floating platform, thus connecting it directly with the harbour area.

Opposite the access plaza to the Wave Science Centre is a residential complex that forms a Green Island. The concept of this complex is based on different land formations. This complex is made up of four areas, each representing a different kind the land formation: three rocky crags (forming a library, a gym with sports areas and a cultural centre with workshops), a spiralling ramp forming a "mountain", which replaces the existing long ramp, providing pedestrian and cycle access from the bridge, market square and railway station to the harbour area, a "volcano", forming a community centre with a nursery, and a "crater", a multifunctional structure for open-air events, festivals, concerts, etc., with the surrounding landscape as a backdrop.

To the north of the above complex is the Business Island, in which the form of the roof of the existing office block has been continued in 5 adjoining buildings, creating a zigzag shaped roof, located in a circular reflecting pool, with a diameter of 90 metres. The top floor of this building has been designed in the shape of a ring, hence with a 360 degree view. The ground floor of the building will be entirely dedicated to shops whereas the first floor and top floor will be used as office space.

The four buildings to the north along the harbour area are square-plan residential buildings, following the original 19<sup>th</sup> century layout of Mikkeli. Each of the buildings has a raised internal courtyard for the communal use of all residents, which rests on the floor above of the east-west Green Lines, forming the raised platform for each building. Each building will have a variety sizes and types of apartments, some all on one floor and others on two floors.

The southernmost residential building is called "The Terraces", in which each apartment has a large terrace, which forms a garden either looking out over the lake or the city centre beyond, or giving on to the internal courtyard.

The next building is the Frame Building, thus named for its large central frame, effectively framing the view of the lake from the central courtyard. The facade itself is also made up of a series of frames, some made up of just one apartment and others of two, three or four apartments.

The concept for the third building is based on a three-dimensional Latticework, with rows and columns of apartments interspersed with gaps, forming a lattice effect and thus providing each apartment with vistas of Lake Saimaa. The internal courtyard in this building also has vistas of the lake through the latticework and again each apartment has a private terrace garden, in some cases with the roof of the apartment below forming the terrace of the apartment above.

The northernmost residential building is the Courtyards, which has a series of courtyards that connect horizontally or vertically.

To the north of the Courtyards is the new Sports Centre, which is located in the bend of the river to the north of the area. The Sports Centre, which has a circular plan, blends with its surroundings as much of it is grass covered. The building itself makes up the outer ring of the Centre, reaching a height of eight metres at the highest point and sinking to a mere barrier measuring approximately one metre on the lowest side. Both the building and central area, which will hold sports fields, a children's play area and community spaces, have a view of the river. The building will contain a gym, rooms for classes, a nursery and community spaces.

### **Shoreline promenade**

Having eliminated the shoreline car park and moved the access road from the lakeside to the north-south Green Line running alongside the railway, the shoreline promenade will be freed up to become an important place in the day-to-day life of the inhabitants of Mikkeli, as well as a tourist attraction. This area will extend from the Wave Science Museum for approximately a kilometre, all the way to the Sports Centre at the bend in the river at the north of site 1. Along the shoreline promenade there will be a new kiosk, bars, cafés and restaurants and new decks jutting out over the water that form public spaces and also offer boat moorings, forming a social hub in the Satamalahti area, with easy access from the city centre.

### **Site 2**

#### **Hill Town**

In Hill Town, the concept is based on the semi-circular form of the existing railway warehouse building, which has been extended with a further semi-circular section curving in the opposite direction to create an S-shaped building, which will be used as a museum. Three newly constructed buildings at ground level repeat the semi-circular form. Rising above each of these buildings are two further semi-circular buildings (with six raised buildings in all), resting on artificial "hills" and each leading from one of the three circular public squares to a circular deck over the lake. The three new buildings at ground level will be for used as services (shops, nursery, etc.), whereas the six raised buildings will be for business use.

All the buildings are raised so that the maximum area can be used for green spaces, fountains and public spaces generally.



### Site 3

#### Panoramic City

This is the site of the waste water treatment plant. The concept for this site is based on the shape of the existing water treatment tanks. Whereas the existing buildings will be demolished, the bases of the existing circular water tanks will be retained, turning them into water gardens, with pools and fountains. Continuing on this theme, a series of interconnecting circles will be created, forming public spaces, some of which will be extruded, raising up to form shops and restaurants and in turn form the bases for five circular apartment buildings.

By raising the apartment buildings, continuity is created at ground level, as each apartment building a circular internal courtyard, allowing pedestrians to walk from one circular area to the next without obstacles. Each courtyard will be off-set from the centre of the building, thus creating apartments of different sizes depending on their position. Each of the apartment buildings will have a 360 degree view of the area, hence the name Panoramic City. In addition, through the asymmetrical design of the central courtyard, each building faces towards a specific landmark in the area: the two southernmost buildings towards the heritage vicarage of Kenkävero, the orientation two is towards two hills situated on the other side of the Lake Saimaa and the last towards an island in the lake.

### Site 4

#### Flying City

Flying City borders on a bird sanctuary, giving rise to the concept for this area. The five apartment buildings in this area have been designed taking the simple abstract form of a bird in flight as a concept, which is extruded and then “laid on one wing” in order to assure views for all the apartments. On the same site there are three circular “flying gardens”, which undulate like air thermals, with sections that rise up to create covered areas beneath, hence providing areas for various uses.

