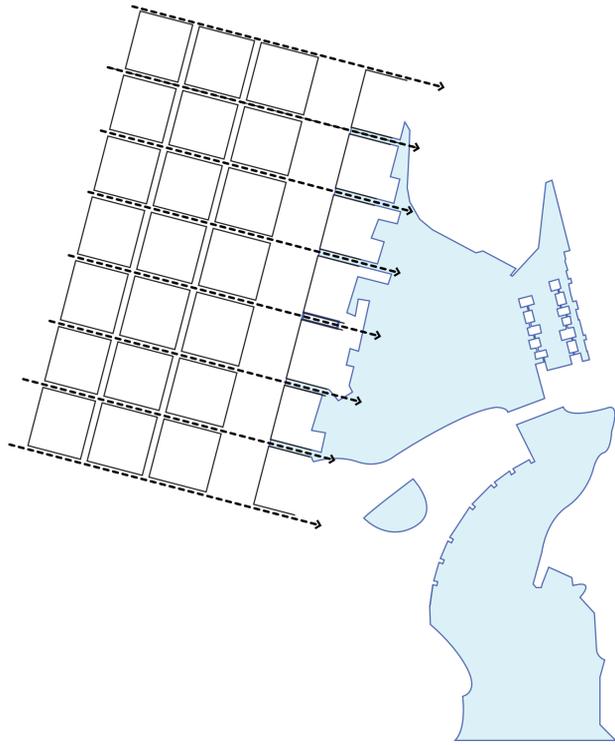
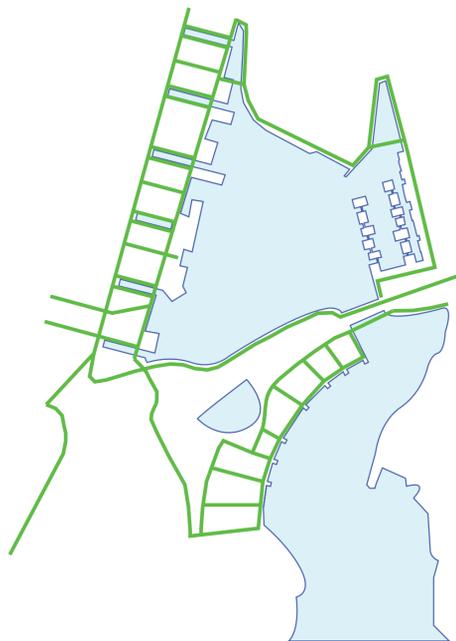


