



## A PROJECT FOR THE CONSTRUCTION OF THE GREEN SPACES IN TOPPILANSAARI

Toppilansaari area is undergoing a change in land use; it is becoming a residential area as its harbour and industrial activities are moving elsewhere. The Toppilansaari area will be the site of a Housing Exhibition in the year 2005.

The city has started a project for the construction of the green spaces in Toppilansaari. Its quality goal is to create a new residential and tourism service area of about 60 hectares where the environment meets high standards and achieves variety, consisting of local vegetation and of different forms of green space construction. The ecological goal is focused on exploiting natural rainwater and stormwater management. Local plant species will be used as well as new green construction technologies in the solutions for the green spaces.

The project is a part of the Management of Changing Land Use Project, within the framework of the EU's Objective 2 programme. The research goal is to exploit the information gained from the project about minimizing the impacts on nature caused by construction. At the same time the enterprises and research units involved will gain know-how and references. The project budget is 724 000 euros and it's financed by the Regional Environment Centre of North Ostrobothnia, the European Regional Development Fund (ERDF) and the City of Oulu.

### PROJECT FINANCING

European Regional Development Fund (ERDF)  
North Ostrobothnia Regional Environment Centre  
City of Oulu

[www.pohjois-pohjanmaa.fi](http://www.pohjois-pohjanmaa.fi)  
[www.ymparisto.fi](http://www.ymparisto.fi)  
[www.ouka.fi](http://www.ouka.fi)

### COORDINATION

City of Oulu, Technical centre  
City of Oulu, Environmental office  
Oulun Vesi (water management)

[www.ouka.fi/tekninen](http://www.ouka.fi/tekninen)  
[www.ouka.fi/ymparisto](http://www.ouka.fi/ymparisto)  
[www.ouka.fi/vesi](http://www.ouka.fi/vesi)

### PARTNERS

JP-Transplan Oy  
University of Oulu  
Department of Architecture  
Botanical Museum  
Botanical Gardens  
PSV-Maa ja Vesi Oy  
Finland's environmental administration  
Finnish Road Enterprise  
Ympäristötarmo

[www.jp-transplan.fi](http://www.jp-transplan.fi)

[www.oulu.fi/ark](http://www.oulu.fi/ark)  
[www.cc.oulu.fi/~herboulu](http://www.cc.oulu.fi/~herboulu)  
[www.oulu.fi/botgarden](http://www.oulu.fi/botgarden)  
[www.psv-mv.fi](http://www.psv-mv.fi)  
[www.ymparisto.fi](http://www.ymparisto.fi)  
[www.tieliikelaitos.fi](http://www.tieliikelaitos.fi)  
[www.ymparistotarmo.fi](http://www.ymparistotarmo.fi)

### REALIZATION

Master planning of the green areas and lighting in Toppilansaari 2003  
SCC Viatek Oy

[www.ramboll.fi](http://www.ramboll.fi)

Planning of Antell Park, Priki Park and Toppilansaari seashore zone 2004  
Suunnittelukeskus Oy

[www.suunnittelukeskus.fi](http://www.suunnittelukeskus.fi)

Planning of Meripojanreitti Park and Hankavastainen 2004  
Atelier Dreiseitl

[www.dreiseitl.de](http://www.dreiseitl.de)

Constructing Priki Park 2004  
Viherrengas Järvenpää Oy  
Financing from the project for the construction of the green spaces in Toppilansaari

[www.viherrengas.fi](http://www.viherrengas.fi)

Construction Meripojanreitti Park, Antell Park and Toppilansaari seashore zone 2004-05  
Oulun Katutuotanto (street and park maintenance)  
Financing from City of Oulu

[www.ouka.fi/katutuotanto](http://www.ouka.fi/katutuotanto)



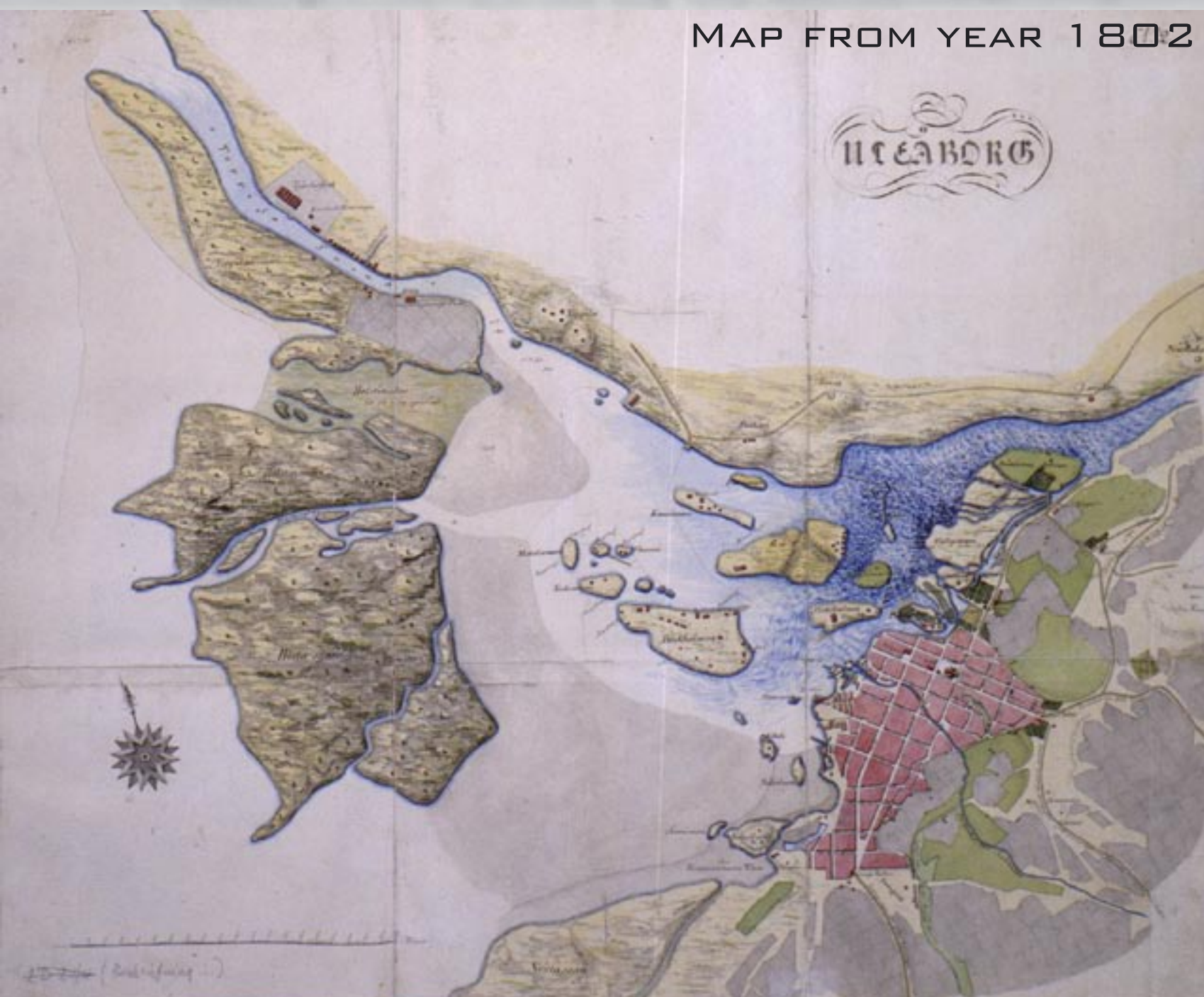




## BASISES OF PLANNING 1

### HARBOUR

Toppilansaari was formed into a separate island in the autumn 1724. Right from the beginning the channel was used for harbour purposes. Toppilansalmi was the main commercial port of Oulu from 1910 to 1970.



