



Finland
Satamalahti Competition

DEARG1311



Hunters in the Snow by Pieter Brueghel 1565



Bassano del Grappa inhabited bridge



Inspiration for the frozen shoreline

Urban Sketches

Lessons learnt from sustainable communities- elements of traditional towns that work

What is a sustainable community? Simply, a sustainable community is one where people have been living happily for generations, and can continue to into the future. These are places that people enjoy, and which residents are proud to call home. They must give people access to the energy, water, and material goods to survive and thrive, without destroying the ability of future generations and surrounding ecosystems to progress.

Ironically, it is the traditional town or settlement developed before the rise of a more mobile population and advanced technologies that has been most successful in developing a truly sustainable template for a community. This is why people wish to live in traditional communities and why they still provide some of the best environments for living.

Traditional towns and villages inspire the layout of a sustainable satamalahti district , with its small, dense neighbourhood clusters separated by successful public spaces and connected with walking trails that celebrate the natural heritage of the area.

The success of Mikkeli, will depend on an understanding of the elements of traditional towns that benefit the community and of current development norms that dilute it and prevent it from growing and changing.

Our proposals for the new Satamalahti district are based on the following themes

The creation of a dense urban neighbourhood which is an international exemplar in sustainable practice. A **“living laboratory”** on the shore of the bay of Savilahti.

Reconnecting the city grid safely for all of the pedestrians.

Frozen shoreline-the creation of **“Trails”** around the lake side for the surrounding communities and beyond.

A world class Science Centre and Expo which is expressed as a **fragmented glass wave** on the skyline. A new horizontal visual marker for Mikkeli.

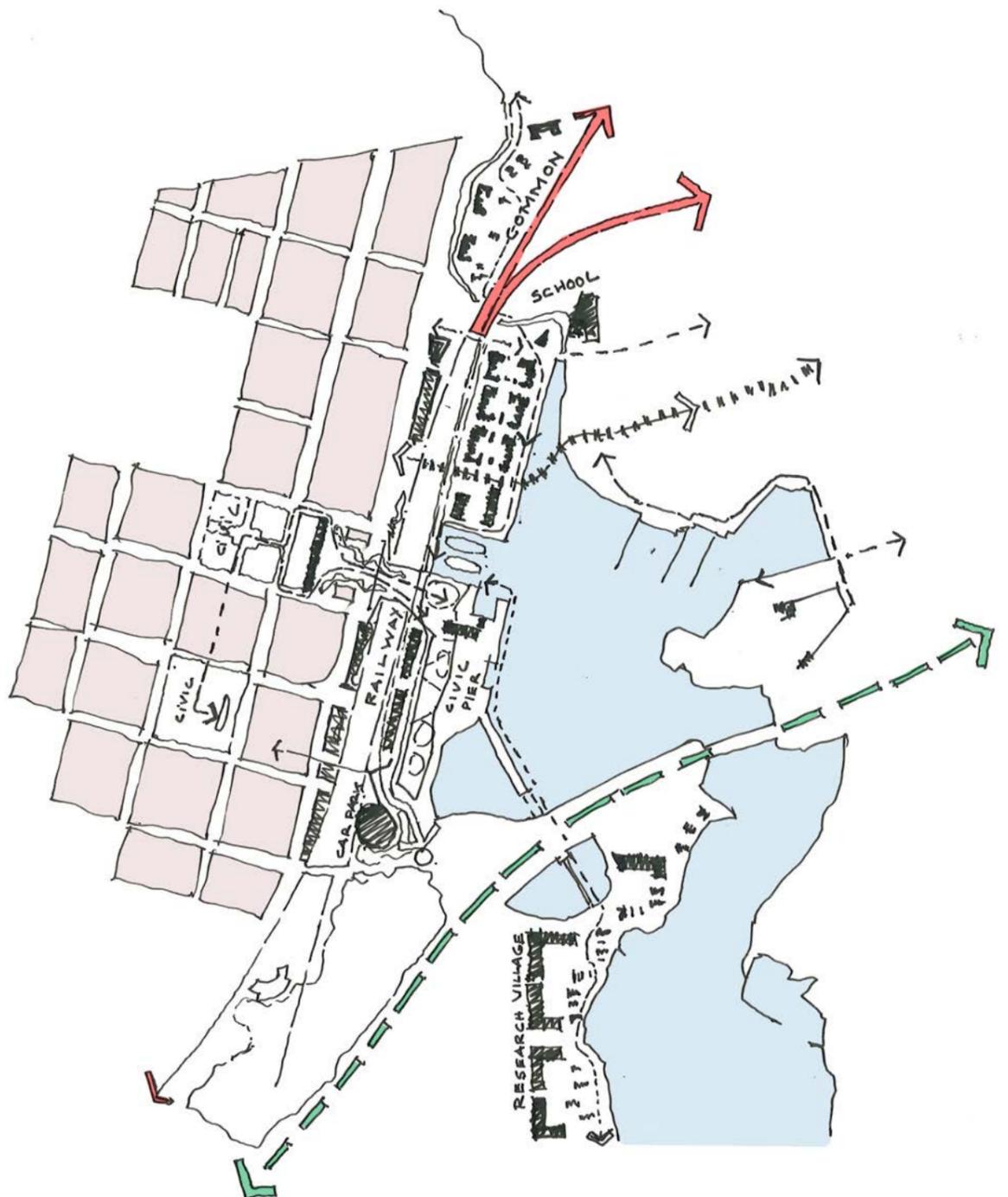
Bringing the lake waters closer to the city by the creation of a new formal dock for larger cruisers. *Perhaps becoming a skating arena for the winter months.*

An inhabited future **“Garden bridge”** which links across Mannerheimintie and pulls the **Satamalahti district** closer to the centre of the Engel’s Grid and the existing commercial of Mikkeli.

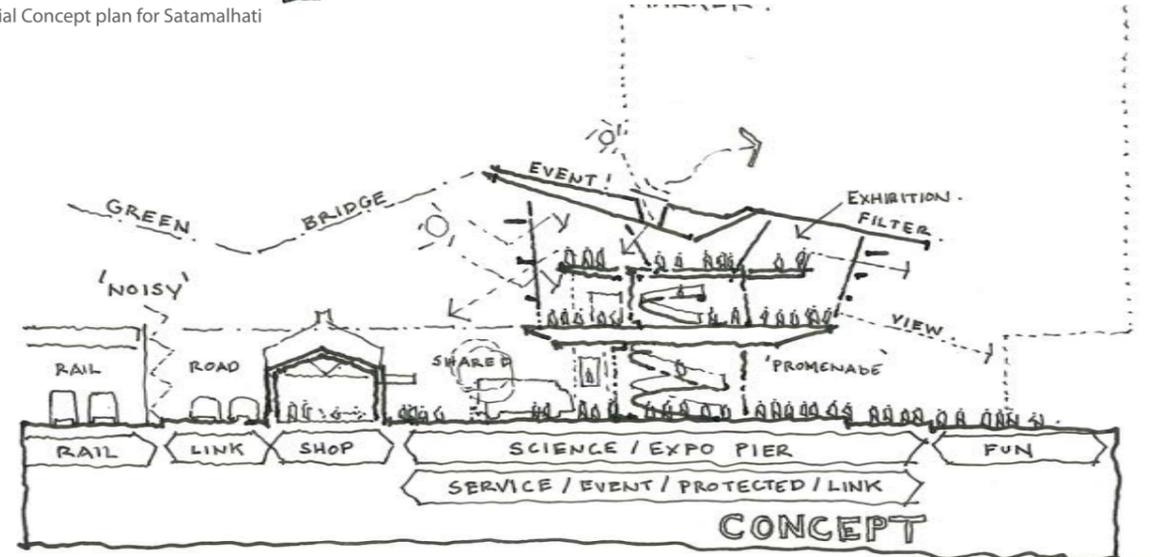
Employment hubs-the creation of new green technologies employment districts as part of the southern gateway to the new development. Transforming the existing waterworks to a world class research cluster;also creating a linear enterprise park along the southern lake side.