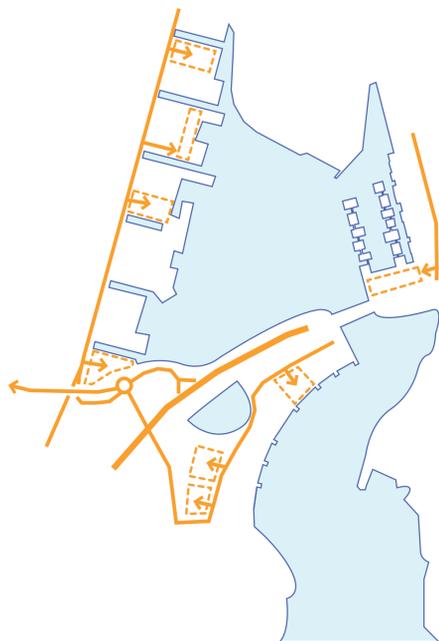
# WATERSPAN



BLOCK ADOPTION



PEDESTRIAN & BICYCLE INFRASTRUCTURE



PARKING & MOTORIZED INFRASTRUCTURE

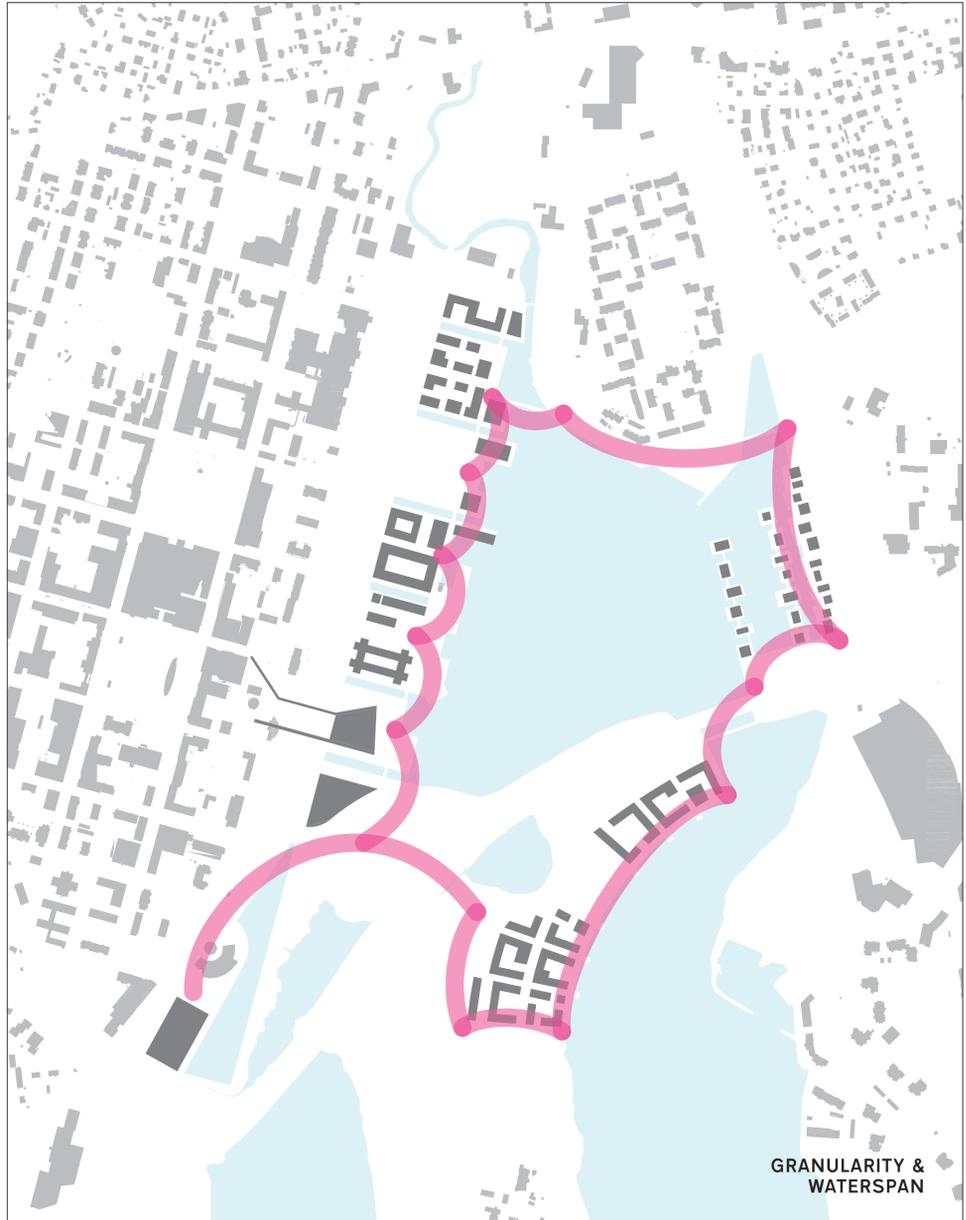
## MIKKELI WATERSPAN / A Symbol of New Connections

Waterspan proposes a range of quality and affordable habitations, innovative commercial and industrial opportunities, architectural typologies, and urban textures around the Satama waterfront and associated areas. These respond to the emerging need for more quality housing, and Mikkeli's intention to adapt and expand the current city centre. Creating access to water and generating a long term diversity are the driving forces behind WATERSPAN.

These are linked together by the project's signature feature, and a welcome icon in Mikkeli's national and international branding: timber-based architecturally-unique 'spans', flowing and arching bridges, linking together the current centre of Mikkeli, with each of the new members of the Mikkeli urban family.

Waterspan becomes a story of connections - old with the new, land with water, the city centre to richness, old and new, of the Satamalahti area, Satama to the whole Saimaa region - and Mikkeli to its own future potential.

Waterspan Gateway's main function is to practically and symbolically link existing Mikkeli's centre with the emerging centre within the whole Waterspan Development and in particular the Waterspan Wharf.



