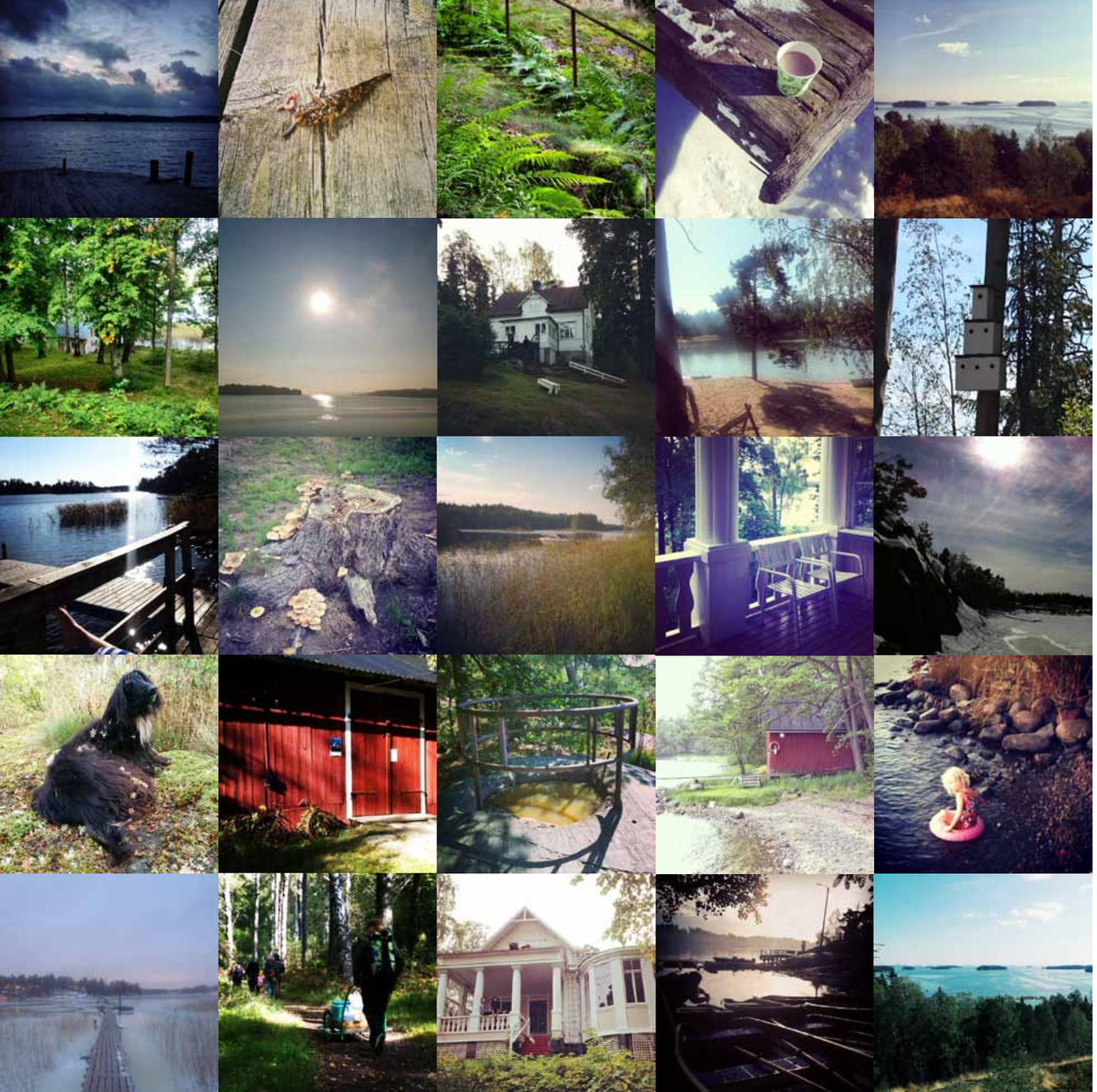

Tomorrow
is
yesterday.

HOME 2040

A Vision for Vartiosaari

Niina Rinne
Master's thesis in Creative Sustainability (Architecture)
Aalto University 2015

ABSTRACT OF MASTER'S THESIS

AALTO UNIVERSITY
School of Arts , Design and Architecture
Department of Architecture

Author:	Niina Rinne
Major subject:	Creative Sustainability, Building Design
Minor subject:	Urban Design
Title:	Home 2040 - A Vision for Vartiosaari
Professorship:	Housing design
Supervisor:	Professor Hannu Huttunen

The purpose of this thesis project is to design vision of a new sustainable residential area in Vartiosaari based on future megatrends and their effects on housing development.

Vartiosaari is a 82-hectare island in eastern Helsinki. It is located in the midst of developed areas south of Tammisalo and between Laajasalo and Vuosaari. Vartiosaari lies on a 7-kilometre radius from the Helsinki city centre. The latest urban plan draft, made by the Helsinki City Planning department, permits construction in Vartiosaari. Even though there has been a lot of debate about developing the island, the plan is to build a marine-like housing area for 5000-7000 inhabitants. Vartiosaari is covered by a unique beautiful nature, and the destruction of the nature is the main reason for people to protest against the development of the island.

Vartiosaari is already a special and unique place. This should be highlighted when designing and building the new residential area. Also the invaluable nature of the island should be preserved as much as possible. The island should not become a new anonymous concrete suburb. The identity of Vartiosaari could consist of maritime nature, strong sense of community and sustainability. The island could be a benchmark of ecological construction and sustainable living.

In this thesis the future megatrends and challenges influencing housing development have been researched. The thesis also reflects what living in the future could be, and how a more sustainable way of living could be achieved. The written part also considers opportunities for sustainable development as well as future threats caused by western lifestyle. Furthermore, the thesis considers what are the sustainable lifestyles, what are the disadvantages and shortcomings of housing today, and what alternative ways of living could be offered. The written part also covers the background of planning in Vartiosaari.

Finally, a conceptual case study for sustainable development in Vartiosaari is presented. The aim of the case study was to design dense variable wooden housing blocks with good connections to the surrounding nature. The block structure is multiform with different kinds of housing typologies. The number of floors in the blocks varies from one to five. The highest buildings are situated along the main street and near the main square. The main construction material is wood due to its ecological and aesthetic values. Wooden city structure will also create a marine village atmosphere which would fit to Vartiosaari.

Submitted material:

Exhibition plates
a written report (x11)
scale model of the block
scale model of the area

Keywords: Vartiosaari, housing design, urban design, sustainability, megatrends

DIPLOMITYÖN TIIVISTELMÄ

AALTO-YLIOPISTO
Taiteiden ja suunnittelun korkeakoulu
Arkkitehtuurin laitos

Tekijä: Niina Rinne
Pääaine: Creative Sustainability, Building Design
Sivuaine: Urban Design
Työn nimi: Home 2040 - A Vision for Vartiosaari
Professuurin nimi: Asuntosuunnittelu
Työn valvoja: Professori Hannu Huttunen

Diplomityön aiheena on ollut luoda visio kestävän kehityksen mukaisesta asuinalueesta Vartiosaareen pohjautuen analyysiin tulevaisuuden megatrendeistä ja niiden vaikutuksesta asuinrakentamiseen.

Vartiosaari on noin 82 hehtaarin suuruinen saari itäisessä Helsingissä. Se sijaitsee keskellä kaupunkirakennetta Tammisalon eteläpuolella, Laajasalon ja Vuosaaren välissä. Etäisyys Helsingin keskustasta linnuntietä on noin 7 kilometriä. Helsingin uusin yleiskaavaluonnos mahdollistaa Vartiosaareen rakentamisen. Saareen suunnitellaan merellinen asuinalue noin 5000-7000 asukkaalle. Saaren kehittäminen on herättänyt suurta keskustelua. Vartiosaaressa on ainutlaatuinen luonto, joka on säilynyt koskemattomana tähän päivään saakka. Saaren rakentamista on vastustettu luontoarvoihin vedoten.

Vartiosaari on erityinen ja ainutlaatuinen paikka, mikä tulisi ottaa huomioon suunniteltaessa uutta asuinaluetta. Myöskin kallisarvoista luontoa tulisi säilyttää mahdollisimman paljon. Vartiosaaresta ei pitäisi tulla uutta mitäänsanomatonta betonilähiötä. Vartiosaaren identiteetin vahvuuksina voisi olla merihenkisyys, yhteisöllisyys ja ekologisuus. Vartiosaari voisi olla uusi upea esimerkki ekologisesta rakentamisesta ja elämisestä.

Tässä työssä on tutustuttu asuinrakentamiseen vaikuttaviin tulevaisuuden megatrendeihin, minkälaisia haasteita tulemme kohtaamaan tulevaisuudessa ja kuinka niihin voitaisiin varautua. Työssä on myös pohdittu, mitä asuminen tulevaisuudessa voisi olla ja millaisia ovat tulevaisuuden kestävät elämäntavat, mitä epäkohtia ja puutteita asumisessa on nykypäivänä ja millaisia uusia ratkaisuja asumiseen voitaisiin tarjota. Lisäksi kirjallinen osuus kertoo Vartiosaaresta sekä avaa suunnitelman lähtökohtia ja tavoitteita.

Lopuksi esitetään konseptuaalinen kestävän kehityksen mukainen suunnitelma Vartiosaareen. Suunnitelman tavoitteena on ollut luoda tiivistä, vaihtelevaa puukerrostalokorttelia ja luoda hyvät yhteydet ympäröivään luontoon. Korttelirakenne on monimuotoinen ja koostuu erilaisista asuintypologioista. Umpikorttelit luovat suojaisan yhteisen sisäpihan ja mahdollistavat yhteisöllisen toiminnan. Kerroskorkeudet vaihtelevat yhdestä viiteen kerrokseen. Korkeimmat rakennukset ovat pääkadun ja aukion laidalla. Rakennusten päämateriaaliksi on valittu puu sen ekologisten ja esteettisten arvojen vuoksi. Puurakentaminen toisi myös merellistä saaristolaiskylä-tunnelmaa, joka soveltuisi Vartiosaareen.

Luovutettu aineisto:

Piirustusplanssit
Diplomityöselostus (11kpl)
pienoismalli korttelista
pienoismalli suunnittelualueesta

Avainsanat: Vartiosaari, asuntosuunnittelu, kaupunkisuunnittelu, kestävä kehitys, megatrendit

View from the highest point in Vartiosaari (photo: Niina Rinne)

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“Future is a place
where we all
are going to live
the rest of our lives.”

Foreword

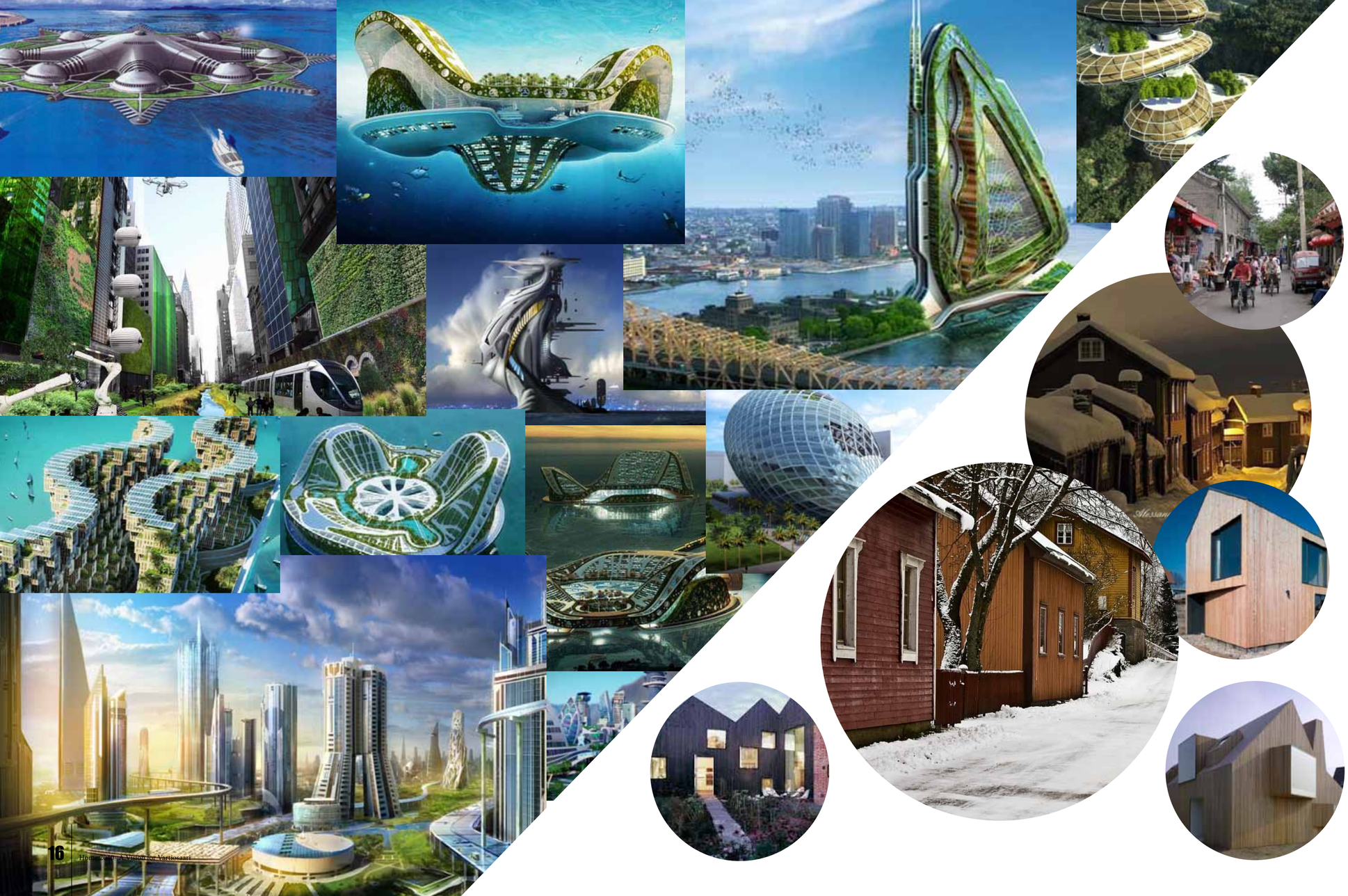
I wanted to make a thesis about housing design and sustainability. The plan was to focus more in the social sustainability and how architecture could support sustainable lifestyles, instead of focusing on energy efficient buildings and technical solutions. The first thought was to design a house, but after getting absorbed into the subject, the thesis expanded into urban planning.