Continued retention of wetlands and reed beds to promote further ecological diversity, enabling nature and development to sit side by side in the future.

A proposed new integrated transportation hub for the region as part of a hybrid cluster that makes the **Satamalahti district** the new gateway for Mikkeli.



Initial Concept plan for Satamalahti



Initial Concept Section

Themes for the masterplan

- Engel's masterplan**

The masterplan proposal seeks to reconnect the city grid with the shoreline of satamalahti. The existing connections are by road, pedestrian bridge or alternatively by an undercroft road connection at the northern edge of the site. Whilst these connections work to a limited extent they do not provide the appropriate scale of urban connectivity which will act as a real and tangible catalyst for the area's growth going forward. The existing city features two fine urban squares both of differing uses. The busy southern market square is connected to the northern quieter tree lined square. The proximity of the two spaces to the proposed masterplan provides an opportunity to create a new city precinct which is intrinsically connected with the civility of Mikkeli. Satamalhati should not be seen as a place apart.

- Reconnecting the grid- Connecting the city**

Connecting the city is the primary challenge of the competition brief. The sequencing of these connections must also look beyond immediate restraints and be a strategic part of the infrastructural planning of the complete city. The creation of safe pedestrian connections across the railway line is paramount to the proposal. We have proposed an inhabited "garden bridge" which ultimately connects to the existing grid by utilising potential gaps within the existing grid structure. The central location of the link will maximise development on either side of the district creating incentives for private sector investment.

- Creation of a identity-reinforcement**

Identity in 21st century cities is an important element of city differentiation in the global market. Our proposals for a fragmented wave roof along the entire length of the southern quay side, creates an iconic visual reference for the city. The glazed strip will become an emblem for the cityscape for passing motorists for along the main road VT 5 and the Savilahti bridge. The roof form's fragmented shape will glow in the darker months of the year and will be highly visible to both sides of the city. It will be also be glimpsed from the existing city grid through the streets.

- Summer/Winter uses**

The Sata lake is a major leisure resource for the city. It also can be used throughout the year creating possibilities for many forms of water sports activities. The lake's summer uses for cruising and tourism has been exploited further by the creation of additional marinas. Importantly we also have proposed a new leisure dock which will bring the marina activities closer to Mannerheimintie, further integrating the Satamalahti Lake visually to the city. In the winter months the entire lake will be utilised and our proposed solution will encourage direct connections to the lake via areas that step down to water level.

- Orientation**

The masterplan is orientated approximately north south but follows the existing Engel's plan reconfiguration to maximise land efficiencies. The orientation that is adopted also is suitable for maximising solar gain to the existing buildings and utilising passive technologies and strategies. The spaces are also protected from the prevailing south westerly's through the massing and placement of the buildings.

- Gateway**

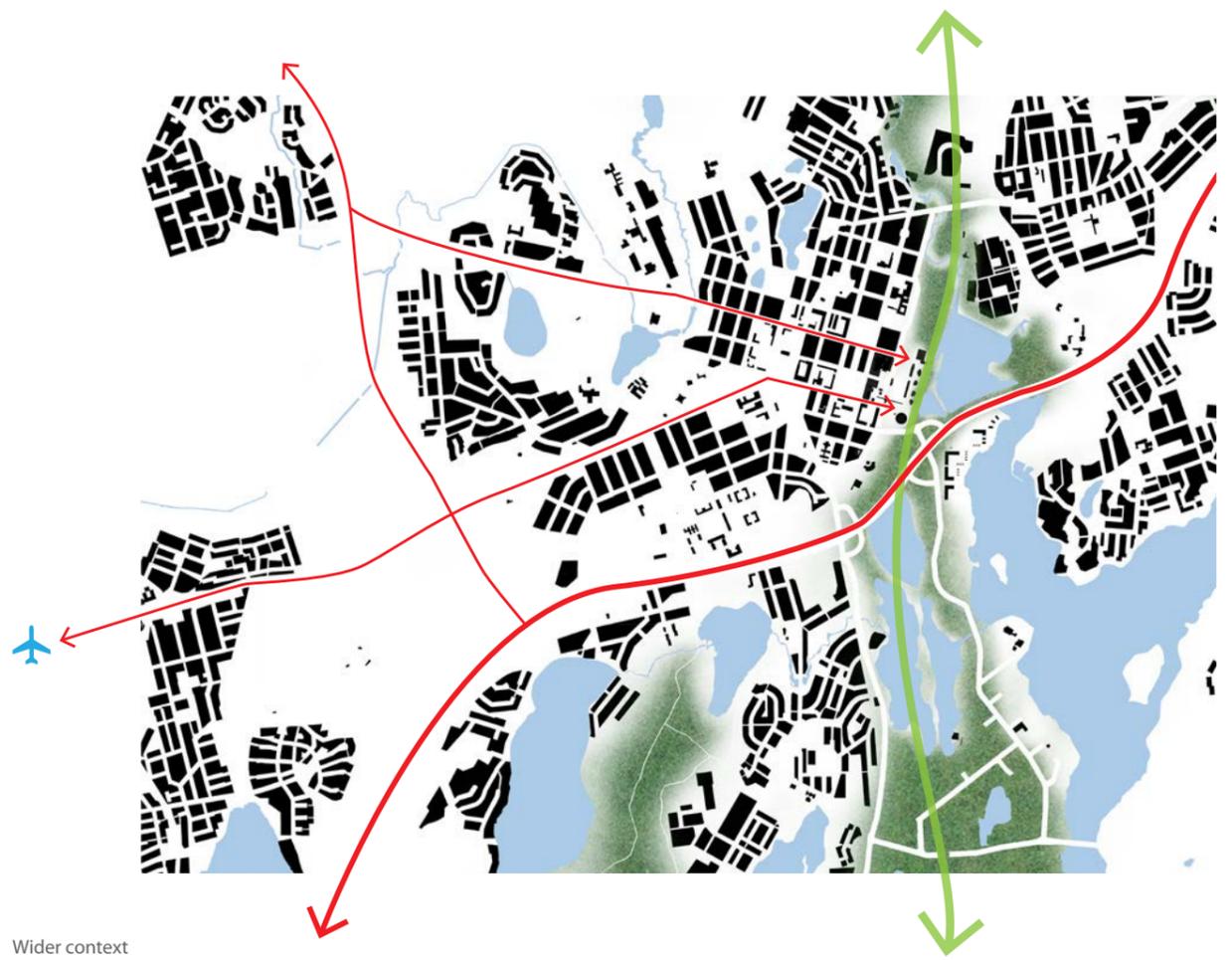
The Science building is a gateway building to the lake and the city. The building also has the opportunity to become more hybrid by becoming part of a grander plan to reorganise arrival to the city. The lower levels of the centre can be utilised to become a new transportation hub for Mikkeli ensuring that visitors arrive in the heart of the new development.