GRANULARITY & WATERSPAN

## WATERSPAN CULTURE BASE / The Connection Network of Satama Waterfront

Waterspan has as its character the connection of the parts of the new waterfront development, and radiating out from the Waterspan Gateway, are the individual timber span bridges, that create a unique transport environment for cyclists and pedestrians. The Radius provides access across all the settlements of the Waterspan Development within 15 minutes, creating a whole alternative transport concept for the entire area.

## WATERSPAN HOMESTYLES / Diverse Settlements, Typologies and Textures

Waterspan has multiple stories to tell. It offers many diverse development concepts - present as individual, coherent settlements - in many of which housing is central.

## WATERSPAN LIFESTYLES / Higher Quality of Life & Reduced Impact

Waterspan is both urban hardware and software: it proposes a format for modern sustainable living in which the quality of life offering, which is conventionally seen as luxurious and antagonistic to sustainability, is itself the essential sustainability offering. Simplicity and intelligent use of resources, with some spatial and technical innovation will achieve this.

But this will happen with the support of actual hardware and software: the smart city of today ensures all citizens have compatible smartphones (and supplies one if they don't), and excellent software and data to match. Waterspan comes ready with the Mikkeli Mate, sustainable lifestyle tool (see Sustainability Board).

## WATERSPAN PRINCIPLES / Guiding Insights for a 21st-century Mikkeli Waterfront

Waterspan is designed around, in addition to the above concept bundles, clear principles that guide the outcomes.

**Ecological** - (See Sustainability Board) The ecological concept is two-fold: focus on quality of life, and focus on net-positive, regenerative resources effects, not just unsustainable 'green' or 'climate-friendly' intervention.

**Wood** - Mikkeli and Satama has historically enjoyed the forestry industry. And the region is still a wood-producing area. It's time to take this heritage and resource base, and drive it into the heart of the new development, both in structure and texture.

**Planning** - Mikkeli has a proud planning tradition, and Waterspan respects and enhances this. A logical layout of streets and sensitive arrangement of program: Waterspan grows on a solid base, rather than reinventing the wheel.

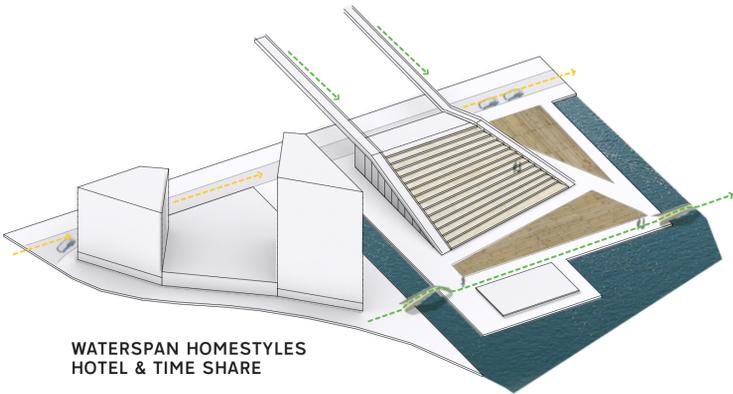
**Tourism** - Mikkeli, with the new Mikkeli hotel and time-share, and the whole Waterspan waterfront and network, has a whole set of new options for tourism. How to make tourists feel like Mikkeli is a home-from-home, and residents feel that tourists are part of the game, not taking over, is the opportunity of Waterspan.

**Education** - Mikkeli is on an education mid-point in Southern Finland, with its own educational establishments, and those in Kuopio to the North, Lahti to the West, and Helsinki to the South - plus all international options, creating massive opportunities to become an educational centre that supports with research and feeds with staff the industry cluster - consumer and business computation, technology services, eco-tech and more - that it wants to attract.