### VILLAS

Toppilansaari land area was divided in narrow plots after the year 1854. The families of the commercial house partners had an active social life in their villas during the last decades of the 19th century. Today, four villas are still standing in Toppilansaari.



#### LIST OF SOURCES:

KAARINA NISKALA 1997: TOPPILAN MAAN-  
KÄYTÖN HISTORIAA TOPPILANSALMEN ALU-  
EEN RAKENTAMINEN JA TOIMINTA VUODESTA  
1724 NYKYPÄIVÄÄN

OULUN KAUPUNKI, KARTASTOPALVELUT

WWW.OULU.OUKA.FI/TEKNINEN/TOPPILANSAARI





## BASISES OF PLANNING 2

### VEGETATION OF TOPPILANSAARI

In Toppilansaari there are lot of cultural originated species. Ballast plants from the period of sailing ships as well as German originated species from the era of WW2 are found in the area. There are also many species that has spread out from villa gardens. Besides trees, witch are typical in the villa area such as birches, lime trees, larches and sembras.

### BALLAST PLANTS



### SPECIES FROM WW2



### GARDEN SPECIES



LIST OF SOURCES:

HALONEN P., HUHTA A-P., KALLEINEN L., AHOLA U.& ITÄMIES J. 2001: TOPPILANSAAREN LUONTOARVOJEN INVENTOINTI TUTKIMUSRAPORTTI OULUN YLIOPISTO

PSV-MAA JA VESI OY 2002: TOPPILANSAAREN HARVINAISEN KASVI- JA HYÖNTEISLAJISTON TARKENTAVA SELVITYS

KALLEINEN L. & KAUPPILA T. 2003: OULUN TOPPILANSAAREN VIHERRAKENTAMISEEN SOVELTUVIA KASVEJA TOPPILAN KASVIEN HISTORIA ERI VUOSIKYMMENITTÄIN

[WWW.OULU.OUKA.FI/TEKNINEN/TOPPILANSAARI](http://WWW.OULU.OUKA.FI/TEKNINEN/TOPPILANSAARI)



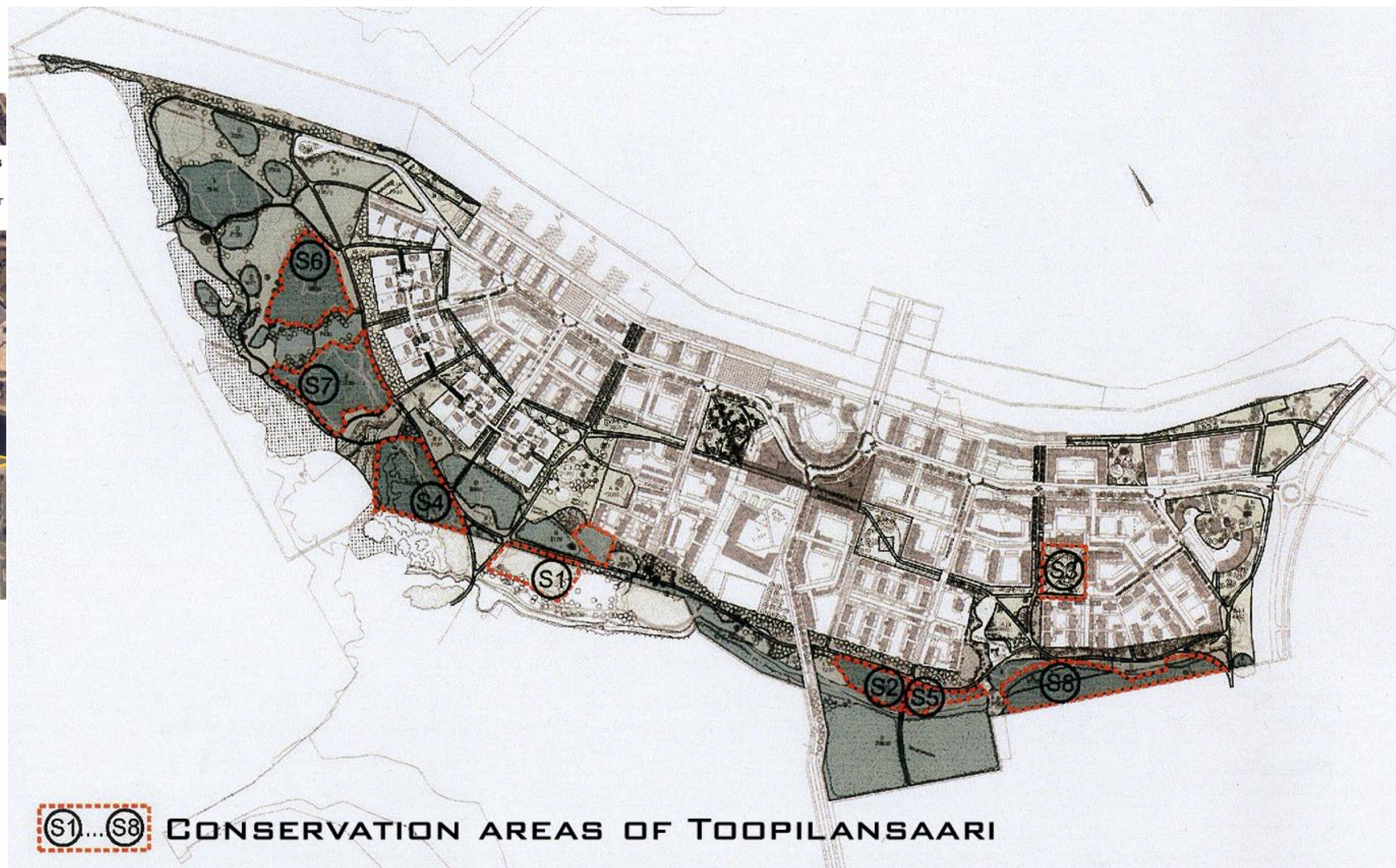
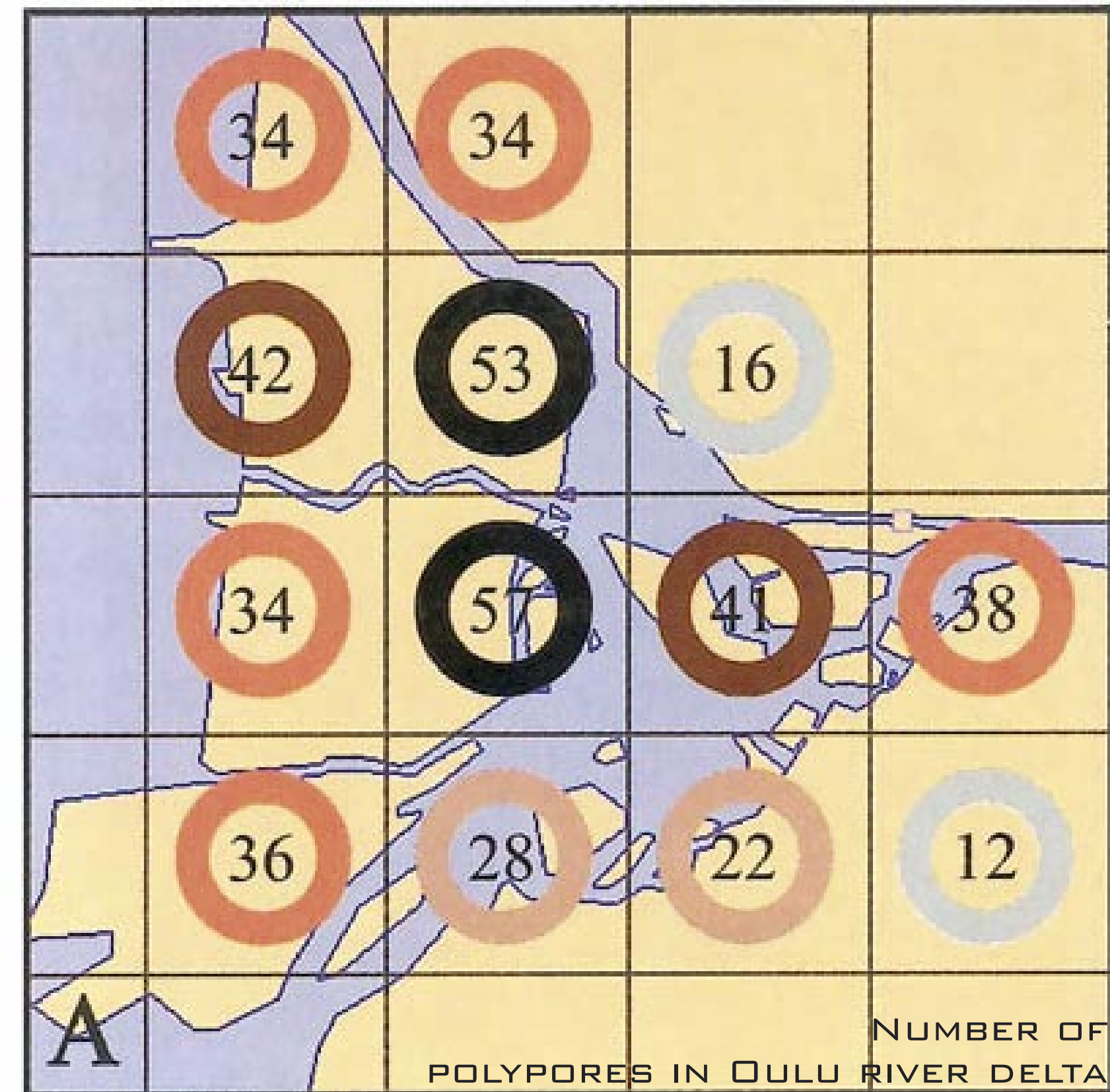