My primary interest was the future of housing development, where are we going and what kinds of changes will we face. What are the challenges and how should we be prepared to them. I also noticed that futures research, urban planning and sustainability cover similar themes and support each other.

For the case study project an island called Vartiosaari, located in Helsinki, was selected. While I was working for the Helsinki City Planning Department I was involved with the Vartiosaari-project. After getting to know the area and the planning history, it was obvious to continue the project further as a master’s thesis. The area will be built around in twenty years and the themes on my thesis will fit well in Vartiosaari.

I would like to thank my supervisor, professor Hannu Huttunen for challenging my ideas and contributing with deep expertise. Also special thanks to Vartiosaari-team of Helsinki City Planning Department; Ritva Luoto, Anne Kangasniemi-Kuikka, Maria Isotupa and Terhi Kuusisto for their positive attitude and support.

Hopefully this work will inspire the development of Vartiosaari and make you wonder about the increadible future even more than before.



Introduction

How does the surrounding environment look like in the future? What do people dream about? What are the things you cannot live without? It is difficult to predict what will happen in the future, but the future is defined by our decisions, values and goals.

The main themes of this thesis are sustainability and housing design in the future. First the megatrends are introduced, and then the background of the case study is explained. The target of the case study is design a residential area in Vartiosaari, and a vision for the future of the area has been created. One of the housing blocks is shown in more detail. The housing block is a conceptional idea for how the life in Vartiosaari could look like in 2040.

The key point of the thesis was to investigate the sustainable future of housing design and living. The primary interest was to go back to the roots, and close to the nature and consider humble solutions rather than high-tech-architecture. The idea of this project is to create an environment that supports a simple slow life which would fit well to Vartiosaari. The island is already nowadays "behind time", so it would be great to preserve a similar atmosphere in the future as well. Could Vartiosaari be an example of sustainable living? Enjoying nature, downshifting, slow life, sharing, immaterialism, seasonal food, gardening, green roofs, local sustainable materials and so on. Could we create a minimalistic frame for humble living? What if the buildings are compact, and the usage of unnecessary or unsustainable materials are eliminated? That the people do not need to have large unused spaces, or household appliances just for themselves. The future in Vartiosaari could be about sharing spaces, materials and ideas. Could there be an ecological wooden village in Vartiosaari?

This project is concentrated more on the social sustainability and residents' ecological lifestyle, and any technological solutions are not shown in detail. The basis of the project is that sustainable technical solutions will be a default option for all construction projects in the future, buildings are self-sustaining or e.g. plusenergy-houses. The assumption is that in the future the technical solutions will develop vastly, and the energy problems can be solved for example with solar panels integrated to window glasses or other sustainable energy solutions. The past has proven that technological development is fast and can largely be taken for granted, but it is really hard to change our culture. Culture is slow to change, and therefore it is imperative that we start to focus on changing our old, unsustainable habits as soon as possible.

Even though the buildings would be energy-efficient, it is important also to consider what kind of lifestyle the residents have. Not only how we heat the building, but also how we use it. How much water do we use, what do we eat, do we recycle, what do we do for living and how do we commute. In the end the lifestyles of the residents are more important than the building itself. But could architecture and urban planning support sustainable lifestyle, and nudge people to live more sustainable?

THOUGHTS ABOUT FUTURE

Where are we heading?

The future cannot be predicted. This is the first principle of the futures research. It is difficult to make accurate models of the changes in society because those changes are linked into so many different complex systems. In addition, the unexpected and radical impact of events, so called "black swans", are shaping the future significantly.

However, one can plan, anticipate and be prepared for the future. With a systematic observation of the current reality, a variety of alternative futures can be represented. At least some of the alternative futures will be realized. The only way to be prepared for the future is to take into account different development options and many possibilities of the future. Therefore, the second principle of the futures studies is that there is not a single future but there are many alternative futures.

The variety of the different futures is due to the complexity of phenomenas and the complex interdependencies. It is better to open many different options of the futures than just focus on one prediction. It is easier to pursue the desirable future or at least part of the prediction when alternative options are known. The future not only just happens, but it will be made. The third principle of futures studies is that one can impact on the future. The future is made by today's planning, decisions and choices.

Megatrends

A megatrend is a large, social, economic, political, environmental or technological change that is slow to form. Once in place, megatrends influence a wide range of activities, processes and perceptions, both in government and in society, possibly for decades. They are the underlying forces that drive trends. Many futures researches indicate that the coming megatrends will be e.g. aging, globalization, digitalization, individualism, sustainability and urbanization.

But how will the housing trends in Finland change? What are needs of the future inhabitants? Nowadays especially in Helsinki the living has been expensive, restricted and standardized. Residents want better homes, but what kinds of? The need of housing will be different in the future, but will the supply of housing be more versatile?
The change of society and environment pose new challenges for housing. More and more people are living in the city, and the amount of elderly, immigrants, and people living alone are increasing. The style of living will have many new cultures because the family forms and lifestyles will differentiate.

Construction and housing design should anticipate and be prepared for the future. Especially in Finland a major megatrend related to housing will be aging. By 2050, Finland has a lot more seniors. This also affects the housing demand. How should Finland take care of the senior citizens and what kinds of new housing typologies there could be? Creative new forms of housing for the elderly are needed. The aging population will also lead to the fact that the amount of people living alone is growing. Generally, homes are planned mainly for nuclear families. The time that is spent in a nuclear family is already quite short compared to the time spent alone or with one´s partner. In the future time spent alone increases, because people will live longer. There will be a need to have more different typologies for people who are living alone. The solution could be for example minivillas, adults' communal houses or new typologies for weekend parents.

One of the rising megatrends is the growth of the sense of community. People want to have a feeling to be part of community. This could be increased by the means of architecture. Various types of collective housing would fit for elderly and solo-living people. Instead of the traditional nuclear family, people might want to live with similar kinds of people who share the same interests and values. Also the size of the family is changing because of extended families. Flexible homes and high-quality communal spaces are needed even more in the future.

The climate change has been an acute topic at since 1970's, and is still a current megatrend. The dense urban structure is necessary, but the challenge is still preserving the attractiveness of urban living. It would be more ecological if most of the spaces would be shared and the personal spaces would be compact. Not everyone would need to have a private gym or a movie theatre on one's home. Home could been seen as a mix of various different spaces around city.

The difference between work and leisure time is mixing and changing. Telecommuting is possible for even more people and often it is hard to separate work and leisure time. Telecommuting reduces the need for mobility, but there should be more shared spaces for working. Social media enables people to rent spaces easily, and support the social interaction. Nowadays it is also easier to share items and ideas because of these applications.

The trend of housing design might be small flexible home and high-quality rentable common spaces. There could be more mixed use of buildings in the future. Concept of home could be distributed around the neighbourhood and social interaction would increase.

(Megatrend map: Richard Watson at Nowandnext.com)

5 TRENDS THAT WILL CHANGE OUR LIVES

1 POPULATION TRENDS AND URBANISATION

GLOBAL TRENDS	EU TRENDS	CHALLENGES for more healthy and sustainable ways of living	OPPORTUNITIES for more healthy and sustainable ways of living
• global population growth • growing middle class • urbanisation	• aging societies • shrinking household size • increasing number of households	• increased demand for health and social services because of aging population and increasing pollution • stress on public finances in Europe	• dense living in cities can support more efficient living (e.g.smaller living spaces, less car use) • collaborative forms of housing can emerge as a solution to extend the living space and to support social interactions

2 CLIMATE CHANGE AND HEALTH

GLOBAL TRENDS	EU TRENDS	CHALLENGES	OPPORTUNITIES
• extreme weather events • climate migration and conflict • increased CO2 and emissions of fine particultate • increased health risks related to diseases • traffic injuries, noise, pollution • heat waves, extreme cold weather, urban thermal insulation	• rising health risks, e.g. obesity, cardiovascular diseases, diabetes, cancer deterioration in mental health (burn out and stress, leading to increased depression and suicidal rates) • extreme temperatures, floods, desertification	• environmental conditions that impose a negative impact on mental and physical health • people with lower incomes are at higher risk • unhealthy and unsustainable lifestyles (lack of physical activity, unhealthy diets)	• growing awareness of health issues and exercise becoming a status factor in some parts of population • healthy urban planning and transport • healthy eating and emerging physical activity promotion programmes

3 ECONOMIC GROWTH, JOBS, TIME AND WELL-BEING

GLOBAL TRENDS	EU TRENDS	CHALLENGES	OPPORTUNITIES
• economic growth as both cure and cause of poverty and disease • growing resource scarcity	• decoupling of economic growth and subjective well-being in many European countries • increasing unemployment, especially among youth	• higher incomes coupled with lessfree time can drive consumptionintensive lifestyles and higher stress levels • lower incomes coupled with high consumption of unhealthy and unsustainable food	• sustainable economy that operates within the carrying capacity of the planet • "green" and decent jobs • alternatives to "consumer culture" are available • value of free time spent on social relations • household based economies can develop new value production models

4 ACCUMULATION OF "STUFF" AND MARKETING

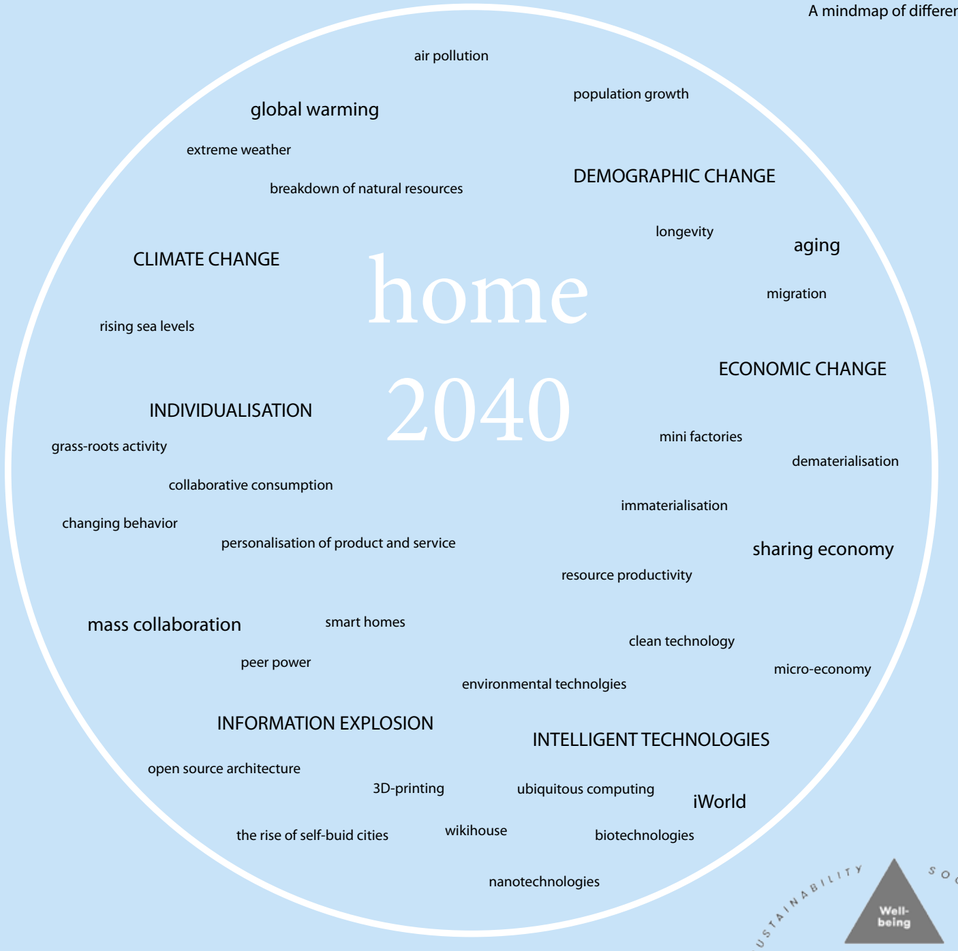
GLOBAL TRENDS	EU TRENDS	CHALLENGES	OPPORTUNITIES
• household consumption is encouraged to drive economic growth	• debt levels are increasing • labour costs are increasing, while product cost are decreasing • short term gratification from consumption with long term consequences, such as indebtedness	• sustainable and durable design, repair and reuse are not economical • advertising instils desires for new products and services • "green-washing" • proliferation of eco-labels is confusing	• need to rethink social costs of using personal credit to stimulate consumption • green and sustainability marketing is a growing field • reuse of "stuff" • access to stuff through services can relive from ownership and provide more satisfaction

5 TECHNOLOGICAL AND SOCIAL INNOVATION

GLOBAL TRENDS	EU TRENDS	CHALLENGES	OPPORTUNITIES
• technological innovation at an unprecedented speed and level • social innovation emerge as a reaction to the crisis of production, consumption and welfare models	• rapid technological innovation, contrasted with a slow speed of and low financial support for social innovation	• technological innovation drives consumer culture • limited financial power and business support for social innovation • tackling rebound effects	• technological innovation drives energy efficiency and sustainability • sustainable value creation models and social innovation support more sustainable ways of living • the economies of barter, gift and sharing offer viable alternatives to conventional business models

(Source: SPREAD Sustainable Lifestyles 2050)

A mindmap of different megatrends



(source: Sitra)

Climate change and dependence on non-renewable resources

Climate change has being the topic for decades and scientific community has reached a wide consensus about it. It cannot be stopped but it can be slowed down, and people can adapt to it. Carbon dioxide and other greenhouse gas concentrations in the atmosphere have increased. The reasons have been for example the use of fossil fuels, cement production, deforestation and other changes in land use. *(source: IPCC)* The atmospheric concentration of CO_2 has increased over 40% since 1750 . The atmosphere and ocean have warmed, the amounts of snow and ice have diminished, sea level has risen, and the concentrations of greenhouse gases have increased. Extreme weather events, such as heat waves and tropical storms will increase. It is expected that the climate change will result in the extinction of many species and reduced diversity of ecosystems.

