SMART RETRO

– NOVEL WAY TO DEVELOP CITIES

BASELINE REPORT
#smartretro #smartups #services #urban #renewal #localeconomy #energy #smartcity #retrofitting #startup #placemaking

DEMOS HELSINKI

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and funded by Nordic Innovation and the project partners.

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CONTENTS

YOUR HOME NEIGHBOURHOOD IS CHANGING 5

1. INTRODUCTION – WHY SMART RETRO? 7
Trend 1. **Energy scarcity** 9
Trend 2. **Renovation debt** 9
Trend 3. **Retail in disruption** 10
Trend 4. **Smart City** 11

2. OUR APPROACH: THE SMART RETRO PROJECT 12
Goals of the project 13

3. WHO ARE INVOLVED IN SMART RETRO AND WHY? 14

4. SMART RETRO CASE AREAS 18
4.1 **City Centre**, Lahti 19
4.2 **Bagarmossen**, Stockholm 28
4.3 **Kvadraturen**, Oslo 35

5. EMERGING PRACTICES IN DEVELOPING CITIES 41
5.1 **Smartups** 42
Fourdeg 42
Iagree 42
Nimber 43
Bringbee 43
Bettervest 44
Crowdpowerplant 44
GoWorkABit 45
Granlund Manager 45
Nearhood 46
Spacehive 46
SnipSnap 47
Upshiftcars 47
Community PlanIT 47
Growington 48
5.2 **Retrofitting Projects** 49
Albertslund, Denmark 49
Birkegade, Denmark 51
Søpassagen, Denmark 52
Peltosaari, Finland 53
Porin Puuvilla, Finland 54
Ny Krohnborg School, Norway 56
Infill's Kindergarten Projects 57
Powerhouse Kjørbo, Norway 58
Ringdansen, Norrköping, Sweden 59
Botkyrka, Stockholm County, Sweden 60
Sätra, Gävle, Sweden 61
Ronna, Södertälje, Sweden 62
Vivalla,Örebro, Sweden 63
5.3 **Placemaking** 65
Sargfabrik, Austria 65
Newcastle Central Business District, Australia 66
Hökarängen, Sweden 67
Tabakfabrik, Austria 69

6. CONCLUSIONS 71

7. REFERENCES 73

"Smart Retro project develops new service concepts with experts and end-users."

YOUR HOME NEIGHBOURHOOD IS CHANGING

WHAT ARE YOUR HOME and neighbourhood look like in twenty years? The radical development in smart solutions, the ageing of building stock, our need to radically cut our greenhouse gas emissions and many other strong drivers are changing the way we live, faster than ever before. That change is particularly significant in areas with older building stock - but it is not deterministic change. This is a baseline report for Smart Retro: a project exploring how we can rein in the strength of emerging trends – like digitalisation and the sharing economy – and use them to steer the development of our cities into a desirable direction.

Many smart city projects focus on newly-built areas[1]. This makes the integration of new smart technologies into "dumb" walls, roads and buildings relatively easy. Unfortunately, the model of building entirely new stock doesn't solve the challenges and needs of our existing cities: in 30 years, the majority of urban dwellers will most likely still live in neighbourhoods built in the 20th century.

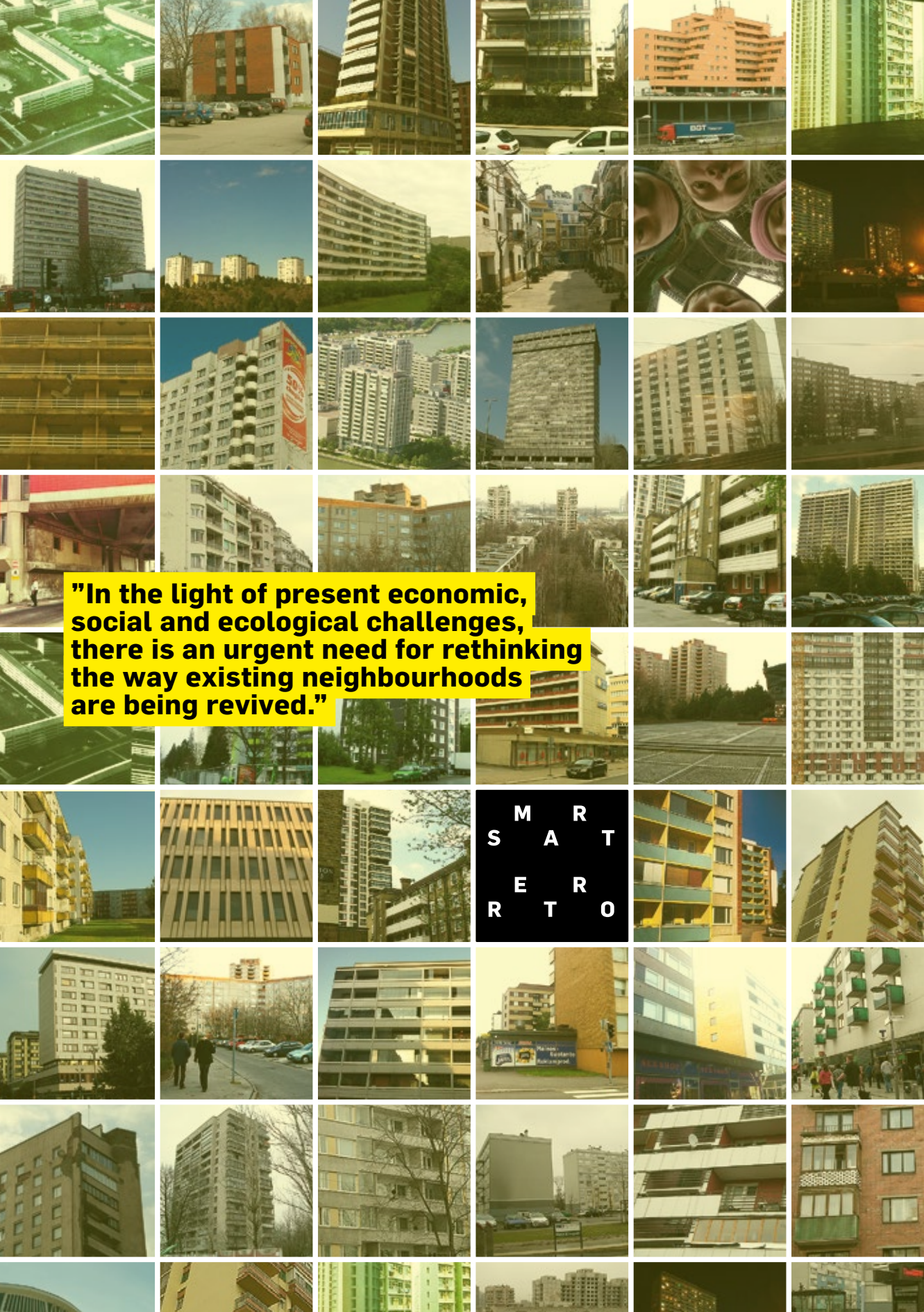
The starting point for Smart Retro is therefore existing building stock: smartness must be *retrofitted* into old buildings and previously constructed areas. The word **Retro** refers to buildings and areas that are ageing and in need of renovation at an accelerating pace. They require retrofitting with new solutions. These practices are introduced in the *Retrofitting Projects* section of this report. **Smart** refers to the inevitable digitalization and the new ways in which we can harness our distributed resources. This development has strong disruptive effects but also opens a plethora of new possibilities. **The sustainable city** is tomorrow's necessity: greenhouse gas emissions must be cut by a large margin and resource efficiency needs to be radically improved. **Sustainable urban services** are an integral part of that advancement – these digital, local services provide new jobs and make our cities more livable. They improve our quality of life. A selection of companies at the frontline of these new service providers are presented in the *SmartUps* section. Many Nordic areas are dilapidating not only in terms of buildings but also in services and urban activity. That is why it is important to look at the case studies in the *Placemaking* section, which demonstrates that the strongest urban vitality often derives from the engagement of locals, good services and suitable infrastructure.

THE SMART RETRO PROJECT develops new service concepts with experts and end-users. The most promising services are proofed in real city environments. The project aims to create new services, valuable partnerships, and ultimately, a new model that – in the Nordic context – effectively combines the refurbishment of buildings with service development.

This baseline report examines the current state and future prospects of our case areas in Lahti, Stockholm and Oslo, to gain knowledge of emerging practices in the domain of built environment. These examples do not unfortunately reveal how our homes will look in the future. But they do convince us of the radical changes awaiting our urban environment in the coming decades.

Aleksi Neuvonen & **Mikko Annala**
Demos Helsinki

1 See for example the cities of Songdo and Masdar


”In the light of present economic, social and ecological challenges, there is an urgent need for rethinking the way existing neighbourhoods are being revived.”
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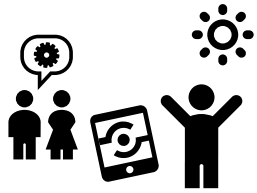
1. INTRODUCTION – WHY SMART RETRO?



MOST CITIES AND URBAN REGIONS of industrialised western societies are now in a situation where old methods of renewal do not work. The replacement rate of existing building stock is low, with official figures in Europe at around 1–2% per year (European Commission, 2013), and extensive mega-projects usually facing challenges such as lack of vacant spaces, narrow funding frames and fragmented political support. Traditionally forward-looking policies and progressive business initiatives have been hindered by top-down planning and visible lighthouse projects, which have sparked change in various corners of society, often without paying enough attention to the subsequent conflicts between the projects' different stakeholders (Campbell, 1996). In the post-modern, networked, European societies of slow growth, these types of 'great leaps' turn out to be very difficult undertakings. Hence the focus is now shifting more towards incremental change, via retrofitting projects, and to job creation in services, which is encouraged by stimulating the local economy.

This situation relates to a number of other challenges facing our societies at the moment. However, these parallel, interconnected problems are also significant opportunities: the renewing of structures can enable the generation of prosperity, well-being and progress.

1 **ALREADY MANY TOWNS** and neighbourhoods in the Nordic countries are poor in terms of services and job opportunities. Traditional manufacturing and service industries will employ even fewer people in the future. An increasing proportion of jobs will be created through self-employment and new sources of income from the peer-to-peer economy (Lahti and Selosmaa, 2013, p.39–52).

2 **RETAIL AND MANY OTHER FORMS** of consumer business are in a state of disruption. Digitalisation, the emergence of e-commerce and different forms of collaborative consumption are all changing the current competitive landscape. Online retail sales in Europe alone are set to double by 2019, growing from €165 billion in 2013 to €330 billion in 2019 (Mintel, 2014). This threatens to leave many neighbourhoods bereft of services. There is a need to reinvent local services and make them a force that unites people and enlivens our cities.

3 **A SUBSTANTIAL AMOUNT OF FLATS** in Europe are in housing areas built between the 1950s and 80s. 31% of Finnish residential building stock was built between 1946-1970. That same figure is 33% for Sweden and 28% for Denmark. Similarly, 23%, 17% and 18% of all residential buildings in Finland, Sweden and Denmark, respectively, were erected in the 1970s (National Board of Housing, Building and Planning, Sweden, 2005, p. 17). Despite being located in good urban regions and having decent access to efficient public transport, many of these neighbourhoods are still overlooked by the middle class and well-to-do families. This leads to development in which the population of the areas is getting greyer and poorer, and becoming demographically biased.

4 **AT THE SAME TIME** urban regions are continuing to expand. The perceived lack of choice in neighbourhoods with good public transportation is partially slowing down the growth of otherwise attractive urban regions. This contributes to urban sprawl.

5 ENERGY EFFICIENCY IMPROVEMENTS are one of the most cost-efficient ways to reduce GHG emissions in cities. Buildings account for up to 40% of all energy consumption in Finland and the rest of Europe, and represent a similar share of Finland's GHG emissions (Berninger, 2012, p. 75). A 2012 study by Tampere University of Technology also found that, with energy efficiency improvements, a single household could decrease its energy consumption by more than 40% (as cited in Laitinen, 2012, p. 93-96). Energy efficiency upgrades also help the affordability of housing in urban areas.

6 BUT ENERGY EFFICIENT BUILDINGS will not solve the problem on their own. We need to adopt new low-carbon, resource-smart lifestyles. Our commutes (which currently result in 15–25% of GHG emissions) often depend on our neighbourhoods, and the type of services and attractions on offer. Similarly, how we consume our money – whether we eat at home or in a restaurant; buy goods or use different types of services – depends on the quality of our urban environment (food results in 15–25% of GHG emissions, consumer goods and leisure time activities 10–15% each) (Envimat as cited in Demos Helsinki, 2010).

Opportunities emerge through rethinking restoration projects

In the light of these economic, social and ecological sustainability challenges, there is an urgent need for a rethink of the way existing buildings and neighbourhoods are being revived and developed. In other words, how can we project and maintain the future value of the capital embedded in the stock of our built environment?

The urgent need for renovating the ageing mid-20th century building stock opens a window of opportunity: besides improving the technical performance of buildings, the renovation projects also hold a great – still untapped – potential for the revitalisation of local retail and service economies and for addressing sustainable lifestyle changes (Berninger, 2012, p. 88). Ingredients of this looming great urban reform include such large changes as

- Smart city projects that promise to provide new, user-centric solutions for energy, transportation and services
- Digital services, e-commerce and sharing economy solutions that could open new opportunities for elevating access to services locally
- The current boom of startup businesses that initiates new momentum for testing social and technological innovations and new business models
- New forms of urban activism and other types of user-led movements that pave the way for new bottom-up change in neighbourhoods.

These emerging drivers of change promise to transform our cities in ways that are quite different from the powers that shaped them in the early 20th century:

- instead of centralized top-down reforms there will be processes operating in a distributed, bottom-up manner
- Instead of building houses and neighbourhoods from scratch or completely anew, there will be more renovating and retrofitting of the old
- Instead of creating new physical and resource-heavy structures there will be more services and products operating within the digital realm.
- Instead of planning and traditional processes there will be engaging visions, experiments and proof of concepts.

Smart Retro recognizes that changes like energy scarcity, the disruption of retail, digitalization, the emergence of the sharing economy and many other trends, will fundamentally alter our urban areas. With the right action however, the strength of these trends can be harnessed to better serve the interests of neighbourhoods, companies and individual residents.

Trend 1. Energy scarcity

NOWADAYS WE CAN AFFORD a better quality of housing and food, and travel much farther than in the past. In other words, we can afford many new things that before were completely out of our reach. At the same time, however, demand on global energy resources is soaring and the consumption patterns of large emerging economies are gradually converging with those of Western societies.

Housing, transportation and food represent the lion's share of household energy consumption (Eurostat, 2009). These three factors also account for the majority of household spending. In Finland for instance, it has been calculated that the average revenue per user (ARPU) from housing, transportation and food, is around 1800€ a month in the capital region. Living expenses in Helsinki alone account for a monthly average of 900 euros per head.

These figures reflect the impact of the rising energy prices on consumer markets. Most people already use a substantial part of their income on resource-intensive basic goods. Thus, a sharp rise in the price of oil – or some other critical resource – could easily lead to household expenses skyrocketing. Correspondingly, there would be a surge in demand for efficient solutions that decrease the energy and resource-intensiveness of housing, transportation and food, and would offer aggregate value for money in the same.

The rise in energy prices is already affecting consumer spending across Europe. Particularly the increase in living expenses - and in many countries, the problem of energy poverty - is forcing customers to leave their wallets at home. In Finland, a growing number of low-income residents are living in old terraced and detached houses, and struggling to pay their heating and electricity costs. Housing related GHG emissions need to be cut rapidly, since energy efficiency improvements are one of the most cost efficient ways of reducing emissions. We must move to low-carbon and resource-smart lifestyles.

Trend 2. Renovation debt

NORDIC COUNTRIES (and the rest of Europe) have a great amount of buildings from the 1950s, 60s and 70s, which comprise a significant part of the countries' wealth. These buildings are now in dire need of renovation. In the past, problems like this were solved with better infrastructure: large investments in new energy and water supply systems, train and subway networks, widened streets and avenues, and in the replacement of existing building stock. Today however, such projects face many economic and political obstacles in cities, making their execution difficult. We now require new, innovative and smarter ways to manage urban growth.

Meanwhile, existing building stock demands heavy investment. Business models for restoration are not yet fully developed. For builders and investors, renovation projects remain less profitable than constructing entirely new buildings. The amount of capital needed for the maintenance backlog in Finland, for buildings, is an estimated 30–50 billion euros. For transportation networks it is 2.5 billion euros, and for infrastructure technology systems another 2.5 billion. The maintenance of real estate in the capital city alone requires 1.5 billion euros (Roti, 2013).

The big boom in renovations opens up another window of opportunity: it offers platforms for testing and scaling up new models. This can be seen as a chance to radically transform urban environments.

Trend 3. Retail in disruption

ELINA, a 32-year-old taxi driver from Lahti, has been happy with the services and products on offer in her hometown. Yet she has noticed significant changes in the city centre: "Terribly many entrepreneurs have moved their business online. It is now the case that many businesses no longer exist in the form of physical shops that you can walk in to. With some things, like curtains, you'd still like to touch and feel the product though, not just order it online."

Elina's experience reflects the rapid change in retail markets. More and more businesses are moving their operations online. In 2013, the e-commerce market in North Europe grew by 12.7%. Some fields are expanding even more rapidly. Even though electronics, fashion, books, music, traveling and cultural activities remain the most important categories in e-commerce, new categories like food are growing more popular. (Ecommerce Europe, 2014.)

Retail and many other forms of consumer business are in a state of disruption, not only because of digitalisation, but also due to changing consumer habits. Whereas the sales declined in all trade industries in Finland compared to last year, the turnover in service industries grew by 2,8% (Statistics Finland, 2014a, 2014b). Willingness to pay for services and experiences - instead of purchasing products - is expected to increase in the coming years.

Department stores have faced a decrease in sales and the number of supermarkets, hypermarkets and the like have fallen in Finland (Päivittäistavarakauppa, 2014). As more and more shopping is conducted online, the footprint of traditional stores is shrinking. This threatens to leave many neighbourhoods completely without services within walking distance.

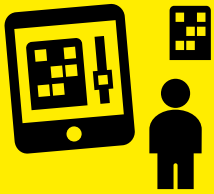
However, many entrepreneurs are discovering how to create on and offline hybrid shopping experiences. Several e-commerce companies have decided to open old fashioned retail shops to support their online business. The concept and value of space and location are changing through digitalization, as digital services and e-commerce create new opportunities for elevating access to services.

The ability to combine experiences, services and shopping is a big trend in the retail space. In other words, it is rare to have a space for just one purpose. This hybridization of retail space happens on all levels: Walmart's new concept in the US includes churches; Scandinavian shopping centers are luring public services; retailers and restaurants sell courses; co-working spaces are a mix between cafeterias and offices and so forth.

However, the battle over customers does not happen solely between on- and offline, as the sharing economy and collaborative consumption are also contributing to the disruption of traditional service models. Furthermore, the decreasing growth of many of the established companies' sales revenue signals that consumer priorities are changing from ownership to access (Wohlsen, 2014). Powerful, connected digital services enable the use of products without ever owning them and platforms for renting and loaning physical products are now growing more popular. Even the most cherished of habits, like owning a private car, are changing surprisingly fast. One of the services introduced in this report, Upshiftcars, illustrates a potential shift from car ownership to mobility access.

One of the reasons for the popularity of social sharing companies is the personal, real and social experiences they can offer, compared to impersonal cookie-cutter services. There is a lot to keep in mind for the retailer who wants to win the race in the future.

Trend 4. Smart City



URBANISATION is among the biggest megatrends shaping the global society of the 21st century. More and more people in the Nordic countries now live in cities and the urbanisation trend is on the rise. The cities of developing countries are growing even faster. That is creating massive challenges both for the quality of life of the cities and the management of big infrastructure systems, such as city traffic and energy usage. Another defining megatrend of our age is digitalisation. Digitalisation makes great promises regarding urbanisation and resource scarcity. Digitalisation also enables so-called Smart City development.

Smart Cities tackle difficult urban problems with new technological solutions. The management of growing cities is complicated due to intensifying problems like traffic, the high cost of upgrading infrastructure, growing emissions and ever more complex administrative systems. The debt of the public sector is growing at an alarming rate. These challenges deteriorate quality of life and increase expenses. As a result, firms and the most talented workforce are leaving the most unattractive cities. Smart City solutions use information technology to bring about new kinds of co-operation and to enable the interweaving of different city elements (energy, buildings, transportation and users). In this way, existing infrastructure can be utilised better and by using fewer resources, and the growing needs of cities can be satisfied.

Smart City infrastructure is about connecting networks and creating synergy. The various parts of the city infrastructure, such as waste management, transportation and energy, are in a dialogue with each other and with the local residents who use them. This sort of networked, smart infrastructure facilitates the spread of information between different systems. That, in turn, gives rise to new opportunities, like optimising real-time demand, anticipating future events and reacting to changes and new trends faster.

This inevitable digitalisation development creates two kinds of significant opportunities for firms. Firstly, Big Data offers diverse analytics and metrics that can be used internally as well as to evaluate new business. Alternatively, open data can generate new possibilities for various partnership models and help operational logics to emerge.

2. OUR APPROACH: THE SMART RETRO PROJECT

A PIVOTAL CHALLENGE of all modern refurbishment projects is to make all related actors to work efficiently and well together. Traditionally, the value chain of built environment has included actors ranging from city officials to vendors, builders and many others. What makes Smart Retro a unique project is that it introduces a novel key group to this equation, which will essentially change the concept of refurbishment.