## BASISES OF PLANNING 3

### POLYPORES

#### POLYPORES IN TOPPILANSAARI

Toppilansaari has a noticeable amount of polypores. The endangered and threatened species are centered near Holstinsalmi, close to old coastline of sea.



## DATRONIA STEREOIDES

HABITAT OF  
DATRONIA STEREOIDES



## DICHOMITUS CAMPESTRIS

HABITAT OF  
DICHOMITUS CAMPESTRIS



#### LIST OF SOURCES:

HALONEN P., HUHTA A.-P., KALLEINEN L.,  
AHOLA U. & ITÄMIES J. 2001: TOPPILAN-  
SAAREN LUONTOARVOJEN INVENTOINTI  
TUTKIMUSRAPORTTI OULUN YLIOPISTO

HALONEN P., KULJU M., KANGAS K. & KAL-  
LEINEN L. 2002: OULUN SUISTOALUEEN  
KÄÄVÄT

OULUN FLOORA TUTKIMUSHANKE  
WWW.OULU.FI/~HERBOULU/OULUN\_FLOO-  
RA/INDEX.HTM

WWW.OULU.OUKA.FI/TEKNINEN/TOPPILANSAARI





## BASISES OF PLANNING 4

### TOWN PLAN

#### THE TOWN PLAN OF TOPPILANSAARI

In 1999 the city approved a new master plan, whose target year was 2010. Toppilansaari was reserved for residential and tourist use. The main aims in the OULU 2010 master plan were to compact the urban structure, to increase urban life and to strengthen the inner city. The size of the area was 2,040 dwellings, 173,000 sq.m. of building rights and 3,470 inhabitants.

The city of Oulu owns the land and water areas in Toppilansaari. In 1999 the city organized an architectural competition for the town planning draft. The City decided to do the town planning with its own organization after the competition.

The town plan was mainly approved in 2003. Town plan area is 72 hectares consisting 31,4 hectares parks and green areas.



TOPPILANSAARI BEFORE CONSTRUCTION WORK



TOPPILANSAARI YEAR 2004



## NEW BRIDGE



LIST OF SOURCES:

[WWW.OULU.OUKA.FI/ASUNTOMESSUT](http://WWW.OULU.OUKA.FI/ASUNTOMESSUT)

[WWW.OULU.OUKA.FI/TEKNINEN/TOPPILANSAARI](http://WWW.OULU.OUKA.FI/TEKNINEN/TOPPILANSAARI)