Long term mass-production and mass-consumption paradigms would require unlimited, cheap fossil fuels and natural resources, and the capacity of earth to cope with the consequences of their extensive use. In a closed system this is not possible. Population growth, the increase in wealth and development of technology are accelerate the consumption of raw materials even further.

The future wars will be fought about water rather than oil. Water is one of the basic needs of human and it is the condition of life. As the population grows, so does the need of water, as high as twice the rate of the population growth. Water is not only used for drinking, bathing or for cooking, but the largest use of water is irrigation. Similarly, the industries constitute a large part of water consumption. The scarcity of food and nature resources and the rising prices may increase the geopolitical tension towards resource-richer countries.

Governments are slowly beginning to respond to the climate change, growing waste mountains and decreasing biodiversity by creating new regulation that forces consumers and producers to internalise more of their environmental costs. The growing environmental problems require radical changes in our lifestyles and production methods. In the past, these were question of ethics and ideology. Now it is the question of the existence of the human kind. The answer should be prioritize high in policy making.

(source: Sitra)

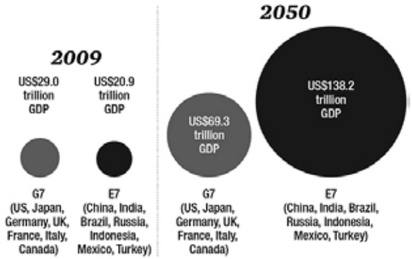
World urban population

Source: World Urbanization Prospects: 2011 Revision, Produced by the UN Department of Economic and Social Affairs

With a population of 8.3 billion people by 2030, we'll need:

Source: National Intelligence Council: Global Trends 2030: Alternative Worlds

GDP of G7 and E7 countries at US$ PPP



Source: PwC analysis

Demographic change

Global population has increased rapidly on the last decades, and will continue at an accelerating pace. However, population growth is not uniform. The population growth is highest in the developing countries, while the industrialised countries suffer from decreasing population. The population is decreasing and aging rapidly because people have fewer children, and they are living longer due to better health care and improved living conditions. In 2009 the Department of Economic and Social Affairs of The United Nations made a forecast that in the 2050 21% of the world population will be over 60 years old. In 2009 the amount of people over 60 years was 11%.

Aging population will be one of the principal challenges for Finland in the future. The pension, social and health care systems of developed societies are facing growing cost pressures as the dependency ratio between the non-working (dependent) and working parts of the population increases. The traditional way to reduce the costs would be raising taxes of the working generation, or cutting the pensions and benefits of the retirees. The risk of the solution is that it weakens the social cohesion, and could create a conflict between generations.

A more sustainable solution would be to see the aging population as active clients of the well-being society and not to doubt their ability to stop the social activities in retirement. They are wealthier, healthier, more educated and more active than the previous generations were at their age. The elderly should seen as a resource which enables the sustainable development and well-being. What do all these senior citizens with their spare time do, and where they spend their money? The elderly could use their free time for helping children, relatives, friends or other aging people in their daily routines, or to do volunteer work.

The aging population should be taken into account in the supply of housing. There should be different barrier-free housing typologies for senior citizens and new innovative services for them. Could one building fulfil the needs of many generations and types of households? It would be a very optimal situation, if the housing solution would mitigate the stressful and hectic life of the nuclear families and at the same time decreases the loneliness of the senior citizens.

In the future, the amount of working population is shrinking in the rich, developed countries. This means a huge increase of migration. The current hostile attitude towards immigrants topples over on its head when there is a need to find people who can take care of our pensions and our economy. The supply of housing should take immigrants' families into account. Designers should consider the different needs of big immigrant families.

(source: Sitra)

Economic change

Sustainable well-being requires a competitive and healthy economy that provides sufficient jobs, investment opportunities and tax revenues for the public sector. Many industrialized countries have responded to the economic challenges by increasing the public borrowing, which has gradually become a fiscal problem for many countries.

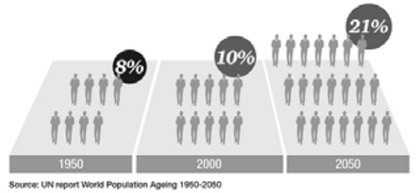
The current economic recession has developed a debt crisis in the eurozone. Stimulus actions have been done, but the underlying structural problems have not been solved. The public debt is at a critical level in many countries, and economic growth has become a priority for decision-making.

At the macro level, economic growth depends on a number of factors related to production and productivity. In advanced societies, where the population growth is limited, productivity is in a key role in the long-term economic growth. The growth of productivity has slowed in the recent years in leading industrial countries. It is not certain whether the slowdown is a long-term trend, or just a temporary phase. In any case, the viability of the economies of the industrialized countries depends crucially on their future productivity growth.

Interdependence of societies has also increased due to economic globalization. The globalization of production systems has improved the standard of living in many industrialized and developing countries. The tough international competition led the highly developed countries has led many local communities into structural problems, growing unemployment and social inequality.

(source: Sitra)

Proportion of the world population aged 60 years or more



Source: UN report World Population Ageing 1950-2050

A temporary viewpoint in Vartiosaari (photo: Niina Rinne)

Intelligent technologies

The development of technology has been enormous. Technology exists in almost every area of our lives; mobility, entertainment, work, health and relationships. One of the trends of technology development is that people are quicker to adopt new devices. Old technologies are not disappearing, but they blend in with the latest innovations of the technology. The development of ICT-technology is changing the ubiquitous computing into a big trend.

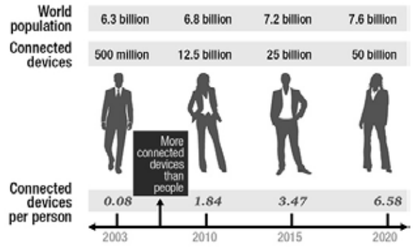
Humanity is moving from information technology society towards ubicomp society. Ubiquitous computing is an advanced computing concept where computing is made to appear everywhere and anywhere. This means that internet is stepping out of the computers and mobile phones, and the same technology can be applied to all kinds of everyday object: furniture, household appliances, buildings, other infrastructure, clothing, packaging, cars, etc. This trend might mean that the future products can make our life easier by taking care of our daily routines for us. The products can identify who is using it and create a personalized content to the user, for example instructions, diagnoses etc.

Similarly, the smart home design will be virtual, too. Wallpaper colours, lighting, sounds and smells can be adjusted. Furniture, flooring, refrigerator, products and clothes are communicating with each others and include service systems. The refrigerator can make an inventory of its contents, and tell the daily deal of the local supermarket. Family members may live in the different parts of the world but still eat dinner "together" because of wall -sized displays in the dining room.

There will be big changes and innovation in environmental technologies, nano-, bio-, and clean technologies in the future. Mini-industry, 3D-printing and other technological innovations have the potential to fundamentally change our lives.

(source: Sitra)

The rise of the "Internet of Things"



Source: Cisco Internet Business Solutions Group, April 2011

Materialistic consumer culture

The current consumer culture and its powerful marketing machinery emphasizes hedonistic consumption as the main source of individual well-being. People work long hours to succeed in their careers in order to achieve the materialistic goals, which is believed to bring happiness. The results show, however, that materialism does not make one happy. In fact, the materialistic people are often even more unhappy. The new purchases usually bring only momentary joy and the extra time spent at work is often out of the social relationships, which are important for personal well-being.

In addition, the consumption culture causes a chaos in our homes, because it is full of goods and people have to use plenty of time, effort and money for cleaning, upkeep, maintenance and storage their items. Material consumption has very little to offer to the satisfaction of social and psychological needs. One cannot buy from a store good social relationships, meaningfulness, understanding or empowerment for everyday life.

The mass consumer culture is an important reason for the current environmental problems. As a consumer, it is generally difficult to understand all the consequences of the daily consumption choices. As the production processes and systems are nowadays more global, it is even more difficult for a consumer to know how their products have been produced and what kinds of social and environmental impacts the production might cause for the local communities around the world. As a result, even for a responsible consumer it is difficult to follow the ethical standards in today's market.

The change towards a more sustainable model of society depends ultimately on the renewal of the cultural frames, values and norms. The transition into a more sustainable lifestyle is not possible without a support of a new cultural paradigm. The new policies and institutions are not actively developed, if the culture does not support them. In addition, neither will the citizens adopt the more sustainable lifestyles.

(source: Sitra)

CASE STUDY VARTIOSAARI

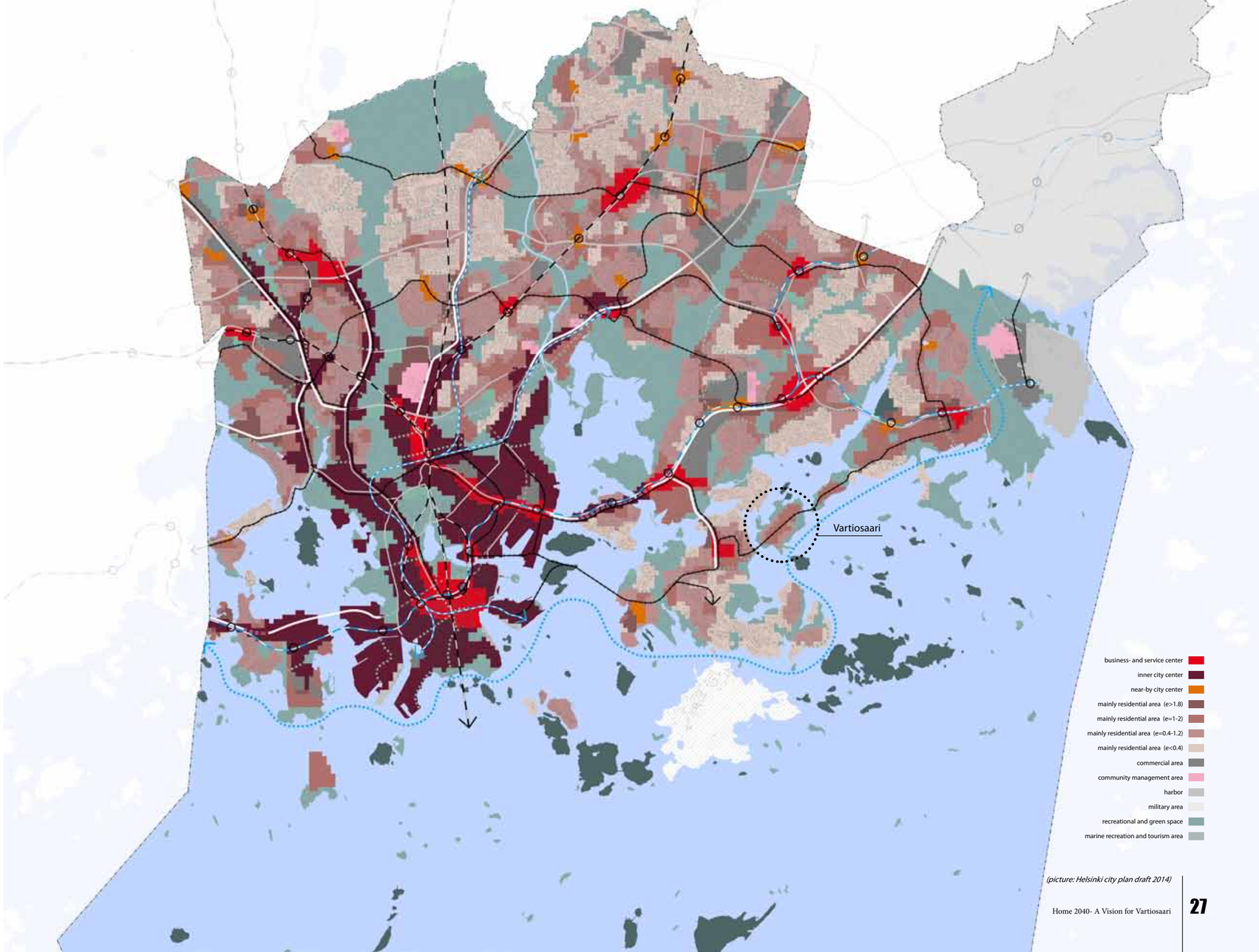
Vartiosaari, located in Helsinki, was selected as the location of the case study, because the city plan does not yet exist. A partial city plan draft is currently being designed. It could take more than 20 years before the island is developed and inhabited.

Vartiosaari is an interesting island as a starting point for a sustainable design project.
Vartiosaari has unbelievably beautiful nature, which naturally should be preserved as much as possible.