- Exemplar in sustainability**

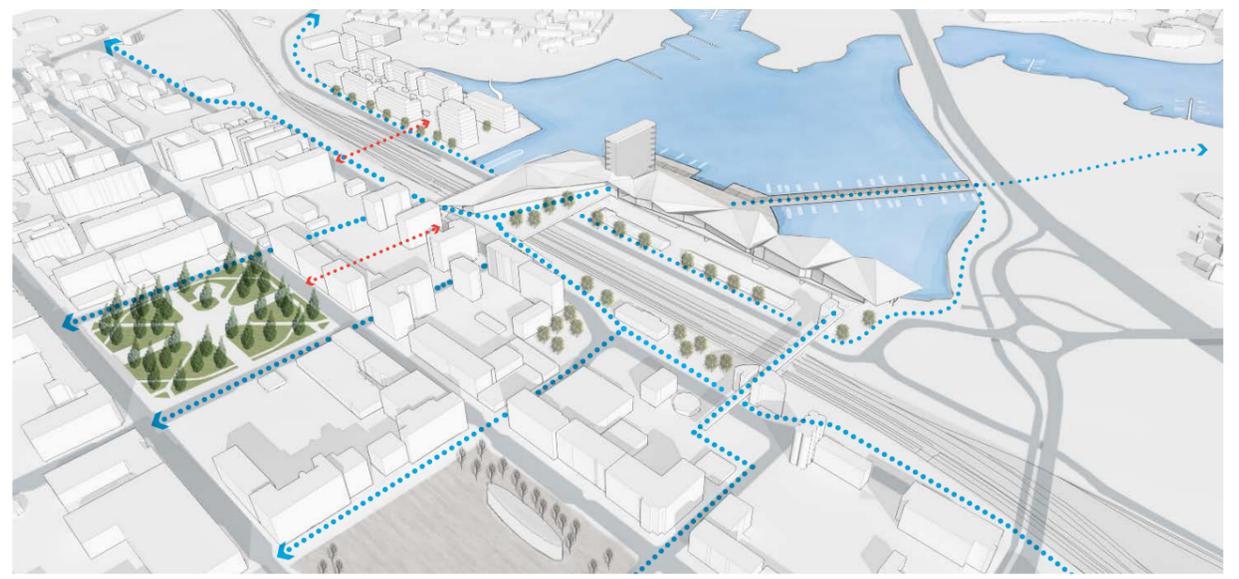
The proposed residential village is located to the northern edge of the site adjacent to the existing residential community of Sakasala. The proposed new village cluster for Mikkeli must act as an international exemplar in sustainable practice.

- Materials**

Utilisation of existing material sources from the local economy must be exploited to the full to ensure that the developments have a regional relevance and language which is unique to Finland. The adoption of innovative proven timber frame technologies for the residential quarters should also be considered a key priority.



Wider context



Connecting the Engels Grid

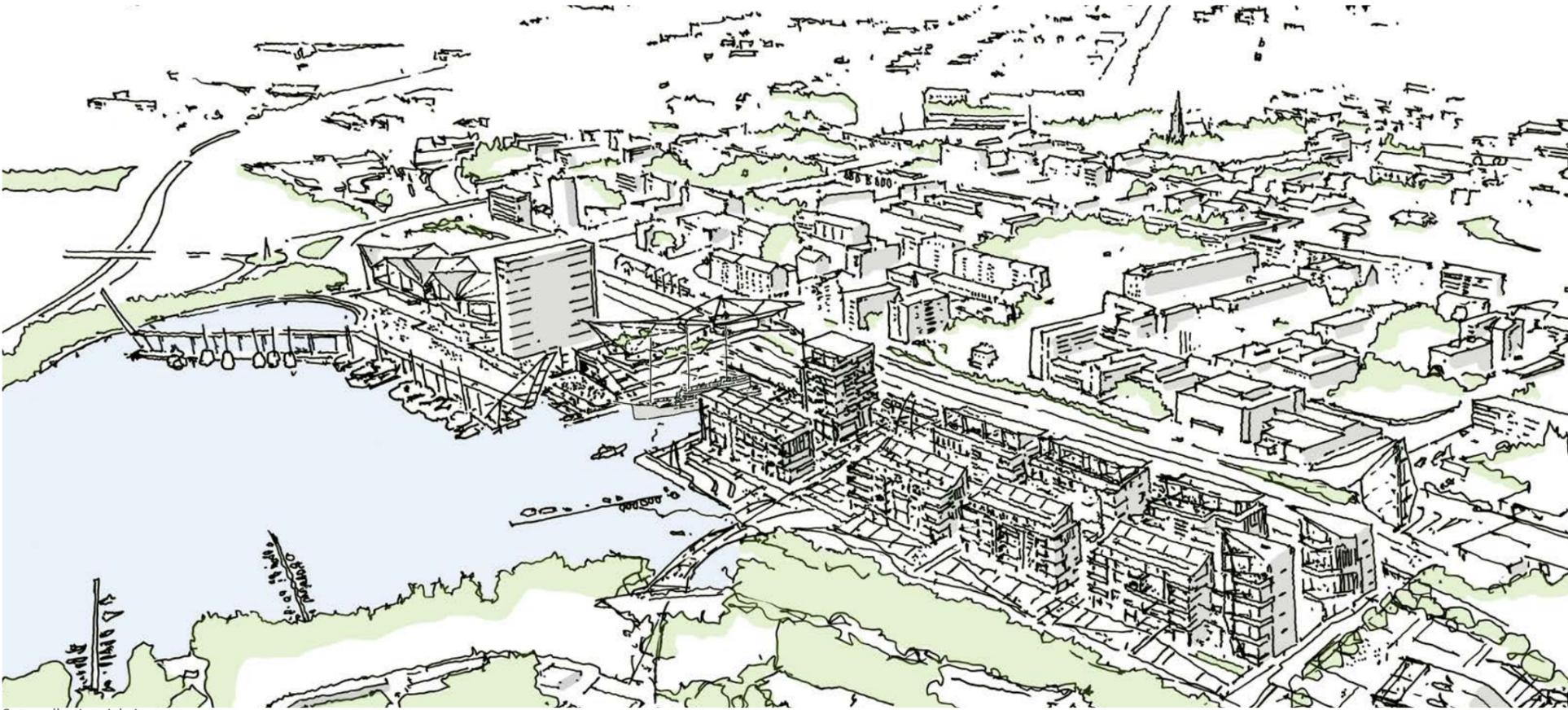


Use mix analysis

Sub - Areas

- Sub - area 1 150,000m² Residential, Business and Service
- Sub - area 2 35,000m² Business and Service
- Sub - area 3 75,000m² Residential, Business and Service
- Sub - area 4 2,000m² Ecology, Exhibition & Education Uses

* More intensive development uses of sub areas 1 & 3 planned as part of masterplan proposals.
 ** Sub -area 2 to be developed as a business and enterprise park for major employer in later stages
 *** Sub - area 4 to be protected and developed as Ecology edge.



Satamalahati aerial view

- **Scale, massing and tall buildings**

The scale of the masterplan relates to the broader context of the lake. The buildings respect the eight storeys datum throughout the city but the central landmark tower which relates to the broader scale of the region, and especially to the Savilahdenkatu.

- **Open Space strategy**

The existing civic spaces within the city are generous. The proportions of the city streets do not create a sense of enclosure as often the grid structure has been underdeveloped. We have proposed a denser shoreline solution to create more intimate activity spaces that are based on creating different types of gatherings of people.

- **Movement, car parking and connectivity**

The ease of movement of people throughout the masterplan is paramount. We have made major urban connections via the proposed bridge structures and we also have proposed reinforcement of the existing linkages wherever possible. Connectivity along the shoreline is also important and we believe that a future major pedestrian connection beneath the AT 5 should be considered to ensure that the carriageway does not further segregate the city from the wider amenity of Kenkaveronniemi. This also will help release development on the existing waterworks site which is isolated from the existing city centread only accessed across the busy motorway.

The delivery of a strategy to achieve high levels of public transit use and high levels of walking and cycling are fundamental elements to the delivery of a sustainable Mikkeli.



Freidberg- Centralised Residential Parking Structure- With Future Development Potential

Car parking is proposed as an undercroft solution for the residential village. We have also suggested that given its excellent proximity to transportation that **car pooling and alternative mobility strategies' may be considered.** Existing empty plots throughout the city and a wider city mobility strategy should be considered as part of the parking philosophy to promote tourism and journeys through the Mikkeli to the

Science centre and other attractions. When tourists visit the new Satamalahati district they should experience the whole of the city. Parking on the site should be closely controlled to give a wider holistic approach to green travel. Given the immediate location adjacent to bus and rail routes there is an opportunity to promote a sustainable mobility strategy for the precinct.