While there are more and more smart and sustainable lifestyle services emerging, the link between the traditional actors and these service providers is missing. Investigating how this connection can be formed and proofing this very link is how the Smart Retro project differs both from traditional refurbishment projects and startup programs. In Smart Retro, first systematic trials of functionally connecting together the diverse set of sustainable lifestyle service startups and the wide range of traditional built environment actors are conducted. The purpose of the link is to introduce services as an integral part of built environment, resulting in considerable added value for built environment and its users. Further, the link will accelerate the emergence of new services as they become commercially more viable.

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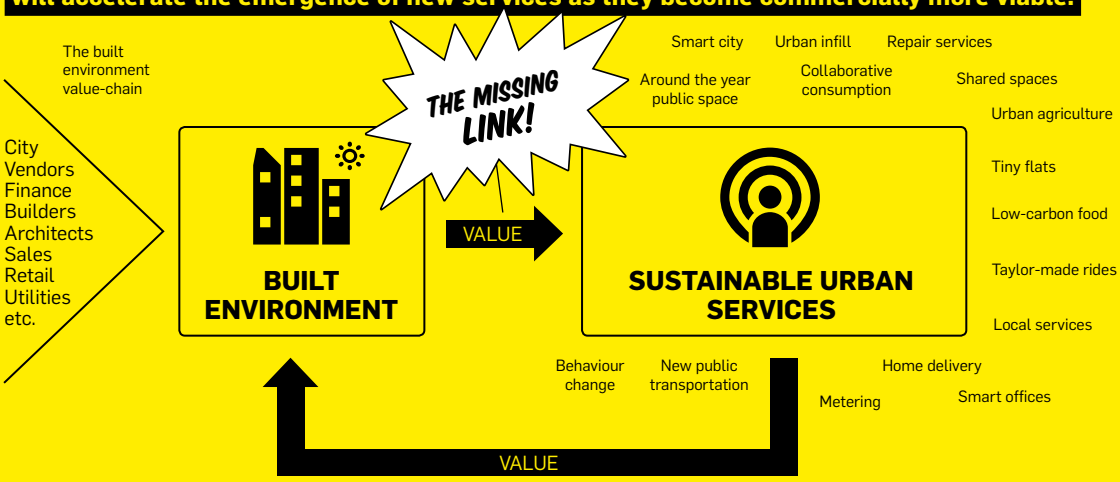

AS A RESULT OF SMART RETRO, first branch of new services are tested in a shared urban environment. Co-functioning of these services as an integral part of real urban context is investigated to acquire unique knowledge of this new way of retrofitting smart into existing urban environment.

To achieve the project's goals, following activities are to be executed.

1 BASELINE ANALYSIS, 05/14–10/14. Firstly, the current state of affairs in the project's case areas is studied and research into existing methods and tools for shifting urban districts and lifestyles to economically, socially and environmentally sustainable direction is conducted. Examples of current retrofitting projects, smart startups and placemaking cases are selected to inspire entrepreneurs, citizens and

decision-makers and to enable all stakeholders to learn and adapt elements from – and also for assisting the project's stakeholders to identify the next steps to be taken.

2 SMART RETRO ACCELERATION PROGRAM, 12/14–05/15, consists of two phases: Innovation Camp and Urban testbeds. The Innovation camp is organised in two steps, first one in Lahti and the second in Stockholm. On the camps, selected smart startups will develop their concepts into functioning prototypes of real services with the support of project partners, external experts and citizens. After the camp, these services will be tested with local urban dwellers in Lahti City Centre and Bagarmossen Stockholm, which serve as urban testbeds. Testing of new services will be supported by providing expert advice and project spaces in both cities. These spaces link lifestyle services to demonstrations of refurbishment projects with high ambitions for sustainability. Matchmaking of startups, companies, providers, regions and funding is also organised in order to build links between organisations and key people.

3 SCENARIO BUILDING, 1/15–10/15. The aim is to build future scenarios that depict alternative futures of built environmental evolution, lifestyle transitions and local service economy. The scenarios are part of the whole project's active communication, as they aim to help in communicating the commercial potential and lifestyle sustainability impact of refurbishment services. The Backcasting method is utilised to aim towards desirable futures by setting most relevant factors of future's built environments in Nordic countries as fixed goals and thus elaborating what the most crucial processes on the way towards those futures are.

4 BUSINESS MODEL GENERATION, 4/14–10/15, is an on-going process throughout the project. The expertise of all project partners and the new knowledge acquired from project events and tryouts are systematically utilised throughout the whole project.

New forms of urban activism and other types of user-led movements often pave way for bottom-up change in neighbourhoods. By bringing in diverse expertise, key organisations and the most suitable startups to try out new solutions in great conditions, the Smart Retro Project pursues to study this change and make it happen efficiently.

Goals of the project

THE SMART RETRO PROJECT pursues to fulfill the following aims.

1. To establish new type of 'transition arena' or new coalitions to project areas: an ongoing co-design process for urban consumer services and sustainable retrofitting solutions that includes the municipality, businesses and residents. The alliance will serve the stakeholders during and after the project. **The goal is to engage project partners and other stakeholders to participate actively and to form at least 10 new partnerships.**
2. To provide new ways to increase the perceived value of the refurbishment for end-users. **We expect 10 new services or products to rise out of the project.**
3. The main goal is to create a model that combines refurbishment of buildings and service development and takes place in the Nordic context. This model will enable initiations of successful regenerative processeses that significantly elevate the standards of sustainability and offer potential for industrial scalability. **The business model should be deployable for any of the construction partners directly after the project.**
4. The dissemination is successful if a **minimum of ten major companies or cities claim interest in the approach by contacting the coordinator or partners** directly, or by aiming to mimic the approach.
5. In a long run, the potential and success of new services will convince policy makers and business leaders to see the vast potential of sustainable regenerations.

3. WHO ARE INVOLVED IN SMART RETRO AND WHY?

The Smart Retro Project includes an ambitious consortium with stakeholders from many different fields. Smart Retro partners come from municipalities and the fields of construction, energy, real estate, research and retail. Read more of the organizations and people below!

Aspelin Ramm Infill

INFILL'S BUSINESS CONCEPT is based on urban repair and densification, which involves building urban housing on small and complicated plots of land as well as transforming existing buildings and city structures. Building densely means building environmentally efficiently and contributing to a better use of resources. We at Infill think that the new sharing economy will affect how we think about urban development in the years ahead, we want to be part of this workshop to increase our competence and to contribute with our experience.

Bjørnar Johnsen is an architect working with city development. He founded the company specializing in urban transformation and densification projects.

Citycon

HEADQUARTERED IN HELSINKI and specializing in grocery-anchored retail shopping centres, Citycon is the number one shopping centre owner in Finland and Estonia, having established footholds also in Sweden, Lithuania and Denmark. Citycon's shopping centres are located in urban environments close to where customers live and work and within a close reach of public transport, healthcare and municipal facilities. The Smart Retro project links to Citycon's targets via development of urban and viable city centers. "We want to be involved in their future development and creating new thinking and fresh ideas. Co-operation with the surrounding community and citizens are important to us."

Ulla-Maija Kemppi works for Citycon Finland Oy as Commercial Director. She is responsible for leading the business operations of Citycon shopping centres Trio Lahti, IsoKristiina Lappeenranta and Arabia, Columbus and Myllypuro in Eastern Helsinki. She is eager to innovate and test new concepts related to retail combined to urban surroundings and new technologies. Ulla-Maija is looking forward to getting new Smart ideas and developing new possibilities to enhance sustainable growth in city centers.

City of Lahti

WITH 103 000 INHABITANTS, Lahti is the 9th largest city in Finland. It is a local authority and municipality with a broad spectrum of public services ranging from social, health care, educational, technical to environmental services. Lahti is facing the need for refurbishment in the majority of city's buildings. At the very same time, the city centre is undergoing a large change in traffic, transportation and parking systems and refurbishment of buildings. "Our aim is to accelerate the growth of new services and business ideas, which would benefit from the investments made for the city environment."

Saara Vauramo is a development manager at the Lahti Region Environmental Services. She leads a team of environmental experts working with city-level targets of cutting greenhouse-gas emissions and increasing the resource-use efficiency of the city. User-oriented and participatory processes are her major interests, which should be better and more thoroughly integrated into the development of cities. The City of Lahti closely collaborates with Lahti City Association, which is a platform of businesses located at the city center of Lahti. **Janne Viitamies** works as a manager of the Lahti City Association.

Demos Helsinki

DEMOS HELSINKI is Finland's only independent think tank. Our aim is to aid organizations, companies and communities to succeed in the future. Demos has an extensive history in working with companies, NGOs and ministries, the parliament, municipalities and other organisations of the public sector that are willing to widen their perspective and renew themselves. Demos Helsinki is proud to be the coordinator of Smart Retro consortium. Developing and testing unique services and products and developing a holistic model for sustainable urban services takes our earlier work in peer incubator Peloton Club to a next level.

Outi Kuittinen specialises in co-creation and sustainable business. She has been mentoring at Peloton Club, a peer-incubator for energy

smart startup companies. The aim of Peloton is to propel organisations and individuals towards the development of services, products and business strategies that support sustainable lifestyles. She has also helped tens of teams from University of Helsinki to shape their initial business ideas into working concepts. Outi especially loves to help build and deliver engaging pitches.

FutureBuilt Oslo

FUTUREBUILT is a ten-year programme (2010–2020) with a vision of developing carbon neutral urban areas and high-quality architecture. The aim is to complete 50 pilot projects – urban areas as well as individual buildings – with the lowest possible greenhouse gas emissions. The pilot projects are set to reduce greenhouse gas emissions from transport, energy and material consumption by at least 50 per cent. These prototypes will also contribute to a good city environment with regard to ecological cycles, health and the general impression of the city.

Eili Vigestad Berge is a project leader of FutureBuilt Oslo. Eili is also managing the process of introducing the sustainability assessment system BREEAM Communities in Norway on behalf of Norwegian Green Building Council and the City of Oslo. Previously Eili has worked as an advisor and project coordinator for Nordic Innovation.

Granlund

GRANLUND is a Finnish design, consultancy and software company that focuses on customer relationships, people and innovations. Granlund has over 50 years of experience and it employs over 500 HVAC, electrical, property, energy and software specialists. The core of Granlund's expertise is energy efficiency. As part of Smart Retro, Granlund aims to harness the power of the individuals when aiming to make buildings and communities more sustainable and more efficient. Instead of just monitoring from afar we are interested in using tools such as gamification platforms and reward systems to motivate users to provide feedback and hints as to how operations could run more smoothly.

Ken Dooley is the sustainability group manager at Granlund Ltd and he is also working towards his doctoral degree as a researcher at Aalto University. In his role at Granlund, Ken is the manager of the sustainability team which focuses on environmental building certification, carbon footprinting, energy innovations and low carbon design for the built environment. Ken has over 12 years experience in built environment consulting and has worked in Helsinki, London, Dublin and Sydney.

K-Citymarket Paavola

K-CITYMARKET LAHTI PAAVOLA is a department store focused on daily groceries and light selection of clothing, sport equipment, electronic devices, music and toys. It was the the first K-hypermarket in Finland and was opened 1971. It is a member of K-citymarket chain of Kesko serving approximately 1.1 million customers per year with a turnover of 16M€. KCM Paavola is located in Lahti city centre. Naturally the future of the centre area also affects the future of the company. In more general level we are willing to learn about logics, trends and tendencies that will be creating the future of consumers and will be the basis for our future decisions. We also want to force ourselves to look further forward despite the daily nature of our business.

Marko Laaksonen, as business owner, is running the business to create effectivity, customer satisfaction and company development. Before starting an independent career in grocery business, Marko worked as a Human Resources Director in a Finnish chemical industry company Suominen Corporation. "I'm very enthusiastic about getting in an innovative and future-oriented project. For example understanding the next step of daily goods online-shopping needs exactly this kind of approach."

Kesko

KESKO is a highly valued listed trading sector company. Kesko's operations include food, home and speciality goods, building and home improvement, and car and machinery trades. Its divisions and chains act in close cooperation with retailer entrepreneurs and other partners. Kesko has about 2,000 stores engaged in chain operations in Finland, Sweden, Norway, Estonia, Latvia, Lithuania, Russia and Belarus.

Timo Heikkilä is a District Director of Kesko in South-Eastern Finland. Heikkilä has international experience from studying in the USA and France. Heikkilä has worked in Kesko since 1986. Heikkilä's former positions include Development Director and Product Group Director. "Too often organizations and people struggle to make changes even when facing major changes and economic problems. One would think, that stakeholders would unite their strengths and move forwards instead of sticking to old mentality. It needs to be investigated, which things in the world are changing and engage people that way."

KTH Royal Institute of Technology

CESC - Centre for Sustainable Communications is an interdisciplinary research environment, situated at KTH Royal Institute of Technology in Stockholm, the largest and oldest technical university in Sweden. CESC provides a forum for knowledge exchange and collaboration between industry, the public sector and research. Together with its partners, CESC conducts innovative research on ICT for sustainability aiming to contribute to a change of society in a sustainable direction. CESC's interest in the Smart Retro project is in exploring ICT solutions for sustainable urban development in a real-life setting, in this way getting a better understanding of how these solutions can be implemented, as well as bridging the gap between ICT developers and urban stakeholders.

Josefin Wangel is a researcher and project leader at CESC. She holds a PhD in Planning and decision analysis and a MSc in Environmental Science. Her research focuses on sustainable urban development from a procedural and conceptual point of view. Key sub-areas of research include futures studies, strategic sustainability assessment, planning for sustainable consumption and stakeholder analysis. In the Smart Retro project, Josefin is primarily involved as work package leader for developing scenarios for Smart Retro futures, and methodologies and analytical frameworks for other parts of the project.

Oslo National Academy of the Arts

OSLO NATIONAL ACADEMY OF THE ARTS is Norway's largest college of higher education in the field of arts. The Academy's aim is to educate artists and designers with the ability to both reflect on and experiment in their chosen field and make lasting contributions to the diversity of our society. Including a diverse set of creative disciplines and closely collaborating with the School of Architecture and Design, the Academy sees Smart Retro as a modern and innovative approach to built environment.

Professor Toni Kauppila runs his research-based Architectural Practice ND and is the Director of Spatial Design and Furniture Design at Oslo National Academy of the Arts in Norway. Kauppila's approach is to closely connect research, teaching, and profession into an ongoing laboratory for developing the social and entrepreneurial qualities emerging from the design processes.

Stockholm Business Region Development

STOCKHOLM BUSINESS REGION DEVELOPMENT is Stockholm's marketing and business promotion company in co-operation with 52 municipalities in the Greater Stockholm Region. SBRD's experts are involved in strategy work, event and co-operations to strengthen start-ups, innovations and expansion of selected industries. Clean tech and services for sustainable and ICT driven urban development are the sectors of highest importance for the sustainable growth and international competitiveness of this rapidly growing region. 140 000 new flats, large investments in new energy and water systems as well as retrofitting of old housing areas are planned until 2030. The environmental city districts like Hammarby Sjöstad and Stockholm Royal Sea Port function as international living labs for sustainable life styles, e-transports and smart energy systems. SBRD is proud to join the Smart Retro project and bring in expertise from a large network of companies and experts. In the coming Innovation Camp in Bagarmossen we will be happy to introduce selected innovative solutions for energy upgrading, smart housing and recycling of energy and materials.

Niklas Svensson is working together with Stockholm Business Region Development in a project promoting sustainable upgrades and retrofits of industrial and commercial buildings in the southern parts of Stockholm, with a special focus on the Högdalen industrial Area. He is also coordinating the Cleantech Högdalen Business network and the involved companies who provide solutions to many of the issues regarding energy efficiency, ventilation, lighting, automation, construction and other important aspects of tomorrows efficient and sustainable industrial/commercial areas.

Stockholmshem

STOCKHOLMSHEM is a public housing company founded in 1937, owned by the city of Stockholm. Stockholmshem is the second largest housing company in Sweden, with 50 000 tenants. Over the years, the business has been refined towards management and rental of housing.The commercial premises consists mainly of smaller premises within our housing areas. We are conducting a project which aims to contribute to a more sustainable neighbourhood by taking care of the local

qualities and creativity that thrives in Bagarmossen. The Smart Retro Project gives us an opportunity to find and involve entrepreneurs and startups in Bagarmossen, and support them to develop and grow. That is a cornerstone in our work to support and develop local creative business and clusters.

We have a great team, with about 10 people, that are thrilled to be a part of the project Blomstrande Bagarmossen. Among us there are **Anna Lackman** who is the project manager, also the area manager for Bagarmossen for four years. **Tobias Lind** is the project leader

since September 2014, and has about 10 years of experience in developing suburban areas around Stockholm. Then we have **Tina Candell** who is our project communicator. She has just begun her employment at Stockholmshem, but has a long experience as a project communicator in the culture sector. We all look forward to meet you this winter at the camp in Bagarmossen.

YIT & YIT-Rakennus

YIT leads the way in construction. YIT creates more attractive and sustainable urban environments by building housing, business premises, infrastructure and entire areas. YIT is the largest residential construction company in Finland and the largest foreign residential construction company in Russia. YIT is also one of the largest business premises and infrastructure construction companies in Finland. YIT aims at being a leading European developer, builder and service provider creating shared value with high responsibility. We aim at improving our quality and customer service further and continuously introduce new and innovative housing solutions for consumers. In this particular project our aim is to learn new approaches to developing services in the residential areas with end-users.

Juha Kostiainen holds the position of SVP Urban Development and Corporate Relations at YIT. Before starting again in YIT in November 2012, Kostiainen worked four years in Sitra, the Finnish Innovation Fund. There he held several executive positions related to energy efficiency in built environment, public leadership, communications and public affairs. Kostiainen has versatile experience related to societal activities and public affairs. He holds a doctoral degree in Regional Studies and has a position of adjunct professor in the University of Tampere (strategic development of city-regions).

Nordic Innovation Fund

SMART RETRO PROJECT'S main funder is Nordic Innovation Fund. Nordic Innovation funds Nordic projects that boost innovation and competitiveness in the Nordic business sector and lead to commercial and sustainable development. Smart Retro is part of Nordic Innovation's Nordic Built Programme. Nordic Built is a Nordic initiative to accelerate the development of sustainable building concepts. Nordic Built is initiated by the Nordic Ministers for Trade and Industry. It combines key Nordic strengths, provides attractive and effective arenas for collaboration and realises concrete projects that demonstrate world-class scalable solutions.

4. SMART RETRO CASE AREAS

TESTING NEW SERVICES and products is a key process when creating Smart Retro's innovation model. In the proof of concept phase, new services are fitted into real urban environments, set to operate in existing city structure with companies, urban dwellers and each other. Here, the business model is developed by studying and elaborating the interplay of Smart Retro services and other actors within the city areas. Since cities and districts are never alike, the model is tested in different locations, chosen to represent relevant refurbishment needs and challenges in today's Nordic countries.

The cases reveal archetypical needs for regeneration and refurbishment within the Nordic region. They include **Stockholm's metropolitan suburban area of Bagarmossen**, **Lahti City Centre** and district of **Kvadraturen in central Oslo**. Lahti is a typical satellite-city with ca. 100 000 inhabitants, which has chosen a new direction after a run-down of a considerable part of local industry. Lahti is also under a process of integration into the Helsinki and St. Petersburg metropolitan areas. Oslo's Kvadraturen is recovering from several problems in recent decades, while also holding considerable potential value as a historical administrational district in central Oslo. Bagarmossen is a prime example of an area of 10 000 inhabitants in need of smarter solutions to supplement its current service selection.

All of the sites are facing needs for refurbishments and undergoing large changes in key matters such as transportation, population and availability of services. Yet all of them are potential growth nodes. They provide excellent grounds for proof of concept for business model and service innovations and preparing their scaling and multiplying.

The most recent policy and strategy papers and reports were examined from each case city. Experts from public and private sectors were interviewed to gain a multifaceted view on how plans described in strategies are put to action and how current strategies are expected to affect case areas and cities. Residents and regular visitors of case areas were interviewed to acquire understanding about daily life of the area's. Analysis of each area was done through a synthesis of all case-specific data.

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4.1 CITY CENTRE, LAHTI

THE CITY OF LAHTI experienced its most rapid growth during the industrialisation period in the mid 20th century. In 1940–1975, the population of the Lahti region doubled and the population of the city tripled. After some decline in the 1980's, the growth has remained stable, making Lahti the ninth biggest city in Finland with an approximate population of 103 400. (Henriksson, 2013.)

Lahti city centre is an area of five square kilometres, located between the lakes Vesijärvi and Joutjärvi. The city centre's population has grown substantially in the last two decades, being only 13 680 in the year 1990. Now nearly 21 000 people live in this central area of the city, which corresponds to 4% of the city's total land area of 135km^2. Population density of the centre is 4 175/km^2. Table 1 presents statistical information of Lahti city centre and the whole city.

As it can be interpreted from Table 1, the city centre's population is relatively old and it is expected to age more by 2025. Currently, almost a third of centre's population is over 65 years old. Lahti's population in general is older than in other Finnish big cities (Mero, 2013). In education or income level there were no differences between the centre and the city's average. However, average values should be interpreted carefully, since they can be affected by a small group of outliers.

According to interviewees, centre's popularity is increasing also among child families. A similar development is in process also in other Finnish cities: more and more often families with children want to settle close to quality services and use public transportation, walk and bike.