#### Decklands

To the north-west of Flying City is Decklands. One of the principal features of this site is the series of decks extending over the lake, to be created in local timber. Each deck is partly grass-covered and curves upwards in a similar manner to the Wave Science Centre. The decks are made up of three areas: the “access area”, the lower covered section that juts out over the water and the raised lookout terraces. The decks have been designed to be used as picnic areas, play areas, etc.

Decklands includes two large multifunctional structures of between 30 and 40 metres in diameter, designed for public events such as concerts, shows, exhibitions, etc., one on to the east and the other to the west of the site. Each square is semi-covered; the square on the west side has three sections curving towards the sky to give some cover for the events held there, whilst at the same time maintaining the lake as the backdrop, whereas the square on the eastern side has four curving roof sections. In each case the roof sections will be created in local timber and grass-covered concrete.

*Table 1: Total Construction (m<sup>2</sup>) by use and by site*

Site	Use	Total construction m2	Site	Use	Total construction m2
	<b>1 Total</b>	<b>196,402</b>		<b>2</b>	<b>45,461</b>
	Residential	147,301		Residential	-
	Business	29,460		Business	27,276
	Services	19,640		Services	18,184
Site	Use	Total construction m2	Site	Use	Total construction m2
	<b>3 Total</b>	<b>78,817</b>		<b>4 Total</b>	<b>29,260</b>
	Residential	59,113		Residential	29,260
	Business	11,823		Business	-
	Services	7,882		Services	-

**Total Construction m2 349,939**

Table 2: Total Green Areas (m<sup>2</sup>)

Site	Green Areas m2
1	40,087
2	56,839
3	58,892
4	122,292
<b>Total</b>	<b>337,002</b>

### **Cityscape**

This project will provide a dramatic cityscape, with the Wave Science Centre standing out as the area's principal landmark and a series of other interesting and attractive low-rise and multi-storey buildings and an abundance of green areas, both in the buildings themselves and surrounding them. The interesting buildings and flourishing green areas create a balanced environment and thus making it extremely appealing to tourists and a relaxing and harmonious place to live and work.

### **Pedestrian and cycle network**

A major focus has been placed on the pedestrian and cycle network, ensuring that moving around the area on foot or by bike is trouble free and extremely appealing owing to the many sites to be seen along the way, connecting the various public gardens, parks and spaces

There is an entire pedestrian and cycle circuit that connects up with the existing network. In addition to making the entire circuit of the lake, there is also a pedestrian and cycle route along the north-south Green Line, which also leads to the city centre.

### **Urban Art Trail**

Forming a trail that makes a circuit right around the four sites of the Satamalahti, a series of sculptures will be positioned, some of which may be permanent and others on a temporary exhibition basis. Leading tourists in from the VT 5 main road, the first may be regarded as the sculpture located at the VT 5 junction to the south of the area. The other sculptures will be placed along the walking and cycling trail, hence creating a tourist attraction.

### **Accessibility**

The harbour area is all on a single level with no need for ramps. The existing bridge leading from the bus station has access via the spiral ramp. The additional underground access provided in the north, gives access both for vehicles and pedestrians and cycles, via two ramps, to the harbour. Access to the floating square and the Wave Science Museum is also all on a single level, as is the public area in Panoramic City.

### **Minimisation of Carbon Footprint**

The design for the Satamalahti aims to minimise the area's carbon footprint by means of self-sufficient energy production using solar panels on all of the buildings, along the north-south Green Line and on the bus shelters, combined with high-level insulation. Another important element in minimising energy use is the fact that visitors, tourists and local residents alike will be encouraged to walk or travel by bicycles as much as possible, both owing to the easy routes throughout and the abundance of parks and gardens, cultural attractions and services to be enjoyed.

Another important element from an ecological perspective is the raising of the buildings above ground level, generally with internal courtyards, supporting the maintenance of groundwater levels through rainfall.

Rainwater treatment will be handled on a plot by plot basis, for example in the case of the Wave Science Centre rainwater will be collected and treated in the area beneath the building.

### **Parking**

All ground level parking has been removed to avoid the interrupting continuity between the various public spaces and to allow the maximum amount of construction, while maintaining a balance with the green areas. Underground parking will be created underneath almost all of the buildings, with the exception of the buildings on the reflecting pool.

Table 3: Total no. of Public and Private Parking Spaces

	Site 1 Total	Private	Pubic	Site 2 Total	Private	Pubic
<b>No. Parking Spaces</b>	<b>2,311</b>	1,733	578	<b>535</b>	-	535
	Site 3 Total	Private	Pubic	Site 4 Total	Private	Pubic
<b>No. Parking Spaces</b>	<b>927</b>	695	232	<b>344</b>	344	-
	<b>Total</b>					
<b>No. Parking Spaces</b>	<b>4,177</b>					

**Road network**

The VT 5 has been connected with the Green Line to give access to the entire harbour area.

At the northern limit of the harbour site an underground road has been created, which to the west gives access to the north of the city centre, to the north to the main east-west road and to the east connects with the road that gives access to the new Flying City residential areas, leading towards Graani.

To the south, the Green Line ends in the Hill Town (site number 2), thus allowing us to close the circuit with Panoramic City (the waste water treatment plant).