A proposed city car parking rotunda is located at the northern edge of the site on the edge lands between the major roads. The car park is seen as a piece of urban sculpture which acts as a marker for arrivals into the city and as an orientation device.

- Numerous other measures designed to support sustainable transportation practices within Mikkeli should be adopted, including: limiting destination car parking, providing well connected pedestrian routes, providing modern and safe cyclist facilities, restricting car access to some key community facilities.

- **Early Arrival of Community Facilities**

In order that Mikkeli can be created as a community from the outset community facilities should be provided such that they are in place when the first residents arrive; community facilities should be provided ahead of the population. New developments are generally characterised by the arrival of homes followed, over time, by the arrival of community facilities leading to the development of an agglomeration of homes rather than the creation of a community. This is particularly important with regard to schools but is also applicable to other facilities such as libraries, sports facilities and public parks. We have proposed a **vertical school** at the northern edge between existing and new communities.

- **Implementation**

There are a number of key design approaches which should be applied to Mikkeli :

- Develop an appropriate new architectural brand to complement the image and appeal of the Satamalahati district .
- Encourage future innovation through design competitions.
- Design buildings to ensure sustainable energy consumption.
- Incorporate an appropriate pedestrian friendly streetscape
- Increase dwelling densities to improve neighbourhood connectivity.
- Incorporate variety and flexibility in building typologies.
- Measure the sustainability performance. (SIP)

- **Develop Integrated Design Standards**

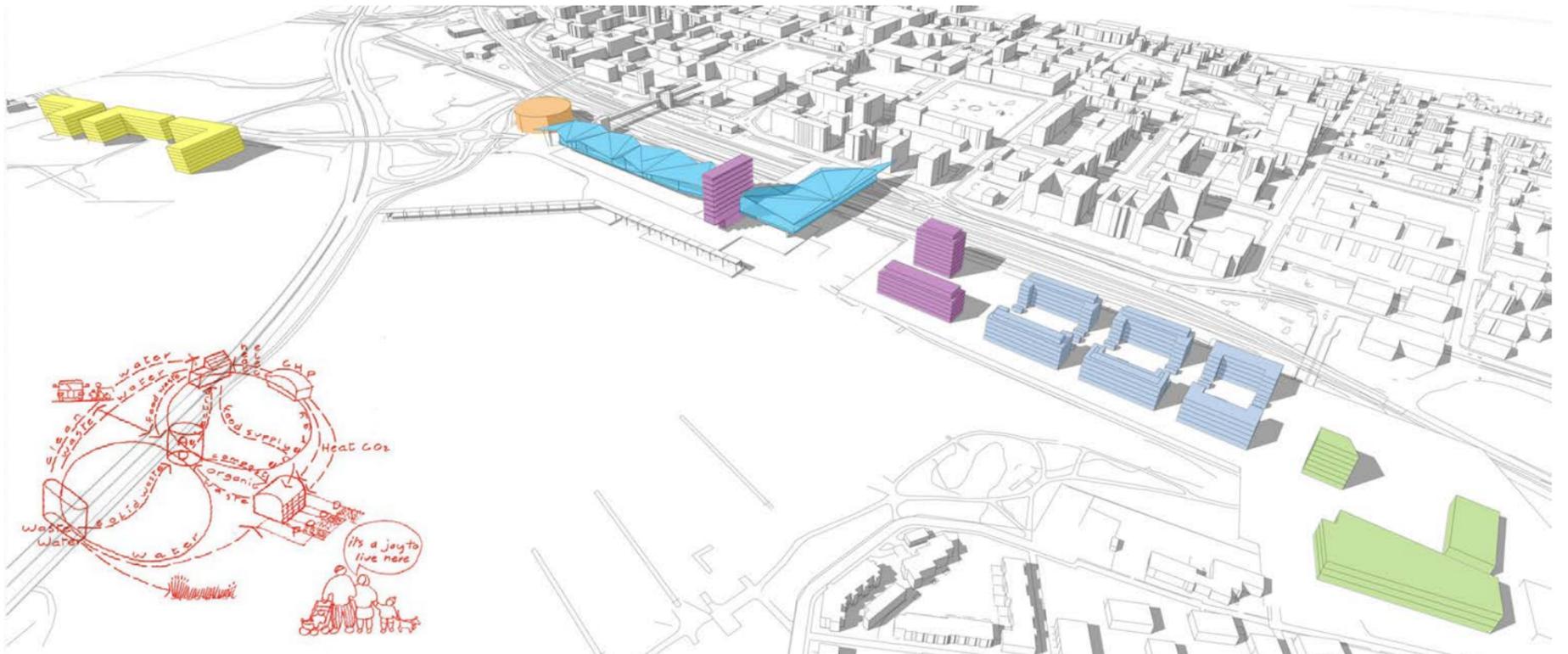
As part of the process of delivering sustainable neighbourhoods, a set of design standards should be adopted for future employment and residential areas. The design standards should create a holistic vision for the settlement – vital to encourage participation by the whole community in the goals of the new community. This vision should have specific emphasis on sustainable lifestyles.



Copenhagen, street life



The Armada Housing Den Bosch Housing, Holland



Housing and Microclimate Diagram

■ Research + Enterprise

■ Parking

■ Science Centre / Expo

■ Mixed use

■ Residential

■ Education & Community

Urban design uses mix



Winterswijk Community Facilities adjacent to Balancing Ponds



Active Use of Storwater Ponds throughout



Public Space - La Vache Noir

Use Mixes

• Northern Sata Residential Housing

We have proposed a residential village called Sata at the northern edge of the site. The proposed village will become a living laboratory which will adapt a holistic sustainable approach to all levels of its design.

• Vertical school

Part of the requirements for any successful design is the provision of local services. Our vertical school proposal places a new school between the existing community of Saksala and the proposed new community of Satamalahti. It is important that the public facilities are in place to attract the residential development and to promote the masterplan as an easy place to live for new families.

• Science and Expo Building

The provision of a science building for the region must work at a number of levels. The creation of a successful Science Centre must integrate closely with its wider role in the local economy in promoting research and incubation activities. The building will also act as an exhibition space and also as a form of Expo for new innovation. Flexibility of use and adaptability are also key considerations. Our approach is to create a flexible double story raised volume which has complete servicing flexibility. We believe from our experience that the science centre should relate fully to its surroundings and become part of daily life. It is not a closed black box and must be relevant and always on display.

• Research and employment opportunities

We have created research and incubation villages on the southern edge of the site. The remediation of the site must have a function which also acts as a new gateway to the city. High value research activities which can link to existing university and schools should be invested to create a cluster adjacent to the lake. Creating direct connectivity to this location is important also to promote lake side walks and to integrate the buildings into the daily life of Mikkeli rather than being seen as another business park accessed solely by cars. The early development of employment opportunities within the masterplan will also assist in retaining qualified individuals in the region.

• Digital social media tower

The central tower in the scheme is named digital tower. The proposed building will have magnificent views to the surrounding landscape should be clad in a sophisticated environmental skin.

• Transportation Hub

There is an opportunity for the new proposal to *think outside the box*. The proposed location has the opportunity to follow other cities and create an integrated transportation hub for the city and region. The possibility exists to create a new railway and bus station which is combined with the initial phasing of the masterplan releasing lands for future development along Mannerheimintie, reinforcing it further as a new major city artery. The relocation of the transportation hub would make the new masterplan central to arrival to the city.