# WATERSPAN

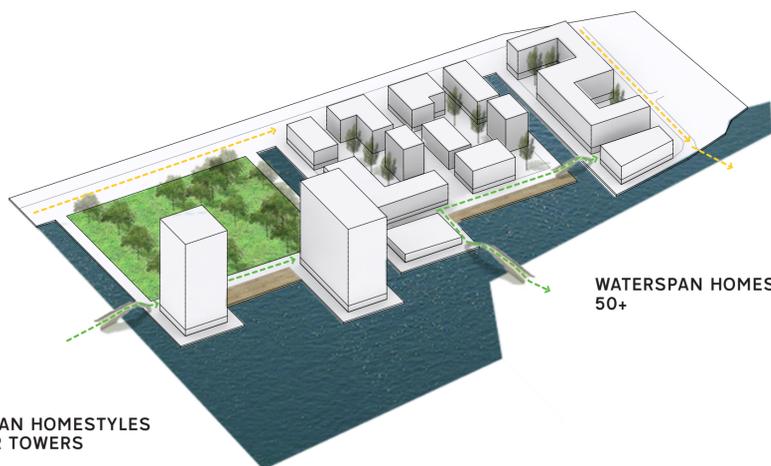


**WATERSPAN GATEWAY / A Bridge Between Old & New**  
 Waterspan begins at the Gateway - a world-unique wood structure that has elements of bridge, skatepark, viewing gallery, performance space, spanning the railway and expanding the current footbridge significantly, integrating with the existing infrastructure on ground and first floor.



WATERSPAN HOMESTYLES  
HOTEL & TIME SHARE

**WATERSPAN CULTURE BASE**  
 A Centre for Culture, Science, and Contemporary Experience  
 Mikkeli has determined that a new facility for science is needed, and should be placed at the heart of the new development. Waterspan takes this to its logical conclusion - interpreting science as the key cultural character of the 21st century, as well as wrapping it in classical culture - music and arts - and contemporary experiences, including art, performance, film and more. Museums are many in Mikkeli - now it's time for a CultureBase.



WATERSPAN HOMESTYLES  
HARBOUR TOWERS

**WATERSPAN CLEAN CLUSTER**  
 A New Computer, Service Tech, & Ecology Sector Hub  
 Waterspan makes a statement about the industries that are coming into to replace the natural resource sector. CleanCluster is a custom-fitted semi-open-plan office block directly on the Waterspan Wharf, which creates a new home for industries in the essential, consumer, business and eco technologies that Mikkeli deserves to be associated with, and will be able to support. CleanCluster is accessible, fun, high-specification - and with access to the Waterspan Wharf.