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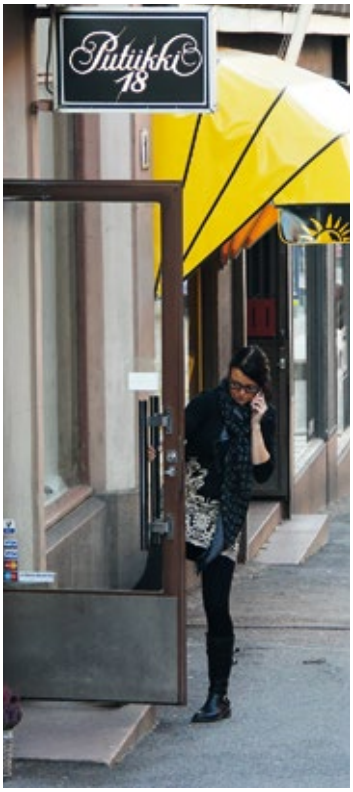
		LAHTI CENTRE	LAHTI
NUMBER OF INHABITANTS / POPULATION DENSITY(KM^2)		20 900 / 4175	103 400 / 669
PREDICTED NUMBER OF INHABITANTS IN 2025		24 000	113 700
AGE STRUCTURE. CURRENT % OF AN AGE GROUP. (PREDICTION OF 2025'S POPULATION)	0-14 15-24 25-44 45-64 65-74 75+	7 (8) 17 (14) 23 (26) 24 (18) 14 (14) 15 (21)	14 (15) 13 (11) 24 (25) 27 (22) 12 (12) 9 (14)
INCOME LEVEL (AVERAGE INCOME IN 2011 FOR PEOPLE 15 YEARS AND OLDER, EUR)		23 506	24 360
UNEMPLOYMENT RATE (2012, % OF THE LABOUR FORCE)		14,8	14,8
EDUCATION LEVEL (SHARE OF INHABITANTS OVER 15 YEARS OLD WHO HAD A COLLEGE OR POLYTECHNIC LEVEL EDUCATION		28	27

Table 1. Demographics of Lahti centre and the average of city of Lahti.



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Q&A WITH A DECISIONMAKER **Saara Vauramo**, Development Manager at Lahti Region

Lifestyles can change rapidly

Q WHAT ARE THE MOST CENTRAL STRATEGIC DECISIONS THE CITY HAS MADE DURING THE LAST YEARS?

A *One of them must be the exceptionally ambitious environmental goals: GHGs are expected to be reduced by 50% from 1990's levels by 2025. In practice this means a big deal of changes in our general energy production and investments in low-carbon district heating.*

Q WHAT KIND OF INEVITABLE LIFESTYLE CHANGES SHOULD BE TAKEN INTO CONSIDERATION NOW?

A *In Lahti, people have started to see it as a possibility that in a city of this size people are not necessarily dependent on cars. If the city influences the attractivity of private motoring through regulation and infrastructural changes, it is possible that Sunday driving in the centre might soon not be so popular anymore. In this fashion, lifestyle changes can happen fast elsewhere too.*

Q THROUGH WHAT KIND OF SERVICE SOLUTIONS LIFESTYLE CHANGES COULD BE ACCELERATED?

A *This connects to living and housing. Sometimes change only requires a small push to actualise. We have tried this with urban farming: once people are already excited about something, they often still need somebody to do the basic initiative, e.g. bring the first plants or boxes for them. Online sales connects to many potential solutions. In particular, supporting local businesses and products from the countryside offers intriguing possibilities, when it comes to them connecting to services located at the city centre.*

USER EXPERIENCE

Impressed by small things

Hanna, 36, graphic designer
Moved to Lahti with family five years ago
Participates to city events and appreciates old, beautiful buildings

"We live as close to the middle of the city as one can," says Hanna, who thinks it's definitely a plus. According to her, the public transportation in Lahti doesn't work. "While different areas should be easy to reach by switching a bus, here all the buses seem to swarm around at the market place. In the next moment they're all gone, like herd animals," she laughs.

But Hanna likes to walk, and for that Lahti's compact centre suits well. Most things one needs are close – and lately some nice shops have opened their doors. Hanna spends a big deal of her leisure time with her children, who like to play and practice cycling outdoors. Even though children find places to do climbing in the centre, it is sometimes difficult for adults to get entertained.

During the weekends the city should thrive, but it seems dead. "On Saturday, the centre is alive for three hours," says Hanna, who isn't particularly fond of shopping but enjoys to take part of different kinds of city events. Hanna has been organising some events in Lahti herself and notes that one of the most crucial things is to communicate well and in good time.

"Too often it feels that nobody knows what is actually happening in the city. Because of that, everybody thinks that there's nothing going on.The information should be easily available for instance on screens. In Pärnu, Estonia, I walk around one concrete pole and learn what happens next week."

Hanna sees that there are many things to improve in Lahti, but also thinks that many improvements are doable. "I'm excited to see how the new market square turns out!"

New buildings and renovations are important, since the results come to stay. Hanna believes that the city can offer attractive urban experiences by contrasting new and old. But she also puts stress on other things: "In general, we need things that take your attention and stick to your mind," she says. "Actually people are often impressed by small things. We don't need an Eiffel tower." Instead of monuments, an innovative use of street lights or a fresh combination of art, functionality and use of public transportation could be elements to improve the city centre.

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Results – challenges, opportunities and ambitions

LAHTI has been in search of a new success narrative at least since its traditional strongholds in furniture and clothing industries practically collapsed in the early 90's. Since those years the geographical position of Lahti has changed due to the new direct railroad connection to Helsinki that has made commuting to or from Lahti a feasible option for a substantial number of people. Gradually this opportunity will make Lahti functionally (in jobs and housing markets) part of the Helsinki metropolitan region. "It isn't directly underlined in the city's official strategy, but Lahti plays a specific kind of role on the outskirts of the greater metropolitan area. As a city it is still easy to get to and offers reasonably priced housing of good value" frames **Matti Kuronen**, the Director of Technical and Environmental Affairs at City of Lahti, the positioning of the city.

Since 2008 Lahti has tried to brand itself as a Green city: Homebase of growing cleantech industry but also a forerunner in low-carbon, resource efficient solutions in urban infrastructure and urban lifestyles. This combination is supposed to form a local niche market: opportunities for cleantech businesses to showcase their products through real-life example cases and greater visibility and reputation for Lahti and its companies as global forerunners of cleantech and sustainable urbanism.

Renewing the city centre is part of this story: the growth of the Green city Lahti is envisioned to focus around efficient public transit network and to densify existing urban fabric. This would shift the balance of the traffic system from cars to buses, cycling and walking. Pedestrian friendly, attractive city centre would be one of the most visible outcomes of this process. It would also serve as one of the front faces of the renewed, attractive Green city Lahti, proving that the former industrial town is really a place where one could consider moving to or locating a business.

If all goes well and Lahti finds a way to new success, it would be a significant industrial town comeback, comparable to something that slightly bigger Nordic cities Malmö or Tampere have managed.

Probably the greatest evidence of success for Lahti would be influx of new faces: Well-educated people working in cleantech businesses, young families moving from university towns of Finland and from abroad. That would address the most substantial challenge Lahti faces: biased population with an overrepresentation of people in the age group of over 65 years.

There are some promising signals already. During the last few years, Lahti's total population growth has shown signs of increase. Depending on the way of estimation, the population of the central area is expected to grow to 24 000 or 25 000 by the year 2025. Further, the centre is expected to grow relatively more (14%) than the city (9%).

Development is a matter of people and human capital

After all, this is matter of people and human capital. "Nowadays the most flourishing cities are capable of investing in people, attracting skilled experts and enabling the inhabitants to use their potential in a best possible way," explains **Johanna Palomäki**, the master planning architect at City of Lahti. Attracting people is no more a matter of having jobs or flats. Companies need skilled labour. Skilled labour wants good living standards: high quality housing, diverse selection of services and attractive environments for leisure time activities.

That will require more than just solid environmental policy by the municipality: high-quality, affordable housing, user-friendly public transport system, user-friendly commuting in form of railway stations, bus stops, car and bicycle parking, accessible and diverse services both within neighborhoods and in the city centre and, generally speaking, a sense of progress in the local community: people moving in, people starting companies, companies investing and expanding.

One of the best things Lahti has is its urban city centre which already differs from the other towns in the metropolitan region. To make its most urban part vibrant, beautiful and easy to access could be a cornerstone for future success. "Our city centre could provide something unique in the Finnish scale: There is a direct access to nature, a big lake right next to the city centre and all this in the proximity of the capital region," sums up **Riitta Niskanen**, who coordinates the projects on the city centre at the City of Lahti.

However, urban transition always takes time:

USER EXPERIENCE

Buzz should be on-going

Jaana, entrepreneur & truffle picker
Has returned to her hometown after decades away
Runs a café and thinks people are more ready to try and organise new things

"I would say that it is quite scattered, a little bit messed up… but beautiful, since there's water and ridges." Lahti, she means. She is circulating a spoon in her coffee, in Tryffdeli, a café owned by her and her husband Esa, who is busy working.

Jaana lives three kilometres away from the centre and comes here for work and services. She enjoys the comfort of having the services nearby. Since they have four dogs and an appetite for fresh mushrooms, the combination of nature and city is a must.

The centre is sufficient for Jaana, but she does see room for improvement. "You long for smaller shops, and luckily some have emerged," she says. She admits to share a wish with many of Lahti's city dwellers: that the new market square would stimulate the whole centre, offer alternatives for the big supermarkets.

"The services are now spread all around the area," Esa adds. Partly because of this, there are lots of empty business spaces in central locations, people don't come and the centre is shriveling. "You need to attract people to come here," he says. "Offer such services that people don't want to go to a shopping mall in a suburb." But as an addition to services, a city centre must also offer some culture. According to Esa, that sort of culture has almost disappeared.

Jaana wishes that authorities seriously considered which regulations are necessary and which are not. "Some easygoingness wouldn't hurt. I mean, if one wants to barbecue something outside, somebody has shouted 'norm' at least three times before the discussion has even begun." According to Jaana, in Lahti there's a growing hunger for being able to try new things and interact more with different people.

The restaurant day, the cleaning day and latest the Art Saturday have opened up a path for doing things in a way which wasn't considered possible just few years ago. Jaana and Esa have taken part to the events as both customers and organisers. "Yeah, on Art Saturday we rented two parking squares, erected a tent and put on some music. That was very cool", she smiles. "This kind of events we need more. They bring citizens, entrepreneurs, different groups and culture people together." And why do they need to be events? "I think some level of buzz should be on-going."

both urban infrastructure and attitudes of people change only gradually. It is a learning process for a citizen or a company to grasp the opening opportunities that changing conditions provide. Before that the transition period requires special tools and measures that help in maintaining political momentum and controlling tensions between differing interests by different actors. These tensions include:

- public investments require both debt and willingness to sacrifice something else for success.
- focusing on city centre means investing less on some other existing neighbourhoods. Retail outside the city centre face fiercer competition.
- making the city centre friendly for pedestrians often implies that there will be less space for cars and their (free of charge) parking. Many shop and property owners claim this will hurt their businesses and push some of the people to hypermarkets elsewhere.
- It is possible that some of the reforms benefit the desired newcomers and their (urban, walkability and cycling favoring) lifestyle more than current inhabitants and their (more suburban, car-driving oriented) lifestyles adapted to current conditions.

In Lahti it is especially the traffic policy that has received plenty of critique. "Housing spreads into many directions and therefore the city centre requires special attractivity. Now the pace of the change is too slow but still the traffic system and parking fees inhibit people from coming here," says **Ulla-Maija Kemppi**, director of Trio shopping centre located in the heart of the city. The public transport system was reformed 2014 and now provides a substantially higher service-level than before. But improving the public image of the bus system will take time and, in the meantime, there are hard budget pressures to compromise the commitment to better public transit.

Hence, for many actors, current green city policies look too ambitious: new regulations now and promises of positive returns only in years to come. Some claim that the goals don't take the prevailing conditions into account: majority of population live in neighbourhoods away from the city centre, previous generations of planners and policy-makers have allowed the building of a chain of hypermarkets outside the city centre and families have adopted a car-dependent lifestyle.

What seems to be missing is a positive narrative that could properly justify the policies aiming at Green city with an attractive and vi-

Q&A WITH A DECISIONMAKER

Convenience can attract people to the city centre

Marko Laaksonen, Business-owner, K-Citymarket Lahti-Paavola

Q WHAT ARE THE MAIN INGREDIENTS OF THE CITY'S FUTURE SUCCESS?

A *We need to decide, whether we want to develop the centre or something else. If service and retail centres keep rising to more or less peripheral areas and individual mobility develops at the same time, there is a risk that the centre continues to lose its ability to attract people. This again means further decay of inner city services and a decrease in people settling there. From Lahti's perspective, it is crucial to choose a steady focus for development work. Easy access to the centre and convenience in its services can be Lahti's advantage.*

Q DO YOU ASSUME THAT THERE IS SOME TYPE OF SHIFT IN LIFESTYLES IN THE COMING YEARS?

A *For example planning of services shouldn't be done based on historical evidence only. For instance, the average age is exceptionally high in Lahti centre. If services are developed on the grounds of current consumption and not on future estimations and new possibilities, it is very difficult to renew the city and answer to emerging demands.*

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brant city centre. Like **Janne Viitamies**, manager of Lahti City, an organization that coordinates collaboration among property owners and businesses in the Lahti centre, puts it: "If we wish to make people join a movement for renewing Lahti, storytelling simply has to be better. It has to start from the perspective of the people involved, it must be more realistic and show a humble attitude. The story as such is already solid."

In other words, the narrative would have to start from addressing the direct needs people and businesses face in their daily lives and provide visions on opportunities for creating economic success and a better quality of life. That could then pave the way for new partnerships between the city, its inhabitants, companies and entrepreneurs.

That type win-win-win formula could include at least the following ingredients:

- policies supporting low carbon economy vision provide opportunities for cleantech companies
- low carbon solutions help build attractive and convenient-to-operate urban environments that pull together motivated and skilled people.
- this type of population creates a growing demand for an increasing number of progressive businesses: urban retail, low carbon housing and mobility, collaborative consumption.
- the leading principle is not only eco-efficiency but also convenience in everyday life and people-centred approaches in all planning.

Meanwhile, what is needed is proof-of-concept: new things that the majority of people would see as a step forward, something that would provide instant improvements to their everyday lives or at least create joy or pride of their home town. A renewed, walkable city centre with fresh new shops, cafés, cultural spaces and a constant flow of inspiring urban events is a very good candidate for acting as such a proof-of-concept heralding the Green city narrative.

Currently the envisioned, new attractive city centre is basically in square one: Construction work of the new underground parking has pushed lots of older shop-keepers to quit. The remaining ones face fierce competition from the big retail businesses with better car access

"If we wish to make people join a movement for renewing Lahti, storytelling has to start from the perspective of the people involved, it must be more realistic and show a humble attitude."
– Janne Viitamies

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just few kilometers outside the city centre. The urban flânerie has found its place in the recently renewed Harbour area. At the same, the entire country is hampered by an era of slow growth and traditional retail business is in trouble with growing competition from emerging e-commerce. All in all, the recipe for creating a flourishing urban environment is somewhat different in 2015 than just a decade or two ago. Like **Saara Vauramo** from the City of Lahti depicts: "The attractivity of a city centre will increasingly include also non-commercial elements. These elements provide something additional for the commercial services. They are something that other locations cannot offer and therefore pull people to the centre."

Based on all this the good news for the development process of the Lahti city centre is that there still is a plenty of unutilised leverage: both from the side of the Green city initiative and just getting the on-going construction work done. The first proper success stories are still to come, either in the form of fast-growing cleantech startups or beloved public spaces or innovative public services.

There is no perfect benchmark for a stunning centre of a mid-sized city with strong low-carbon ambitions. Lahti could provide one by focusing even more on combining its two strongest areas of expertise, cleantech and user-centric design. This combination could bring about the next level of urban spaces, innovative sharing economy businesses and plenty of smart city solutions that improve both resource efficiency and user experience. The result could be that Lahti is known as a forerunner in consumer cleantech and low carbon society with a human face.

Lahti – From the boom years to a threshold of change

LAHTI was Finland's fastest growing city after the Second World War. Lahti's age structure, economic life and building stock – to mention some of the biggest topics – are still largely affected by so-called boom years and down-scaling of heavy industry after the growth.

A major portion of Lahti's building stock dates back to the rapid growth years (1950–70) and are now in need of renovation. In 2011 there were 47 210 working positions in Lahti. Picture 1 depicts how these positions were divided on different sectors. Health and social services was the biggest individual sector with a share of 18%. Also industrial (14%) and wholesale and retail sale positions (15%) were common in the city. (Henriksson, 2014.)

Although industrial positions still account for 14% of total job positions, Lahti is looking for new directions in creating jobs and business. The new vision of the city is to become an attractive and healthy environment city. Enhancing the liveliness of the centre has been stated as one of the main goals. (The City of Lahti, 2013). The southern end of the centre is expected to expand and become a resource smart forerunner area and also be the home for hundreds of companies (Renor, 2014).

"Growth always needs it engines: new projects and investments, new stories to be told, new faces of success."

Picture 1. Division of job positions in Lahti city. (2011).

- Construction 7%
- Wholesale and retail sale 15%
- Public administration, national defence and compulsory social insurance 5%
- Transportation and storaging 5%
- Health and social storaging 18%
- Others, sum 21%*
- Administration and support 8%
- Education 7%
- Industry 14%

*Other sector include: Agriculture, forestry and fishing; water supply; maintenance of electricity, gas, heating and cooling; accommodation and alimentation; information and communications; funding and insurance; real-estate; professional, scientific and technical positions; arts and entertainment; other services; and unknown industries.

Centre to be developed with new emphasis'

AS TABLE 2 SHOWS, the central area of the city has a substantial amount of residential buildings and some of the city's industrial space. The centre is clearly more compact than rest of Lahti: over two thirds of the apartments consist of one or two rooms. According to a prediction based on Lahti's zoning plan, 11 000 new apartments will be built in Lahti during the years 2013-2025. Most of the new apartments (2600) will be built within the city centre. (Mero, 2013.)

Table 2. Statistics: built environment of Lahti.

		LAHTI CENTRE	LAHTI
FLOOR AREA (2012, %)	RESIDENTIAL	56	59
	OFFICES	9	3
	BUSINESS SPACES	12	8
	INDUSTRIAL SPACES	7	16
MODE OF TENURE (2012, %)	OWNERSHIP	34	51
	RENTAL	49	38
	OTHER	17	11
APARTMENT SIZES (2012, %)	1–2 ROOMS	68	53
	3–4 ROOMS	28	37
	OVER 4 ROOMS	2	9

Table 2 also suggests that the centre is strongly overrepresented in office space and also clearly above Lahti's average in business space. Decline in the city's economy and also a large scale renovation in the centre are currently creating difficulties for many businesses.

Lahti has an imperative to grow in population. This is due to its current demographic structure: the boom years of the 1950-1970's brought in a large number of inhabitants who are now in the process of retiring. To counter the effects of the aging population, Lahti needs a constant flow of new people.

Growth always needs it engines: new projects and investments, new stories to be told, new faces of success. In 2010 city of Lahti made a decision to start turning the city centre into more of a pedestrian friendly area. The plan has a 10-year time span, and includes building a travel centre to help intermodal passengers to make smooth transfers between trains and buses as well as a large-scale underground parking system under the centre. In addition, the areas of Radanvarsi and Rantakartano will be functionally integrated to the centre.

According to locals, Lahti and its centre have a lot of active inhabitants with a strong will to develop their city. Uusi Lahti (The New Lahti) was recently nominated as Finland's urban newspaper of the year, specialising in offering its readers concrete and valuable topics from their local environment. In Facebook group Lahti the citizens share pictures of the city and thoughts about current issues. Group Mastoministeriö is a conversation forum for political topics, with an aim to bring local politics into every citizen's life, and Lahti GreenCity is a politically and ideologically independent forum for those interested in co-designing Lahti into an environmental city. Furthermore, local Facebook-based flea market with its 13 000 members and a group directed for all the area's mothers with 6000 users are active in second hand trade, sharing event tips for child families and other everyday conversations.

The centre was mainly seen in a positive light by almost each one of those ten citizen interviewed for this report: for some, it was one of the key things to move to or stay in Lahti. The centre was said to be a compact area, where all the necessities are in excellent reach. Living in the city centre was most often described as "easy." Those with entrepreneurial backgrounds stressed that Lahti has exceptionally good connections to Helsinki and many smaller towns. According to the interviewees, it's notable that, in Lahti, one can get an affordable flat from a central location in the city – and just one hour from the capital. Nature's proximity to centre was considered important by most of the interviewees

The city as an organisation was described as "hard to work with" and not reactive enough to the needs and requests of citizens, who are trying to vitalise the city centre. Interviewees thought that monitoring of norms and regulations stifles grass root activism in Lahti. However, two of the interviewees noted that city authorities shouldn't be expected to do everything and that Lahti's citizens themselves are too passive. The on-going renovations were seen

as detrimental for the centre's vitality. Public transportation was heavily criticised in terms of buses going too seldomly, schedules being incompatible with each other and prices being too high. Visiting the city centre was described as a slightly "boring" experience especially by the younger interviewees. The general service culture was described almost as primitive, meaning, for example, that many of the shops only being open for a few hours during weekends. However, some respondents anticipated that the centre would become more lively and interesting once the renovations are finished.

What could be improved so that the area would be seen as more lively and attractive?

IN GENERAL, more services in terms of quality and quantity was hoped to settle to the centre. However, it was recognised that many entrepreneurs have struggled to "make it there." This was seen to create a vicious circle, in which not too many new boutiques open their doors, because the centre is lacking buying customers – and not too many spend time in the centre due to a lack of interesting shops and services.