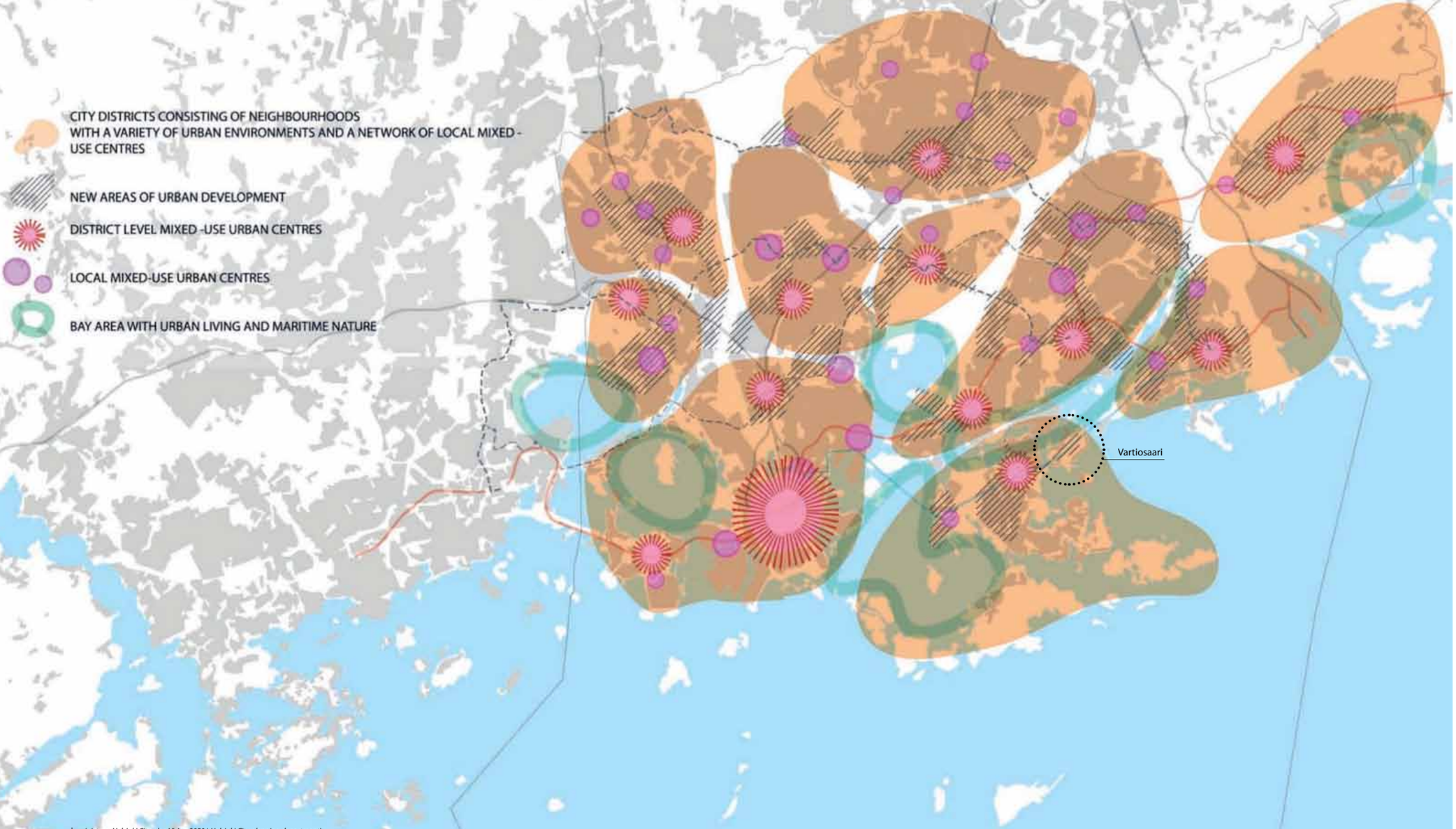
However, the cities are always changing and in the long run and wider context it might be even more sustainable to densify the city structure. It is close to the city center and surrounded by infrastructure. Also the ground is suitable for construction, and there are is no harmful pollution or noise-pollution.
Vartiosaari has a lot of potential to be a paradise for living.

Changes are always hard but for example Lauttasaari, Laajasalo and Kulosaari have been forest, bare nature some years ago and nowadays there are lovely residential places, and it would be hard to imagine Helsinki without those built islands.

In any case, a lot of the nature should be preserved, especially the marine athmosphere and the amazing views to the horizon. Vartiosaari could be a new example of sustainable living, a platform or a model for how people should live in the future, an updated version of "eco-Viikki". It could be a test area for new sustainable urban planning, architecture, wood construction and energy forms. Vartiosaari could be a self-supporting sustainable island.



(picture: Helsinki city plan draft 2014)



(picture: Helsinki City plan Vision 2050/ Helsinki City planning department)

"In the future, Helsinki will be an urban, rapidly growing rail transport network city with expanding central areas coupled with other developing centres. Commuter trains and the metro will offer fast rail connections between the central areas and other parts of Helsinki. The light rail network will complement this traffic system, making it a highly efficient network. The city will be concentrated along the transverse traffic routes, the expanding centres and in what are currently highway-like areas. First and foremost, Helsinki is a city with a human scale. Urban spaces will be designed on terms that suit pedestrians, not vehicular traffic. In the future, fun cities that are pleasant to live in, where everyday life runs smoothly, and where the range of opportunities is ever-expanding will be the successful ones.

The theme pertaining to urbanism and urban culture depicts Helsinki in 2050 as a markedly more dense, ecological and vibrant metropolis. According to the attractive living theme, Helsinki is a socially balanced, dense and functionally versatile city, in which homes, workplaces, schools and services are close to one another and can be accessed easily. All everyday services are within walking or bicycling distance. A wider range of services can be reached in little time by public transport. The most comprehensive range services can be found in larger centres formed by several city districts that are connected to one another by fast traffic routes. There are numerous housing options.

Helsinki's profile as a city by the sea is also identified as a separate theme in the vision. In 2050, Helsinki's seaside areas and the archipelago will be stages for active life featuring residential and working areas, parks, cafés and public saunas—without forgetting natural landscapes perfect for quiet relaxation.

In 2050, Helsinki is home to around 860,000 residents and 560,000 jobs. Helsinki is an international city, and the robust urban centre of the metropolitan area. Urban life is born out of encounters between people, for which a great city offers spaces and opportunities."

(source: The Vision 2050 - the new Helsinki city plan)

Introduction of Vartiosaari

Vartiosaari is a 82-hectare island in eastern Helsinki. It is located in the midst of developed areas south of Tammisalo and between Laajasalo and Vuosaari. Vartiosaari lies on the 7-kilometre radius from the Helsinki city centre.

The island has about 50 villas and vacation homes as well as about 100 other buildings. The oldest villas date back to the late 19th century. The City of Helsinki owns about half of the island's building stock and 90 percent of the land area. Some 20 people have their home in Vartiosaari year round. Most of the buildings are used in summertime only. The commute to the island is by boat.

The island is one of the nationally distinguished constructed cultural environments in Finland (RKY 2009), one of the summer villa areas along the old steam boat routes in Helsinki. Vartiosaari also has high landscape value.

The island is marked by rich landscape and natural conditions. The flora ranges from dry pine fields to green woods. Rocky hilltops open magnificent views to the sea. The highest point is 32 metres above sea level.

A partial city plan is under preparation for Vartiosaari. The preparation relies on planning principles approved by the City Planning Committee in November 2013. According to these principles, Vartiosaari will be a densely built island district, developed for both housing and recreational services for all Helsinki residents. The island is connected by bridges to Laajasalo and Vuosaari and it will be part of future's marine neighbourhoods in eastern Helsinki.

Principles for the planning of Vartiosaari

The neighbourhood in Vartiosaari is designed so that it creates a rich new layer for the silhouette of Vartiokylä bay. The eastern Archipelago side of the island will be preserved to be green, but the new city structure can be seen on the large landscape silhouette. Vartiosaari is planned for 5000-7000 residents and the target of the gross floor area is 250 000 to 350 000 m^2. There will be different types of high-quality residential areas. Vartiosaari offers a variety of housing types and sizes, inviting different residents across various phases of social situation, education, economic status and age. Vartiosaari provides jobs in services sector as well jobs related to leisure, recreation and culture. The services and the development in Laajasalo have to be taken into account when measuring and locating the public and commercial services in Vartiosaari.

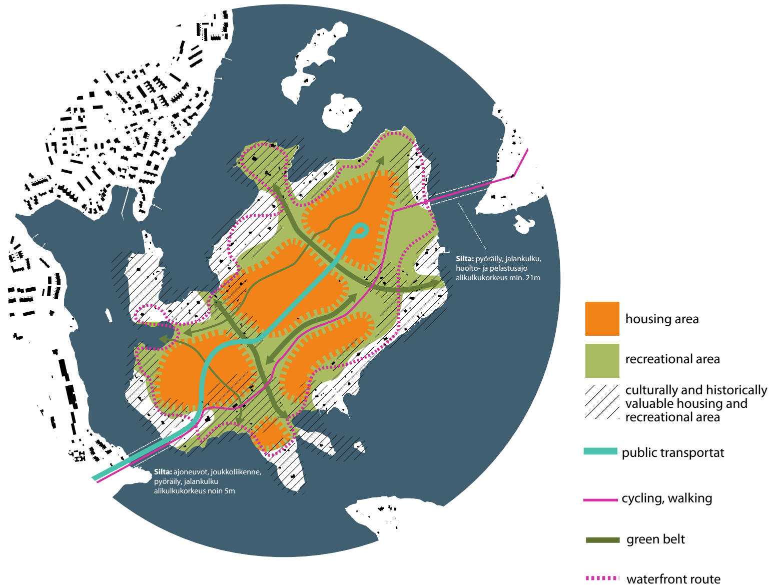
Vartiosaari will be integrated into the East Helsinki Cultural Park and its recreational and tourism services. The island's valuable cultural and diverse nature will be the starting point for the recreational planning. Proximity to the sea will be the main theme when designing the recreational areas. The beaches will be opened for public use and there will be a nature trail around the island. The experiential nature trail highlights the nature and culture attractions in the island.

The tram from the city center to Kruunuvuorenranta will continue through to Vartiosaari. There will be a cycling and walking route across the island. It is part of the planned larger cycling corridor from the city center to Vuosaari.

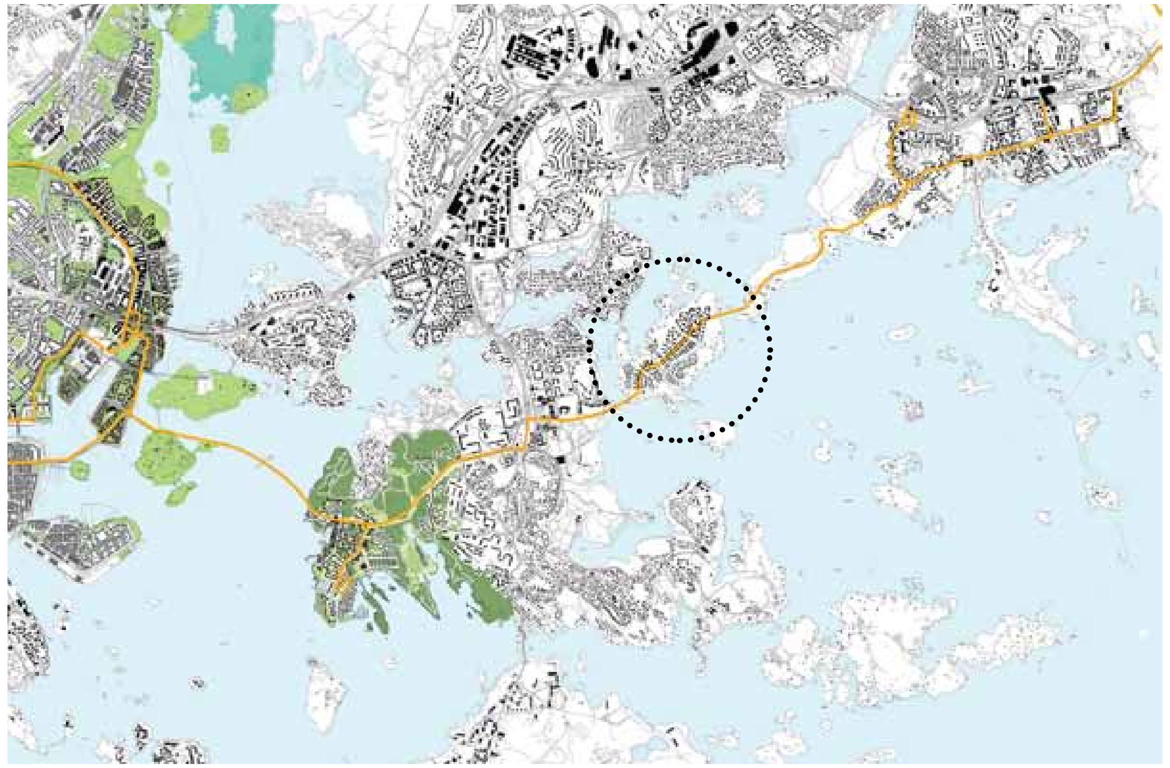
On the dense housing areas the parking is based mainly on the centralized parking under ground. Most of the new construction is directed to the central parts of the island. The target is to design a dense and terrain adaptive hill town with great sea views. Culturally and historically valuable garden-like villa area will be taken into account when planning the complementary housing and recreational areas on the shore line. Urban public space is to be a high quality, unique and should strengthen the identity of the archipelago town.

Careful planning of green areas, with a varied vegetation, green roofs etc. will compensate the loss of natural vegetation, and the greenhouse gas emissions produced by the new built areas. Alternative renewable energy sources (such as solar energy) are promoted by using the property-specific solutions. Wood construction and the use of environmentally friendly building materials will be encouraged.

(source: Helsinki City Planning Department)



(picture: Helsinki City Planning Department)



A draft of the new tram connection
(picture: Helsinki City Planning Department)

Vartiosaari as a part of the East Helsinki Cultural park
(picture: Helsinki city plan 2002/ Helsinki City Planning Department)

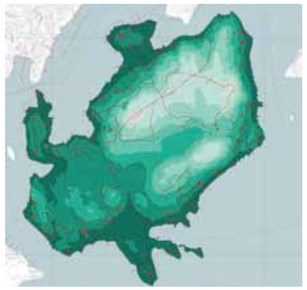
The possible new connections and nature paths.
(picture: Helsinki city plan 2002/ Helsinki City Planning Department)

Vartiosaari (photo: Helsinki City Planning Department)

the planning area of the case study

The landscape of Vartiosaari

The City of Helsinki owns most of the island. There are few private plots on the coastline. The topography of the island is very variable. Vartiosaari has rich natural conditions. The villas are located mostly on the coast of the island and the plots are mainly accessible only by sea. The island has no roads, but relatively comprehensive network of paths.