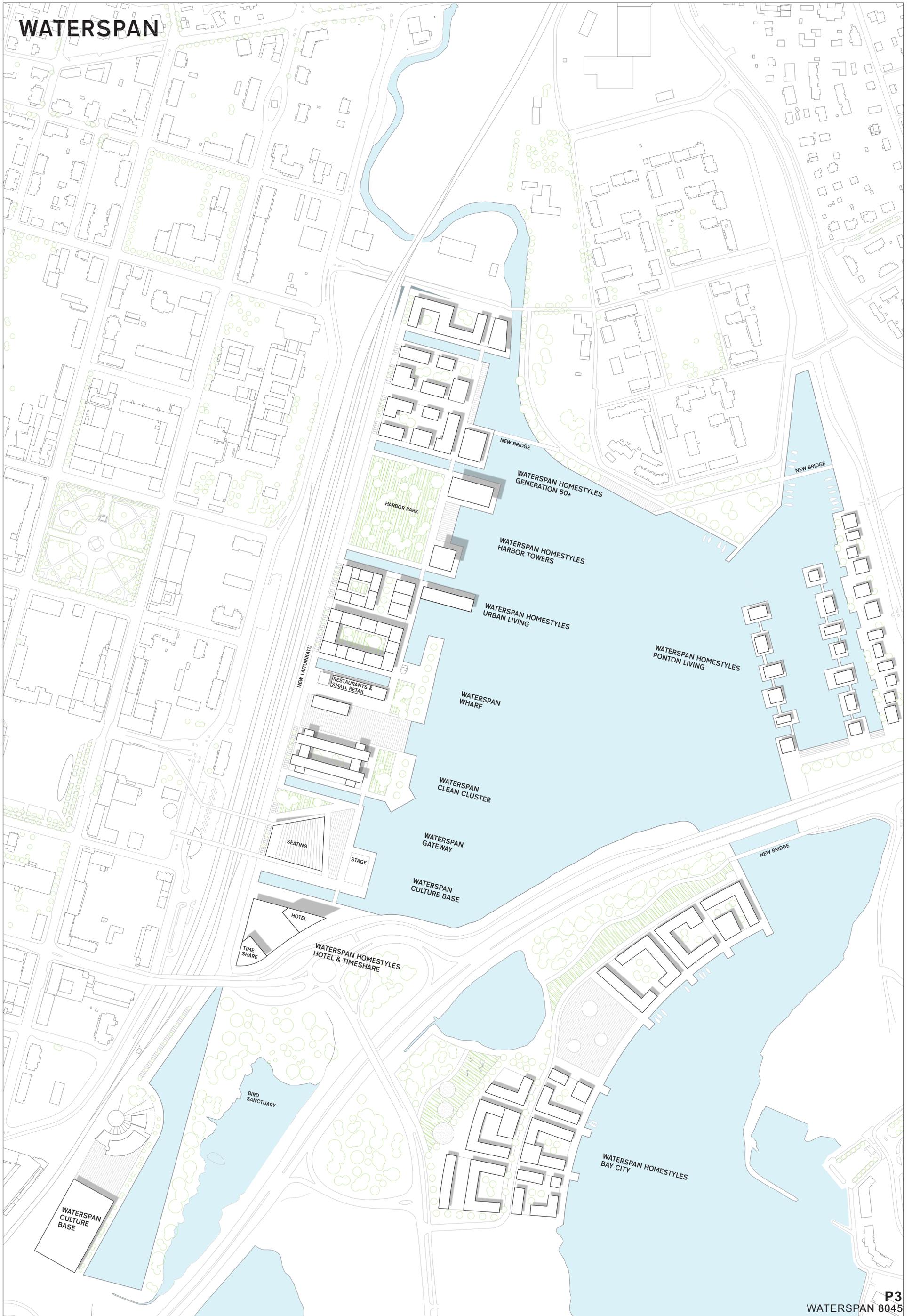


WATERSPAN HOMESTYLES  
URBANITES

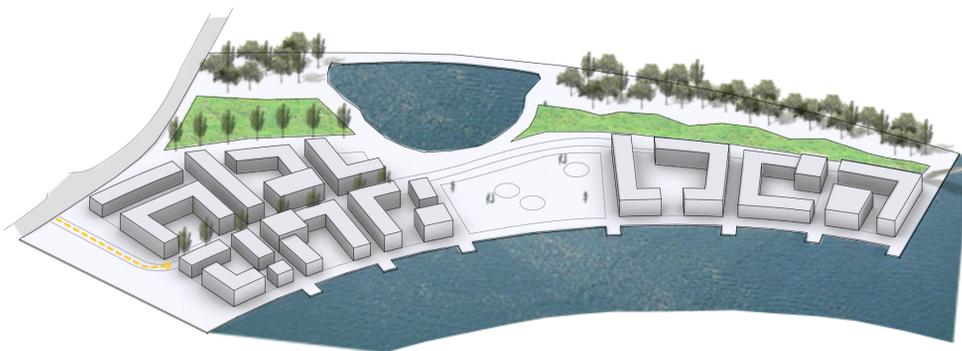
**WATERSPAN WHARF**  
 A Celebration of Local Enterprise through Eating & Drinking  
 Mikkeli has a thriving outdoor market community, and now this can be showcased in Waterspan Wharf, a food shopping shopping, eating, drinking, local enterprise experience, modelled on San Francisco's Fisherman's Wharf building. The keywords here are quality, diversity, freshness, and obviously ecological and local produce.