• Retail and attractions-promenade

The new pier side walkways and public spaces are planned to promote a diverse range of uses; from smaller coffee shops and restaurants to spaces for city festivals and markets. The juxtaposition of marine activities and tourism opportunities along the formal edges of the masterplan are central to our plan. Mixing uses vertically and horizontally: promoting busy edges to the shoreline are paramount. Opportunities to reach the level of the water are also manipulated through steps and level changes throughout the scheme. A new marina is proposed at the eastern edge bringing some of the lakeside activities closer to the Paukkulan Nuorisio-Opisto Youth College and promoting better connectivity to the lake side. Development in this area should be focused on intensifying clusters around the existing college footprint.

• Ecology imperative

The eastern edge of the lake provides an area with potential rich wildlife diversity. We have proposed that this could be retained and protected with discreet buildings placed as viewing and exhibition points in the reed beds. The retention of this natural habitat reserve as an educational resource immediately adjacent to the neighbourhoods could also be used to promote the proposed Science Centre and as a potential extension of the

visitor attractions for the entire lake.

• Stormwater Management

The drainage and water management system should be designed to make best use of the natural topography and features of Mikkeli, where possible protecting existing flow paths. Through the introduction of elements such as bio-swales and open flow (naturalised) conveyance channels the natural environment can be incorporated throughout the neighbourhoods in Mikkeli; neighbourhoods should not be islands of development but should be integral to their surrounding systems.

The volume of water treated should be reduced through the introduction of soakaway pits, infiltration trenches, and pervious paving solutions, particularly in large areas of hard standing such as parking lots. Efforts to better integrate stormwater ponds within the community should be undertaken. Locating stormwater ponds with common areas, such as parks and using them as a recreational resource should be incorporated.

• Sport, play and the extension of the trails system

The early provision of adjacent sports and play facilities should be integrated with the trails around Lake Satamalahti. We have proposed that sports pitches and play areas are developed throughout the plan. The provision of safe playgrounds within the residential area are vital in the creation of new networks at a micro level for the urban design. Recent docklands developments such as Dublin Docklands have created dedicated play areas to increase and stimulate community participation as the plan evolves. The connectivity of the trails systems to surrounding communities will also help the Satamalahti District to integrate as part of the organic growth of Mikkeli. The involvement of local established communities will be an important social factor in creating an urban design solution which involves all of the cities stakeholders.

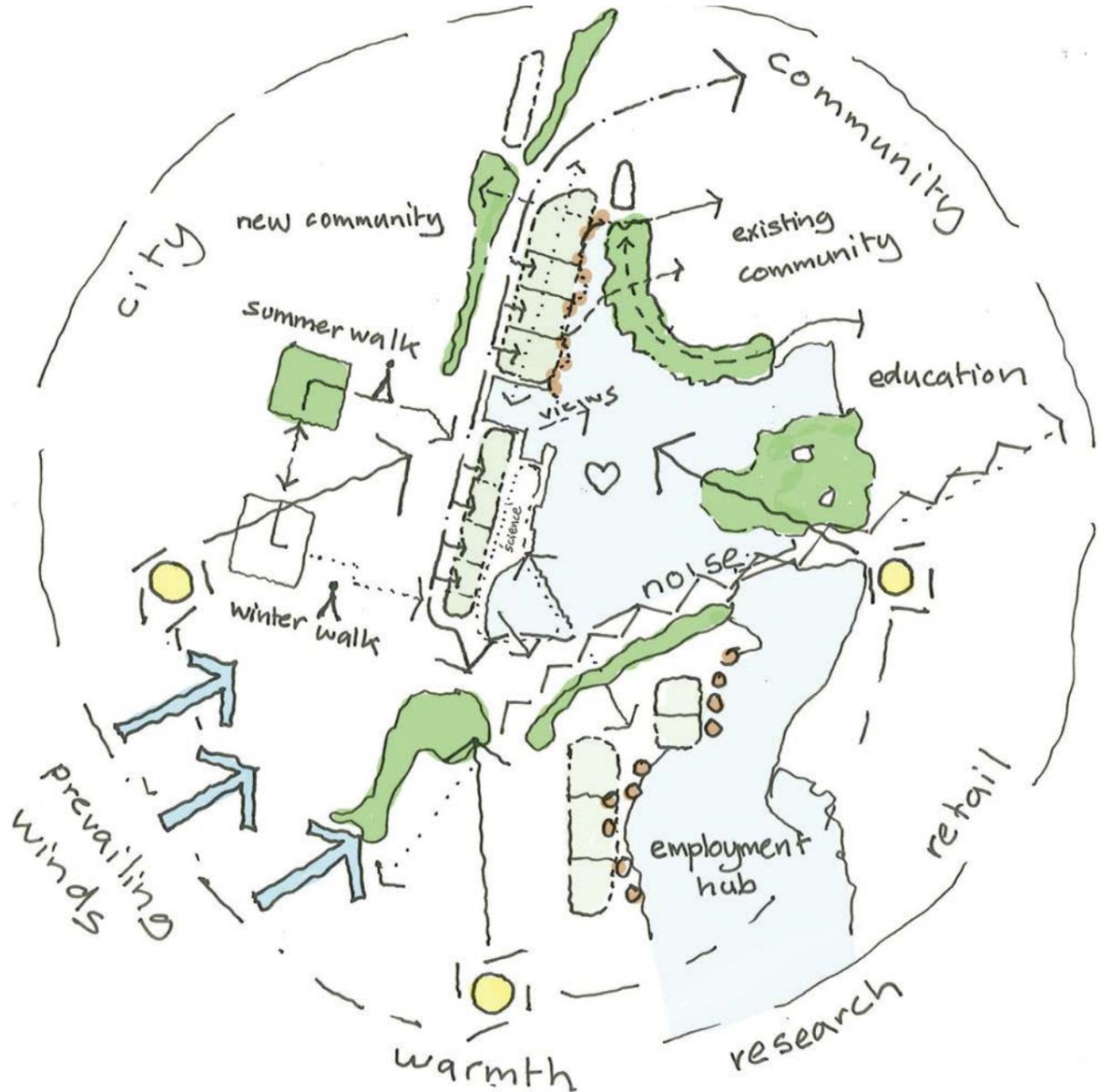
Satamalahti must not be seen as a place apart from the existing city.



Delivery of 5-8 Storey Timber Frame Development



London, Higher Density Developments, Murray Grove nine storey timber frame



Sustainable Satamalhati concept diagram

Sustainable Themes

The following base principles apply to the whole of Mikkeli and its neighbourhoods but are best demonstrated at this stage in the development of the masterplan on the northern neighbourhood:

- Intense development of site
- Addresses and integrates the Natural Heritage System
- Exploiting the existing Ecological Topography
- Orientates the grid towards the sun
- Utilises north-south active streets
- Microclimatic design to reduce carbon footprint of building
- Emphasis on streets becoming public spaces to encourage use of walkable neighbourhoods
- Creating variety of spaces and urban experience
- Encouraging urban agriculture
- Aiming to calm automobile traffic as much as possible
- Variety of building typologies, densities and heights
- Location of facilities to encourage pedestrian access and cycle use-the creation of a trails system to surrounding areas.
- Co-location of facilities to intensify development and encourage walkability
- Optimising stormwater management ponds with new solutions for distribution and more attractive layouts
- Optimising district heating thresholds in conjunction with higher densities
- Utilising and integrating renewable energy technology
- Integrating significant employment opportunities within the community, facilitating walk/ cycle to work potential and supportive of transit
- The efficient use of land, in particular to deliver connected and walkable neighbourhoods, is of key importance and a number of approaches have been employed to use land more efficiently.

Engage in Discussions with District Energy Providers

District energy offers a number of opportunities to increase the overall sustainability of Mikkeli. A district energy system can provide electricity and heat across the network if a Combined Heat and Power (CHP) unit is used.