Changes in service culture and customer behaviour were wished by many. Almost each one of the interviewees saw The Art Saturday and it's sub-event Putiikkipäivä ("Boutique Day") signals of a positive change in Lahti's atmosphere. In Putiikkipäivä, citizens were abled to rent a retail space for establishing a shop for just one day. "It wouldn't have been possible just some years ago," one interviewee said. "People are more relaxed and willing to try things."

It was hoped and believed that citizens continue being more active in organising and participating to urban events. From the city's side, a permissible attitude and support was wished for. It was seen that popular events would slowly activate the centre, which would benefit everybody. Some interviewees also pointed out that if there were more non-commercial, cosy spots to spend time in, this would attract more customers to small shops nearby. Moreover, local unique shops were wished to show up to accompany those found in every Finnish city.

"We have a sufficient amount of people and resources to do everything in Lahti," said **Henna**, 33, an entrepreneur. "Empty spaces, outside and inside need to be taken into use. Otherwise they will remain mere resources."

"The centre was said to be a compact area, where all the necessities are in excellent reach. Living in the city centre was most often described as 'easy.'"

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4.2 BAGARMOSSEN, STOCKHOLM

NIKLAS PIVIC (CC BY-NC-SA 2.0)

Bagarmossen – a neighbourhood 20 minutes from centre

BAGARMOSSEN is a neighbourhood in Stockholm municipality, located around 10 km south-east of Stockholm City (Stockholmshem 2014). While it takes only 20 minutes to reach centre by subway, the natural reserve Nackareservatet with hiking trails and lakes is just around the corner. The area has a small neighbourhood centre where there are grocery stores, a pharmacy, a library, hairdressers, pubs, cafes and restaurants. There are several schools and sports grounds. The high school is located in the adjacent neighbourhood Kärrtorp.

The built environment is diverse with time-typical architecture from different decades. Bagarmossen, together with a number of other neighbourhoods south of Stockholm, was planned and constructed plan-

Q&A WITH A DECISIONMAKER

Focus from cars to public transport and biking

Interviewee is a climate- and energy strategist at regional development organisation.

Q DO YOU SEE ANY POSITIVE TRENDS AS REGARDS SUSTAINABLE LIFESTYLES, AND IS THAT SOMETHING THAT YOU CONSIDER IN YOUR PLANNING?

A *One thing is that the share of people commuting by bike is increasing rapidly. This is both out of concern for the environment, but also for personal health. Yesterday I read that we are putting a lot of the budget for regional transport on public transport and bike infrastructure. I think it was like 70 % or so. And that is a real transition, because up to now the main focus has been on cars.*

Q WHO WOULD YOU SAY ARE THE KEY ACTORS FOR A TRANSITION TO A LOW-CARBON SOCIETY?

A *The municipalities are really important, because of their mandate. They have a planning monopoly for comprehensive plans and detail plans. But also the country administrative boards (sv. länsstyrelser) and the county councils (sv. landsting) are important, since they provide the municipalities with a lot of background material. They also provide a basis for co-operation between municipalities, which is essential when it comes to planning and managing larger infrastructures such as public transport, bike lanes and water and sewage systems. Our role, as I see it, is to make sure that these overarching and long-term aspects are not forgotten, and also to point at synergies; that a low-carbon society comes with many benefits.*

Q HOW DO YOU SEE THE ROLE OF STRATEGIC POLICY DOCUMENTS?

A *Well, right now I think that too few people know of them. That goes for our policies, but also for policies at EU-level, such as the directive on energy efficiency. For me these are evident, but I've realised that we need to change they way we use and communicate around these. You always have to remind people that there actually are political agreements on sustainability targets. For the future, I see that policy documents will need to be even more concrete and binding. But policy documents do not make change by themselves, people who champion them are always needed.*

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ning ideals imported from the US, with smaller neighbourhoods surrounding a neighbourhood centre. The building stock from the 1950's consists of low-rise multi-family buildings and smaller single-family homes while high-rise buildings were constructed in the 1960's and 1970's during the Million Homes Program. The buildings from the 1950's are valuable from a historic point of view and their original characteristics in terms of shape, colour and details should be preserved. The area was further densified in the 1980's. (Schönning, 1997.) Two new residential areas are planned to be constructed in Bagarmossen.

"Boendedialogen" visited the area in 2012. This led among other things to refurbishment of the neighbourhood centre, an outdoor cinema, a local business community in order to create a livelier centre and increase local trade and a local farming initiative.

The built environment consists of multi-family houses (rental and condominiums), row houses and villas. There is a total of 5 600 dwellings in Bagarmossen, 90% of which are apartments in multi-family buildings (Statistik om Stockholm, 2013). The public housing companies Stockholmshem and Svenska Bostäder are the biggest property owners in Bagarmossen (Stockholmshem, 2014; Svenska Bostäder, 2014). In 2013, Bagarmossen had 11 300 inhabitants. Income and education levels in the area are lower and the unemployment rate higher than average for the city district Skarpnäck and Stockholm as a whole. The population is expected to increase by around 12% till 2022, which corresponds with the population increase of the Stockholm municipality. (Statistik om Stockholm, 2013.)Table 1 shows some statistical information for Bagarmossen compared to the city district Skarpnäck, Stockholm municipality and Stockholm inner city.

Table 1. Statistical information of Bagarmossen compared to district of Skarpnäck, Stockholm municipality and Stockholm inner city.

	BAGAR-MOSSEN	SKARPNÄCK CITY DISTRICT	CITY OF STOCKHOLM	STOCKHOLM INNER CITY
NUMBER OF INHABITANTS (2013)	11 300	45 000	897 700	331 500
NUMBER OF INHABITANTS PER ROOM UNIT (2012)	0.58	0.56	0.56	0.53
PUBLIC HOUSING COMPANIES	76	31	17	6
OTHER RENTAL	19	18	28	29
CONDOMINIUM	5	51	55	65
INCOME LEVEL (AVERAGE INCOME IN 2012 FOR PEOPLE 16 YEARS AND OLDER, SEK)	241 000	278 500	323 500	378 000
EDUCATION LEVEL (SHARE OF INHABITANTS 24-64 YEARS OLD WHO HAD A COLLEGE EDUCATION IN 2012, %)	50	55	56	67
UNEMPLOYMENT RATE (SHARE OF INHABITANTS 18-64 YEARS OLD WHO WERE UNEMPLOYED IN 2013, %)	4.4	3.5	3.4	2.2
AVERAGE AGE (2012)		37	38	40
PREDICTED POPULATION GROWTH 2013–2022 (%)	12.4	7.7	12.6	9.7

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USER EXPERIENCE

Henrik Milles wants to see radical change

We meet Henrik Milles in his home in Bagarmossen. The condominium, where this 48 years old high school teacher lives together with his two daughters, has the forest just outside the windows. The possibility of getting a bigger apartment was the key reasons for why Henrik choose to move to Bagarmossen eight years ago, but he also appreciates the closeness to nature and the lakes. - It is nice to see deer just outside your window, he says.

He is less happy with the square outside the subway station, where he sees a lot of social problems. In fact, he thinks that the entire area around Bagarmossen center is worn down and in need of a radical change. When being asked about the range of services in the area, and if they help him in living a more sustainable life, he first replies that he's never thought about that, since he doesn't care about the environment. Then, after a short pause, he continues:

– My daughter however thinks a lot about the environment and buys eco-labeled cleaning products and food. She seems to be able to find everything the family needs in Bagarmossen, so there should be a good range of environmentally friendly goods here.

Results – challenges, opportunities and ambitions

IN 2005, the City of Stockholm launched the slogan "Stockholm, the Capital of Scandinavia", pointing at the City's ambition of establishing Stockholm as a commercial node, especially for cleantech, IT and knowledge industries. Stockholm was the first city to be awarded EU Green Capital status in 2010, year after being crowned Intelligent Community of the Year by the Intelligent Community Forum. The revised "Vision 2030" emphasizes the role of the City as a centre for the growing region and a motor for economic growth in the entire country. Also for the Stockholm region, growth, innovation and green development are top of the agenda, as can be seen in the overarching goals in the 2010 Stockholm regional development plan. Climate change is taken seriously, at least at a policy level where there are a number of strategic documents directed to curbing greenhouse gas emissions and energy use. But climate change is also seen as a business opportunity for the City as a whole, and for the variety of companies involved in the sustainability sector. Looking at the role of the housing sector in mitigating climate change, focus has so far been mainly on new developments, where Hammarby sjöstad and the Royal Seaport are intensely marketed as role models for sustainable urban development. A few projects directed to renewal can be found, but here the focus is rather on social sustainability, i.e. on coming to an end with segregation, unemployment and estrangement. Other than that, renewal is very much a matter of replacing pipes, changing windows, renovating facades, and updating the outdoor environments. To some extent this results in more energy efficient buildings, but not to the extent needed to meet the energy efficiency targets. For the issue of climate change, two other policy areas stand out as essential to address:

local/regional transport and consumption. For transport there is however an encouraging trend of more and more people going by bike, the number of people using car pools is increasing, and so is the number of people working from home. Consumption trends are more problematic as they are pointing at nothing but increased volumes of goods being consumed. Yet there are some positive trends to be found. According to Miljöbarometern, more and more Stockholmers are eating vegetarian food and are choosing eco- and Fair Trade-labeled and locally produced goods. Especially regarding food the trend of buying eco-labeled products is strong. In 2013, 35 % of Stockholmers claimed to always or often buy organically produced food items. Organic food is also championed by the City of Stockholm when they procure and buy food for the schools and pre-schools that are run by the municipality.

From a governance point of view it looks as if the collaboration between the different levels of authorities, types of administrations and public and private companies is working well.

"We have been working with developing the local centers in Bagarmossen and Kärrtorp during quite a long period of time, since the beginning of 2000, to make them more attractive. In doing so, we were working together with housing companies, business associations and other actors. As a result, all premises were rented out, and the square was revamped, so after a while we decided to discontinue our work, it felt as if, for now, there was no need for us." (Inger, City District Administration) There is also openness for involving citizens in planning and development of the built environment, as can be seen in the citizen dialogue initiative.

Bagarmossen today

ZOOMING IN TO Bagarmossen, the key strengths of this local neighborhood are to be found in its location – close to the city and to the nature – and in its very engaged inhabitants. This is something that is pointed out by all residents interviewed for this report, both people working with developing the area and people living in the

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"Zooming in to Bagarmossen, the key strengths of this local neighborhood are to be found in its location – close to the city and to the nature – and in its very engaged inhabitants."

area[1]. Also the buildings in the area are pointed out as of being of high quality, and well worth refurbishing. That Bagarmossen is a mixed area in terms of the types of buildings and inhabitants is also seen as one of the strengths of the area.

Bagarmossen was repetitively described as a neighbourhood with engaged and committed inhabitants[2]. There is for example a blog, Bagisbloggen[3], where you can get updates on all things happening in the area, and there are Facebook groups such as Bagisbloggen, Bagis! and Bagarmossen Second Hand.

Still, there are things to do. Three respondents expressed a will to see more work to address the social problems of the area. One of them mentioned choosing alternative routes to avoid the young people that hang around the subway stop and the square at night. It was stated that some vandalism, such as violating parked cars, has occured in the area.

The City of Stockholm and housing companies Stockholmshem, Familjebostäder and Svenska Bostäder have initiated the so-called Boendedialogen (Eng. Citizen dialouge) in order to develop the outer parts of the city. The aim is to receive suggestions for how the neighbourhoods can be improved, strengthen collaboration between different actors and those who live in the area, and facilitate future commitments. In 2012, the Boendedialogen visited Bagarmossen and the residents were invited to give suggestions on how to improve the area. This resulted in, for example, that the neighbourhood centre got refurbished, an outdoor cinema, a local farming initiative and a local business community with the aim to create a livelier centre and increase local trade (Boendedialogen, 2012).

Recent renovations were mostly praised by the residents, but some concern of increasing rents were voiced. The location between the city and the nature is not only appreciated among the people living in Bagarmossen, but also believed to be one the reasons for the area's increased popularity in recent years. There is a fear for that increasing the attractiveness of the area could result in gentrification and a diminishing local engagement. One respondent had moved into a smaller apartment in order to manage the increase in rent. Further, better road connections to Stockholm were also wished because of traffic jams on the current road.

A lively square would activate the whole area

THE SMALL NEIGHBOURHOOD centre is located next to the subway. Over there, grocery stores, hairdressers, a flower shop, a library and a pharmacy are all in good reach. Also some restaurants, a pub and a café exist there. While as many appreciate the functionality of the basic services, the square is sometimes described as "dead" and "dull" by the residents.

The housing company Stockholmshem believes in Bagarmossen's centre. Stockholmshem sees that the square can become more lively, as many people are already passing by it on their way to subway. However, perhaps more specialized services around the square would be needed to attract the bypassers to stop.

Many residents of Bagarmossen brought up views about the main square and its surroundings. Three respondents felt that the square should be considerably more lively and one thought that the built environment near the square should be more dense. These two changes were expected to make Bagarmossen more attractive for businesses and reduce the need for travel. Nevertheless, as all of the respondents who lived in Bagarmossen appreciated the closeness of green areas, it was voiced that this side of the area should definitely be protected. More lighting and guards on the main square and pedestrian streets were also requested to discourage vandalism. It was believed that safer square would encourage more people to travel by subway also at nights.

Eight of the respondents felt that there are good prospects for a sustainable lifestyle in Bagarmossen. The public transportation system

1 Interviews with people living in Bagarmossen, Stockholmshem, and Skarpnäck city district
2 Interviews with people living in Bagarmossen, Stockholmshem, the business organization, and Skarpnäck city district
3 www.bagisbloggen.se

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and bicycle paths in the area facilitate sustainable transportation: majority of the respondents do not feel that car traveling is necessary as long as the subway is cheap and reliable. While as others wished to have more specialized services, some didn't recognize a need for new services in Bagarmossen – they were accustomed to use services in Stockholm's centre. Some respondents wished for more locally produced food and possibilities for community gardening. Almost all respondents reported sorting their waste and most of them found this easy to do. However, there was some need for improvements in the recycling possibilities reported.

USER EXPERIENCE

Mia is a fan for collective action

– Do you know how long the interview will take? Mia asks, and shakes her apron mildly, releasing a small cloud of flour into the air. If it's less than an hour I'd like to just prepare the dough before we start.

Once the dough has been taken care of, we sit down over a cup of strong coffee, embedded in the irresistible scent of freshly baked cinnamon buns. The coffee is eco-labeled, as most things produced and sold in the tiny bakery and café.

– A couple of years ago, my husband and I decided to change our life. I left my job at an advertising agency and we bought this small bakery. So now I work here as a baker; it's a really small, craft bakery. When we opened it we had the ambition of creating a meeting place in Bagarmossen, where everyone can feel at home. So besides from being a café we also use this premise for exhibitions with local artists, meetings and parties. There are also a lot of writers who sit here to work.

We are actually here to interview Mia about the local business association, but since she also lives in the area, we take the opportunity to also ask her about how she as a resident looks upon the area. In general she is very positive about Bagarmossen, and especially the local engagement:

– For me, since I live here and have children here, it is the local engagement that is the most important. For example, there was this Romani family who were begging for money by the subway, that a lot of people here got engaged in. So we arranged a flee-market to collect money to help them. I also appreciate that it is such a mixed area, there are young hipster families, immigrants, old ladies, poor people, wealthy people… it's a good mix!

And joint endeavors is something that she would like to see even more of. She sees a great possibility of establishing more premises and functions that support shared use and collaborative consumption, like a tool pool, a car pool and places for people to cook and eat together. But she also see a risk in that an increased attractiveness of the area could result in less engagement, of people start moving to Bagarmossen just to make a "housing career".

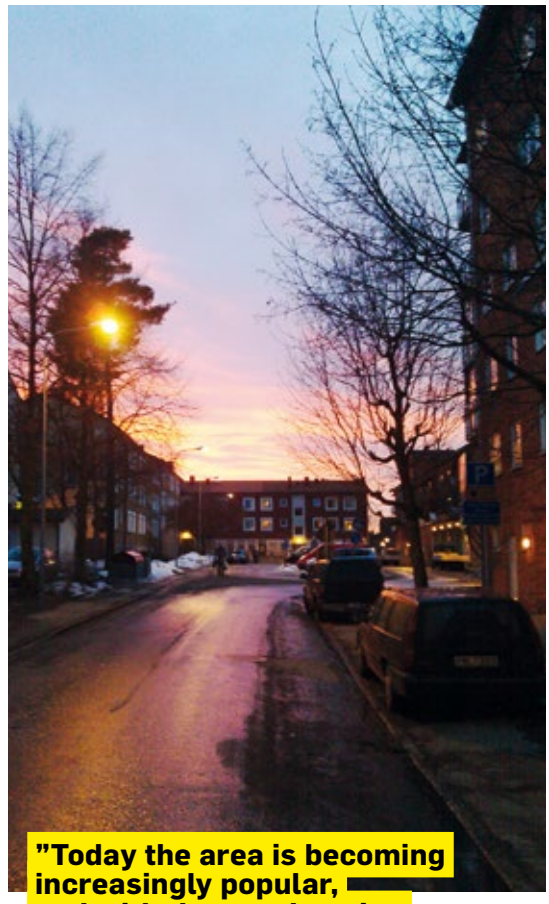
Bagarmossen continues to develop

TODAY THE AREA is becoming increasingly popular, and with the new housing planned included, the population is expected to increase by around 12% till 2022, which corresponds to the projected general population increase for the City of Stockholm. Most people moving to Bagarmossen move there from other parts of Stockholm, particularly from the southern suburbs. (Statistik om Stockholm, 2013.)

To meet the increasing housing demand in the Stockholm region it is necessary to develop many new housing areas, which requires further densification of existing areas. This also entails some construction in areas where there is now forest or other green areas. In Bagarmossen, two new residential areas are planned to be constructed; one in north-western and one in south-western Bagarmossen.

In north-western Bagarmossen plans have been made to create a denser and more diverse urban environment by complementing an already existing neighbourhood with low-rise multi-family houses. The proposal comprises around 60 smaller condominiums. A final decision will be taken in the end of 2014. The plans for south-western Bagarmossen comprise a total of 2 500 new rental apartments and condominiums, mainly in multi-family houses. The project is still in early phases of planning, and construction is not planned to start before 2018. Especially the last mentioned project has received a lot of criticism from people living in the area. (Stockholm Stad, 2014a; Stockholm Stad, 2014b.)

To conclude, the key strengths of this local neighborhood are clearly to be found in its location – close to the city and to the nature – and in its very engaged inhabitants. According to many interviewees, this combination was seen as precious and a promising starting point for further development. Activating the main square could answer to residents' inquiries about increasing safety and more diverse services.



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"Today the area is becoming increasingly popular, and with the new housing planned included, the population is expected to increase by around 12% till 2022, which corresponds to the projected general population increase for the City of Stockholm."

4.3 KVADRATUREN, OSLO

MAHLUM / WIKIMEDIA COMMONS (CC0)

Historical Centre of Commerce and Culture

WITHIN THOUSAND YEARS, the city of Oslo has developed from a poor village-like settlement into a global capital of the nation. The city started to gain wealth after facing industrialisation in 19th century, when newcomers flooded the city seeking for jobs and boosted the population from 30 000 to 230 000 in five decades. More recently, Oslo has experienced a fast acceleration of state economy due to oil industry in the 1970's and witnessed the growth of the service sector from there onwards. (City of Oslo, 2013.)

Despite radical changes in the city's character and explosive growth in its population in recent decades, one can still find old wooden houses, large industrial buildings along the riverside and other physical manifestations of the city's history. The area of Kvadraturen (engl. "the Square") makes at least one central chapter in Oslo's story.

Today this area – the former King Christian IV's city – covers a large part of Oslo's centre, so that it has Castle Park in west and districts of Grønland and Vaterland on its east side. As an addition to its central location, Kvadraturen has a long history as a com-

USER EXPERIENCE

Kvadraturen is an area of strong contrasts

Per, 29, Project Manager for Norwegian Savings Bank Foundation
Comes to Kvadraturen daily for work and irregularly for classical concerts

If you don't know Oslo but you have the map of the city, you would quite likely first head to Kvadraturen. Or as Per puts it: "You'd probably think that this is the downtown of Oslo, where everything happens. But it's quite the opposite, since it's about 25 000 people who work here, but only about 600 people live here."

Per works in a company which is retrofitting an old bank building to be a house for cultural production and social entrepreneurship. This building, Øvreslotts Gate, is hoped to attract people and act as a multifunctional venue for events. But for now the streets of Kvadraturen seem rather quiet. "After working hours there is almost nothing happening. Except, there are still drug addicts and prostitution in these streets."

According to Per, it might be good idea to reduce rents for service businesses to attract more entrepreneurs to establish their cafes and restaurants in Kvadraturen to activate the streets in a positive way.

"Right now Kvadraturen is not really the nicest place to hang around, especially in the evening," Per says. Besides the old and beautiful buildings, Kvadraturen is an area of strong contrasts. "It's quite interesting that you have a shelter for addicts in one block, and lots of expensive clothing stores and fancy art galleries right across the street." Although Kvadraturen has lots of contrasts as an area, according to Per, it lacks diversity in terms of services. The historical district of Kvadraturen could be an attractive seedbed for local, unique businesses.

HELGE HØIFØDT (CC-BY-SA-3.0)

"The geographical nature of Oslo is reflected in the strategy: Oslo pursues to grow through compact urban development and by protecting the blue-green structure of the city."

mercial and cultural centre. However, after the Second world war Kvadraturen turned into an area of problems: first, prostitution concentrated to surroundings of Akerhus Castle. Then, drug users started lingering in the Castle Park and later in Østbanestasjon. Also heavy traffic – pollution and noise effects along with it – distressed Kvadraturen ever since private motoring had become common. (Eike, 2013.)