WATERSPAN HOMESTYLES  
50+

# WATERSPAN



# WATERSPAN

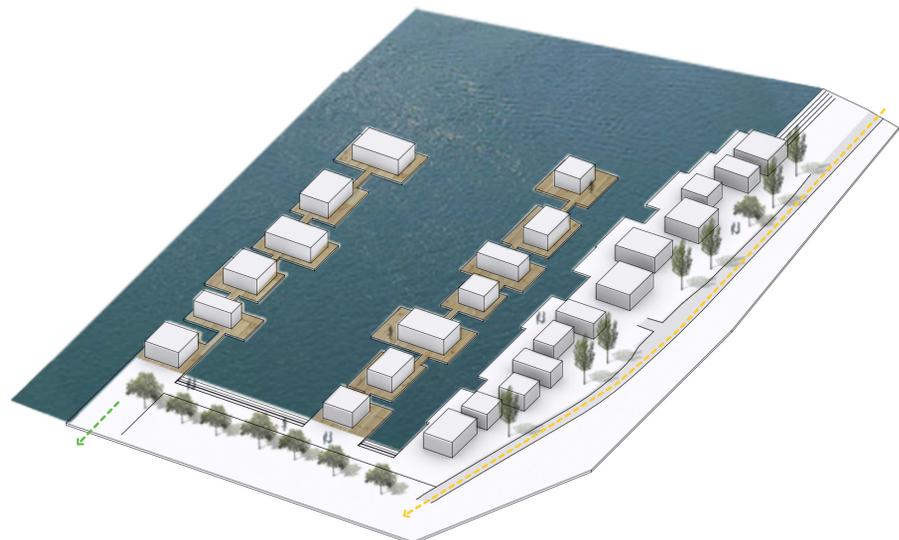


WATERSPAN HOMESTYLES  
BAY CITY

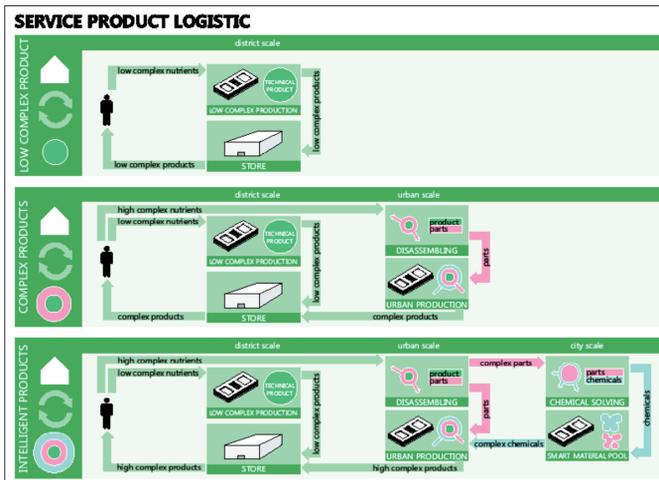
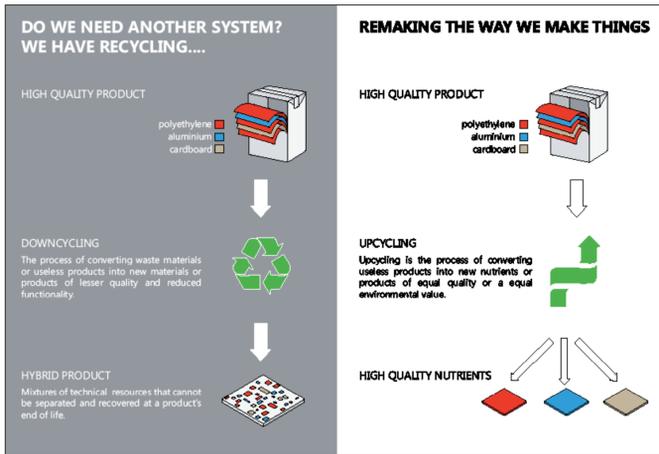
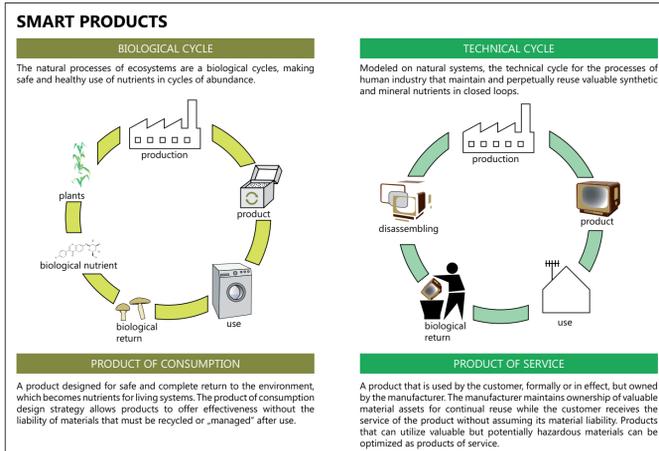
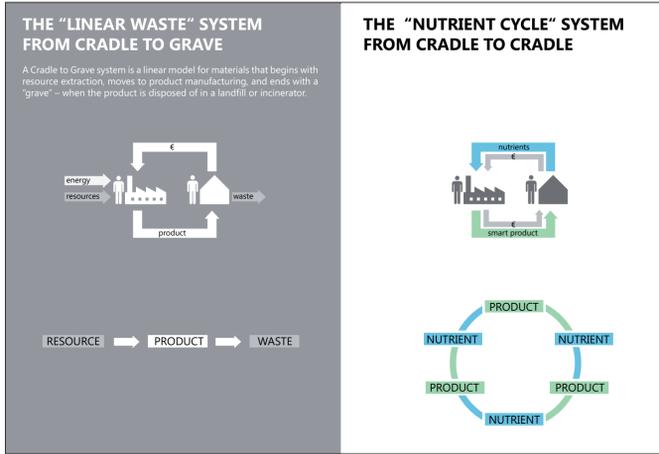