- To be effective and economically viable, medium/high level of density and mixed uses are required and infrastructure should be developed prior to the arrival of buildings.

Public facilities such as schools should be built with smaller footprints (possibly as 'vertical schools') and co-located with other community facilities such as libraries, play fields and sports facilities. In addition, these facilities should be provided early in the development so as to provide these facilities to the first residents.



Pleasant Waterside Microclimate, Ekerö

Residential density should be increased to place larger numbers of the population close to facilities and public transit nodes. This higher density increases the application and viability of district energy solutions. Variety in housing typology should be used to attract a demographically diverse population.

The effective use of land, in particular in relation to the local environmental context is also of key importance. The use of the existing topography and hydrology should be employed to drive reductions in storm water management facilities, increase sustainable urban drainage solutions and the retention of ecology. Additional links with the natural heritage system should be built through trail systems and walking routes

Neighbourhood layouts should be responsive to the local microclimate with streets taking advantage of the warming of the sun and protection from the wind and will incorporate comprehensive walking and cycling infrastructure giving appropriate consideration to these travel mode choices.

In order to move to this delivery approach there are a number of key actions which should be undertaken in order to deliver a sustainable Mikkeli.

Delivery of 5-8 storey Timber framed buildings

Currently 5-8 storey residential buildings are achieved utilising steel and concrete technologies which have accost premium. Timber framed construction is significantly less expensive and considering the local supply chains and expertise the potential for constructing taller residential structures should be explored. Nine storey timber framed structure have been now been developed in the UK and with potential change in local legislation opportunities for medium rise residential buildings to be developed either totally or partially utilising timber technologies and local skill bases.

Introduce a Sustainability Measurement and Monitoring Process

Recognisable sustainability targets and design guidelines (a SIP-Sustainable Implementation Plan) should be set to deliver sustainable outcomes in the initial stages of the project.

Growth centre for cutting edge Green Employment

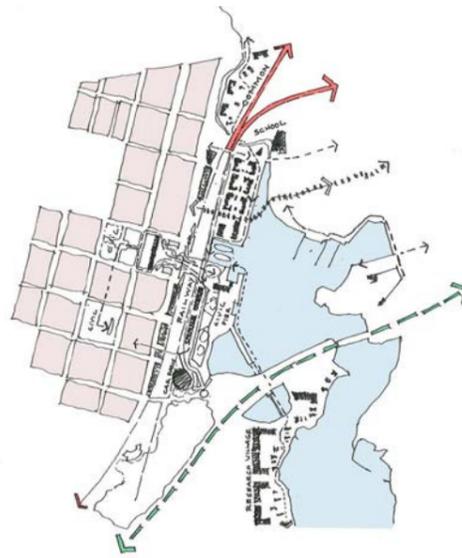
The young and single may also be attracted to Mikkeli. The co-location of employment opportunities, and potentially cutting edge 'green' employment should attract young professionals in the early stages of their careers. The link between the employment areas, the underlying sustainability credentials of Mikkeli and the access to green spaces and nature provide an excellent 'sell' to this group. Financial Incentives to promote new e businesses should also be encouraged through small scale business incubator units throughout.



View 'A' along Harbour



Mikkeli - City Context

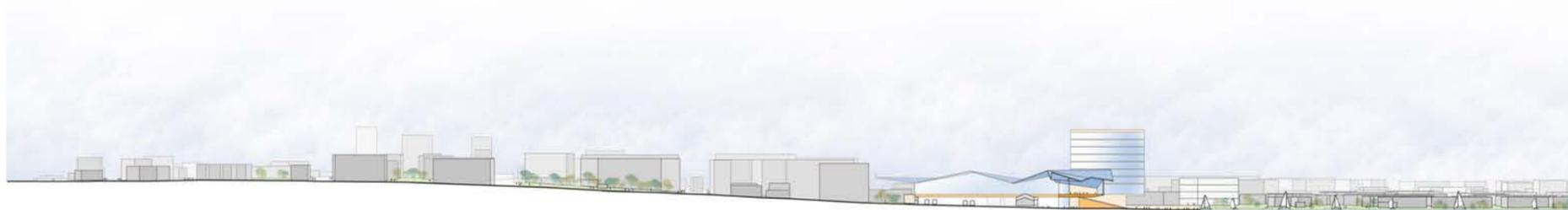


Initial Concept Plan for Satamalahti



Infrastructure

- New Infill Blocks
- On Street Parking



Area Cross Section
1:2000

Satamalahti Competition

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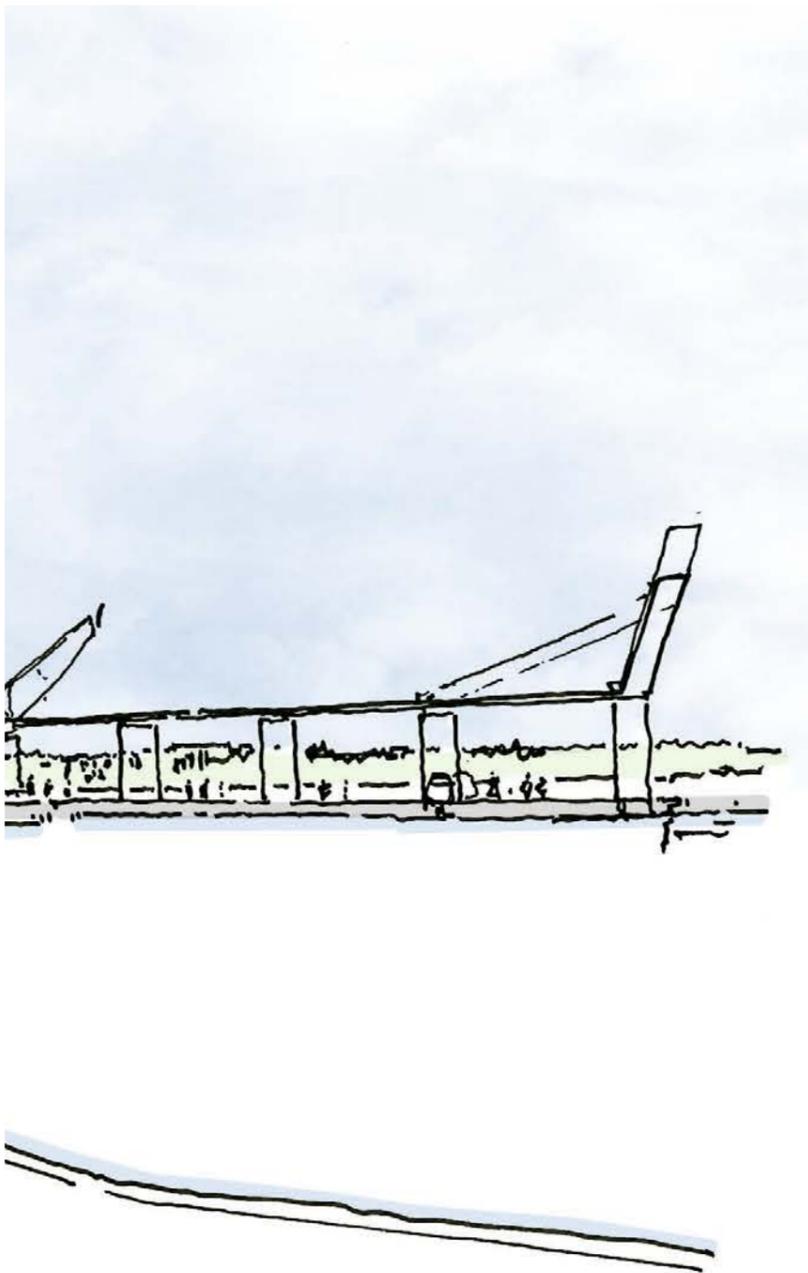
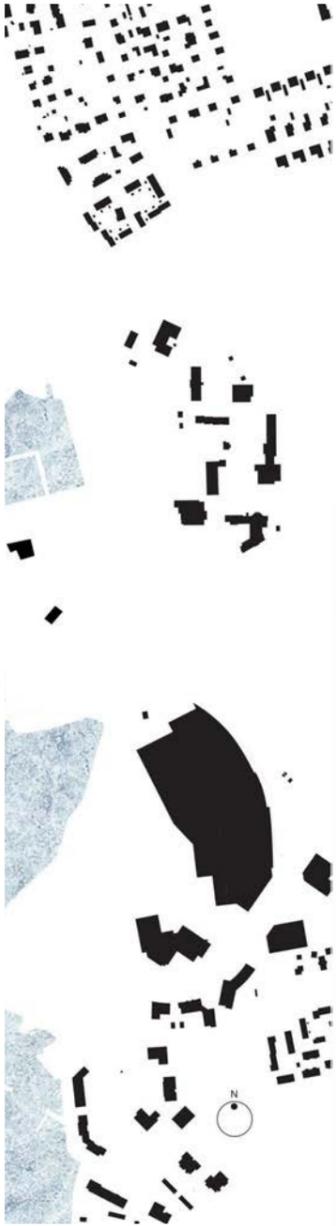