Connecting the eastern subway lines to the lines of the western areas in 1977 and steering of car traffic to an underground path of Festningstunnel in 1991 has mitigated these problems remarkably. Nowadays Oslo has the best subway coverage in Europe, and 80 percent of commuting is done by public transportation (City of Oslo, 2013). After successful traffic reformations and growth of the neighbouring areas, Kvadraturen has begun to restore its attractiveness. Today, the former traffic hub has started to re-transform into more of a central area with plenty of offices and cultural monuments side by side (Eike, 2013).

Oslo Grows through Compact Urban Development

OVER THE LAST TWO DECADES, Oslo has received 200 000 new inhabitants and the population is still projected to grow by one third in the coming few decades. This makes Oslo the fastest growing city in Europe. Integrating large-scale growth into existing city structure is a huge challenge, requiring high quality planning. Despite fast growth, Oslo wants to succeed in protecting the urban, natural and historical values of the city. Oslo is aiming to become an energy efficient, compact city with attractive urban spaces with diverse qualities.

For reaching its aims, it needs to be investigated how the city's specific geographical nature between fjord and the forest, issues created by on-going climate change, and special historical and cultural character effect the city's development and its planning.

Oslo has started to work together with its inhabitants and the business sector, and also takes part in regional, national and global cooperation to improve the environment. Oslo's city council has agreed to reduce climate gas emissions by half by 2030, and to make Oslo a climate neutral city by 2050 (relative to the 1991 level). This

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decision – and the fact that the city is projected to grow – has considerable impacts on the development of the built environment. (City of Oslo, 2011.)

To monitor its goals, Oslo follows per capita greenhouse gas emissions, greenhouse gas emissions from municipal bodies in Oslo, total greenhouse gas emissions (CO_2 equivalents) and total energy usage of the city's inhabitants.

The geographical nature of Oslo is reflected in the strategy: Oslo pursues to grow through compact urban development and by protecting the blue-green structure of the city. Oslo wants to invest in the city's attractiveness, safety, user-friendliness and accessibility of areas. Noise levels, air pollution and greenhouse gas emissions are measured and set to be reduced.

Since transportation makes up the largest source of emissions, Oslo has put effort on developing it into a sustainable direction. As one thing, Oslo is recognised as the electric vehicle capital of the world (Grønn Bil, 2012). According to the strategy, Oslo attempts to make it easy for people to live and work in the city without a car, partly by encouraging walking and cycling, partly by increasing the amount of journeys made by public transport. (City of Oslo, 2011.)

Planning pursues a goal of having most housing and commercial spaces located close to transportation hubs. Arguably, due to investments in public transportation and successful planning of urban mobility, car traffic has increased slower in fast growing Oslo compared to national average. Even further, development of integrated land use and transportation planning will be required to keep the city attractive and functional. (City of Oslo, 2011.)

USER EXPERIENCE

Kvadraturen should turn green

Maria, 70, entrepreneur and librarian
Runs a design item shop and thinks that Kvadraturen is close to everything

"Kvadraturen needs more shops; the windows on street level should contain something that people can look at," thinks Maria, a shop-owner herself. Maria has a history as a librarian and student of Oslo School of Architecture and Design, among many other things. "Not every empty space should be turned into a restaurant, but they should be special shops. Not the same you find everywhere."

Maria has been coming to Kvadraturen regularly for four years, ever since she and her son opened a shop that sells lamps, furniture and other interior objects from European designers.

According to her, the best thing about the area is that it is very central. In some sense Oslo is a divided city, but Kvadraturen does not appear to have an identity of the west or the east – it is neutral. However, Maria thinks that the good location isn't utilised as well as it could. "They are taking away a lot of the parking around here. This makes it harder for people to come to Kvadraturen." She adds that the area can be a hard one to transform, because it consists of many old buildings that were never meant to be open to the public.

After all, Maria believes that the location is eventually an advantage. "It is a very nice part of the city and it has many nice art galleries." Next she would like to see Kvadraturen turn green. "We would like more trees and plants. It would make the air quality in the streets, shops, offices and apartments in the area better."

Retrofitting of building stock and planning of compact city

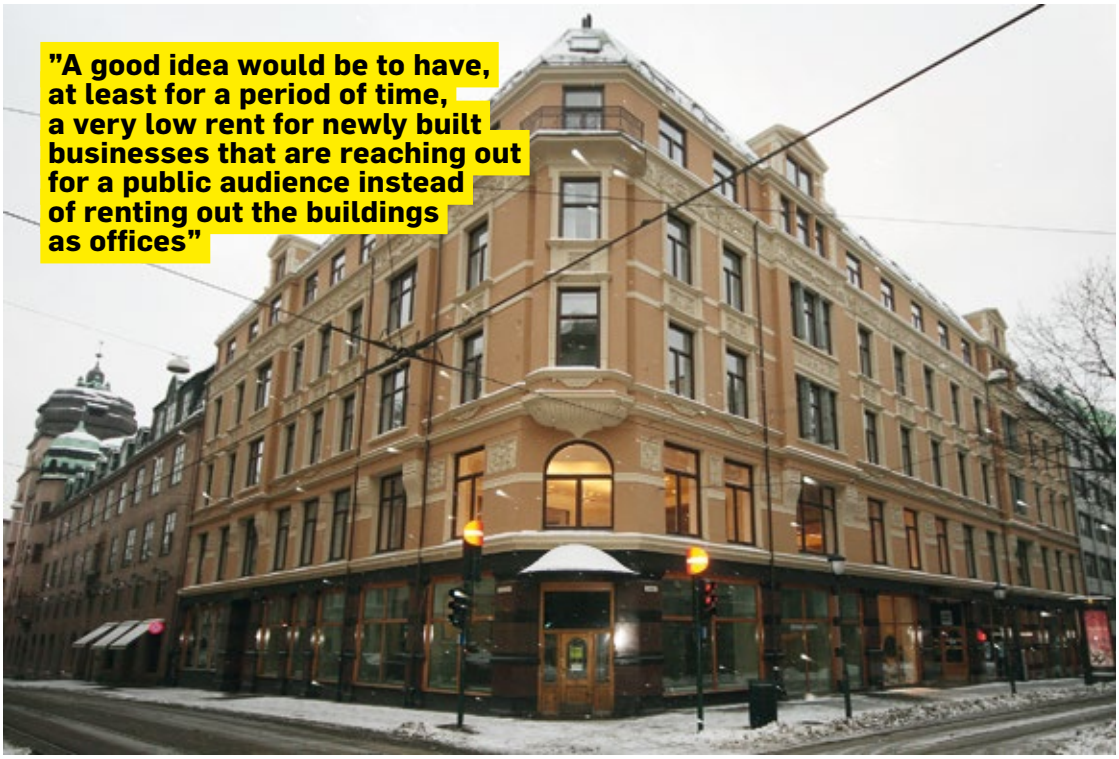
TO DEVELOP an increasingly compact city, Oslo seeks to densify its new and existing subway lines, create new hubs in central locations for dwellings and knowledge-based companies and employ high floor ratio in areas of high demand. However, densification should not take place at the expense of green, ecological solutions.

Before constructing new areas, major development projects are required to include an evaluation of whether older buildings can be retained and re-used as an expression of local identity and sense of place. Oslo will make arrangements to provide a satisfactory level of services within a walking distance from people's homes. Important services include outdoor recreation areas, waste collection points, stopping points for public transport services, day care centres, schools and grocery stores. One of goals is that no area of the city is more than 200 meters away from the nearest square or social meeting place. Oslo aims its districts to become and remain sustainable areas, in which everyone is entitled to clean air, clean water and access to attractive outdoor recreation areas. (City of Oslo, 2011.)

Kvadraturen is close to everything but needs to connect to people

THE PEOPLE who regularly visit Kvadraturen seem to have mixed feelings about the district. Some say that it is a large area so you have everything that you need, but it is still quiet and away from the people and the turmoil of downtown Oslo. However, some find the area lacking in services.

The interviewees came from various different backgrounds: a shop owner, a shop worker, a project manager at a bank, to mention some. All of those interviewed visit the area frequently, several times a week, and seemed either to be working or studying there. The public transport system was praised by many, particularly the fact that Prinsens Gate has been closed to other vehicles but trams. Many new bicycle lanes are



MAHLUM / WIKIMEDIA COMMONS (CC0)

also being established. This was mainly viewed in positive light, but one interviewee said that it can be dangerous because cyclists are allowed to bike on both sides of the road and towards the direction of cars.

How to develop Kvadraturen? As one thing, many of those interviewed discussed cycling. Some were happy about a new cycling lane, but because it is not being used they thought that the space would have been put to better use as a car park. However, some thought that existing parking space should be made into cycling lanes. A few interviewees wanted bicycle parking, and one interviewee described a very interesting bicycle parking system in Kyoto and imagined Oslo implementing the same system.

The respondents describe Kvadraturen as being close to the city centre, close to everything, and one of the oldest parts of Oslo with many nice buildings. The oldest ones are from the 1600's and a lot of new buildings were added in the 1800 and 1900's. Previously the area consisted almost solely of offices and provided many services, such as banks and post offices. There was not much to do if you did not work there or if you were not visiting a service such as a bank or the post office. This background still impacts the nature of the area and things can't be reversed in a snap.

The respondents found there to be a limited number of shops, restaurants and cafés and a lack of city life in general. "The cafés and restaurants don't have that umph and are mostly for tourists." Some interviewees described it as rundown with a lot of drug addicts, prostitutes and crime. According to one interviewee, the area's beautiful buildings are falling apart since the families, which have been in the area for a hundred years cannot afford to renovate them, but will not sell them either. It feels unsafe. A lot of shops have had to close and empty stores do not give a good impression. The interviewees also complained that there were no grocery stores or children's toy or clothing shops. Furthermore, a lot of construction work is going on, so the area can become noisy at times.

HELGE HØIFØDT (CC-BY-SA-3.0)

Oslo Takes Part in FutureBuilt

Oslo is participating in FutureBuilt, a 10-year regional development programme for climate neutral urban areas and buildings with high architectural quality. FutureBuilt aims to complete 50 pilot projects such as urban areas, schools, kindergartens and office buildings with the lowest possible greenhouse gas emissions. These prototypes will also contribute to a good city environment with regard to ecological cycles, health and the general impression of the city.

Projects explore practices that are not used by the current construction industry. Innovative solutions require employing of new methods, concepts, technologies and products. Some of the pilot projects will also serve as research case studies, while others function as showcases because of their central location. One of the projects is Oslo's first passive energy school building, Bjørnsletta and another example is the Fjord City, in which harbour areas are re-located and used for multifunctional urban development with housing, business, recreation and culture.

Three central themes for FutureBuilt are transportation, energy and materials. Projects are either done in central locations or located near transport hubs, and pedestrians and cyclists are given better facilities whereas parking spaces are reduced by half. FutureBuilt supports energy efficiency and local, renewable power sources. FutureBuilt's vision is to show that climate neutral urban areas, based on high quality architecture, are possible. Its pilot project is meant to inspire and change practices in both the private and the public sector. Oslo and FutureBuilt are partners of the Smart Retro Project.

What would make Kvadraturen more lively and attractive?

MANY OF THE RESPONDENTS said that the area was going in the right direction. A lot of new apartment buildings are being built in nearby areas. This will contribute to the change that Kvadraturen is going through. People are coming back to the neighbourhood. The old Post Office has been turned into apartments and many new shops have been established.

The interviewees hoped for livelier streets: more green areas and parks, better restaurants, cafés and shops and fewer cars. They also hoped for more recycling and trash bins. The existing ones are two blocks apart, so people just throw their trash on the street.

In addition, renovating the facades would make the area better, and that can already be seen happening now. Furthermore, the windows on the street level should contain something that people can look at. Not every empty space should be turned into a restaurant, but interviewees seemed to be in need of services and environments that engage them into something. One way to attract people come would be that the shops established in the area should be specialised stores instead of the ones you can find everywhere else. "A good idea would be to have, at least for a period of time, a very low rent for newly built businesses that are reaching out for a public audience instead of renting out the buildings as offices", suggested one interviewee. Some newcomers such as a venue for events were already anticipated to slowly activate the area in near future.

Smart Retro in Kvadraturen

THE CITY'S STRATEGY states that the large population growth will be countered with actions, which secure and further develop not only the urban but also natural and historical values of

OMAR HOFTUN (CC-BY-SA-3.0)

"Chosen solutions must be both user-friendly and encourage environmentally sound use. The Smart Retro consortium believes that integrating smart into old can activate Kvadraturen's cityscape and economy."

the city, and which facilitate high quality architecture and urban design. Refurbishment of larger run-down areas is considered greatly important. (City of Oslo, 2011.)

Kvadraturen as an old, central district is one of the key areas to implement many of the city's goals. Kvadraturen has surely improved from 1970's. Yet, the area's reputation is still questionable and many consider the area dangerous especially by night. A notable part of Kvadraturen still consists of offices, administrational buildings and business properties, thus there is room for diversifying the area in terms of services, culture and leisure possibilities. (Osloby Sulten: Et tomrom midt i byen, 2012)

The Smart Retro Project is a part of the development work of Kvadraturen. As an area which doesn't expand but needs to be developed sustainably and with innovative solutions, Kvadraturen fits both Smart Retro's and City of Oslo's core ideologies. Oslo's policies stress, that chosen solutions must be both user-friendly and encourage environmentally sound use. (City of Oslo, 2011.) The Smart Retro consortium believes that integrating smart into old can activate Kvadraturen's cityscape and economy in a healthy way.

5. EMERGING PRACTICES IN DEVELOPING CITIES

WHAT KIND OF ACTIVITIES, companies, communities and projects actually practice Smart Retro thinking without knowing it? We have conducted a comprehensive listing of promising practices and filtered the most interesting ones to this report. Promising practices can be service innovations, startups, business models, corporate ventures, citizen networks and development projects that provide and enable sustainable services. With "promising" we mean examples that could be at least partially disseminated or mainstreamed beyond the single initiative.

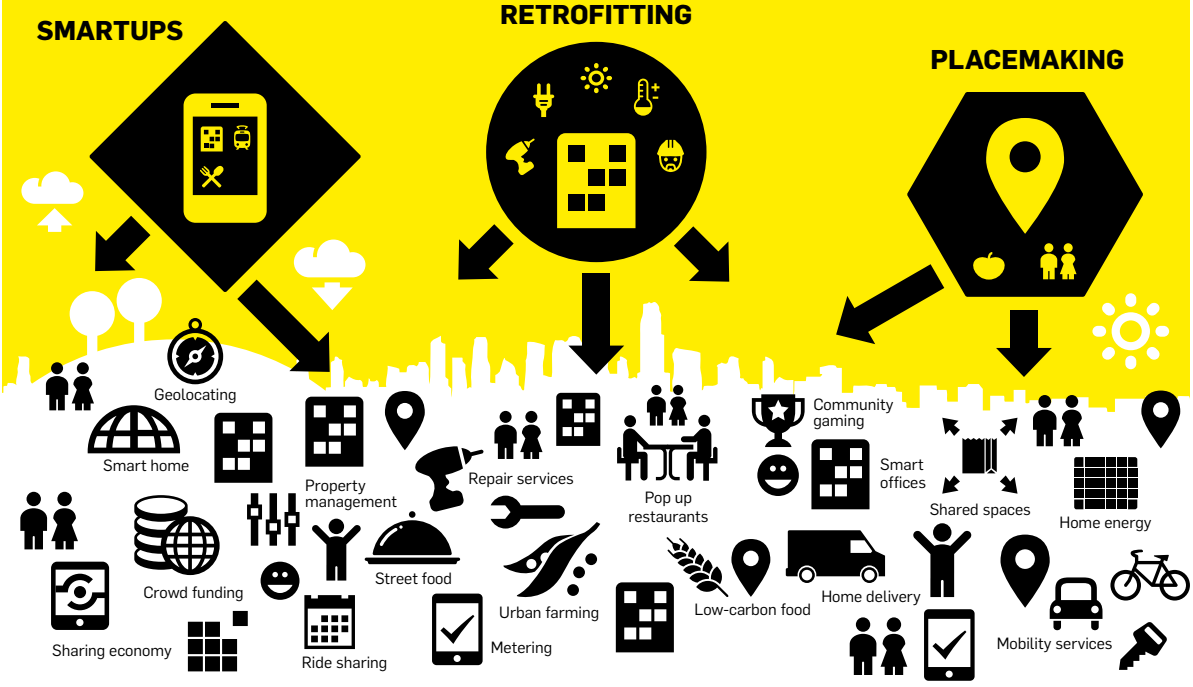
In this report, promising practices are divided into three categories: **Smartups**, **Retrofitting projects** and **Placemaking cases**.

In the first section we present startup companies that can renew urban environment in smart and sustainable ways. We have started calling these companies smartups. In other words, smartups are startups that help free their users from inefficient use of natural resources by combining digital and physical.[1] For listing the most relevant and inspiring smartups, we have scanned through an exhaustive list of incubators, accelerators, centers, hubs and other startup communities.

In the second section, we have collected development projects, which have intriguing social, economical or environmental goals and innovative ways for pursuing them. The third section is Placemaking cases. These cases consist of urban renewals, which particularly focus on a local community's potential and assets with the intention of creating public spaces that promote people's well being. These encouraging examples show that the urban environment can be changed in a major way while taking local identity and motivations into consideration. Local people who care about their neighborhood are often the initiators of these projects.

To prevent us from re-inventing the wheel, it is good to get familiar with a startup that has created a model for crowdsourcing solar power and to get to know a project that has turned an old school building into an ecologically sustainable and socially thriving service hub. Read about these two and many others below!

1 Read more about smartups from Demos Helsinki's Smartup Manifesto (in press).



5.1 SMARTUPS

RESOURCE EFFECTIVITY has been recognized as an competitive advantage in many fields, such as in construction, energy production and manufacturing of machines and devices. Despite of considerable progress on many fronts, the energy consumption of households has continued to increase. This is due to rebound effect, which means that energy effective production makes products more affordable – – and increases consumption.

This is why a shift towards sustainable *lifestyles* is needed. Smartups are startup companies that facilitate this shift. Resource effectiveness has not been widely recognized and utilized as a competitive edge among service providers. These reasons make smartups – companies which make urban life smarter and more sustainable – the most intriguing branch of new businesses. A diverse set of these very companies and their solutions are introduced in this section.

Fourdeg

#housing #smarthomes | FIN

Fourdeg patent pending solution for water-radiator heated buildings ensures energy savings and at the same time improved comfort through highly adaptive temperature control with a fast investment payback.

Have you ever laid your bare feet on a surprisingly cold floor? Changed a room and noticed that you need to pull on a sweater there, while in the last one you were comfortable in your t-shirt? How about when you opened your blanket carefully, felt the chilly air – – and decided to get up just slightly later? If you've experienced any of these, you've touched the issue that the creators of Fourdeg are determined to tackle.

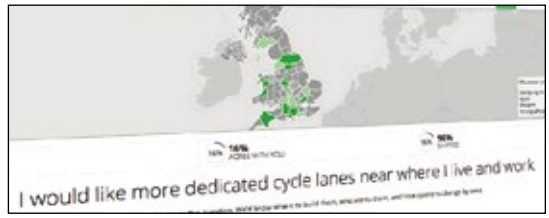
Despite being a concrete and daily comfort issue, heating is also tightly tied to our wallets and the global environment. When it comes to housing, heating is responsible for a major part of both economic expenses and use of natural resources. As many property holders might have noticed, heating expenses have risen and are predicted to rise more.

Fourdeg is currently testing a solution, which takes comfortability, climate and the wallet into consideration. "We want to use less natural resources but still create more business for us and our customers", says Fourdeg's CEO Markku Makkonen.

The smart system works through intelligent self-learning cloud-driven heating optimization algorithms and also allows users to monitor and control the system through web and mobile. This is how Fourdeg's system can save up to 35 percent of heating energy and still increase the comfort.

In Fourdeg's pilot target the investment payback time was about 18 months. "We can't guarantee that for all targets, which can differ significantly from each other", notes Makkonen. "But in any case it is fast."

Read more: http://www.fourdeg.fi



Iagree

#bigdata #accessibility #democracy | UK

We think you're smarter, kinder, and wiser than many businesses and politicians give you credit for. We're here to help you prove it.

"I like being outside. Want to come?", is the first thing that you run into after logging in at Iagr.ee. After the question has been followed by claims "Supermarkets are all the same" and "No more monarchy", you may want to ask what the heck is this about.

Although one might think it's too pretty to

be called one, Iagree is a statistical survey tool. Moreover, this data hoover also collects questions, analyses the answers and connects the results to districts. Answering is fast, easy and even addictive, and posing a good question is awarded with points. This combination can result in a huge amount of recent, easily adaptable localised data. The next step is to find out and actualize intriguing ways of applying it.

With Iagree, an official from Espoo city can inquire whether the subway line should be prolonged further, given the expected expenses. Imagine a local community which has managed to pool 3000 euros – what to do with the money to benefit the community?

Nevertheless, Iagree is not all about strict questions but also more generic ones. This enables a service user to explore district-specific attitudes towards public transportation, tendencies in buying behavior of food, working hours or willingness to go outdoors after sunset. And these are just a fraction of the endless possibilities that quite many corporations, startups, service providers, event organizers and other organizations might be interested of.

Read more: http://www.iagr.ee

Nimber

#delivery #transportation | NOR

With Nimber you are able to send practically anything, from the very small to the very large, over a long distance or across town.