SECTION URBANITIES & HARBOUR TOWERS

WATERSPAN HOMESTYLES  
PONTON HOUSING



# SUSTAINABILITY



## GENERAL CONCEPT / Limits & Quality of Life

Sustainability is a near-universal concept nowadays. The essence of it is two-fold.

Resources & Nature are subject to scientific and ethical limits - without respecting these limits, there can be no economic prosperity or social progress.

Sustainable living has the potential to align with quality of life, through defined strategies such as efficiency, service-based consumption, access to nature, and full resource cycling.

## DESIGN FRAMEWORK / Systematic Design Processes, Data-rich Analysis

Mikkeli Waterspan is based on the most systematic approach to sustainability, where six domains of analysis are integrated to achieve a resource-positive - or 'regenerative' - impact on the natural resource base.

Supporting the general concept - of limits and of quality of life, these domains of sustainability analysis ensure that Waterspan does not merely have 'green' or 'environmental' features, but that the whole design concept supports and delivers a measurable, long-term sustainability outcome. This means that while the development will be LEED/BREEAM compatible, it is important that the design and development goes greatly beyond the limited concepts in those basic approaches.

**SITE** - Choosing of site, development massing / volumetrics, and building orientation to maximise use of natural resources, minimise waste, and protect nature.

**SYSTEMS** - Linkage of individual houses and blocks to large-scale energy, resource, transport, and natural systems for full efficiency.

**STRUCTURE** - Adoption of structural features, and materials / fittings, which reduce resource use.

**LIFESTYLE** - Integration of lifestyle systems into the infrastructure, including service-based consumption, and pervasive information.

**PARTICIPATION** - Pre-design, and post-design participation by the community in the Mikkeli Waterspan development.

## SITE / Conserve Resources, Protect Nature

Subject to more detailed engineering, the structures presented in Waterspan are intended to maximise not just the leisure-focussed waterfront views, but also the resource-focussed southern face. This enables measurable decreases in the use of heating and lighting energy. The siting also maximises green space, for leisure but also functional landscaping, including microclimate, and functional plants (to reduce airpollution, noise, offer fruit, herbs and more), and to protect nature.

## SYSTEMS / Design Across Scales, Connecting Resources, Thinking Dynamically

The systems dimension of urban design is usually where the worst sustainability errors are made. Resources, energy, production-consumption, food, transport, waste, carbon, are not naturally separate components of the urban fabric, in distinction to the program, infrastructure, landscaping and buildings: they are integrated and act in synergy with them, in a truly sustainable consumption.

## Resources

Mikkeli Waterspan adopts as its grounding concept the cradle-to-cradle model of resource management. This is the principle that all resources are divided into two streams - technical materials (minerals, metals etc) that are truly finite, and biotic materials (including structural materials like wood) - and both of these streams are treated as cycles to be managed with the utmost care. Technical materials, after one cycle of use, must always be 'upcycled' to uses that equal or improve on their quality of deployment (unlike conventional recycling or 'downcycling'). Biotic materials must always flow back through nature, in a managed, regenerative way.

## Energy

Mikkeli Waterspan adopts a single energy standard: hyper-efficiency in production and consumption. The implications of this are, beyond the obvious use of the most efficient construction and product standards, use of local biomass co-generation energy for the backbone of space heating, with limited support from onsite energy infrastructure built into the dwelling. Mikkeli will be net energy positive by any model.

## Production-Consumption

Mikkeli Waterspan's systemic concept of sustainability - encompassing the two principles of respect for limits and increasing quality of life in synergy with sustainable use of resources - extends to the way goods are produced and consumed. It is not sufficient to say that consumers must be better, and producers must be better - it's time for new production-consumption concepts that everyone benefits from. The key emphasis in Waterspan is the service-based model of so-called collaborative consumption: cars, washing machines, spaces, and many categories of consumer goods, are available through the Waterspan lifestyle system, as either final services (such as washed clothes, or taxis, etc) or rentable items (access to washing machines, cars, etc). This does not mean sharing of private goods, and is designed to be experienced as a high-end consumer lifestyle, with strong management and design, while saving costs and resources.