Buildings

- building
- path

Land ownership

- The City of Helsinki
- Private

Cover

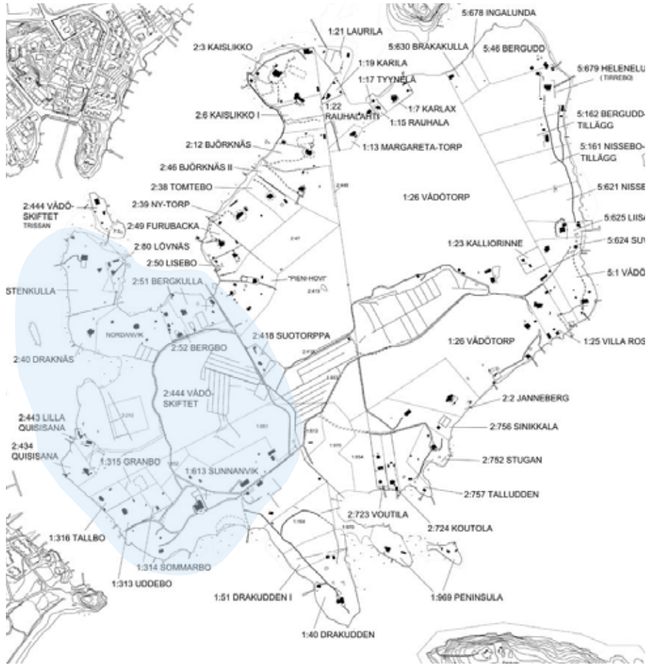
- dense forest
- semi-open wooded terrain
- semi-open/open meadow, agricultural area

Topography

- 0-5m (above sea level)
- 5-10m
- 10-15m
- 15-20m
- 20-25m
- 25-30m
- 30-35m

(pictures and photos: Helsinki City Planning Department)

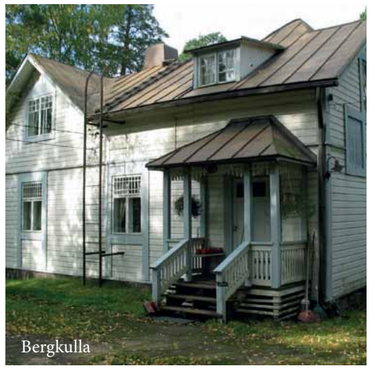
Pictures of the existing villas in the planning area

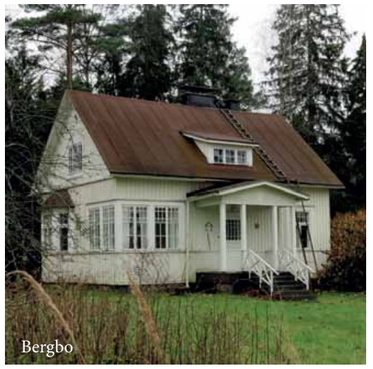



Stenkulla


Sunnavik


Suotorppa

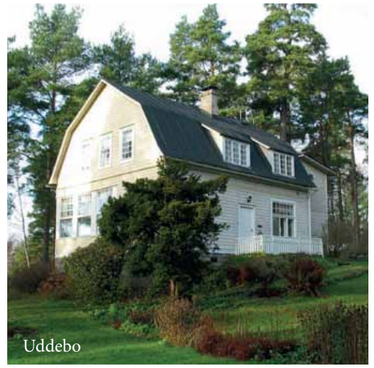

Bergkulla


Bergbo


Draknäs


Nordanvik


Sommarbo


Uddebo


Quisissana

(pictures: Helsinki City Planning Department)

Sustainable Vartiosaari

It has been predicted that in the future people want to live and work close to other people who share the similar values and interests. Nowadays the cities and companies tend to appeal to as many as possible. It could be that in the future the cities, neighbourhoods and companies will have to stand out and be more unique to attract people. In the future there could be fewer neutral and anonymous solutions, and more characteristic neighbourhoods which would be attractive only for special target groups.

Cities would not be seen only as a built structures, instead they could be an important wellness factor and something that gives us experimental and comfortable experiences. In the present solutions, efficiency and economy often override everything else as design principles.

Vartiosaari is already a special and unique place. This should be highlighted when designing and building the new residential area. Also the invaluable nature of the island should be preserved as much as possible. It should not become a new anonymous concrete suburb. The identity of Vartiosaari could consist of maritime nature, strong sense of community and sustainability. It could be a new test area for a sustainable living and people around world would come to learn and see how to live totally ecologically.

The island could unite similar people together. What if Vartiosaari would be a freetown like Christiania in Copenhagen? It could have a reduced bureaucracy and be a self-proclaimed autonomous neighbourhood. Vartiosaari could be a test bed for "architecture without architects" or "urban planless"- concepts. There would be space for DIY-construction and joint building ventures, which would strengthen the sense of community too. In the future inhabitants are more involved in the construction field. The needs and ideas are coming from the grass-root-level as well, and do-it-yourself-attitude has spread widely. Construction could be unrestricted, flexible and spontaneous. Changes could be easy to make, and the needed bureaucracy be decreased significantly. The residents could have the right to make the decisions related on their living environment.

At least the urban plan of Vartiosaari could have increased flexibility, in order to allow to change the purpose of the spaces without a heavy legislation and long term change process. There could be lots of communal spaces, but the function of the spaces would be due to the residents. The buildings and the functions of the spaces could also change along the seasons, so called seasonality architecture. Or there could be opportunities for temporary uses of the spaces in Vartiosaari. Multipurpose public and shared spaces could be aplenty, and some of the communal spaces could be built after the residents have moved in, in order for the residents to be able to define what is needed functionally.

The sustainability in Vartiosaari could be achieved via energy-efficient buildings and energy solutions, and but also with sustainable lifestyles. Sustainability is more than green building solutions and energy efficiency, it consists also of the social and cultural aspects. There are already allotments gardens in Vartiosaari, so urban gardening or even vertical gardening could be included in the design. Wood could be used as a building material because it is local, durable and healthy. Wood is also a renewable material and it can be recycled.

It is likely that there will be changes in work and working practices in the future. Teleworking creates a need for co- and tele-working spaces. Especially "the creative class" for which the division between work and leisure may have been diminished in the future, will need flexible spaces. There could be also lots of service based jobs in Vartiosaari. Culturally, part of the maritime-lifestyle ia that the work is changes when the seasons are changing. This could be reflected in the design.

Sustainable, close to the nature, slow healthy life could be the characteristics of Vartiosaari. The residents of Vartiosaari might value more the quality of life than materialism.

Principles for sustainable society

1. Zero carbon
2. Zero waste
3. Sustainable transportat
4. Sustainable materials
5. Local and sustainable food
6. Sustainable water management
7. Land use and wild life
8. Culture and heritage
9. Equity and local economies
10. Health and happiness

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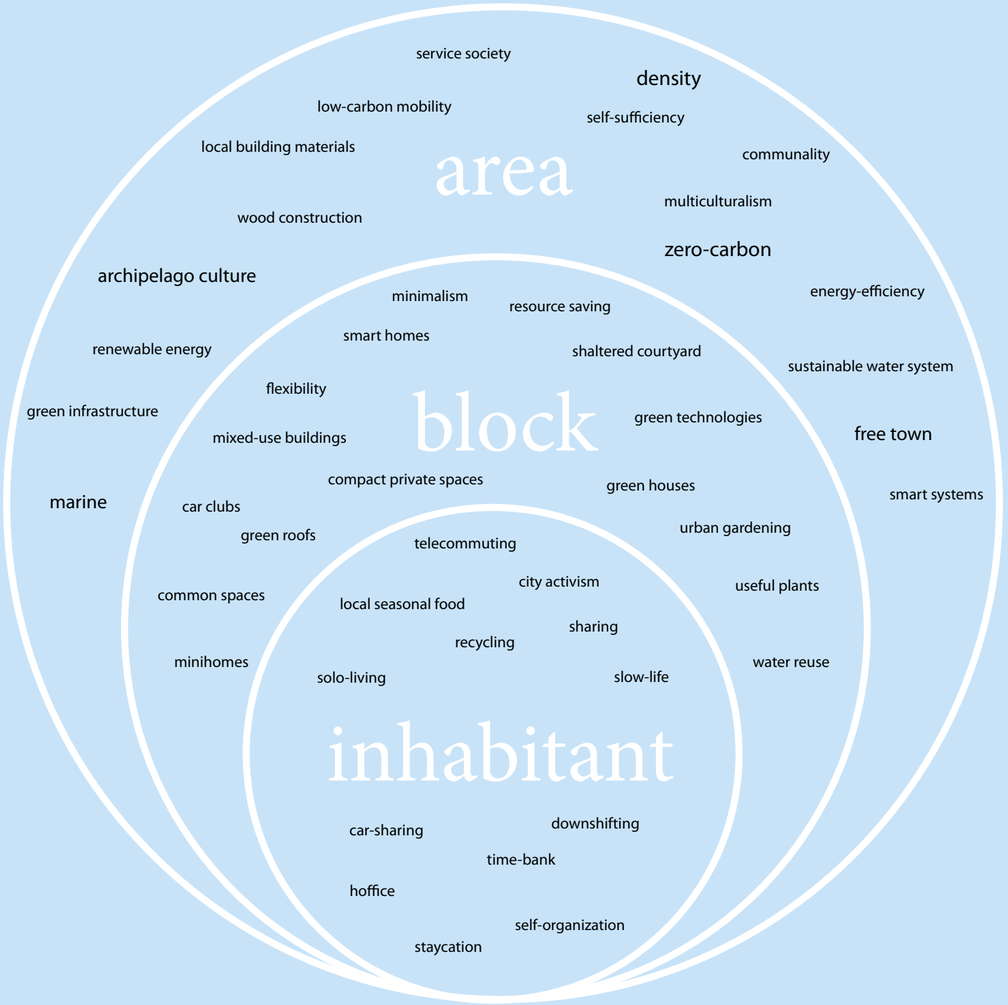


floating services

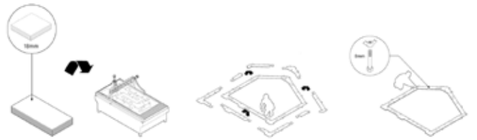
sustainable way to commute

services on trails

bikelift

hitch hiking stop for bicycles

Ideas for sustainable Vartiosaari



WikiHouse

WikiHouse is an open-source project for designing and building houses. It endeavours to democratize and simplify the construction of sustainable, resource-light dwellings.
WikiHouse enables users to download building plans from its website, customize them and then use them to create pieces out of plywood with a CNC router. Construction of WikiHouse structures requires no special parts because the cut pieces of wood snap together with wedge and peg connections. The frame of a WikiHouse can be assembled in less than a day by people with no formal training in construction. The frame must then be finished with cladding, insulation, wiring, and plumbing before it can be inhabited.

(source: Wikihouse)

Most likely there will be more open source construction systems in future. That could encourage people for DIY-construction. The residents themselves could build for example shared common spaces afterwards. There could be flexibility on the urban plan as well on the construction laws. Some areas could be left unbuilt in the beginning, and then the residents could decide what kinds of spaces are needed.

The average european lifestyle, today (per year)

- 10 000 km car
- 2 000 km public transport
- 546 kg of food with 19% meat, fish and seafood
- 37 m2 person heated living space
- Resources for other consumption items and leisure time

= MATERIAL FOOTPRINT OF ABOUT 29 000 KG

→

Sustainable european lifestyle, 2050 (per year)

- 10 000 km by means other than private automobile
- 500 kg of mostly vegetarian food
- 20 m2 /person in a zero-energy house
- 1000 kWh of wind and solar power
- Fewer but sufficient household appliances and other equipment
- Some resources for leisure time and other purposes

= MATERIAL FOOTPRINT OF ABOUT 8 000 KG

"The material footprint is a tool to measure, manage or optimize the resource consumption associated with our lifestyles. It includes materials used in the products and production processes that support our consumption, mobility, housing, health. A material footprint means the use of renewable and non-renewable material resources (excl. water and air) plus the erosion caused by agriculture and forestry. It covers the whole lifecycle from the extraction of raw materials to the processing industry, distribution, consumption, recycling and disposal of all extracted materials."

(source: SPREAD sustainable lifestyles)

Supporting the communality

Internet will affect how the society will be organized. Internet is changing our society and our lives. It will shape the way we interact with others and it has made us more individualistic and more social. Internet will help us to communicate with people who share the same interests, values and taste and to built new kinds of communities. Nowadays the community is not restricted by the geography, physical contacts or social status, instead people can create relationships and smaller units with anyone. It is much easier to find similar minded people. As there are already social communities online, it could be that those groups also gather physically as future occupants of a houses, blocks or neighbourhoods. Or even cities.

Joint building ventures have become more popular. It means that a house or a group of houses will be built by a voluntary, non-profit group of future residents. Usually the project is assisted by professionals. It is not a new invention., for example 50-100 years ago many apartment blocks were built by a group of residents. It is quite a usual way to built apartment blocks for example in Germany.

Joint building ventures is a good way to influence the solutions and design of your own home. Buying a home is one of the most significant investments in one's life. Therefore in the future people may want to influence more the housing alternatives, even when one wants to live in a block of apartments in the city, not only when building a single family house in the countryside. In Helsinki the joint building ventures have been mostly semi-detached houses, rowhouses or townhouses, even though few apartment blocks have been built and more is planned.

The challenge of joint building ventures is that the group of future residents are typically just a random selection of people. Only common thing might be that they are interested in joint building ventures. Instead in the future it is likely that groups that share common the interests and values build houses together.