Josefin, 22, moves from Narvik to Oslo to study in Kunsthøgskolen. Since she moves into a fairly small student apartment, she decides to transfer her belongings by bringing the most important ones by private car with a help of her dad and buy the rest from Oslo.

After settling down Josefin notices that the apartment isn't as small as she had pictured. Actually her sofa would have fit the apartment perfectly, but Josefin can't afford to rent a van to bring it from the other side of the country. The sofa stays unused at her parents' storage.

Unless Morten, 46, hears of Josefin. Morten lives in Tromsø, which is roughly 100 kilometres north from Josefin's hometown Narvik. Morten visits Oslo about once a month to see his two grown up children and old friends. Lately Morten has created an account to Nimber. When he decides to go to Oslo, he posts an announcement stating his time of travel and how much he has room in his van. Josefin sees one of Morten's posts, they come to an agreement of a fare of 200 crowns. The sofa begins its journey to southern Norway.

Social delivery services such as Norwegian Nimber and Finnish Piggybaggy save natural resources, make deliveries and also help people cut their transportation expenses. The services are not limited to larger transportations between cities, but also encourage deliveries withinthem. Smaller packages can be delivered by private car, public transportation or even by bike.

Read more: http://www.nimber.com

Bringbee

#delivery #retail #food | CHE

Hassle-free online shopping and delivery. Create your shopping list and have a BringBee near you to deliver it.

Meet Philippe, a BringBee. He is on his way to IKEA in Lyssach, Switzerland to shop for himself and Emma. The two have never met, but soon will, once Philippe delivers Emma the items she has ordered via BringBee home delivery network. Earlier today Philippe accepted Emma's job offer as he was checking from BringBee if anyone living nearby needed anything. The shopping list he printed includes six items Emma has chosen.

Shopping and delivering the goods causes little extra effort for Philippe, since he needed to go to the store anyhow and Emma lives a couple of blocks away from his home. After receiving the

products, Emma confirms the received delivery and the costs for the goods and a small reward is transferred for Philippe, who by that time is already back home assembling his new book shelf.

BringBee connects people around smarter shopping. As Emma saves a trip in the middle of a busy week, Philippe earns some extra money. And there are even more benefits than helping out a neighbour and strengthening the community around you. As a great deal of trips are for shopping, and shopping produces a considerable part of CO_2 emissions, BringBee helps make transportation more sustainable by taking advantage of existing traveling and underused transportational capacities.

Read more: http://bringbee.ch

Bettervest

#crowdfunding #energyefficiency | GER

Bettervest is the world's first crowdfunding platform for energy-efficiency projects of companies, NGOs and local authorities that lets the crowd participate with high returns in the cost savings.

Even though energy conversions – when done well – usually pay back reasonably fast, they still require large investments in the first place. That is one reason why energy wasteful infrastructure is retrofitted and modified slowly, leading to loss of money and also potential escalation of the climate crisis.

Have you ever thought of making money by helping your hometown or neighbour shop to turn more energy efficient and sustainable?

There seems to be a model for doing that. Bettervest's Internet platform aims to gather thousands of citizens to invest small amounts and enabling small and big-scale energy-efficiency projects to take place. Projects can relate to private companies, non-governmental organizations, local authorities or any association. All of the projects will be listed to bettervest's website, and each of them has a goal amount which has to be reached before the project can be carried out.

As a return to their investment, the citizens who invested get a share of the savings that were made because of the conversion. As in all investments, investors naturally have to face a risk too.

Bettervest only finances sustainable energy efficiency projects, which have been analysed with objective measures. Measurements of carbon emissions are done by energy efficiency consultants. The company has managed to successfully raise money for various projects.

Read more: https://bettervest.de

Crowdpowerplant

#homeenergy | UK

Crowd Power Plant's aim is to revolutionise the UK's energy mix and make UK renewable energy installations more profitable.

Home renewable energy installations – mostly meaning solar panels but also installations of wind turbines or hydropower systems – have long been noteworthy ways of saving in household energy expenses, doing some environmental impact and in some cases even selling the excess energy with profit.

Now, why haven't these practices mainstreamed? Even though prices of other appliances are decreasing, the equipment, work and possible alterations done to the residence still often lift the overall price of installations above average house's budget. Taking a loan for installation costs is a normal procedure. It seems to take some kind of a push to turn urban rooftops into seas of solar panels after all.

If making money isn't enough of a reason to make people invest in solar panels, maybe making more money is. Somewhat this is the idea behind Crowd Power Plant, a British startup which is crowding existing home energy producers together and encouraging others to join. The company is not forming a community – it is building bargaining power, which can level with big producers and sell energy from combined individual

sources to suppliers with a lot better prices than an individual generator would achieve.

At best services such as Crowd Power Plant can initiate positive feedback loops, which encourage new people to do home energy installations, bring down both installation and sustainable energy prices, and also make more people use sustainable energy. At this scale, having a solar panel on roof is nothing but a small thing – it can be a part of revolution in terms of ways in producing energy and fighting climate change.

Read more: http://www.crowdpowerplant.com

GoWorkABit

#microwork | EST

GoWorkaBit is like Twitter for jobs. Workbites up to 140 hours.

Need somebody to carry tables and chairs to your outside festival? A professional gardener to stylize your retail shop's yard? How about an assistant to book for clients for your barbershop and plow its yard clean from snow?

GoWorkaBit is an Estonian service which works as a middleman between those who are willing to do short-term work and those who need tasks to be done. Workers' motivation for workbites can come from many reasons. One might want to gain diverse experience from book keeping or event organizing, acquire valuable references, make extra income or just want to try serving dishes at a restaurant for experience's sake. Employers can be private people, associations or anyone in need of workers.

Workers can define their pay and which gigs to accept, while the employer can choose which one of the willing workers will do the job. Collaboration is evaluated by employers and workers, and the reference system aims for keeping the system efficient and pleasant for both sides.

GoWorkaBit and services of its kind enable urban events that otherwise wouldn't have come true. For instance, microwork services can help entrepreneurs to establish foothold before being able to hire permanent workforce, or allow citizens to improve their competences.

Read more: https://goworkabit.com

Granlund Manager

#propertymanagement | FIN

Granlund Manager is a maintenance management system that ensures the performance and efficiency of your real estate throughout its life cycle.

Granlund is certainly not a startup, but it's innovative product Granlund Manager comes very close to some of the others that are introduced in this section. Granlund Manager is a browser-based flexible maintenance management application that meets customers' diverse needs. The Manager offers each user a view of the data that relates to their property in accordance with their position and role. The application can be introduced quickly and utilized according to customer's needs. Effective reporting provides up-to-date information to the management of the property to support their decision-making processes. Granlund Manager pursues to grow according to customer's needs: each component of Granlund Manager forms an individual unit and the components can be seamlessly integrated with each other according to the users' needs. Granlund Manager offers the users the exact combination of services they need.

Granlund Manager offers solutions not only for maintenance activities, maintenance manuals and energy management, but also assists customers in long term planning of energy use, service requests and reporting on environmental impact and user engagement to reduce energy consumption and environmental impact. Some of current users of Granlund Manager are Lähitapiola, City of Espoo, Senaatti Properties and Stockmann.

Granlund a Finnish design, consultancy and software company that focuses on customer relationships, people and innovations. Granlund has over 50 years of experience and they employ over 500 HVAC, electrical, property, energy and software specialists. Granlund's services focus on the entire lifespan of a property or community, having energy efficiency at the core of their expertise.

Read more: www.granlundmanager.fi/en/

Nearhood

#identity #localservices | FIN

Nearhood is neighbourhood's meeting place online and in your mobile.

"There's a sign missing between Boatswain's street and Albert's street", reads at the local page which is dedicated to a living district of Punavuori in Helsinki. The city of Helsinki replies: "Thank you for your message. We have forwarded it to the local maintenance unit." A bit later, the maintenance unit reports that the matter has been taken care of.

The abovementioned is a real-life example of a service called Nearhood, which is provided by Born Local. Nearhood gathers many-sided and multilayered information about urban districts to be viewed in one glance. It's far from being an announcement board for city officials: at Nearhood, anyone can report a city festival or work party, sell and exchange goods and services, let the locals know about a found bicycle or a broken window – or just post a pretty picture of the winter's first snow falling down on home street.

Many news platforms and e.g. Instagram have been integrated to Nearhood through keywords. This means that the viewer of the page can see edited material and pictures from social media, which are related to viewer's own home district or its proximity. All of the material on the page are recent, which turns the site into a real-time, interactive newspaper of one's own local district.

This time the first text was about a missing road sign, but it could as well have been a missing dog or a cat, or a neighbour looking for somebody to help in moving in. Nearhood has exciting potential to boost local identity and turn districts into more village-like environments.

Read more: http://nearhood.net

The Flyover Liverpool is one of Spacehive's landmark projects.

Spacehive

#crowdfunding | UK

Crowdfunding for urban environment projects.

Most of the urban areas could be improved, but how? Retrofitting, modifying and building takes money. Sometimes the bill wouldn't even be extravagant, but because of the lack of a funding model, many good ideas get deserted.

Spacehive is a platform for putting forward project ideas which are related to built environment and allowing anyone to fund them. With 374 project plans received, many funded and counting, on top of the display platform, Spacehive offers management tools to ease project management for people with little experience, instructions on things that need to be taken into consideration and free design advice.

The larger projects include installing wi-fi routers on lamp posts to provide free internet connection to a shopping district of Mansfield, turning a concrete-made flyover route into an urban park with spaces for new small businesses and culture events in Liverpool, while the smaller ones are such as creating street art on series of old brick murals and turning a school yard into an outside tennis court with portable nets and other minimal investments.

Because projects have to reach out to the community for support, the things that get built are more likely to be valued by people. If processes are widely accepted and even partly funded together, they can bind people strongly together and give them a sense of ownership over their area. Whereas every bigger project naturally needs a planning permission, having a funding, properly built project plan and community's support helps in getting one.

Read more: http://www.spacehive.com

SnipSnap

#geolocating | USA

The first app to scan, save, and redeem printed coupons on your mobile phone.

Hannu is bundling down the street with pace. He needs to make it to one more meeting before he can call it a day. The phone beeps. One more message again, Hannu sighs, but unlocks the phone anyway. No, it's a reminder of a discount coupon, which is set to expire tomorrow. Otherwise Hannu couldn't care less, but the reminder continues. It knows that in Hannu's extreme proximity there are two places where Hannu could use the coupon: a cafe right next door or a small local takeaway restaurant at the end of the street. Hannu, who had missed his lunch, decides to buy a baguette for half price.

This service by Italian SnipSnap and others more or less alike are possible because of geolocation technologies. Geolocation means identification of real world location of an object, such as a car, a computer or more and more often: a telephone.

Geolocation is not that new of an invention, but many like to think that only a fraction of its potential has been unlocked. According to study made in 2014, 19 percent of mobile device users use geolocation and and an additional 40 % are willing to use it within the next twelve months. Regardless, privacy issues and unwillingness to share a location is a strong counterforce for the development of geolocating services.

If Hannu wouldn't want to share his location with everybody, he still might be willing to share it with entrepreneurs of his current home district – or at least with a dozen of organizations, event organizers and companies which enjoy his trust. Once good practices for solving privacy issues emerge and spread, geolocation services can have a major effect on urban life and cities. For example, by using geolocating customers can get offers for products and services when they really need them, and entrepreneurs may decide the location of their shop or event by scanning the location history streams of their customer segment crowds. Geolocation can also grow in importance in planning of mobility solutions.

Read more: http://www.snipsnap.it

Upshiftcars

#mobility | USA

From car ownership to access.

Private cars will most likely not disappear totally from the cityscape. But still, will there be a shift in transportation?

Upshiftcars, which currently operates only in California, thinks yes. One day pretty soon, not so many people own private cars even though they still like to use them. Upshiftcars delivers their client a vehicle, which suits the situation and runs on new fuel sources. The vehicle can be ordered directly to the spot by using a mobile app – and dropped anywhere in the city. Currently, cars are delivered manually by workers. In the future however, a self-driving vehicle might come to customer's door automatically.

Upshiftcars is part of new thinking: a paradigm, which sees mobility primarily as a service. Vehicle owning isn't going to be as popular it was, since different pay-for-use models have mainstreamed and users can choose the most suitable mode of transportation for each situation. Bus for regular commuting, peer-to-peer taxi service for more urgent trips, and perhaps ordering an upshiftcar when needing a vehicle for a day or two.

Read more: upshiftcars.com

Community PlanIT

#gamification #communitygaming #augmentedreality | USA

Community PlanIt is a game that makes planning playful, and gives everyone the power to shape the future of their community.

In Nordic countries and elsewhere, citizen participation has been in-written to urban planning already for some time. Unfortunately, participatory planning still too often means few active citizens showing up to open planning events. Obscure planning language, tight weekday routines and also a fair deal of laziness often stand in the way of ideal participatory planning. Furthermore, even a full hall of active citizens rarely represents the whole community. If it's more inviting to stay home playing video games instead of going to a planning audit of your home community, is there any solution?

Turning community planning into a game could be one.

Community PlanIT is a game that transforms community planning into a meaningful activity open for all citizens. The game consists of a series of time-sensitive missions, in which players compete with each other to contribute to their community. At the same time they learn about local issues, connect with each other, and suggest solutions to problems. Players earn coins by responding to the challenges that comprise each mission. When they complete a mission, they can pledge coins to local community causes.

The catch is that in the end the three projects with most virtual coins get actual funding and proceed to the execution phase. The players also get a chance to meet with each other and discuss the results of the game with planners and decision-makers.

Gamification and game mechanics offer interesting opportunities for changing urban environment through motivating citizens, creating healthy competition, generating buzz and social proof and encouraging customer loyalty. Slightly related to this, augmented reality techniques assist in testing an urban project by placing a new element (office, park, road) in the target environment. This enables planners and participating citizens to see new concepts "live" through a smartphone display already in the planning phase.

Read more: https://communityplanit.org/all/

Growington

#food #mapping #locality #gamification | UK

Share, swap and trade home grown fruit and vegetables in your neighbourhood.

If I lived in a city centre, what would it take if I want to eat only locally grown vegetables? Not that much necessarily, if you have a spot to grow something in, you're willing to trade – and yeah, if there's an active network of urban farmers.

Growington is a UK based startup, which has built a food-mapping system which enables the users to easily scan who are growing food in their proximity. Additionally, users swap the harvest through a sharing mechanism and can ask for questions and for help in matters related to urban farming. Growington also introduces gaming mechanics to harvesting: the program awards points and badges based on progress of the harvest, hoping to encourage user-networks into playful competition against other areas. All in all the service has a prospect of boosting the sense of locality and turn them more green.

"The platform that we have built works globally and we already have growers signed up from Australia, South Africa and Brazil", said co-founder Darren Smith in an interview for Urbantimes.

As an addition to new technology and user interfaces enabling handy networking and trade among urban farmers, there are powerful trends such as food security, climate change and health issues driving people towards urban farming.

Read more: http://growington.com/

5.2 RETROFITTING PROJECTS

THIS SECTION lists 13 most intriguing Nordic retrofitting projects. There are, naturally, many other renovation projects underway in the Nordic countries. However, we have selected the ones that are known and often brought up as examples in reports and media, and that have not only a focus on energy efficiency but also include social aspects.

ARKITECTURE PHOTPGRAPH TORBEN ESKEROD

Albertslund, Denmark

PROJECT NAME	Albertslund: "Master Plan South"
TIME PERIOD	First phase initiated in 2007, second in 2012 and the third was supposed to start in 2013.
FINANCING	BO-VEST (Danish Housing Association)
PARTICIPATING COUNTRIES	Denmark
ACTORS INVOLVED IN THE PROJECT	BO-VEST, Municipality of Albertslund, Danish EUDP Programme, Social Housing Fund, Cenergia, Rubow Architects, VELUX, Rockwool and Danfoss.
HOW SUSTAINABILITY IS MEASURED	Control over the energy consumption on households. The zero energy house calculation is based on Cenergias calculation tools ASCOT and BYG-SOL (www.cenergia.dk). Yearly energy balance can be found here: (www.activehouse.info)

Albertslund – An active multicultural suburb of the South of Copenhagen

Albertslund is located 17 km west of Copenhagen. Its population is about 28.000 inhabitants and is composed of a varied range of ages and occupancies. It is considered a lively town and has had a long history of cooperation between citizens, businesses, and government. 61% of housing in Albertslund is council housing, while 34% is privately owned (Albertslund Kommune, 2014).

Albertslund South is a suburban area part of Albertslund Municipality. It was built in the 1960s, mostly with one-storey low-and-dense housing. It is connected to the rest of Copenhagen metropolitan area with a commuter train. There are 3000 dwellings for a population of 6000 inhabitants in the area, from which 25% are of foreign origin. Most residents have lived in the neighbourhood since it was constructed; many are now retired, while others were born and raised in the area (Larsen, 2013).

PROJECT AIM: To retrofit about 2200 dwellings. It has a strong focus on energy efficiency and generation and aims to cover 10–15 % of all electricity use in Albertslund with solar power by 2020; low-energy renovation design, plus improving indoor air climate and optimising the energy supply solution (Pedersen, 2012).

Albertslund South – An energy-efficient laboratory for ready-made solutions

The town of Albertslund serves as a living climate laboratory where new green technologies and solutions are invented in close relation to the city's development and people's life. The renovation of houses is linked with different public space renovation, bike-lane infrastructure from Albertslund to Copenhagen, and other initiatives (Sharing Copenhagen, 2014).

The project targets houses built between 1960–1980. All buildings under the project are

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prefabricated. Therefore, the project has aimed at delivering prefabricated solutions that are applicable to a large number of different building types, focussing on the mass production models of the period.

"Master Plan South" is the largest retrofitting project in progress in Denmark. It includes the retrofitting of about 2200 dwellings and consists of three phases: 623 multi-storey dwellings – the construction was initiated in 2007; 552 terraced houses – planned to be initiated in 2012, and 1000 atrium houses – planned to start in 2013. The Pilot project – The Hyldespjaeldet – test house was realized in 2009 in a public private partnership also involving the large building companies, VELUX, Rockwool and Danfoss. The design of some modular prefabricated solutions and their implementation are taking into account the financing possibilities for future and flexible uses for the rest of renovation cases (Pedersen, 2012).

In regards to social aspects, Albertslund has a strong and highly developed democracy with high participation rates, from the population and the social housing offices (Larsen, 2013). Therefore, it was part of the process since the beginning of the project, and there was a collaborative effort on bringing new solutions. For the Albertslund South project there have been both a series of meeting in the individual subsections of the housing estate and more traditional large public meetings (consultation) with several hundred participants, opening a bottom-up communication. The pilot project served as a model in scale 1:1, and helped to generate a balance between short-term expectations and long-term overall goals of the community.

Today, one third of the planned renovations have been completed. A tour through the renovated buildings is provided at www.sharingcopenhagen.dk.

PROJECT FOCUS	MAIN PROJECT RESULT		ENVIRONMENT			SOCIAL ASPECTS						ECONOMY
	Renovation	Social issues	Energy	Climate	Other	Education	Jobs	Services	Dialogue	Segregation	Other	
	●		●						●			●

MAIN SCOPE	URBAN SCALE				TYPE OF BUILDING		
	Municipality	District	Neighbourhood	Part of neighbourhood	Single-family home	Multi-family home	Public buildings
		●				●	

Birkegade, Denmark

PROJECT NAME	Roof-Garden Birkegade 4-6
TIME PERIOD	Year of Renovation 2011
FINANCING	Andelsforeningen Birkegade 4-6 Neighboors Co-operative
WEB PAGE	www.birkegade.dk
PARTICIPATING COUNTRIES	Denmark
ACTORS INVOLVED IN THE PROJECT	Andelsforeningen Birkegade 4-6 Neighboors Co-operative, JDS Architects, PLOT Architects (BIG & JDS), City of Copenhagen, EKJ Engineers, Logik & Co. Contractors
HOW SUSTAINABILITY IS MEASURED	Not known.

Elmegade: A vibrant dense and narrow area missing a garden.

Elmegade is part of a densely populated area of inner Norrebo, Copenhagen. In the triangular block of Birkegade/Egegade/Elmegade, density provides a narrow, dark and cramped inner courtyard. In addition, the building was in need of renovation, primarily because it had a leaking roof, but also because the neighbours where aiming to have a better building and a space to share as a garden (City of Copenhagen: Technical and Environmental Administration, 2012).

PROJECT AIM: To repair a leaking roof and provide a shared area for the building neighbours to have a better life and child-friendly housing.

Green rooftop – A communal-space approach for roof renovation.

An initiative of the cooperative housing association Andelsforeningen Birkegade 4-6 in Norrebo to repair its leaky old roof included a 490 square-meter rooftop-garden, the construction

JDS ARCHITECTS

of three additional top-floor apartments, façade renovation including energy windows and ventilation system with heat recovery and 13 French balconies (IMEA, 2012).

The social aspects are met by the additional public space for the building; bringing the neighbours together in the new roof area, providing the residents access to a grass-covered hill, a wooden terrace with a barbecue area and an outdoor kitchen, as well as an activity space; while the green roof improves the indoor climate in summer and winter, provides local water drainage capacity and has a better insulation effect (Danish Architecture Centre, 2014).

The residents developed the whole project and its process, through the Birkegade Co-operative. They found on the need of renovation a model of investment in spatial and service renewal. This way, the co-operative funded the main part of the project with the profits of the new apartments' rent and a modest increase in co-operative housing costs.

The project had a big effect on the City of Copenhagen and on its climate plan, and became a case study on the decision to create more green roofs in Copenhagen. For instance, all new roofs with a gradient of less than 30% are to be green due to this example project (Danish Architecture Centre, 2014).