## Food

Mikkeli Waterspan is a home for quality sustainable living, and what better example of that than food production. Waterspan encourages local production of food, and uses the food system, managing sources, marketing and consumption, and waste, as an example of how to create the synergy between truly sustainable living and quality living. Waterspan Wharf is showcase of local, sustainable food - for buying and cooking at home, and eating out experiences.

## Transport

Waterspan accepts cars, but does not prioritise them. It invites a public transport backbone to local transportation, together with a rich sustainable transport concept - the Waterspan Radius - at the heart of the project. The cable car is also a rich opportunity to support sustainable transport.

## Waste

Waterspan does not believe in waste, and implements instead a cradle-to-cradle concept. Household and commercial waste is sorted and distributed back to the resource management centre by an underground / underwater vacuum-tube system. Industrial waste is taken to the resource management centre by design - the buildings are designed for easy disassembly.

## Carbon

Waterspan is carbon positive. Meaning that it releases no net carbon. It does this by working with the energy and forestry companies nearby to create the Carbon-Energy Forest Reserve. This is a protected source of the biomass for the cogeneration energy system - its protection means that the carbon emitted in production will always be recaptured by the maintained forest - and an additional forest environment protected for the extraction of extra carbon from the atmosphere, emitted through means other than energy production. Mikkeli is the perfect location - with abundant managed forest potential, and cogenerated energy - to be a leader in carbon positive development.

## STRUCTURE / Optimised building design & engineering, High-quality interiors

Waterspan assumes for the design and construction of buildings and interiors that no data is too much. BIM/LCA models are the baseline. Structures are overengineered for resource efficiency, from the choice and use of materials, to the use of energy in production, construction and use - and designed for easier disassembly and upcycling. A centrepiece of the Waterspan engineering concept is the use of structural wood in the 'span' bridge elements of Waterspan Radius, and in the construction and facades of many of the housing typologies.

The interiors of all Waterspan properties are intended to adopt the highest standards of efficient fittings and fixtures, with an emphasis on simplicity, durability and cradle-to-cradle thinking.

## LIFESTYLE / Modern way of living, combining high-tech with real wellbeing

The Mikkeli Waterspan experience is enabled by a lifestyle system which harness the power of service-based production-consumption, and puts it directly into the housing and commercial concepts spatially and in engineering - and into peoples hands through a custom lifestyle-management app.

Housing and commercial premises are built to assume service-based production-consumption, and thus are oriented towards these facilities. Space for large printer rooms in offices, spaces for washin machines and other storage for consumer goods, is reduced in the development and planning concept, while position and space for management and storage of service-based experiences is increased: serviced washrooms to house washing machine services is prioritised, as is space for car-share parking, and many other dimensions of these new lifestyle concepts.

All of this is leveraged by the Waterspan lifestyle management app. This makes all consumption options available, plus a flow of realtime data about the energy and resources performance of the individual using the app, as well as their household and aggregate data for Mikkeli as a whole.

The lifestyle approach in Waterspan makes a priority of supporting and enabling lifestyle options that are rich in experience and value-added but low in resource consumption and nature impact. The Experience zone - with spa and sport and nature activities - and the Alternative Therapies are - with activities focussed on personal development such as yoga, dance, and more - are highpoints of this post-consumerism, high quality lifestyle concept.

WATER FRONT

HOTEL/ TIME SHARE 27.680M<sup>2</sup>  
COMMERCIAL/ BUSINESS 7.740M<sup>2</sup>  
HOUSING 114.970M<sup>2</sup>  
PARKING 16.850M<sup>2</sup>

PONTON HOUSING

HOUSING 15.650M<sup>2</sup>  
PARKING 4.050M<sup>2</sup>

CULTURE BASE

CULTURAL CENTER 1.690M<sup>2</sup>

BAY CITY

HOUSING 59.520M<sup>2</sup>  
PARKING 12.800M<sup>2</sup>

TOTAL HOUSING 190.140M<sup>2</sup>  
TOTAL COMMERCIAL 37.110M<sup>2</sup>  
TOTAL PARKING 33.700M<sup>2</sup>