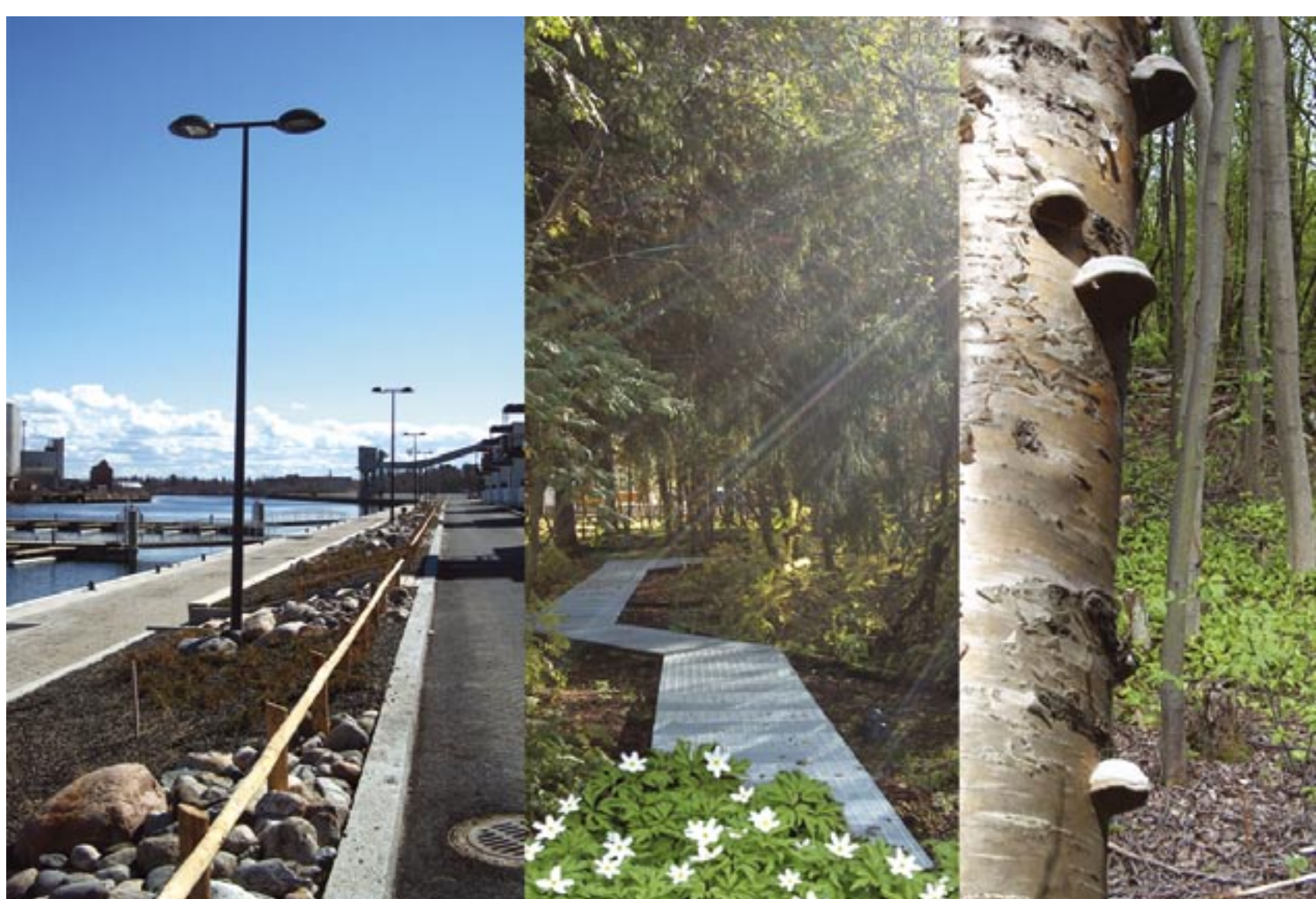


## GOALS OF THE CONSTRUCTION OF THE GREEN SPACES IN TOPPILANSAARI

### GOALS QUALITY AND ECOLOGICAL GOALS

The quality goal is to create a new residential and tourism service area where the environment meets high standards and achieves variety, consisting of local vegetation and of different forms of green space construction. The ecological goal is focused on exploiting natural rainwater and stormwater management. Local plant species will be used as well as new green construction technologies in the solutions for the green spaces.

## FROM A BUILT ENVIRONMENT TO A NATURAL AREA



## LOCAL VEGETATION



## ECOLOGICAL STORMWATER MANAGEMENT









## MERIPOJANREITTI PARK 1

### THE PLAN OF MERIPOJANREITTI PARK

The long and narrow Meripojanreitti Park is a central green space where the integration of water with art and urban design themes creates high quality living and green recreational surroundings.

Landscapes formed by stormwater define the quality of the central park area and, several aspects of stormwater management - the collecting, retaining and cleansing stormwater - takes place within the park. The basic theme of the park is a clear, simple and peaceful landscape. Different points of interest purposefully placed provide highlights in the park in contrast to the basic peaceful mood.



### THE LIGHT VORTEX



### ACTIVITY AREA



### THE SUNKEN BOAT



LIST OF SOURCES:

[WWW.DREISEITL.DE](http://WWW.DREISEITL.DE)

[WWW.OULU.OUKA.FI/TEKNINEN/TOPPILANSAARI](http://WWW.OULU.OUKA.FI/TEKNINEN/TOPPILANSAARI)





## MERIPOJANREITTI PARK 2

### THE PLAN OF MERIPOJANREITTI PARK

One of the most important design aspects is that the park perceived as one continuous element. Therefore the crossings on the two streets Fokkatie and Seilitie are designed to emphasize the park and not the streets. The crossings provide the connecting of the cycle pathways and the streets.

The steel framed vegetation islands are basically the solid symbol for the flow of the meandering water. To highlight the artificial expression of these elements, only one species of plant is used per element. The wide open parts of the park are free of trees to emphasize the quietness, with groups of trees at focusing points like crossings.

Section of Meripojanreitti Park



## CONTINUOUS MEANDERING

LIST OF SOURCES:

[WWW.DREISEITL.DE](http://WWW.DREISEITL.DE)

[WWW.OULU.OUKA.FI/TEKNINEN/TOPPILANSAARI](http://WWW.OULU.OUKA.FI/TEKNINEN/TOPPILANSAARI)