Figure & Ground
1:4000



Oblique Aerial View



View 'B' - Winter activities on frozen Lake Saimaa



View 'B' - Summer activities on Lake Saimaa

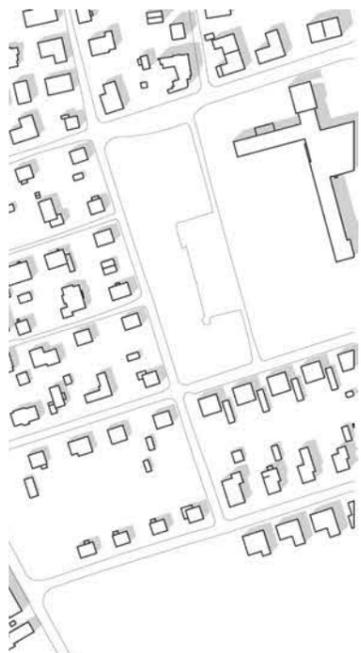


General Layout Plan
1:2000

Legend

- 1 Science Centre + Expo
- 2 Digital Tower
- 3 Transportation Hub
- 4 Harbour
- 5 Garden Bridge
- 6 Events Quay
- 7 Boardwalk
- 8 Potential Future Link
- 9 Parking Rotunda
- 10 Research + Incubation Village
- 11 Sata Square
- 12 Mixed Use
- 13 Sata Residential Housing
- 14 Community Building
- 15 Vertical School
- 16 Ecological Research Facility
- 17 Business & Services Spine





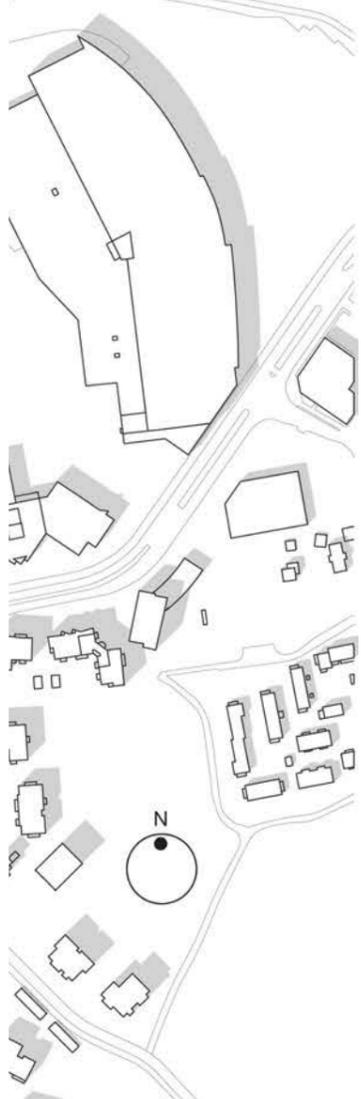
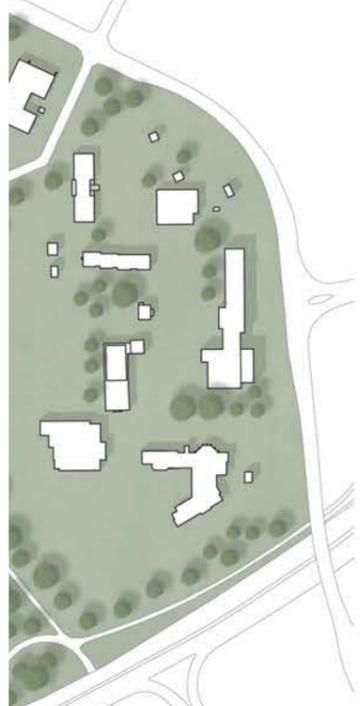
View 'C' - New Civic Square



Satamalahti Aerial View



View 'D' along rejuvenated Quayside



Design Approach

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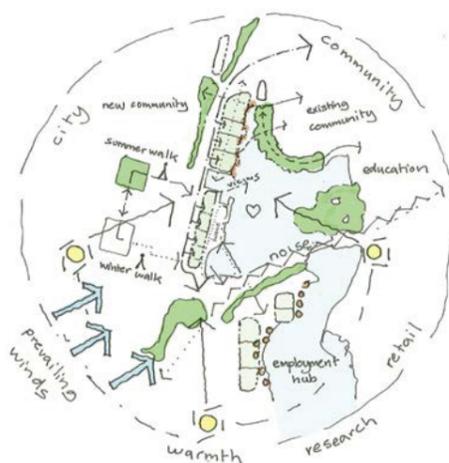
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Retention of wetlands and reed beds to promote ecological diversity.

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Satamalahti Micro-climate Concept Diagram