Theme-houses could increase as well. Apartment houses could be more unique. There could be a theme according to which the garden, common spaces and apartment would be designed. For example there could be dog-friendly apartment housing. Usually a resident with a dog is not extremely popular tenant, but this property could be turned into a criteria that defines the type of the housing. There could be a dog park or an agility course on the common yard, the dogs would be welcomed on the saunas, and the materials and details would be designed also for dogs. It would be easy to develop also services related to the theme and new business ideas; a dog hotel, grooming, dog food circle and so on. Or another block for musicians; a common studio, well-insulated walls, a stage on the courtyard, instruments recycle-corner, music teaching etc. Or an urban gardening block with green houses, seasonal food cafe and apples on sale.

Nowadays the common space of the apartment blocks typically looks the same and feels like it is just something that has been built because of the legislation. The common spaces could be more specialized and controlled by the residents and shared across various housing companies or communities.

These kinds of theme-blocks would support the community and facilitate communality and interaction. One would have a strong sense of being a resident of the dog-block, but going to concerts on the open stage of the musicians block and buying vegetables from the urban gardeners.

Because Vartiosaari is already geographically a closer neighbourhood it would provide a good framework for new kinds of communities. The island would be naturally a small community, and the residents would have the identity of being a resident of Vartiosaari. However, there could be smaller units of communality as well . At least it is important that Vartiosaari would be a characteristic, unique and a special new residential area.

Small scale communities interacting in the Vartiosaari

The concept of the planning area

There will be three different villages in Vartiosaari. The planning area of the case study is part of the first village of Vartiosaari reached when arriving from the South. The planning area is on the west side of the main street and there is a tram stop on the center of the area.

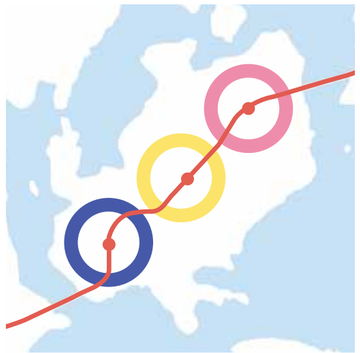
Tram stop is surrounded by higher and more densely built apartment blocks and there are also spaces for different kinds of services available (retail, common services, working spaces). A public space, a square, is formed near the tram stop and it connects the park on the east side of the main street to the harbour on the west side.

The naturally formed bay is highlighted and a new harbour and recreational area is designed. The new harbour attracts boaters, sailors and canoeist to have a break in Vartiosaari. In addition, there are recreational services for all. Kanasaari, a little island near by is attached to the harbour by a new bridge and it allows to enjoy the seaview in quiet.

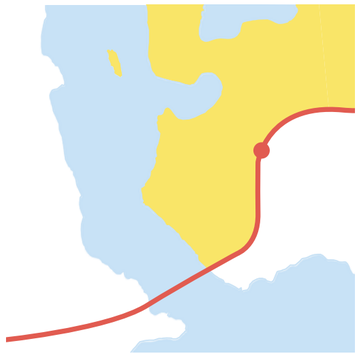
The area's highest point is left unbuilt, and the existing viewpoint is made more accessible. The island's nature path is going through the viewpoint as well the harbour.

The buildings are higher along the main street and near the public square. The buildings are shrinking towards the forest and blends into the scale of the old villas. The vehicle traffic is restricted and there are two main roads to the plots and to the parking areas underground.

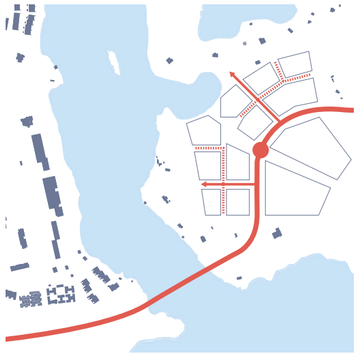
There is a low-speed street, mainly for pedestrians, going through the area and it makes a safe and comfortable way to get to the nature and other parts of Vartiosaari. A green belt separates this harbour village from the other village.



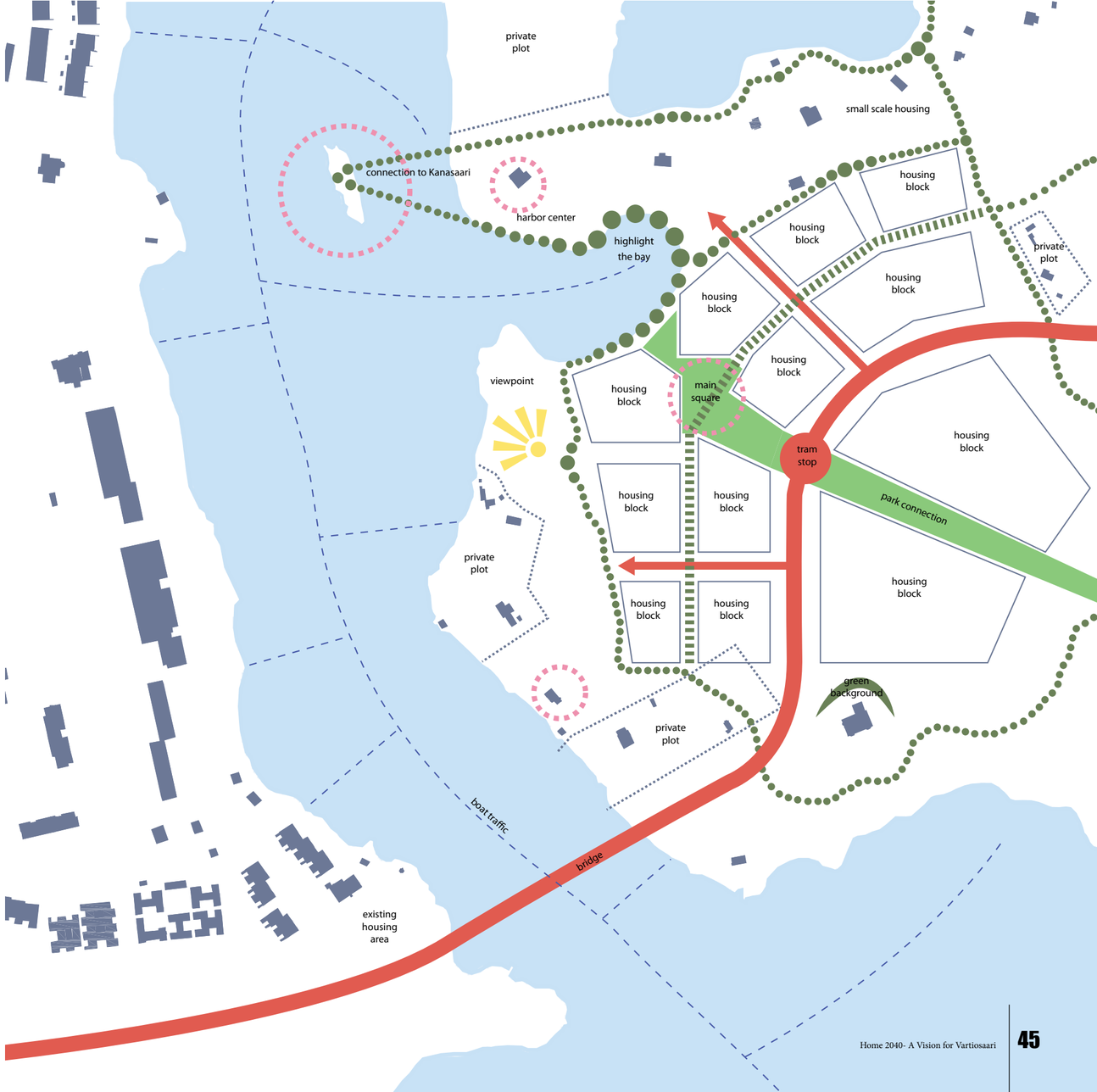
The three villages of Vartiosaari



The planning area



Building blocks and traffic connections




PRIVATE PLOT
VILLAS
SERVICE
SERVICE
SERVICE
VILLAS
PRIVATE PLOT
SERVICE
PRIVATE PLOT
VIEWPOINT
TRAM STOP
UNDER-GROUND PARKING
LILLA QUISISANA
UNDER-GROUND PARKING
QUISISANA
TALLBO
SOMMARBO
SUNNANVIK
PRIVATE PLOT
UDDEBO
0
50
100

Mix land use and compact city structure

Vartiosaari would be a perfect platform for a new kind of ecological residential area. The aim could be to be a self-sufficient island. In the future Vartiosaari could be a versatile, pleasant neighbourhood with good connections to the nature and recreational areas.

Vartiosaari could be a walkable neighbourhood. The necessary daily services would be within a walking distance. There would be easy connections to the public transportation, and the use of private cars would be decreased.

In this plan the approach of compact building design and mixed land use has been taken. Denser blocks are located along the main street and near the tram stop. There are lower and smaller buildings near the forest and the existing villas. In the future there will be a great range of housing opportunities and alternatives. The development decisions are predictable, fair and cost-effective, and the community and stakeholders collaborate in development decisions.

Vartiosaari could be a distinctive, attractive community with a strong sense of place. The natural beauty and critical environmental areas have been preserved. The development in Vartiosaari would strengthen also the existing communities.

Energy

Vartiosaari area could be a pilot project for energy efficient self-supporting residential area. The goal would be to be a carbon neutral island. Vartiosaari could become a showcase of creative and sustainable energy solutions in Helsinki. Energy production and the use of energy should be designed and optimized as a whole on island level.

All the energy in Vartiosaari that would be produced is renewable energy. The heat could be produced in a heating power plant what uses only renewable energy sources. A lot of the energy needs could be produced locally by solar energy, for example by orienting the buildings towards the most optional cardinal directors to maximize sunlight, and to make the passive heating more efficient. Geothermal heating could be one option, as well as uses of sea water for cooling the buildings.

The roof surfaces could be used for collecting solar thermal and photovoltaic. A significant amount of single-family houses' electricity and hot water could be produced by solar panels. Vartiosaari could be a test bed for new kinds of energy solutions, for example wave-energy, smaller scale wind power or energy produced by biowaste.

But most important aspect from sustainability perspective is that the residents will use energy sparingly. The usage of electricity, energy and water could be monitored by a real time system in order to avoid peaks of consumption. In the future a carbon emission limit is likely part of everyone's life, and does not only affect countries or companies. Everyone would have an emission account and quota, and people are following their emissions carefully. If one wants to go aboard by plane, he or she must save certain amount of carbon-credits in order to be able to afford it. One could also save emissions and sell it forward.

Buildings

In this area there is 48 100m^2 GFA and the area density is 0.87. The higher buildings (max. 5 floors) are along the main street and the main square. The blocks itself are quite efficient and the most dense is e=2.0. All the blocks have a private but common courtyard. There is a variety of the floor heights even within in a block.

Buildings in Vartiosaari should be highly energy efficient, high quality, eco-friendly wooden buildings, and they are built to last decades. Solar panels, photovoltaics, green roof, gray water systems and so on are default solutions in houses.

Vartiosaari could invest heavily in new innovative wooden structures and accessibility. Wood is used as a building material because it is local, durable and healthy. It is also a renewable material and it can be recycled. Wood has many advantages as an ecological construction material. It is renewable and ecologically discardable.

In the future, wooden structures will be used in buildings much more intensively than at present due to aesthetic, economic and ecological values. Wood is also ideal with respect to its physical properties as it is easily workable and can be combined with other materials such as stone, glass and metal. It is also conducive to a pleasant indoor climate. The demand for wood by the wood-using sectors is estimated to grow by 40% in volume by 2030–2050, with strong demand particularly in the building sector to replace steel and cement.

1. 3100 m^2	e=1.3
2. 5500 m^2	e=1.9
3. 4100 m^2	e=1.2
4. 5800 m^2	e=1.6
5. 6000 m^2	e=1.6
6. 5900 m^2	e=2.0
7. 5400 m^2	e=1.8
8. 8100 m^2	e=1.4
9. 4200 m^2	e=0.7

total 48100 m^2 GFA
area 55500 m^2
area e= 0.87

Traffic and mobility

The main street and the three tram stops (harbor-, meadow- and hill-village) connects all the main functions of the area. The main way to commute in addition to walking and cycling is the public transport, in this case, tram.

The benefits of public transport are for example that it ensures safety, saves money, eases traffic congestion, improves air quality, reduces energy consumption, stimulates economic development and fosters more livable communities.

Pedestrian and cyclist routes are clearly separated from car traffic and they provide safe connections to all parts of the region.

Parking lots are located in the underground cellar in the blocks or centralized in underground parking garages.

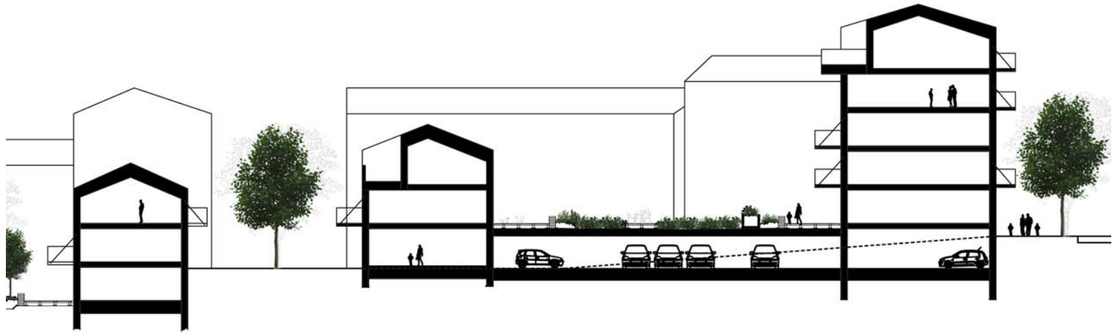
Vartiosaari could also be entirely car-free island. However, the location is considered too faraway from the city center of Helsinki. If the car-free trend is growing, all the parking garages do not need to be built. Also, it is not known how quickly for example the ecological electric cars will develop and gain popularity. It may be that the amount of cars will remain the same, but the usage of the car will be more ecological.