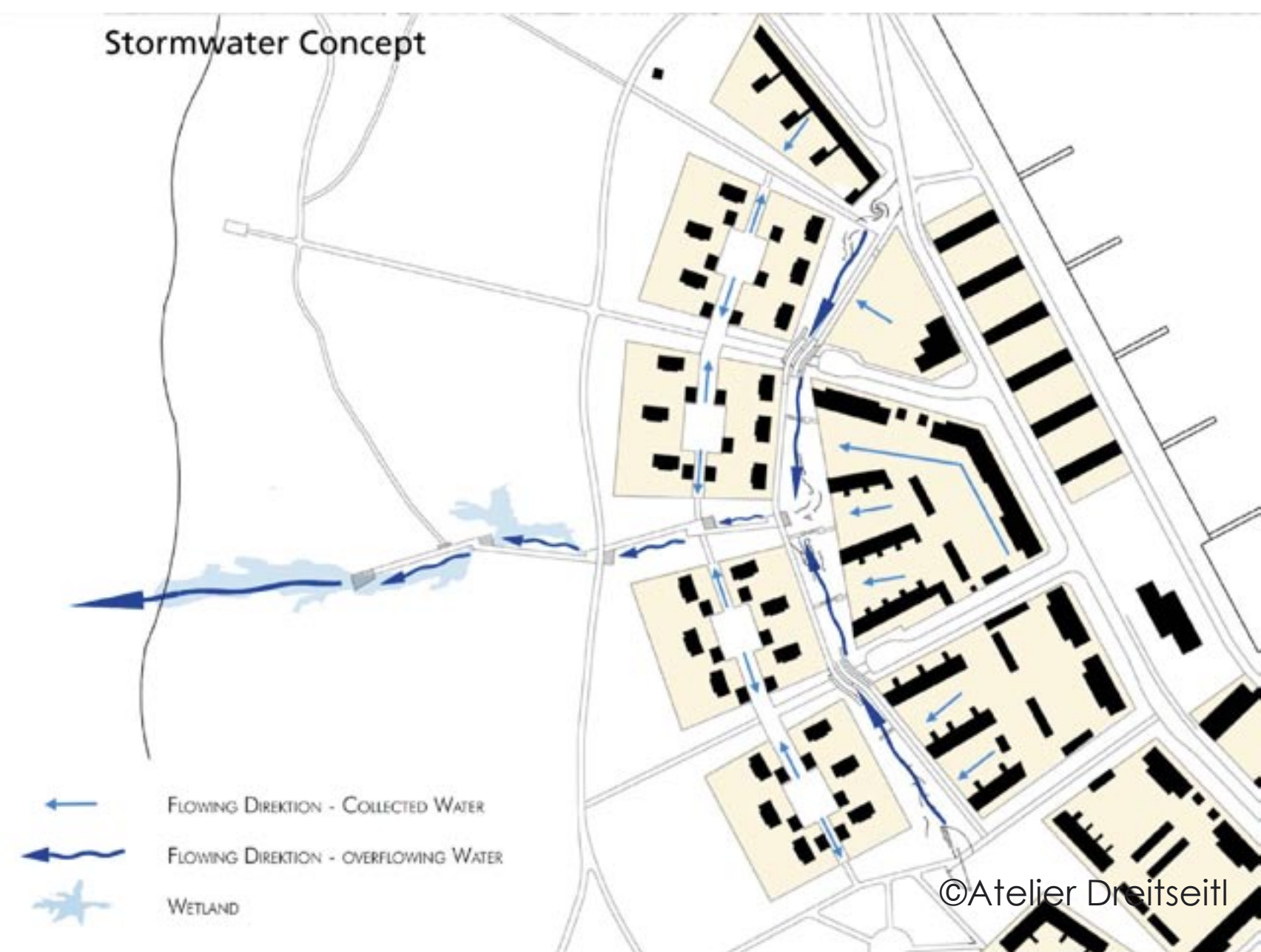
## MERIPOJANREITTI PARK 3

### HANKAVASTAINEN

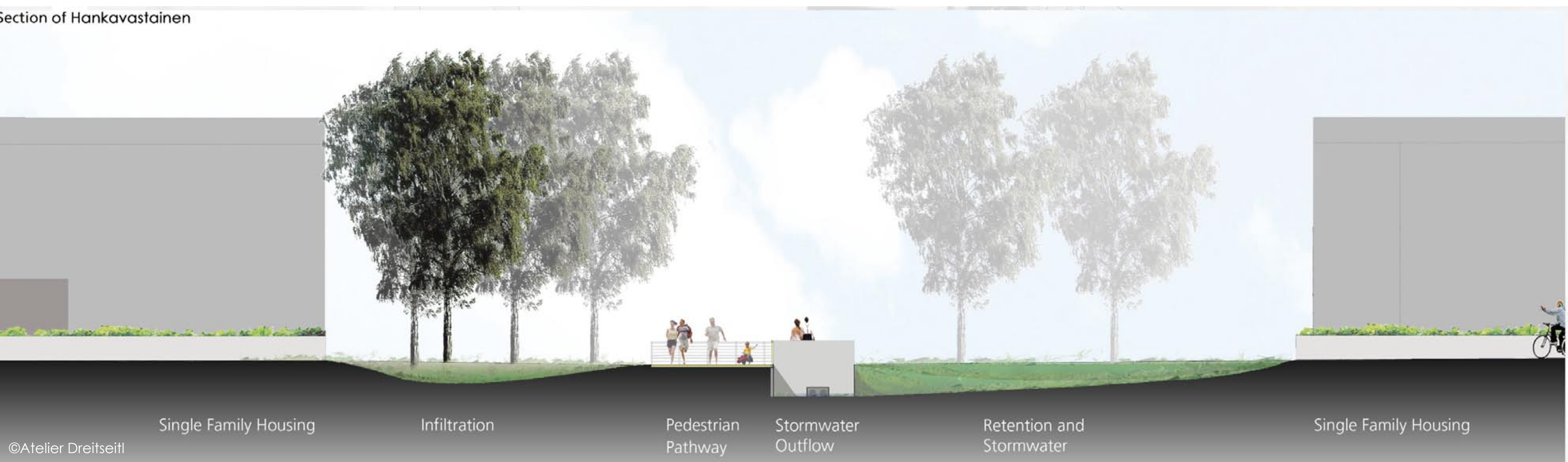
#### THE PLAN OF MERIPOJANREITTI PARK

In Toppilansaari there are several ecological stormwater treatment methods in use. In street areas, the stormwater is led to green sections as well as to retention ponds for absorption. In the city-blocks the stormwater is partly led to green zones for local absorption, and partly led away to the Holstinsalmi strait and to wetlands.

The run-off water will be led from the private areas to the Meripojanreitti Park, where it can be integrated into the public park design. A water axis is formed in Hankavastainen, which will function as a stormwater overflow route to the Retinranta nature reserve.



Section of Hankavastainen



## STORMWATER

LIST OF SOURCES:

[WWW.DREISEITL.DE](http://WWW.DREISEITL.DE)

[WWW.OLU.OUKA.FI/TEKNINEN/TOPPILANSAARI](http://WWW.OLU.OUKA.FI/TEKNINEN/TOPPILANSAARI)





## NORTH PART OF TOPPILANSAARI 1

### NORTH PART THE PLAN OF RETINRANTA AND PAARLASTINRANTA

Natural green areas and protected habitats are located in the seaside beach area. The shoreline alder forests areas are remarkably diverse and ecologically rich as a result of remaining undisturbed for many decades. The seaside meadow areas are managed to preserve their versatility and to resist heavier recreational use. Some areas are developed into meadow parks where the species typical for Toppilansaari. Some areas are kept arid and sandy.

### ALDER FORESTS



### BALLAST MEADOW



### ARID AND SANDY



#### LIST OF SOURCES:

[WWW.SUUNNITTELUKESKUS.FI](http://WWW.SUUNNITTELUKESKUS.FI)

[WWW.ULU.OUKA.FI/TEKNINEN/TOPPILANSAARI](http://WWW.ULU.OUKA.FI/TEKNINEN/TOPPILANSAARI)