Copenhagen Street Life



Hunters in the Snow - Peter Brueghel, 1565



Winterswijk



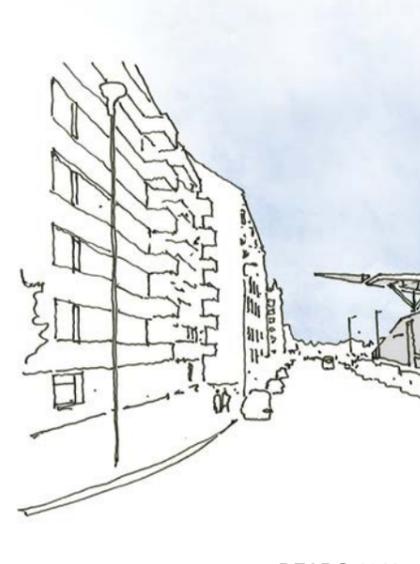
Armada Housing, Den Bosch, Holland



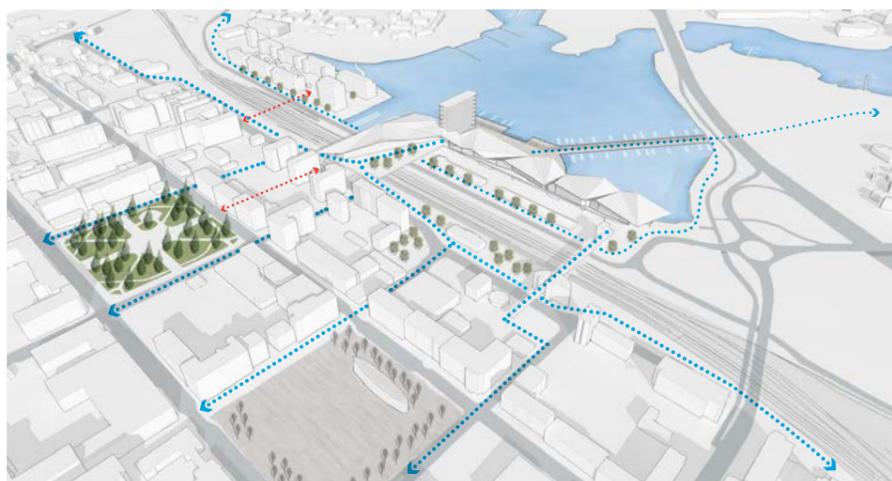
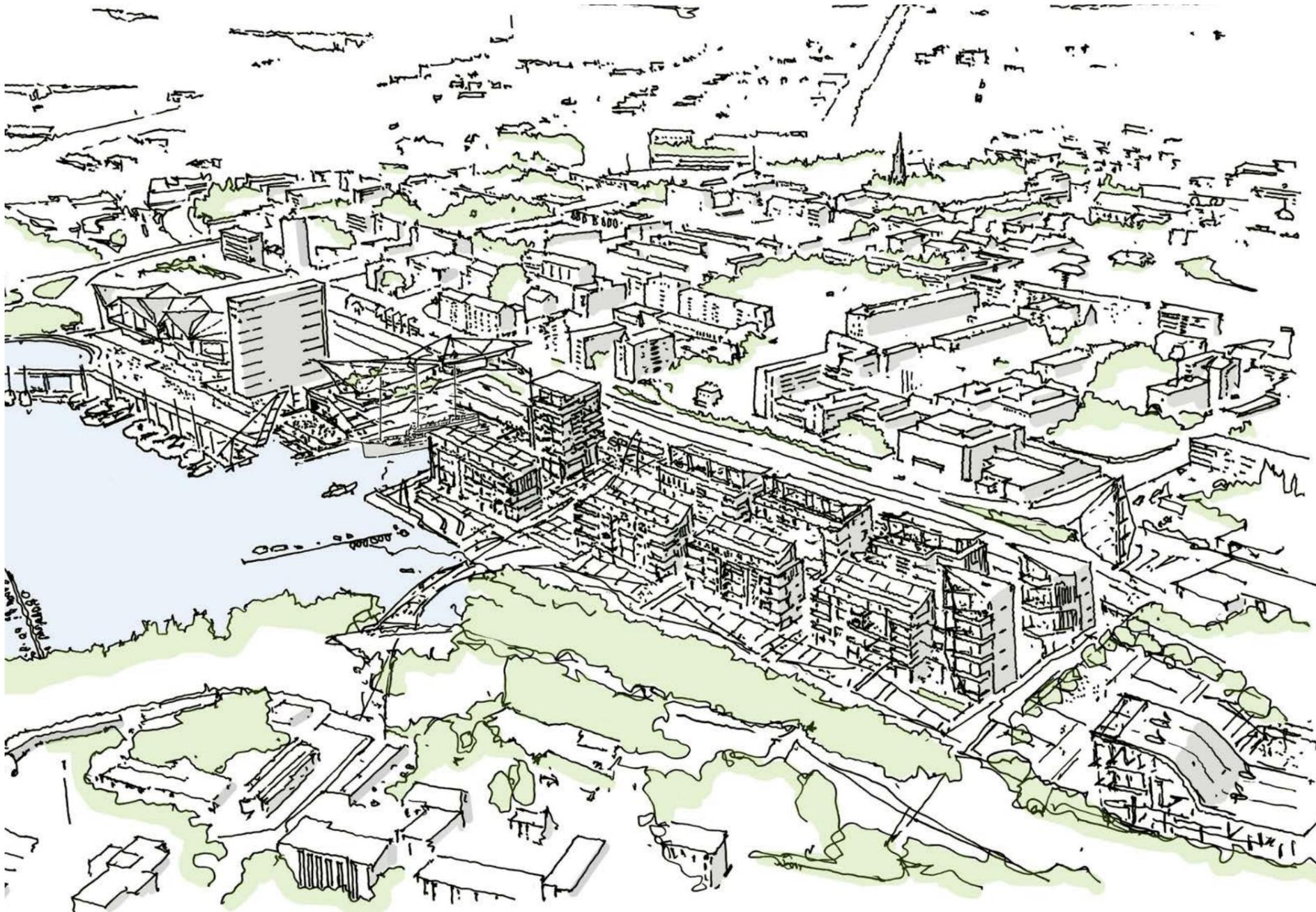
Green Connectors - La Vache Noir, Paris



View 'E' from Sata Square

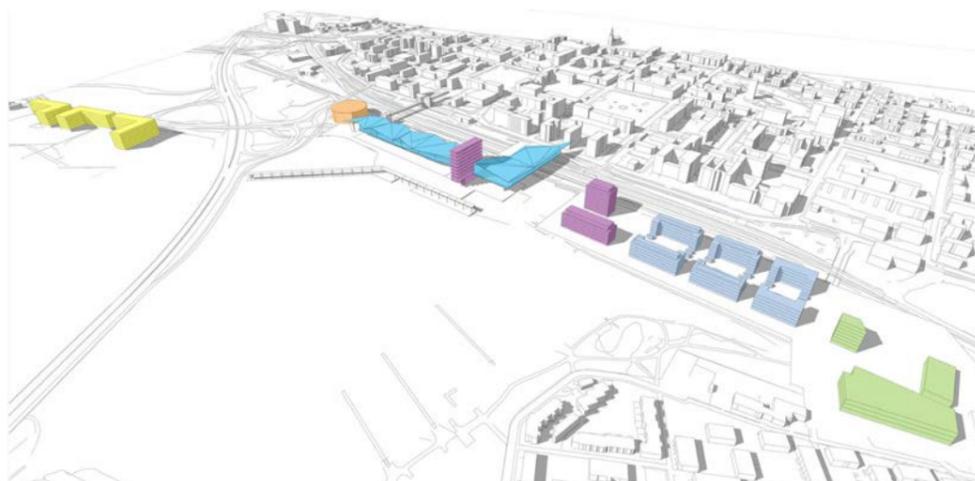


View 'F' of Garden Bridge

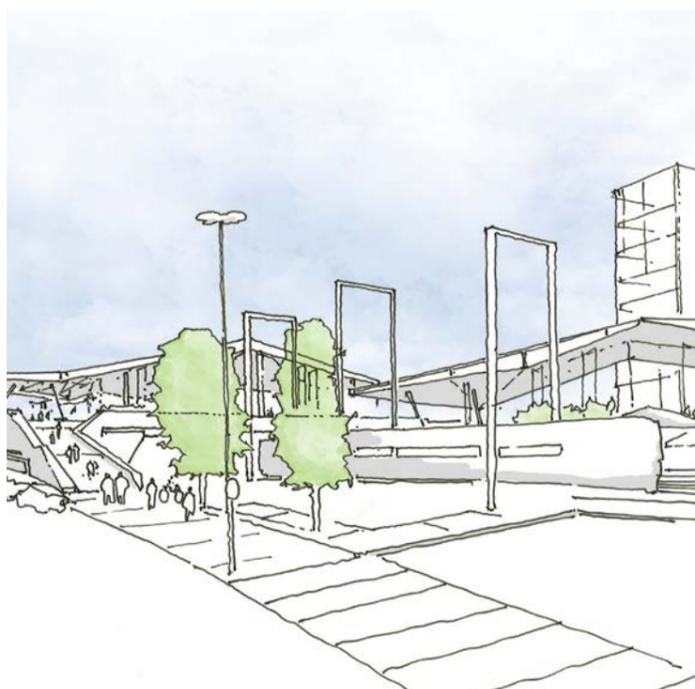


Connecting the Engels Grid

- Pedestrian / Cycle Links
- Potential Future Links



- Research + Enterprise
- Parking
- Science Centre / Expo
- Mixed use
- Residential
- Community



View 'G' from Boardwalk towards Science Centre