PROJECT FOCUS	MAIN PROJECT RESULT		ENVIRONMENT			SOCIAL ASPECTS						ECONOMY
	Renovation	Social issues	Energy	Climate	Other	Education	Jobs	Services	Dialogue	Segregation	Other	
	●	●	●	●				●	●			●

MAIN SCOPE	URBAN SCALE				TYPE OF BUILDING		
	Municipality	District	Neighbourhood	Part of neighbourhood	Single-family home	Multi-family home	Public buildings
	●			●		●	

Søpassagen, Denmark

PROJECT NAME	Søpassagen Renovation Project
TIME PERIOD	Renovations in 2011
FINANCING	AB Sopassagen (Housing Co-operative)
WEB PAGE	http://sopassagen.ning.com
PARTICIPATING COUNTRIES	Denmark, Austria
ACTORS INVOLVED IN THE PROJECT	Cenergia, Architect's Office in Copenhagen, Co-operative association
HOW SUSTAINABILITY IS MEASURED	Not known. But, the consumption of electricity is now shared to reduce the costs of it.

Søpassagen – Strict building construction regulations and creative initiatives

Søpassagen, Copenhagen is located toward the "city lakes" in Copenhagen and the heavily trafficked "Fredensgade", an old area in the city constraint by aesthetic building regulation that once prohibited visible solar panels to be installed. For these conditions, the design development required an intense and detailed dialogue with the chief architect's office in Copenhagen. Søpassagen is a building of 90 apartments that house a mix of young students, small families, singles and couples. The building residents count with a well-organized cooperative that tries constantly to innovate towards CO_2-emission reduction (Danish Architecture Centre, 2014).

PROJECT AIM: Restoring the drainage and energy systems of the housing building, using solar panels as a renewable source of energy.

Model Søpassagen – A cooperative creating common identity and producing solar energy

"Model Søpassagen", an effort from the housing association AB Sopassagen in Copenhagen, is aiming to achieve a CO_2-emission reduction

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in their building's environment. The whole model is based on people, technology, and CO_2 emission reduction. The project tries to improve resident's habits by creating common identity and a sense of community among residents. The technical side of Model Søpassagen consisted on improving the housing efficiency was also developed integrated and according to the needs of the residents.

The renovation of 90 apartments at Søpassagen in Copenhagen, installing solar panels on the roof and a rainwater collection and drainage system (fascine) below ground level. The solar panels, covering approximately 360m^2, produced 45kWp, were the first project approved by the city administration in such area, where preserving the building's historic and esthetical characteristics is essential. Also, the project included a water drainage system below ground level to prevent flooding, but making it possible to reuse rainwater in washing machines in the shared-laundry for all residents in the cooperative and in the housing bathrooms.

The project opened discussion in the City on the issue of having many red roofs in Copenhagen, and explores ways to promote more solar panels in general. Also, the city seeks to promote water drainage systems similar to the one in Søpassagen as part of its flooding prevention initiatives (IMEA, 2012).

PROJECT FOCUS	MAIN PROJECT RESULT		ENVIRONMENT			SOCIAL ASPECTS						ECONOMY
	Renovation	Social issues	Energy	Climate	Other	Education	Jobs	Services	Dialogue	Segregation	Other	
	●		●		water			●				

MAIN SCOPE	URBAN SCALE				TYPE OF BUILDING		
	Municipality	District	Neighbourhood	Part of neighbourhood	Single-family home	Multi-family home	Public buildings
	●			●		●	

Peltosaari, Finland

PROJECT NAME	Peltosaari, Finland
TIME PERIOD	Ongoing since 2010, one pilot project concluded in August 2011.
FINANCING	Town of Riihimäki, ARA (The Housing Finance and Development Centre in Finland), TEKES (The Finnish Funding Agency for Technology and Innovation), and VTT (Technical Research Centre of Finland).
PARTICIPATING COUNTRIES	Finland, United Kingdom
ACTORS INVOLVED IN THE PROJECT	Paroc, ARA, Tekes, VTT, Sitra, Aalto-yliopisto, Enervent Oy, Ensto, Lujatalo Oy, Lammin Ikkuna Oy, Riihimäen Kotikulma Oy
HOW SUSTAINABILITY IS MEASURED	Energy consumption is measured by the dynamic simulation software (IDA: Indoor Climate and Energy 4.0). The energy consumption of the building and the performance of the new wall structures is being monitored by the VTT researchers after each renovation is completed. More information on (http://www.paroc.com/campaigns/~/media/Images/Campaigns/Paroc%20Innova/Innova-full-paper.ashx)

Peltosaari – a suburb of rental houses in a strategic location

Peltosaari is a developing area located 69 kms north from Helsinki, in Riihimäki city. Its growth has been directed by its city's location, being an important transport link for Helsinki, Lahti, Hämeenlinna, Tampere, and Russia. The area of Peltosaari was originally built in 1970s –1990s and houses up to 2,700 inhabitants, out of a total of 29.000 in Riihimäki.

50% of the houses in Peltosaari are rental houses. Most of the dwellings required renovation before the project started. The area had a bad reputation and various socio-economical problems; developing a growing rate of unemployment of 27–33% (Mazarakis, 2012). The number of families was declining, services were scarce and of low quality, and there was no investment interest.

PROJECT AIM: The project aims to create urban connections between Peltosaari and Riihimäki, while improving the image and perception of the area by renovating the old dwellings to attract new citizens – young professionals, families with children, students and senior citizens - that could actively act on the transformation of the environment. Developing new technical solutions for housing aims to make it easier for citizens to implement eco-efficient and energy-efficient transformations in the built environment.

The pilot project's aim was to renovate the suburban block of flats from the 1970s and to study the potential for energy renovation, searching to innovate the methods and solutions for energy-efficiency upgrades of the existing building stock in Finland (ARA, 2013).

TOPI AALTONEN / RIIHIMÄEN KAUPUNKI

Peltosaari Project – a lab of technical innovation and social assistance

The project was launched in 2010, with a competition seeking housing companies or rental buildings that would be suitable for major energy renovation. A block of flats with an exposed-aggregate finish, owned by the rental housing company of the City of Riihimäki, Riihimäen kotikulma, and built in 1975, was chosen. (ARA, 2013)

The pilot technical renovation project, Kotikulma 10, is a 4-storey-high building rental apartment owned by Kotikulma Oy, city of Riihimäki. It consisted of renovating a typical multi-storey building with 33 rental apartments and a day-care center built in 1975, located in the Peltosaari area, to meet the Finnish Passive House requirement. The renovation included new doors and windows, balconies, additional thermal insulation and a new ventilation system

with effective heat recovery. The outer concrete panel and the thermal insulation of the old exterior walls were replaced by vertical façade elements with a wooden frame structure. The new renovation methods reduce the duration of on-site construction work (Lylykangas, 2012).

The residents in the area were taken into account in the research of the social context and the population needs to develop the master plan and the future design of the area. Social goals were addressed by the Housing Clinic, the Peltosaari Parliament and the Peltosaari Project development. As a communication and support initiative, the project opened a "Housing Clinic", where citizens could receive help to solve their different problems. The Housing Clinic aims to transport services nearer to the service users and to establish networks and discover the real needs of residents. On the other hand, the Peltosaari Parliament was born as an initiative from the neighbours, after one year of the project. It was established to engage residents in active participation and effort to add pressure and influence the decisions on the development of the project (Mazarakis, 2012).

The above-mentioned solutions in Peltosaari are still on probation, but they have been proven to be a path for dialogue, participation, integration, and improvement in the community. These social initiatives are directing the development into a more inclusive policy-making methodology for the area, which is accompanied with a huge investment on technical solutions; and as such is expected to bring interesting outcomes.

Development of Peltosaari consists of many sub-projects, some of them finished and some still on-going. In a recent survey (VTT Research, 2014), over half of the respondents agreed that Peltosaari is a comfortable place to live, while about 5% disagreed. Shortcomings in services and cleanliness were most commonly reported deficiencies.

PROJECT FOCUS	MAIN PROJECT RESULT		ENVIRONMENT			SOCIAL ASPECTS						ECONOMY
	Renovation	Social issues	Energy	Climate	Other	Education	Jobs	Services	Dialogue	Segregation	Other	
	●		●		water				●			

MAIN SCOPE	URBAN SCALE				TYPE OF BUILDING		
	Municipality	District	Neighbourhood	Part of neighbourhood	Single-family home	Multi-family home	Public buildings
			●			●	

Porin Puuvilla, Finland

PROJECT NAME	Puuvilla
TIME PERIOD	To be completed at the end of 2014
FINANCING	Renor Oy
WEB PAGE	www.porinpuuvilla.fi
PARTICIPATING COUNTRIES	Finland
ACTORS INVOLVED IN THE PROJECT	Skanska, Renor Oy, City of Pori, Realprojekti Oy, Porin Puuvilla Oy, Ilmarinen, Arkkitehtikonttori Küttner & Pussinen Oy, Narmaplan Oy.
HOW SUSTAINABILITY IS MEASURED	Under LEED Certificate requirements

Porin Puuvilla – A 100-year-old cotton factory on the vibrant central Pori

Puuvilla – a former 100-year-old cotton factory of Pori represents an important part of the social memory of the population of the region. The mill and related spinning mill started operations in 1900 and the dye shop in 1902. The Pori mill area and the Pori mechanical engineering works are part of the Finnish national heritage. The area and its buildings were designed by architect August Krook in the late 1800. In the latter part of 2000th century the factory was shut down. For a long time the large industrial buildings stood almost entirely empty and out of use, symbolising the end of the industrial era (Porin Puuvilla, 2014).

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PROJECT AIM: Activate a dormant factory community and an unused space and turn it into a dynamic complex while still preserving its traditional values and taking the environmental and social issues into account.

Porin Puuvilla Shopping Centre – A private development reactivating the Industrial Heritage

The unused spaces of Puuvilla are being renovated and extended into a shopping centre, aiming to turn the area into an active hub for the whole region. Shopping Centre Puuvilla is starting its activity in the red-brick heritage walls of the old Pori cotton mill in November 2014. It is looking to house an atmosphere of modern life, with fashion, interior decoration, and leisure activity stores and services. The building includes spaces for public services, education and entrepreneurship. Energy consumption will be covered mainly by geothermal sources. There are 94 energy wells being drilled for the project, to produce about 80% of the yearly heating and cooling by thermal energy (Porin Puuvilla, 2013a).

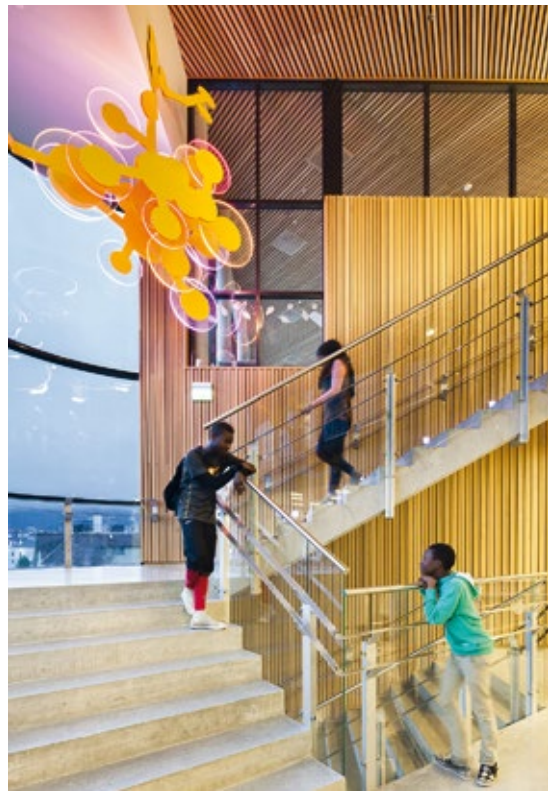
There has been on-going public conversation on how this old factory area – relevant to for city's identity – should be used. Therefore participatory processes have been applied in Puuvilla's planning, and it's new appearance is generally welcomed by the locals. Puuvilla has become the biggest business, education and leisure centre in the Satakunta region, housing the University Consortium of Pori and various services and businesses.

PROJECT FOCUS	MAIN PROJECT RESULT		ENVIRONMENT			SOCIAL ASPECTS						ECONOMY
	Renovation	Social issues	Energy	Climate	Other	Education	Jobs	Services	Dialogue	Segregation	Other	
	●		●				●	●				●

MAIN SCOPE	URBAN SCALE				TYPE OF BUILDING		
	Municipality	District	Neighbourhood	Part of neighbourhood	Single-family home	Multi-family home	Public buildings
	●						●

Ny Krohnborg School, Norway

PROJECT NAME	Ny Krohnborg School
TIME PERIOD	Renovation completed in 2012
FINANCING	Bergen Commune
WEB PAGE	http://arkitektgruppen-cubus.no/prosjekt/nye-ny-krohnborg-skole-utomhus
PARTICIPATING COUNTRIES	Norway
ACTORS INVOLVED IN THE PROJECT	Architecture firms Rambøll Norge and Arkitektgruppen Cubus AS, Office of Cultural Heritage in Norway, and Bergen municipality.
HOW SUSTAINABILITY IS MEASURED	Not mentioned.



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Arstad – a dense area with little community space

Arstad is a dense suburb area, south of the city center of Bergen, built in the 1920s. Recently, it was considered a neighbourhood with outstanding social challenges of little neighbour interaction and very low self-esteem. No safe and attractive meeting places or community areas for activities and interaction were provided. In the central part of the neighbourhood there is an old run-down school of Ny Krohnborg, which is designed by the municipal modern architect Kaspar Hassel in 1924. The school was recognized as a good location to revitalize the community.

PROJECT AIM: To expand an existing school by adding a new sports and culture venue to bring social structure and identity of the neighbourhood.

Ny Krohnborg School: new spaces for neighbourhood interaction

The Ny Krohnborg School was transformed and developed into a modern town center with schools, kindergartens, sports and cultural interaction areas as its main elements, to achieve an integrative renovation of the building and its public space. The cultural section includes a flexible hall, exercises and games room, media library and community café. In addition, a new sports centre is built on existing school space and close to the existing buildings. For this, the architects and the city council worked closely to design the extension of the school while simultaneously respecting the school's history, trying to balance the preservation and redesign of the complex.

The project team focused on reusing and repurposing as many materials as possible. Structural features dated back from 1924, and external facades, stone work, roof tiles, small pane windows, iron details and paneled doors, were kept in their original state. In order to achieve better use of natural sunlight to improve the building's energy efficiency, new doors and windows were incorporated in the new design. For better functionality and universal accessibility, new lifts and ramps were also added.

The resulting retrofit work of the Ny Krohnborg School gave life to the old building, but also to a vibrant neighbourhood center, acting as a school and nursery as well as an inviting public space for local residents. In addition to being

HUNDVEN-CLEMENTS PHOTOGRAPHY

environmentally beneficial, re-use of an existing building has other synergy effects. Now the sports hall is an integral part of the school and nursery during daytime, whereas it is open to the public after hours. The schoolyard – which is created on the roof of the sports hall – is also a popular arena for outdoor sports and activities in the evening. The central location of the school in the domestic neighbourhood reduces need for transport. The once run-down school has become a vibrant heart of the neighbourhood, creating new energy and optimism. (Jewell, 2014)

PROJECT FOCUS	MAIN PROJECT RESULT		ENVIRONMENT			SOCIAL ASPECTS						ECONOMY
	Renovation	Social issues	Energy	Climate	Other	Education	Jobs	Services	Dialogue	Segregation	Other	
	●	●	●	●		●		●		●		

MAIN SCOPE	URBAN SCALE				TYPE OF BUILDING		
	Municipality	District	Neighbourhood	Part of neighbourhood	Single-family home	Multi-family home	Public buildings
			●				●

Infill's Kindergarten Projects

PROJECT NAME	Kindergarten Projects
TIME PERIOD	On-going
WEB PAGE	http://infill.no/
PARTICIPATING COUNTRIES	Norway
ACTORS INVOLVED IN THE PROJECT	Aspelin Ramm Infill
HOW SUSTAINABILITY IS MEASURED:	Not mentioned.
DESCRIPTION OF THE AREA	Central Oslo

PROJECT AIM: To offer a convenient and ecologically sustainable solution to childcare needs of a growing city centre.

Kindergarten Projects – Providing childcare close-by to parent's daily activities

Oslo is the fastest growing city in Europe and is

INFILL

projected to need space for 1900 new kids in its kindergartens by 2020 (Infill, 2014). Kindergartens are often not easy to establish in dense locations, since they have special requirements due to safety issues and noise and require enough room for playing and other activities both inside and outside. Having too few kindergarten places is a challenge for parents' time use and work routines. Further, it adds to city's commuting levels, if parents have to travel long distances to kindergarten and back regularly.

Infill's approach to solving the problem is to integrate a kindergarten and family homes with

innovative design. The planned structure is a medium-sized building of 8000 square meters. Its rooftop is an outside playground, which enables children to get fresh air and more daylight easily and adults to monitor safety of the children and access to the nursery effectively. The building includes 80 apartments. The families who live in the building have a privilege to sign their children into the kindergarten. This can reduces pick-up times and extra traffic. (Infill, 2014)

PROJECT FOCUS	MAIN PROJECT RESULT		ENVIRONMENT			SOCIAL ASPECTS						ECONOMY
	Renovation	Social issues	Energy	Climate	Other	Education	Jobs	Services	Dialogue	Segregation	Other	
			●	●			●	●				

MAIN SCOPE	URBAN SCALE				TYPE OF BUILDING		
	Municipality	District	Neighbourhood	Part of neighbourhood	Single-family home	Multi-family home	Public buildings
		●				●	

Powerhouse Kjørbo, Norway

PROJECT NAME	Powerhouse Kjørbo
TIME PERIOD	Renovation concluded in 20 Jun 2014
FINANCING	Entra Eiendom
WEB PAGE	http://www.powerhouse.no/en/prosjekter/kjorbo/
PARTICIPATING COUNTRIES	Norway
ACTORS INVOLVED IN THE PROJECT	Snøhetta Architects, construction company Skanska, The environmental organization ZERO, the aluminium companies Sapa and Hydro, the consultancy company Asplan Viak, and the property management firm Entra Eiendom.
HOW SUSTAINABILITY IS MEASURED	Energy-efficiency measures in ventilation and energy systems of the buildings, and introducing materials with low embodied energy production. Assessment based on Building Establishments Environmental Assessment Method (BREEAM: Outstanding Certification). More information can be found here: http://www.laganbygg.se/userfiles/presentations/41._session_11_m.thyholt.pdf

Kjørbo – an office complex between the nature and the seafront

Kjørbo is a former manor area at the seafront in Sandvika near Oslo, in Baerum municipality, Norway. The two renovated buildings were originally built in 1980 and each cover approximately 2600m² and annually consumed 250kWH per sqm (Snøhetta, 2014).

PROJECT AIM: To develop and construct a pilot building that produces more energy that it consumes over the course of their lifetime – positive-energy buildings.

Powerhouse Kjørbo – a positive-energy renovation office building project

Powerhouse Kjørbo opened in April 2014 and is the first Powerhouse project to be completed by the group. Walls, ceilings and windows are tight-fitting and well insulated. Exterior sun shading and internal solutions, including exposed concrete decks, contribute to a reduced energy needs and meet its system of geothermal energy system and its rooftop solar production that supplies over 250.000kWh, or 41kWh per sqm each year. With these, it will generate enough energy to cover the total amount of energy used to produce the building materials, construction, operation and disposal (Snøhetta, 2014).

PROJECT FOCUS	MAIN PROJECT RESULT		ENVIRONMENT			SOCIAL ASPECTS						ECONOMY
	Renovation	Social issues	Energy	Climate	Other	Education	Jobs	Services	Dialogue	Segregation	Other	
	●		●	●				●				●

MAIN SCOPE	URBAN SCALE				TYPE OF BUILDING		
	Municipality	District	Neighbourhood	Part of neighbourhood	Single-family home	Multi-family home	Public buildings
				●			●

Ringdansen, Norrköping, Sweden

PROJECT NAME	Ringdansen
TIME PERIOD	2000–2003
FINANCING	Around 30 % was financed by the government through the so-called kretsloppsmiljarden[1].
PARTICIPATING COUNTRIES	Sweden
ACTORS INVOLVED IN THE PROJECT	Norrköping municipality, residents in the area, housing companies.
HOW SUSTAINABILITY IS MEASURED	Through targets such as energy and water use. The socio-economic effects of the project are presented in the report "Går det att vända utvecklingen i utsatta bostadsområden? Exemplet Navestad/Ringdansen i Norrköping" by Åsa Bråmå (2011).

GOOGLE

PROJECT AIM: To achieve a socially, culturally, economically and ecologically sustainable residential area through the involvement of residents in the transformation process. (Hyresbostäder, 2014)

Ringdansen – A social-housing development on a multicultural suburb

The residential area Ringdansen is located in the Navestad neighbourhood in Norrköping, approximately 4.5 km from the city centre. The area was constructed in the beginning of the 1970s as a part of the Million Homes Programme and originally contained around 1 600 apartments. Ringdansen received a bad reputation from the start, mainly due to its unconventional architecture and its location in the outskirts of the city. The residents were mainly immigrants and Swedish households with social problems. Over the years there have been recurrent attempts to improve the situation in the area through small scale physical measures and various social projects; however they have not led to long-term improvements.