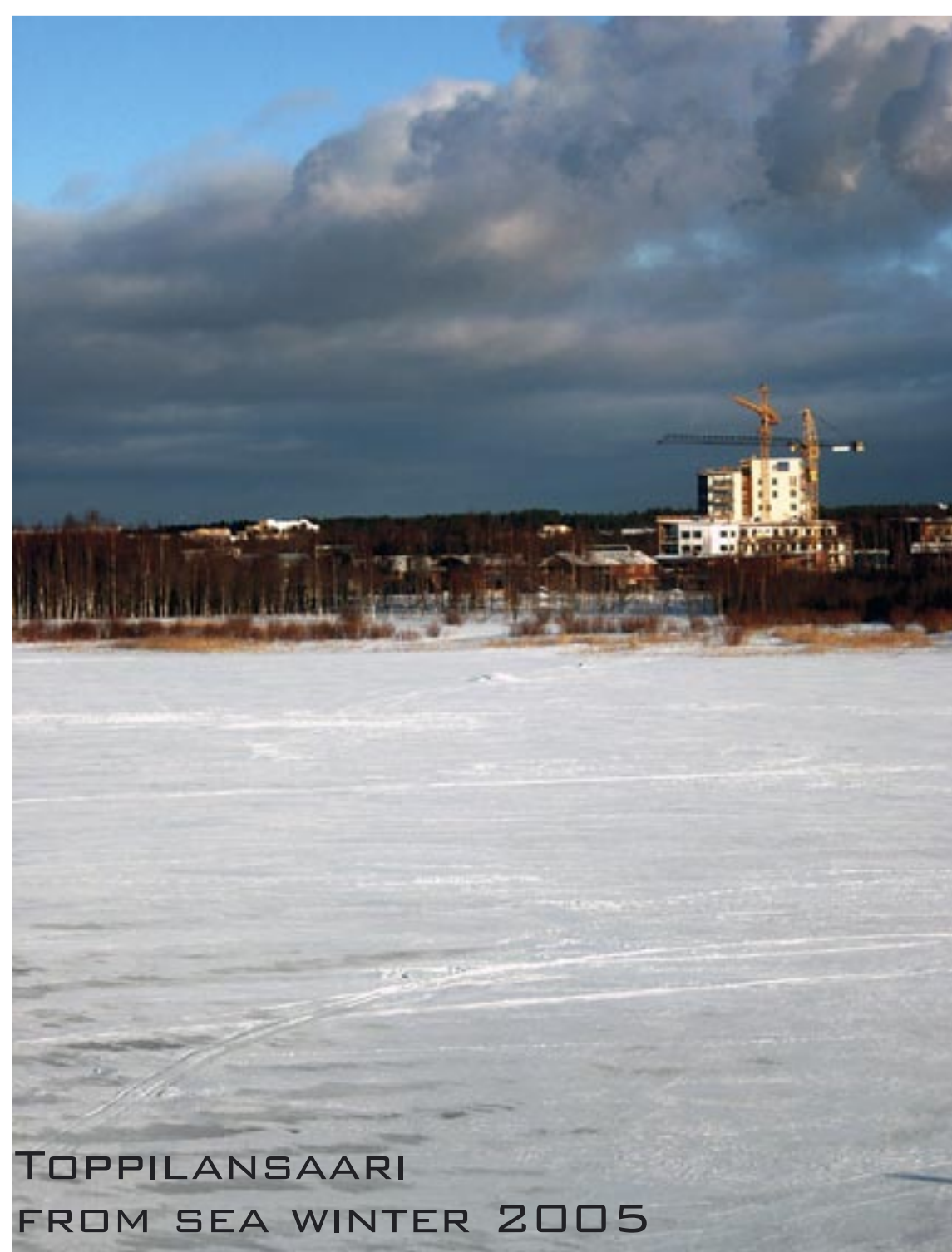
## NORTH PART OF TOPPILANSAARI 2

### VISTAS

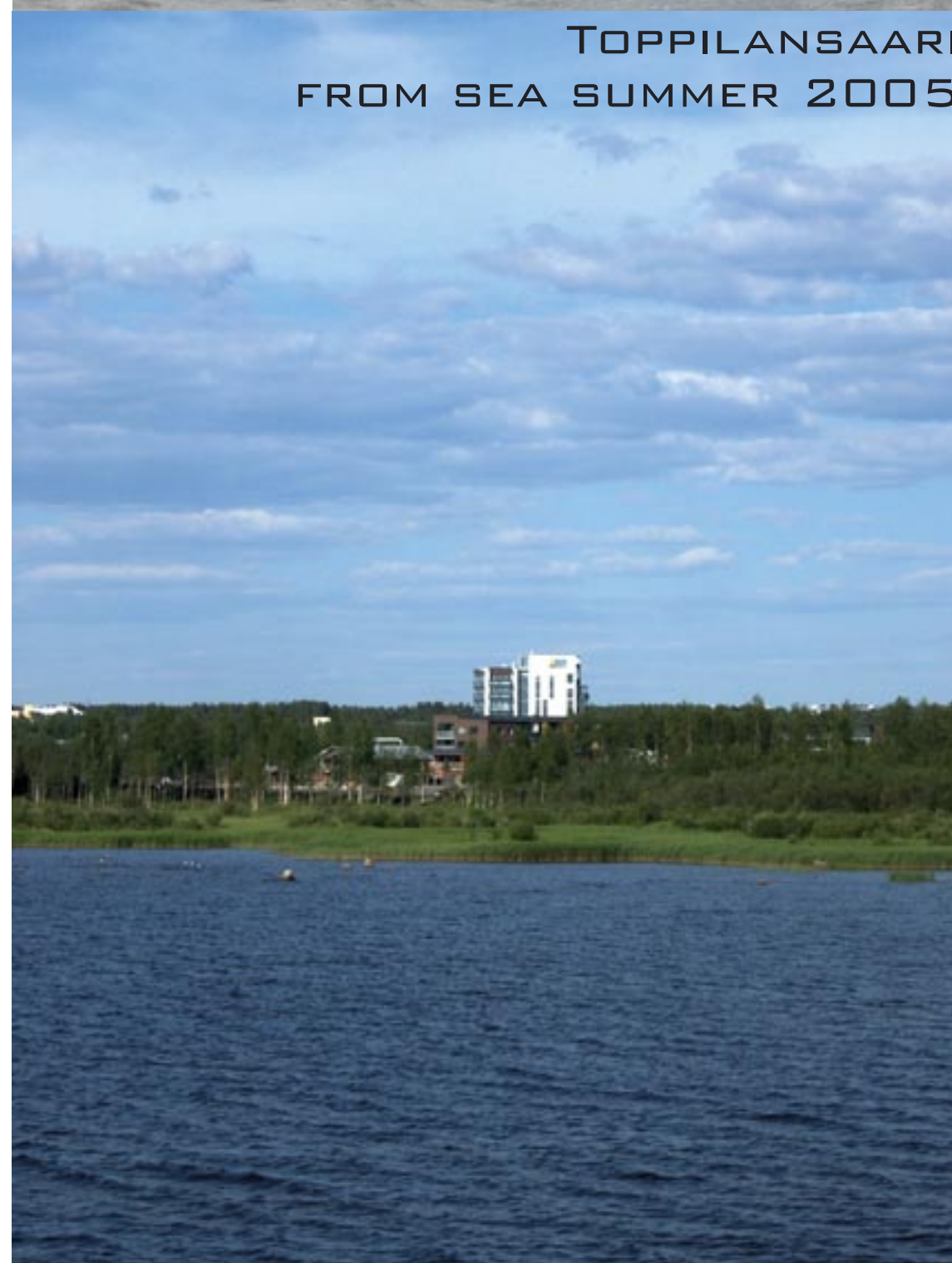
The important open views and vistas are directed to the sea.