However, it is recommended that there would be less cars but the utilization rate would be higher. This would be achieved for example by carsharing. Carsharing allows a member (of a household or a business) to access a fleet of shared cars and other types of motorized vehicles when needed, by paying a usage fee each time. Carsharing helps the community reduce the number of trips and distances travelled by private cars. It also releases more space for productive uses, because there is no need to expand the space that is currently occupied by roads and parking areas.

Communities also benefit from lesser air and noise pollution. There should be facilities for shared vehicle use, such as carpool drop-off areas, designated parking for vanpools, car-share services, ride boards and shuttle services in Vartiosaari.

Land consumption for car parking is reduced by concentrating parking spaces in collective car parks. Space-saving parking options (multi-storey parking garages, basement car parks, automated parking systems) could be used in Vartiosaari. The cost of parking and construction of the parking spaces are directed to the users of the cars.

in any case it would be desirable that the need to commute would decrease due to denser city structure, local services and telecommuting.



Above an idea how the parking could be arranged. The advange of the topography has been taken.

An example how the parking could be arranged, if the need is 1 car per 120 m² GFA

Functions

Most of the work spaces and collective spaces are located in the ground floor and along the main street. There are retail services near the tram stop and the multipurpose spaces where people could interact around the main square. The services related to harbour activities are next to the sea.

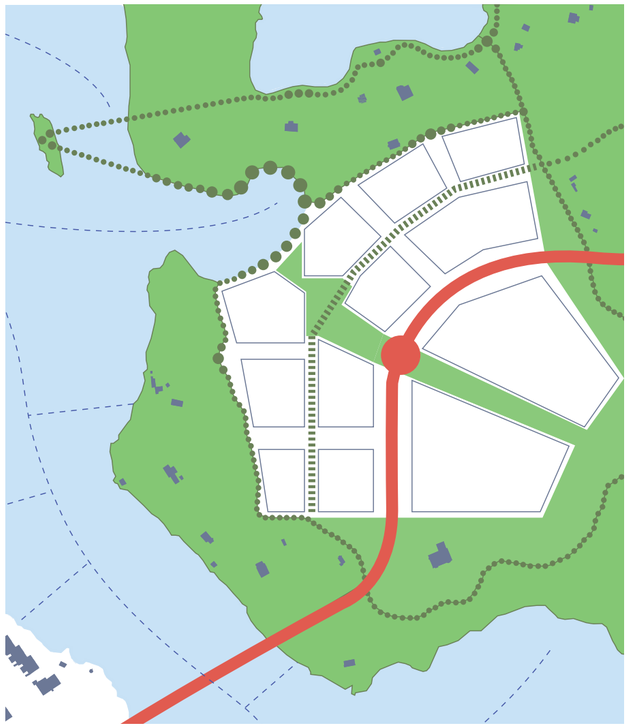
housing
workspace / common space
multipurpose space
commercial / retail

Green areas

The streets in Vartiosaari nudge people to walk and cycle. The streets are green and lush in Vartiosaari. A green street uses a natural system approach to reduce stormwater flow, improve water quality, reduce urban heating, enhance pedestrian safety, reduce the carbon footprint, and beautify the neighbourhoods. Green street features include vegetated curb extensions, sidewalk planters, landscaped medians, vegetated swales, permeable paving and street trees.

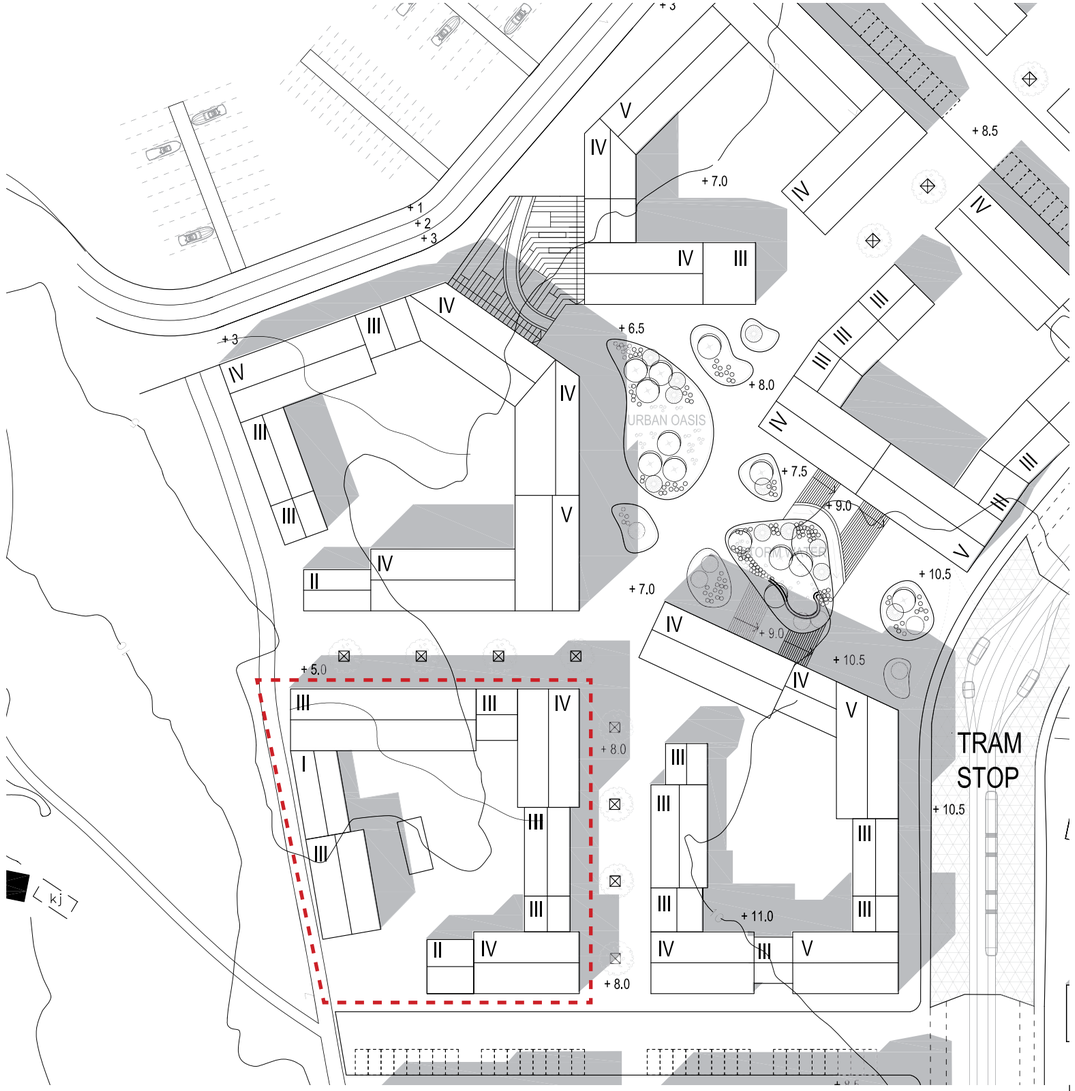
In Vartiosaari there could be spaces for urban agriculture and cultivation. It would help to deliver a series of advantages, such as contributing to food security and improving self-sufficiency. Urban agriculture can produce organic food and use less water and chemical fertilizers compared to agricultural practice on large farms. It provides places for interaction and community identity, with educational initiatives around gardening and improves overall consumption cycles.

Vartiosaari favours green roofs. Green roofs provide numerous ecological and financial benefits. They reduce the runoff volume and peak discharge rate by holding back and slowing down the water that would otherwise flow quickly into the storm drain system. They utilize the biological, physical and chemical processes found in the plant and soil complex to prevent airborne pollutants from entering the storm drain system. They reduce the heat island effect, summer air conditioning costs, and CO2 impacts. Green roofs are also aesthetically pleasing. They protect the roof membrane from damage and decay, and can potentially lengthen the lifespan of the roof by two to three times. Green roofs and intensive small-scale gardening in the city are providing fresh local food.