## VISTA FROM FOKKATIE



## VISTA FROM HANKAVASTAINEN



LIST OF SOURCES:  
[WWW.SUUNNITTELUKESKUS.FI](http://WWW.SUUNNITTELUKESKUS.FI)  
[WWW.DREISEITL.DE](http://WWW.DREISEITL.DE)  
[WWW.OULU.OUKA.FI/TEKNINEN/TOPPILANSAARI](http://WWW.OULU.OUKA.FI/TEKNINEN/TOPPILANSAARI)



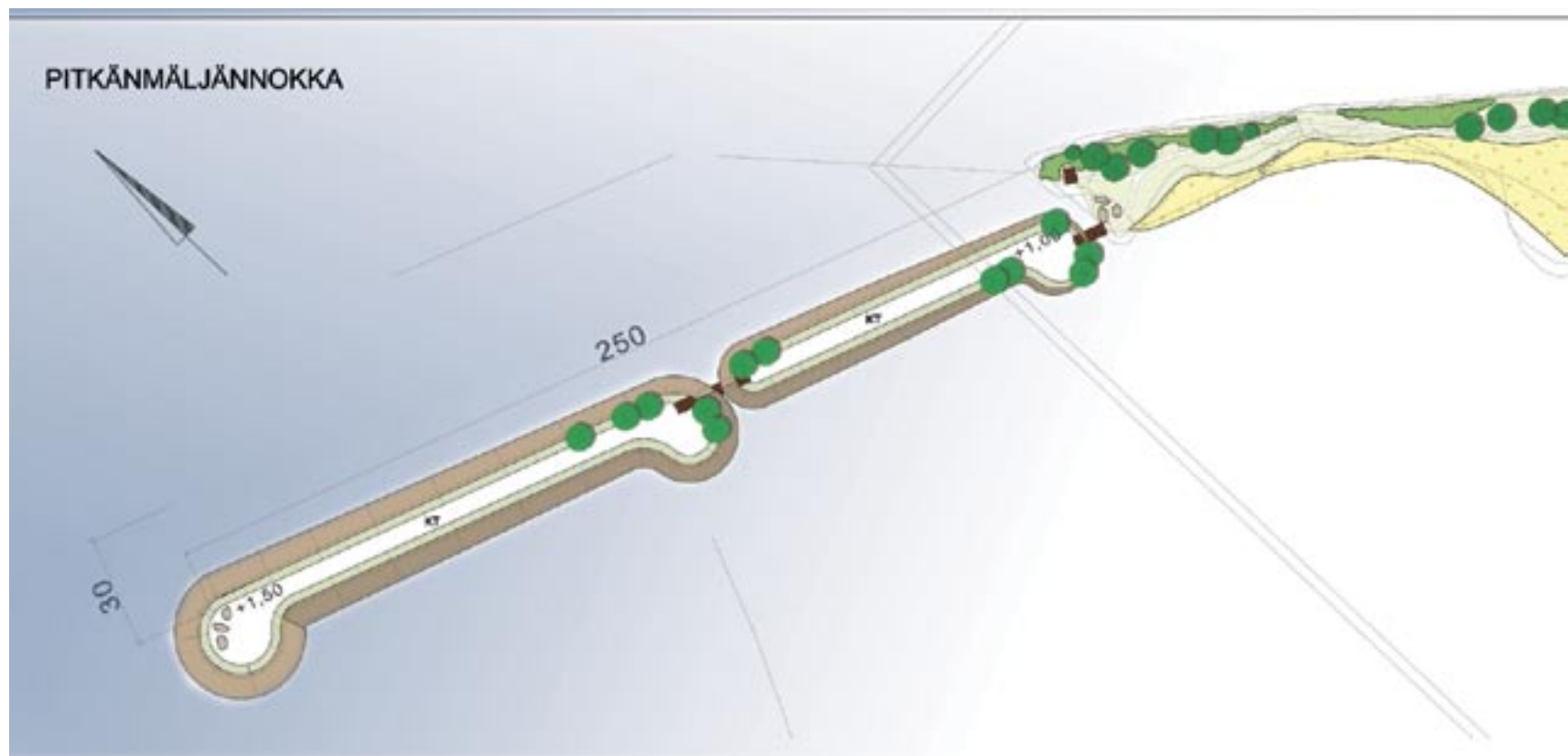


# NORTH PART OF TOPPILANSAARI 3

## BREAKWATER

The breakwater is 250 m long with open views directed to the sea.

## OPEN VIEW



TOPPILANSAARI  
AERIAL PHOTO SUMMER 2004



LIST OF SOURCES:  
[WWW.SUUNNITTELUKESKUS.FI](http://WWW.SUUNNITTELUKESKUS.FI)  
OULUN KAUPUNKI, KARTASTOPALVELUT  
[WWW.OULU.OUKA.FI/TEKNINEN/TOPPILANSAARI](http://WWW.OULU.OUKA.FI/TEKNINEN/TOPPILANSAARI)





## WATERFRONT BOULEVARD

### THE PLAN OF WATERFRONT BOULEVARD

Planning of waterfront boulevard was made by Rantakokko & Co OY and Plaana Oy. Area constructions was made by Finnish Road Enterprise. The waterfront boulevard plants are typical for Toppilansaari natural vegetation.



## REELINKI SQUARE



LIST OF SOURCES:

[WWW.PONVIA.FI](http://WWW.PONVIA.FI)

[WWW.PLAANA.FI](http://WWW.PLAANA.FI)

[WWW.OULU.OUKA.FI/TEKNINEN/TOPPILANSAARI](http://WWW.OULU.OUKA.FI/TEKNINEN/TOPPILANSAARI)





## PARKS AND WOODS OF TOPPILANSAARI

### GREEN AREA THE PLAN OF SMALLER PARKS AND FORESTS

Smaller parks with high maintenance level as well smaller parks with more natural appearance and lower level of maintenance are located along Pitkänmöljantie or between the housing quarters. Larger parks Lundströminpuisto and Antellinpuisto are located between housing blocks and the wooded Holstinsalmi area. Playgrounds are located in these parks.

Toppilansaari has a noticeable amount of polypores of which the threatened and rare species are centered near Holstinsalmi area. In this area all the procedures aim first and foremost at preserving the polypores also in the future. With prudent forest management and on some area even restraint on forest management it is intended to make sure that the unique nature in Holstinsalmi is preserved even with changes in land use.

### ANTELL PARK



### HOLSTINSALMI AREA

HOLSTINSALMI SUMMER 2005



BIKE PATH BY LUNDSTRÖM PARK



STORMWATER DITCH TO THE HOLSTINSALMI







## PRIKI PARK 1

### FENNOSCANDIAN HERB-RICH FORESTS WITH PICEA ABIES

Priki Park, growing in its natural state, is situated in the middle of the housing blocks and is connected to the green zones of Toppilansaari and the Oulu River Delta via Lundström Park. Priki Park is constructed by hand to protect the vegetation. Management aims to maintain the rare habitat of the wood anemone, the versatile vegetation and the trees.



The park is bordered by stone walls and steel rails, and walking is guided on gratings above the ground to prevent the sensitive wood floor from becoming trampled. Stormwater from the surrounding lots and streets are led to the park to maintain the moisture in the ground.

Raised gratings function as pathways so that the wood floor vegetation is maintained as much as possible. Electric lighting is situated on the ground beside the path. The path is sloping and partly bordered with rails to facilitate safe access to all.

The trees in the park are spruces, birches, rowans, bird cherries, larches, firs and willows. Along the side of the park there are some lime trees as a reminder of the villa garden which used to grow in the area.

Prudent forest management aims to increase the formation of decaying wood. Careful thinning out increases light to the wood floor, as well as improving the living conditions of polypores, cavity nesting birds and other wood species.