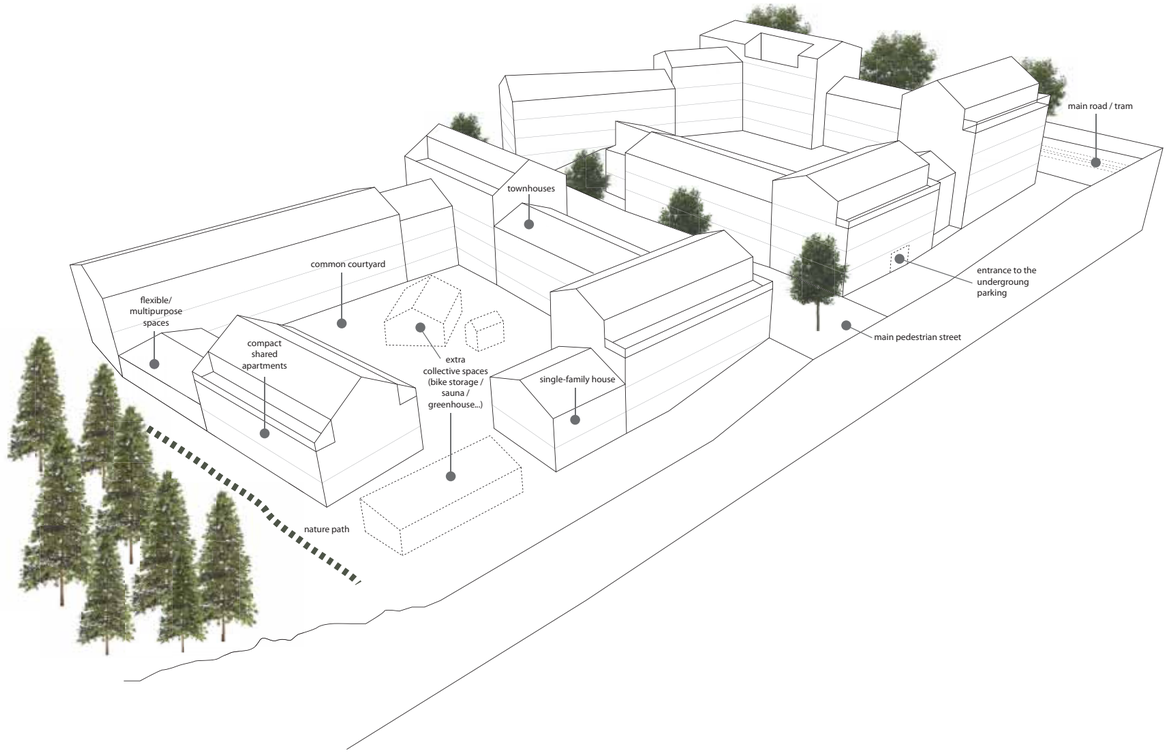


a perspective of the main square

a section from the main street to the sea 1:1000

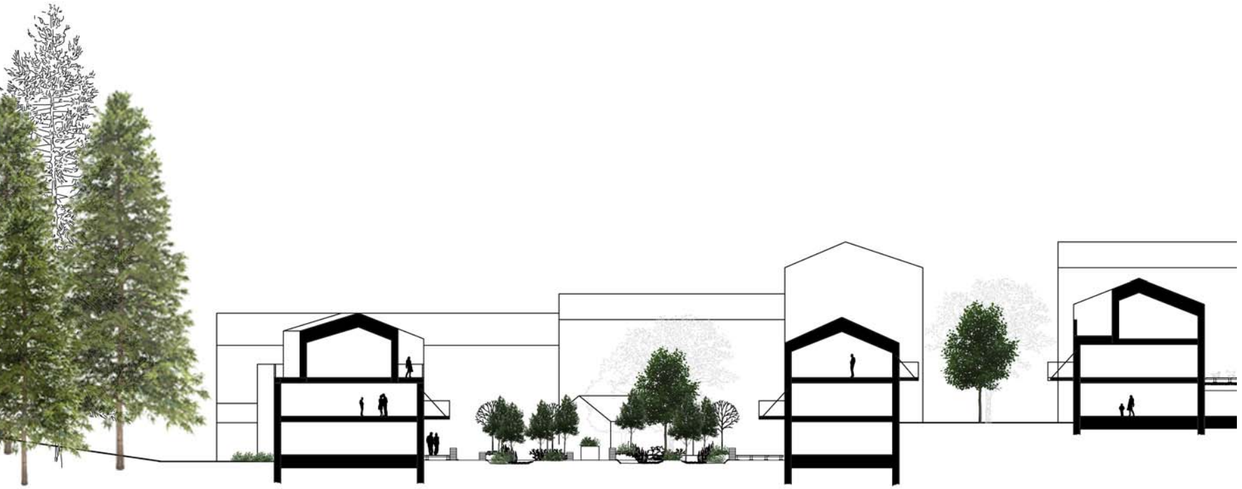


A vision of the future harbor in Vartiosaari

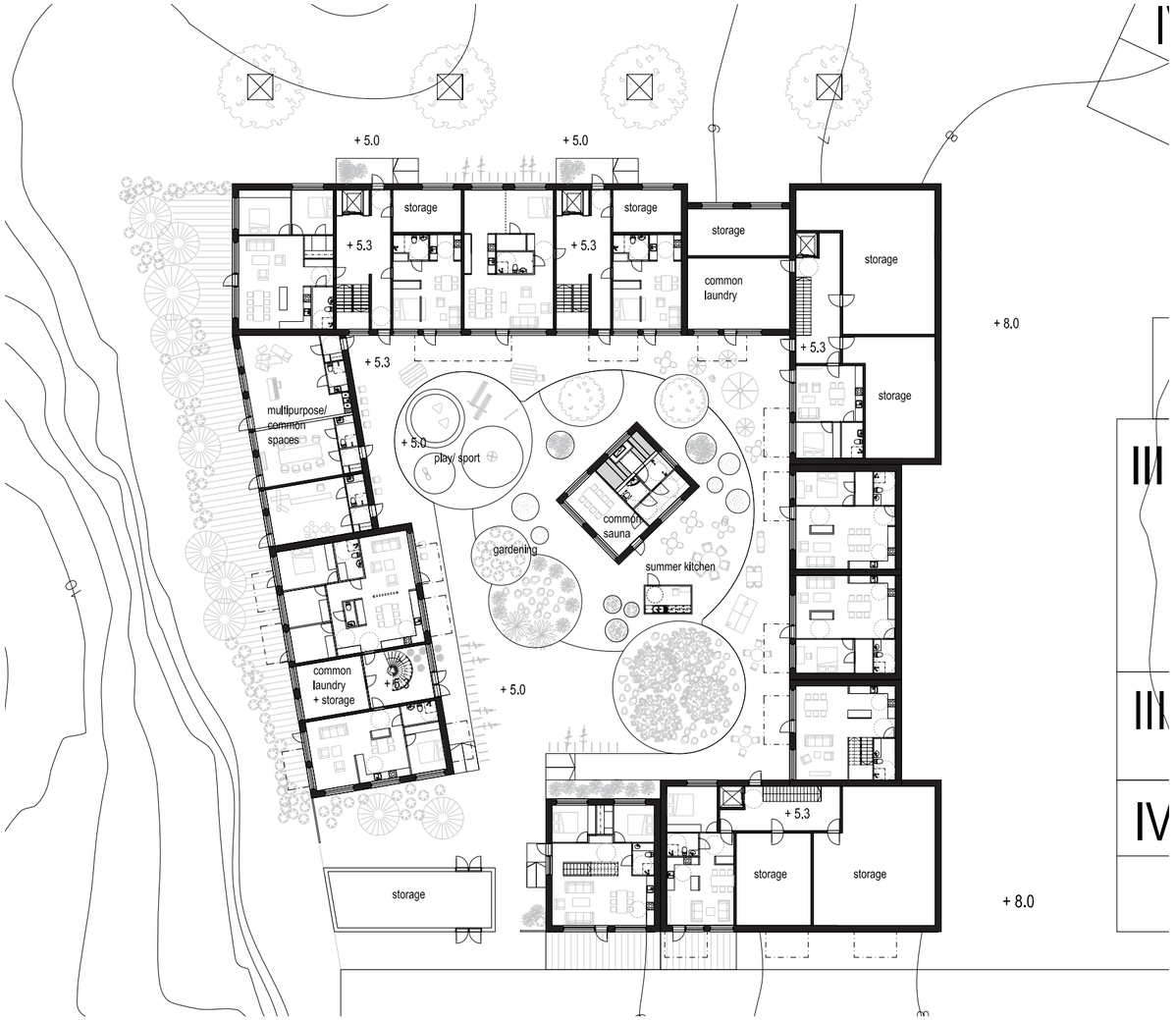


an axonometric picture of the block

a perspective of the courtyard

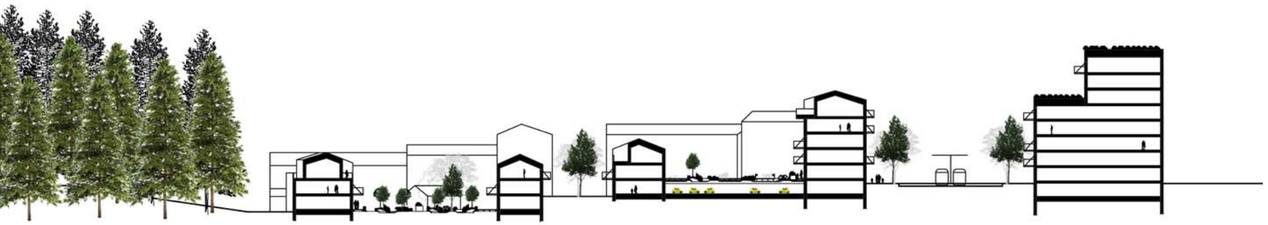


a section of the block 1:400



the ground floor 1:400

a perspective of the main square



a section of the blocks 1:1000

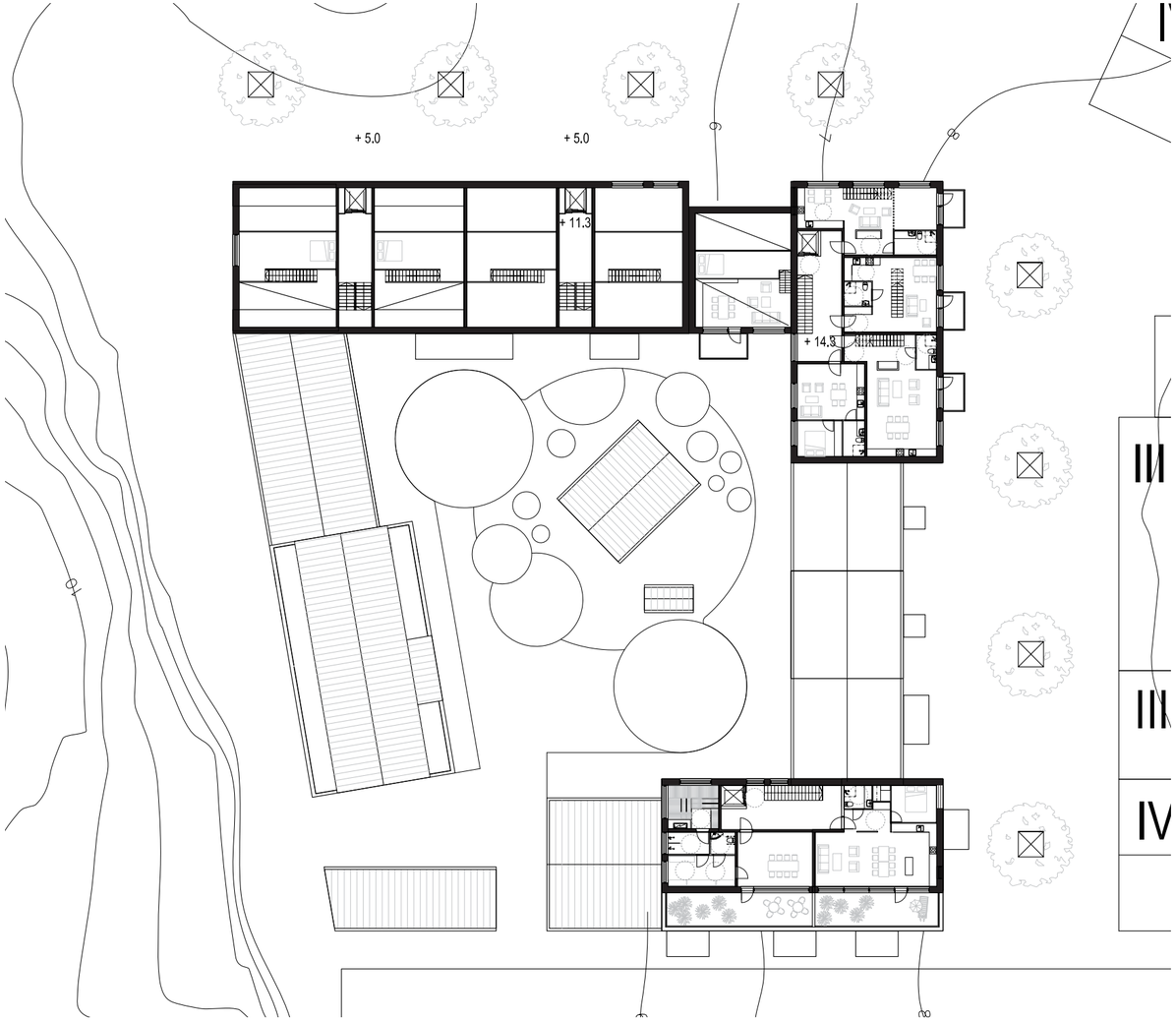
the first floor 1:400

a perspective of the main pedestrian street

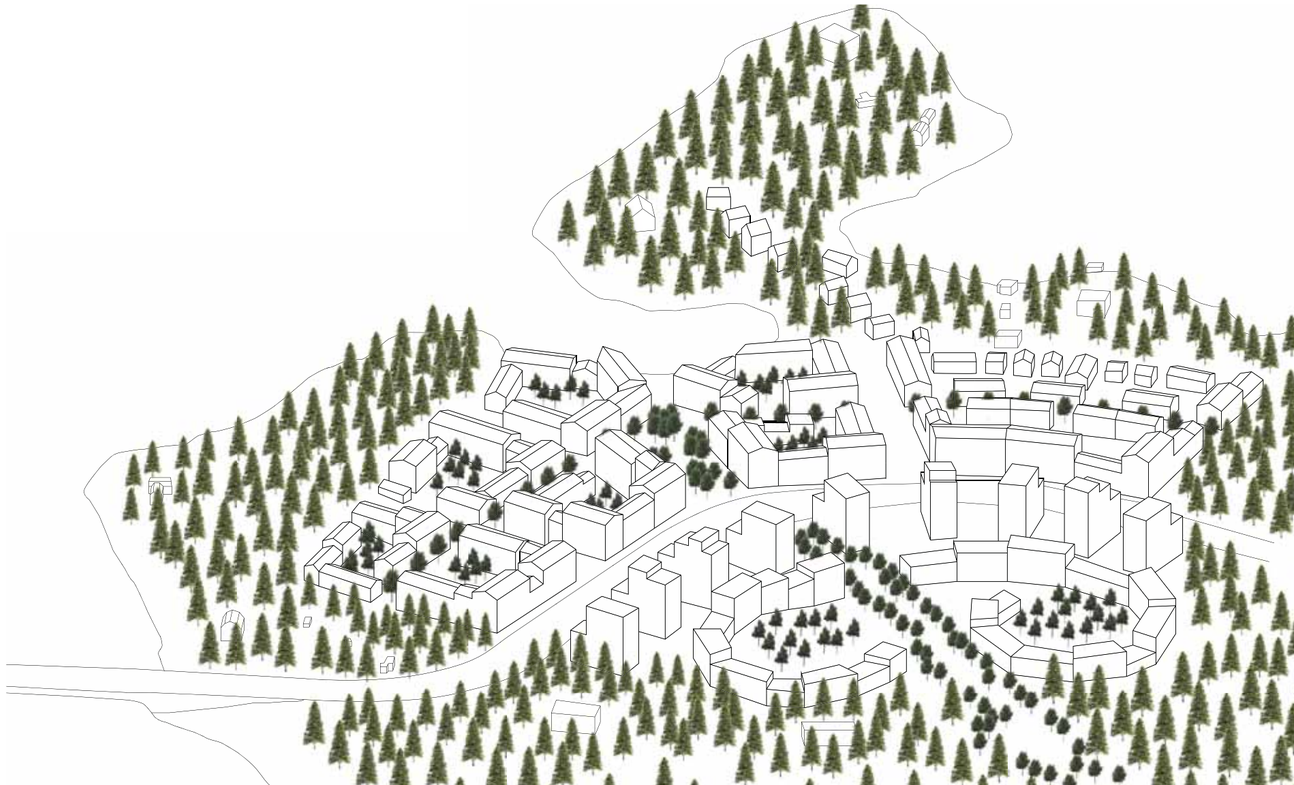
a section of the pedestrian street 1:2000

the second floor 1:400

A perspective of the main street



the third floor 1:400



Conclusion

The future is very unpredictable and extremely interesting subject. Small, random events can change the direction of life entirely. The future cannot be predicted, but it is useful to prepare for various scenarios and question the prevailing paradigms. New generations are used to living in abundance, and owning a detached house and a car in an urban area is not necessarily the life goal of the majority any more. At least it is not certain that everyone can afford those in the future, as we need to lead more sustainable lives, which means reducing our consumption and carbon footprint. Perhaps in meaningfulness, purpose of life and spiritual values are more important than materialism in a welfare society of the future. Naturally abundance of water and clean food remain the basis of a functional society in order to fulfill the basic needs of people, but pursuit of wealth and material goods might play a less significant role in peoples' lives.

These trends could be taken into account in the urban planning and housing design. The design of Vartiosaari could highlight communality, ecological living and slow life as a counterforce for constant stress and busy lifestyle. Slow life could prevail: slow food, slow travel, slow sport. Listening to life's natural rhythm and enjoying the moment.
People who value sustainable living, social justice, environment and healthy lifestyle could build their lives at Vartiosaari.

Vartiosaari could be profiled to as a home for development of experience economy. New experiences and nature could be the focal points of Vartiosaari's economy, as well as welfare and healthcare services. The services could be based on clean environment, nature as a source of relaxation and near food. Vartiosaari could be a paradise for living and relaxation. Building Vartiosaari would make it possible to create new recreation areas, renovate the Villas, and create accessible connections to enjoy the view to the sea. It would be important to invest in innovative, high-quality housing solutions and sustainable development.

(photo: Helsinki City Planning Department)

Afterword

The deeper one goes into a subject the less you realize you understand. This thesis is a high level survey into several extensive topics. Many of the themes of the thesis could themselves be topics for a deeper research. Any single one of the megatrends identified and its effects to urban planning or housing design could be the basis for a thesis. Detailed housing solution design for example communal living could also be an area of research itself.

In any case, while writing this thesis, I discovered many new ideas and an interest for further study of the topics. This enthusiasm will provide a good platform for professional development and additional learning in work life. A key learning for me is that small things can eventually lead to dramatic changes in life.

Niina Rinne
Helsinki 25.4.2015

(photos: Niina Rinne)

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PICTURES AND PHOTOS

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The photos on the covers: different users in Instragram (#Vartiosaari)

SEMINAR: Asuinpaikkana Vartiosaari 2030 -tulevaisuusilta, 11.12.2014, at Laituri, Helsinki