ENTRANCE TO PRIKI PARK  
FROM REIVIPOLKU

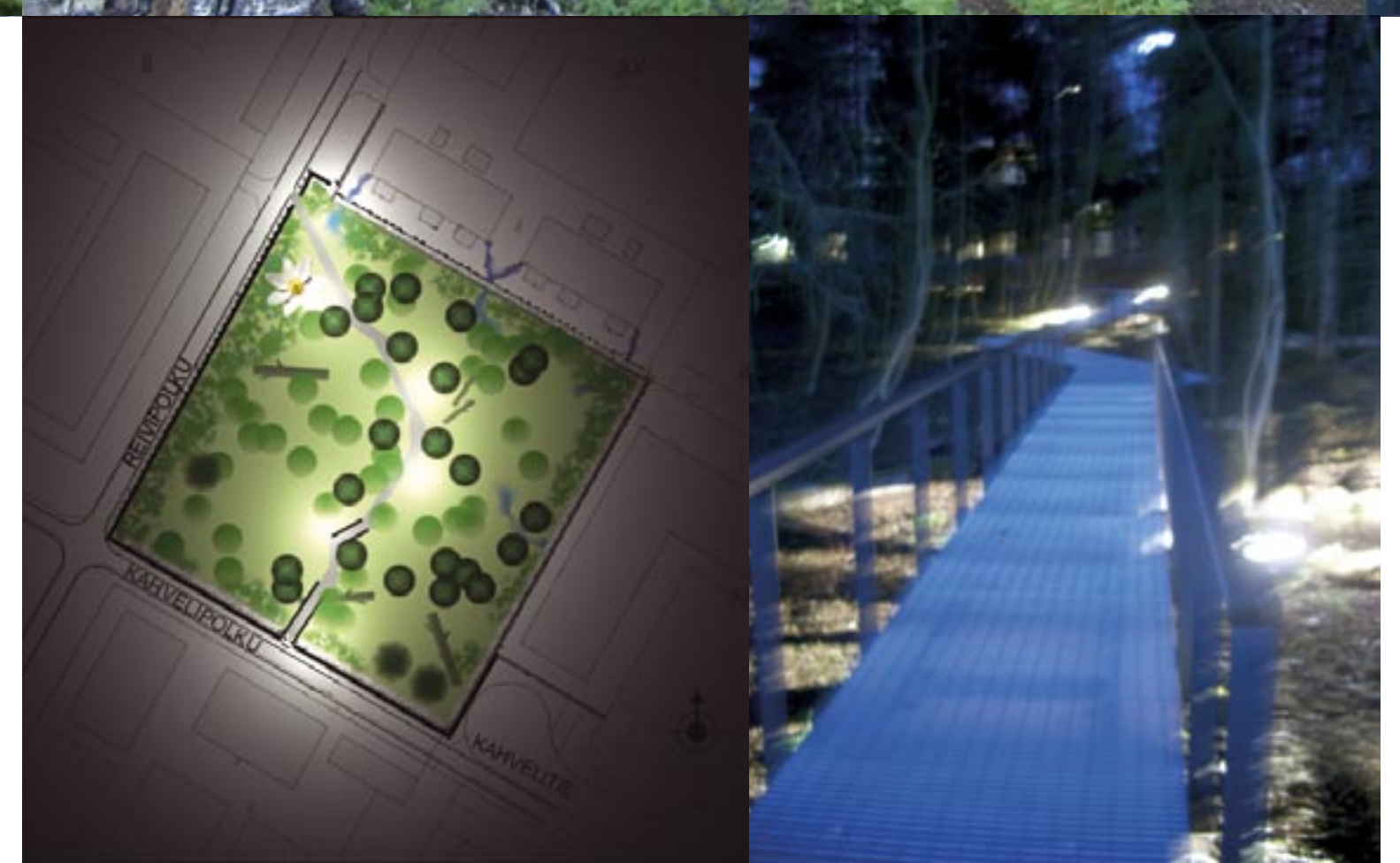


ENTRANCE TO PRIKI PARK  
FROM KAHVELIPOLKU

LIST OF SOURCES:

[WWW.SUUNNITTELUKESKUS.FI](http://WWW.SUUNNITTELUKESKUS.FI)

[WWW.ULU.OUKA.FI/TEKNINEN/TOPPILANSAARI](http://WWW.ULU.OUKA.FI/TEKNINEN/TOPPILANSAARI)







## PRIKI PARK 2

### A RARE HABITAT OF WOOD ANEMONE

The wood floor vegetation is typical for the habitat. The wood anemone is blooming during the early summer. Also wood-sorrel and lily-of-the-valley bloom before the trees' leaves appear. Also narrow buckler fern and stiff clubmoss can be found in the park. As reminders of the villa garden there are martagon lilies, wood forget-me-nots and wild growing sorbaria bushes. The bushes are heavily thinned to give living space for minor plants.



Park area approx. 0,5 hectares

Priki Park is a rare habitat of the wood anemone in the City of Oulu and in northern Finland. The species has grown in the area ever since the 1800's, and is protected in the provinces of Oulu and Lapland. The park area will suffer due the changes in land use in Toppilansaari in the future; there will be changes at least in the lighting and moisture conditions, in spite of the careful preplanning work. Some plant material of the wood anemone has been transferred to the Botanical Garden of the University of Oulu for micro-propagation.



ANEMONE NEMOROSA WOOD ANEMONE



OXALIS ACETOSELLA WOOD-SORREL



LILIUM MARTAGON MARTAGON LILY



MYOSOTIS SYLVATICA WOOD FORGET-ME-NOT

LIST OF SOURCES:

[WWW.SUUNNITTELUKESKUS.FI](http://WWW.SUUNNITTELUKESKUS.FI)

[WWW.OULU.OUKA.FI/TEKNINEN/TOPPILANSAARI](http://WWW.OULU.OUKA.FI/TEKNINEN/TOPPILANSAARI)





## THE FULFILLING OF THE OBJECTIVES OF THE TOPPILANSAARI PROJECT

Toppilansaari there are several ecological stormwater treatment methods in use. In street areas, the stormwater is led to green sections as well as to retention ponds for absorption. In the city-blocks the stormwater is partly led to green zones for local absorption, and partly led away to the Holstinsalmi strait and to wetlands.

The natural values of Toppilansaari are protected by surveying and bordering the areas to remain outside of the construction work. The natural areas are treated gently and existing nature values are preserved. Transfer of plants and the following of planning recommendations promote the preservation of local plant species.

Some plant material of the wood anemone has been transferred to the Botanical Garden of the University of Oulu for micropropagation. The plant is protected in the Oulu Province. There is very little experience of micropropagation this plant anywhere in the world, so the task has turned out to be very challenging.

The fulfilling of the objectives of the Toppilansaari project as well as the changes in the nature due to the new land use have been monitored since 2004. The functioning of the new management methods and structures will be surveyed in the follow-up work, so that in case of problems there will be time to implement necessary repair measures.



THE PLANTS EVACUATED FROM TOPPILANSAARI TO THE BOTANIC GARDENS OF THE UNIVERSITY OF OULU.



THE MICROPROPAGATION OF WOODS ANEMONE IN THE BOTANIC GARDENS OF THE UNIVERSITY OF OULU.



THE MONITORING OF ECOLOGICAL STORMWATER MANAGEMENT IN SPRING 2005.