Re-design and renovation for today's society

The project involved demolition of the top floors on some buildings and a big share of the housing stock in order to open up the massive buildings. The amount of apartments in the area was reduced by 40 %, from 1 600 to 900 (Bråmå, 2011, p.20). The remaining apartments were renovated with a focus on improving their environmental performance through reduced energy and water usage. The residents in the area were involved from the beginning of the planning process when it came to the future design of the area, but no other social measures were included. The social goals were instead to be achieved through already existing projects, mainly through the project Nya Navestad (Eng. New Navestad). The transformation of Ringdansen led to an improvement in the socio-economic situation of the area. It is not believed that this improvement was a result of displacement of the weakest households in the area, but rather due to a combination of improved socio-economic status of the residents, and the fact that households with stronger socio-economic status have moved into the area. (Bråmå, 2011)

PROJECT FOCUS	MAIN PROJECT RESULT		ENVIRONMENT			SOCIAL ASPECTS						ECONOMY
	Renovation	Social issues	Energy	Climate	Other	Residents	Jobs	Services	Dialogue	Segregation	Other	
	●		●			●						

MAIN SCOPE	URBAN SCALE				TYPE OF BUILDING		
	Municipality	District	Neighbourhood	Part of neighbourhood	Single-family home	Multi-family home	Public buildings
			●			●	

Botkyrka, Stockholm County, Sweden

PROJECT NAME	An intercultural Botkyrka (Sw. Ett interkulturellt Botkyrka)
TIME PERIOD	Ongoing since 2010
FINANCING	Botkyrka municipality
WEB PAGE	http://www.botkyrka.se/kommunoch politik/ hallbarutvecklingochmanskliga rattigheter/ettinterkulturelltbotkyrka
PARTICIPATING COUNTRIES	Sweden
ACTORS INVOLVED IN THE PROJECT	Botkyrka municipality
HOW SUSTAINABILITY IS MEASURED	Through indicators related to employment (e.g. employment rate and income levels), how much "at home" the inhabitants feel in the area (e.g. safety and discrimination), schools (e.g. bullying and share of students eligible for high school), climate change (no indicators yet), health (e.g. physical activity and violence) and trust in other citizens and in the democracy (e.g. participation in elections). All the indicators can be found here: http://www.botkyrka.se/kommunochpolitik/ekonomiochstyrning/arsredovisning/Sidor/default.aspx.

Botkyrka – A multicultural municipality with contrasting architectural landscape

Botkyrka municipality is located in Stockholm County around 30 km south of Stockholm City. The municipality has close to 90 000 inhabitants. In terms of socio-economic status and architecture there are big differences between the northern and southern parts of Botkyrka. North Botkyrka has a lower median income and a higher percentage of people with a foreign background than southern Botkyrka. Northern Botkyrka is characterized by high-rise buildings that were constructed during the Million Homes programme in the 1960s and 1970s, while the building stock in southern Botkyrka mainly consists of villas and low-rise multi-family buildings. In 2010, Botkyrka had the lowest median income and the highest concentration of persons with foreign background among the other municipalities in Stockholm County and unemployment levels in Botkyrka remains higher than the county average. (Reardon and Dymén, 2014)

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PROJECT AIM: To create an intercultural community characterised by interaction and movement between individuals and groups, in order to create growth and a sustainable society.

A cross-sector strategy for intercultural and neighbourhood reactivation

Botkyrka municipality has adopted a cross-sector strategy that centres on the well-being of the people living in the area. The municipality promotes interculturalism with an approach that focuses on exchange and interaction between people with different origins. The strategies are reflected in the work of the municipality's societal and spatial development unit which integrates socio-economics, culture, physical planning, the environment, youth and community outreach, segregation and education. When a development project is proposed, both the impact on the community and the environment is evaluated. In order to reach a wide range of individuals, the municipality co-operates with community groups, such as the public library and the schools. The library also works closely with the Women's Resource Centre that helps to integrate women into the workforce through training in employment skills and Swedish, and guidance on how to start a small business. There have also been strong efforts to engage young people through sports, exchange programs and summer employment opportunities (Hållbar Stad, 2014). There are indications that the ef-

forts are having positive impacts on the residents in the area. For example, the rate of child poverty has declined and new dwellings are being constructed in North Botkyrka, for the first time since the Million Homes Programme. (Reardon and Dymén, 2014)

PROJECT FOCUS	MAIN PROJECT RESULT		ENVIRONMENT			SOCIAL ASPECTS						ECONOMY
	Renovation	Social issues	Energy	Climate	Other	Residents	Jobs	Services	Dialogue	Segregation	Other	
		●	●		●	●	●			●		

MAIN SCOPE	URBAN SCALE				TYPE OF BUILDING		
	Municipality	District	Neighbourhood	Part of neighbourhood	Single-family home	Multi-family home	Public buildings
	●						

Sätra, Gävle, Sweden

PROJECT NAME	Green Sätra (Sw. Sköna gröna Sätra)
TIME PERIOD	2011–2018
FINANCING	Delegation for Sustainable Cities finances parts of the project
WEB PAGE	http://www.gavlegardarna.se/sv/Kampanjer/satraprojekt/Hem/
PARTICIPATING COUNTRIES	Sweden
ACTORS INVOLVED IN THE PROJECT	The housing company AB Gävlegårdarna in collaboration with Gävle Energi AB, Gävle municipality, the foundation Rapatac, and others.
HOW SUSTAINABILITY IS MEASURED	Measurement of energy use for heating, hot water and electricity; measurement of water use; follow-up changes in the residents' social environment.

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PROJECT AIM: To create a sustainable urban area from an economic, social, environmental and esthetic perspective, where the residents are involved and influencing their environment.

Sätra – A suburb rich in heritage providing culture, nature and architecture

Sätra is located 3 km north of Gävle centre. Around 9 700 people live in Sätra. The area was constructed in the 1960s as part of the Million Homes Program, but has continued to develop since. The newest buildings in the area are from the 1990s. The area has cultural values with time-typical architecture and preserved natural land, for example the Sätra fields which are located in the middle of the neighborhood. Services in the area include library, dental care, hair dresser, health center, church, grocery store and restaurants. The public transportation works well and there are walking and cycling paths connecting Sätra to Gävle centre.

Engaging the residents for sustainable retrofitting

The goal is to increase the residents' participation and involvement in the renewal of their own homes and the local environment so that the results in terms of well-functioning meeting places and increased wellbeing become permanent. The project mainly involves renovation of the building stock in eastern Sätra in order to improve the energy efficiency, but also smaller projects to improve the biological diversity and meeting places in the Sätra fields and renewal of parts of the neighbourhood centre. Additionally, pedagogical solutions are included in order to make the residents aware of how their lifestyle affects the development towards a sustainable district. The views and ideas of the residents are

considered in the early planning stages through meetings and workshops. Sätra may ultimately provide a model for renewal of similar areas and how to apply sustainable solutions on a large scale. (Skönä gröna Sätra, 2010.)

PROJECT FOCUS	MAIN PROJECT RESULT		ENVIRONMENT			SOCIAL ASPECTS						ECONOMY
	Renovation	Social issues	Energy	Climate	Other	Residents	Jobs	Services	Dialogue	Segregation	Other	
	●		●		●	●			●			

MAIN SCOPE	URBAN SCALE				TYPE OF BUILDING		
	Municipality	District	Neighbourhood	Part of neighbourhood	Single-family home	Multi-family home	Public buildings
			●			●	

Ronna, Södertälje, Sweden

PROJECT NAME	
TIME PERIOD	Ongoing since 2009.
FINANCING	Södertälje municipality, Framtid Ronna AB, Chamber of Commerce, the Swedish Public Employment Service, Campus Telge, and others finances parts of the initiative. As there is no time limit for the plan, all means of financing have not yet been decided.
PARTICIPATING COUNTRIES	Sweden, Poland, Hungary, Rumania, Greece, Italy, the Netherlands, Germany.
ACTORS INVOLVED IN THE PROJECT	The municipal board in Södertälje municipality decided in 2008 to participate in the EU-financed project RegGov (Regional Governance of Sustainable Integrated Development of Deprived Urban Areas (2011). Södertälje municipality is collaborating with 8 other cities/regions in Europe to share knowledge and learn from each other. One of the main goals has been to develop a local action plan for each partner. Here Södertälje has focused on the area Ronna.
HOW SUSTAINABILITY IS MEASURED	Probably with socio-economic indicators such as education, employment rate, safety, etc.

Ronna – A modern-style suburb of high-rise buildings and outskirt villas

Ronna is located in Södertälje, around 30 km south of Stockholm City. There are around 7 000 inhabitants in Ronna. The building stock mainly consists of high-rise multifamily buildings constructed during the Million Homes Programme, with some row-houses and villas in the outskirts of the area. Most of the apartment buildings have been refurbished since they were constructed. In the middle of Ronna there

is a small neighbourhood centre; however the services have gradually fled the area since the 1990s. Several bus lines are connecting Ronna to Södertälje centre. Originally seen as a well-kept and nice area, the perception has changed during recent years with reports on violence and criminality. Previous efforts have been made to improve the conditions; however they have always been limited in time and have not focused on structural changes, hence there have not been opportunities for long-term success.

PROJECT AIM: To develop an integrated local action plan for sustainable development of Ronna to overcome the limitations of previous initiatives and design and implement a model for a more successful and sustainable approach to Integrated Neighbourhood Development. (RegGov, 2011.)

A centre for small business innovation for urban sustainability

The vision is to transform Ronna to an urban area which is environmentally, socially and eco-

nomically sustainable. It should be a centre for innovative small scale businesses. There should be diverse types of housing and activities and people with different experiences, competences, income levels and backgrounds should live there. Initiatives are taken to strengthen small and medium sized companies and local entrepreneurs are provided support to develop their ideas. The goal is to improve the social conditions in the area, by for example reducing the unemployment rate, improve education levels and increase participation in the society (voting etc.). If the model can be implemented successfully with lasting success, its benefits can serve as a model for a comprehensive and sustainable regeneration and development of other areas and neighbourhoods in Södertälje. Ronna can thereby be a model for the transformation of million homes programme areas to modern urban environments. In 2012 a project for connecting all parallel municipal policy documents and targets to a clear action program for Ronna started with financing from the Delegation for Sustainable Cities. The plan should run for as long as necessary to reach complete, long-term success in the development of Ronna. The plan is therefore not limited by political governance or current means of financing. (RegGov, 2011.)

PROJECT FOCUS	MAIN PROJECT RESULT		ENVIRONMENT			SOCIAL ASPECTS						ECONOMY
	Renovation	Social issues	Energy	Climate	Other	Residents	Jobs	Services	Dialogue	Segregation	Other	
		●				●	●	●	●	●	●	

MAIN SCOPE	URBAN SCALE				TYPE OF BUILDING		
	Municipality	District	Neighbourhood	Part of neighbourhood	Single-family home	Multi-family home	Public buildings
			●			●	

Vivalla, Örebro, Sweden

PROJECT NAME	My Green Neighbourhood (Sw. Mitt gröna kvarter)
TIME PERIOD	Ongoing since 2009
FINANCING	Delegationen for sustainable cities
WEB PAGE	http://www.obo.se/sv/grona-obo/Mitt-Grona-Kvarter/
PARTICIPATING COUNTRIES	Sweden
ACTORS INVOLVED IN THE PROJECT	The housing company Örebrobostäder
HOW SUSTAINABILITY IS MEASURED	Not known.

GOOGLE

PROJECT AIM: To reconstruct the residential area Vivalla in Örebro to an ecologically, economically and socially sustainable area (Nya Vivalla, 2013).

Vivalla – a multicultural suburb surrounded by nature

Vivalla is located around 5 km from Örebro city centre. There are 6 500 people living in Vivalla. The area was constructed in the 1960s and consists mainly of two-storey multifamily buildings. The neighbourhood centre provides a number of services such as health care centre, dental care, grocery stores, hairdressers, restaurants, café, and library. Nearby are also schools, a larger shopping mall and a number of small businesses. The area is connected to other parts of the city by bus lines, walking and cycling paths and roads. Vivalla is green and park-like, surrounded by forest and cultivated land. Employment, income and education levels and other social indicators

GOOGLE

show that Vivalla is below average compared to Örebro as a whole. The area has been the target for several renewal programmes in the last 20 years.

Taking first steps in integrating social, economic and environmental goals

The renewal initiative is more radical than previous projects in the area. It includes refurbishing and pulling down and building new apartments, all of which is changing the physical structure.

The focus on citizen participation in the planning process is also new, as is the focus on energy saving and other measures related to climate mitigation and cost efficiency. The project involves transformation of 123 apartments in the residential area Vivalla in Örebro. Environmental and social sustainability is combined through measures to reduce energy consumption, increase the participation from the residents and to provide opportunities for the unemployed in the area to work for the construction company. Thereby renovation is intended to also contribute to economic sustainability through lower operation and maintenance costs, reduced damage on public properties and more jobs. (HållbaraStader 2011.) Örebrobostäder sees the project as a first step in a long term strategy for integration of environmental, social and economic aspects in the company and experiences from the project will give a foundation for continued transformation in the whole of Vivalla – a total of 2 400 apartments. Renovation of Vivalla was started in February 2014.

PROJECT FOCUS	MAIN PROJECT RESULT		ENVIRONMENT			SOCIAL ASPECTS						ECONOMY
	Renovation	Social issues	Energy	Climate	Other	Residents	Jobs	Services	Dialogue	Segregation	Other	
	●	●	●	●		●	●		●			

MAIN SCOPE	URBAN SCALE				TYPE OF BUILDING		
	Municipality	District	Neighbourhood	Part of neighbourhood	Single-family home	Multi-family home	Public buildings
				●		●	

5.3 PLACEMAKING

PLACEMAKING is creation of a distinctive, livable space through community engagement. Placemaking differs from constructing a building, designing a plaza, or developing a commercial zone. Authenticity and context-sensitivity are at the core of placemaking. This makes placemaking inevitably a collaborative process.

The end result of placemaking may share many features with a development process which is led from above: place can be a square, a downtown, a park, a residential street or a garden. These examples from Austria, Sweden and Australia show how urban activism and other user-led movements can be not only effective but also pivotal in renewing urban areas successfully.

Sargfabrik, Vienna, Austria

PROJECT NAME	Sargfabrik
TIME PERIOD	1987–2000
FINANCING	City of Vienna, Association for Integrative Lifestyle (VIL)
WEB PAGE	http://www.sargfabrik.at/
PARTICIPATING COUNTRIES	Austria
ACTORS INVOLVED IN THE PROJECT	Association for Integrative Lifestyle (VIL), local community, visitors

PROJECT AIM: To achieve the integration of housing and culture and to accommodate various lifestyles and cultural facilities in alternative and socially conscious way.

Sargfabrik – demolished and rebuilt

Sargfabrik is located in Vienna's 14th district at the site of the large coffin manufacture. Old factory *Maschner & Söhne* was built in 1895. The production stopped in 1967 leaving the site for the future reuse. Old buildings were demolished, with the exception of the chimney which has been left on the site. Construction started in 1994 and first residents moved in in 1996. Non-profit organisation called Association for Integrative Lifestyle (VIL), founded in 1987, is the owner and manager of Sargfabrik today. Similar project owned by VIL and called Miss Sargfabrik, was completed nearby in 2000.

JASNA CIZLER

Affordable housing and social inclusion

Sargfabrik was one of the pioneer projects in creating apartments on former industrial sites. This is a multifunctional complex and a combination of residential, cultural and social institution. Aim was to create affordable collective housing for people of different cultures, backgrounds and age groups. Project has achieved the integration of disabled people and socially excluded groups. All important decisions (rules, programs, budget, allocation of flats for renting) are made at the meetings of the association VIL. Residents are involved in community development, volunteering and communal events in Sargfabrik and its surrounding. Aside from about 100 res-

idential units, Sargfabrik contains kindergarten, events hall, seminar room, publically accessible bathhouse, restaurant, playground, communal courtyards and roof gardens. All communal facilities can be used by residents of both buildings.

Environmental sustainability is an important aspect of the project and it involves making optimum use of energy, composting, using of the solar power, optimized use of space in sleeping zones (in Miss Sargfabrik). Courtyards and rooftop gardens allow fruit and vegetable growing. Parking facilities for cars were kept to a minimum (one car park for ten households) in order to make room for the swimming area. Park places are used for car-sharing or are filled with bicycles.

The project won numerous prizes including: *Adolf Loos architecture prize for residential buildings* in 1996, *Bauherrenpreis* in 1996, *Architecture prize of Austrian Cement industry* in 2001 (Miss Sargfabrik) and *Promotion Award for Architecture of Berlin University of the Arts* in 2002 (Miss Sargfabrik). More than 200 people live in Sargfabrik and it is popular among people searching for a place to live. Crime in the area has decreased, young people gather in this complex for education, entertainment and decission making process, and people with special needs have a well designed space for their needs.

Newcastle Central Business District, Newcastle, New South Wales, Australia

PROJECT AIM: To solve the problem of Newcastle's empty central business district; to find short and medium uses for vacant buildings until they become commercially viable or are redeveloped.

PROJECT NAME	Renew Newcastle
TIME PERIOD	2008 – present
FINANCING	NSW Government (through Arts NSW and Department of Trade & Investment's Enterprising Regions Program), City of Newcastle, Hunter Development Corporation, Newcastle Now, property partners and local service providers
WEB PAGE	http://renewnewcastle.org/
PARTICIPATING COUNTRIES	Australia
ACTORS INVOLVED IN THE PROJECT	non-profit organisation Renew Newcastle, property owners, artists, community groups

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Newcastle's centre facing decline

Located 160 kilometres north of Sydney, Newcastle is the second biggest city in New South Wales (155,000 residents). The city was a coal and steel producer until 1990s when the closure of industrial plants and recession happened. The decline of Newcastle's central business district happened as a result of suburbanisation and retail activity moving out from the city centre. More than 260 premises in Newcastle's city centre were unused in 2007. Buildings started to decay, fall apart and suffer from vandalism. As a result, centre had with poor public domain and it was considered unpleasant and unsafe.

Non-profit organisation generates activity

Renew Newcastle is an initiative proposed in 2008. Non-profit organisation was set up to generate activity in unused premises until the long term uses happen. Property owners license their empty buildings for a nominal sum to Renew Newcastle, and this organisation manages short term use of buildings, by taking over the maintenance and finding users. Users are involved in community, cultural and creative projects that bring people to the area. Renew Newcastle tries to make the best use of available spaces, by supporting projects that will be achievable with available resources and will make ongoing uses and become viable businesses.

The project brings people to the city centre, creates a new identity and creates positive economic repercussions for the owners. A report published by *SGS Economics & Planning* in 2011 shows that for every dollar invested in this initiative, the Renew Newcastle initiative generates ten-times that in economic benefit to the city. More than 50 unused spaces have been reactivated by 2014 and more than 130 initiatives have been realised in them. Tourism has increased by 25% since 2008.

Read more: http://renewnewcastle.org/about

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Hökarängen, Stockholm, Sweden

PROJECT NAME	Sustainable Hökarängen (Sw. Hållbara Hökarängen)
TIME PERIOD	2012–2015
FINANCING	The Swedish Energy Agency, the housing company Stockholmshem
WEB PAGE	www.hallbarahokarangen.com
PARTICIPATING COUNTRIES	Sweden
ACTORS INVOLVED IN THE PROJECT	The housing company Stockholmshem, Sustainable Innovation AB, Stockholm Environment Institute

ARILDV / WIKIMEDIA COMMONS (CC-BY-SA-3.0)

PROJECT AIM: To create a socially, environmentally and economically sustainable Hökarängen.

Hökarängen – A suburb in constant grow of needs and insecurity

Hökarängen is located around 9 km south of Stockholm City. Construction in the area started in the 1940s and has continued to expand since then. The building stock mainly consists of low-rise multifamily buildings but there are also some higher buildings, villas and row houses. There are approximately 9 000 inhabitants in Hökarängen. Hökarängen has had a bad reputation from the beginning, due to e.g. criminality. The apartments are small and many families with children are therefore moving from the area. Local services face competition from larger shopping malls in the vicinity.

Sustainable Hökarängen – Services, culture, and growth for social renovation

So far the project has focused on three areas: (1) Developing the neighbourhood centre and increasing the availability of services; (2) Developing the local art sector; (3) Sustainability investments such as development of green areas, renovation of buildings in the area and improving energy efficiency without destroying the area's cultural values. The idea is to let the residents decide what actions should be taken. Since the project started the centre has developed from a slumbering place to a lively, open area with new stores, cafés and restaurants and the residential areas have been refurbished. The effect of the project is evaluated by Stockholm Environment Institute, which monitors the sustainability goals by measuring reduction in energy use and carbon dioxide emissions.

Tabakfabrik, Linz, Austria

PROJECT NAME	Tabakfabrik Linz
TIME PERIOD	2009 – present
FINANCING	City of Linz, Federal Ministry for Education, the Arts and Culture, Directorate of the Provincial Government of Upper Austria and the Municipal Department of culture, private sector, space renting
WEB PAGE	http://tabakfabrik-linz.at/
PARTICIPATING COUNTRIES	Austria
ACTORS INVOLVED IN THE PROJECT	City of Linz, Tabakfabrik Linz Entwicklungs- und Betriebsgesellschaft mbH, creative industries representatives, community groups

PROJECT AIM: Temporary use of unused land or premises and their preparation for the final use; becoming the heart of a vibrant and newly formed district of the city; revitalising social demands by being committed to principles of participation, transparency, openness, creativity and social responsibility.

Tabakfabrik's tobacco production stops in 2009

Tabakfabrik industrial complex is located between the Linz city centre and Danube waterfront. It was designed by Peter Behrens and Alexander Popp and built in 1935. Tabakfabrik was the largest tobacco factory in Central Europe at that time, offering very good working conditions for its employees. With the exception of few buildings, the complex represents a historical monument and it has been protected since 1981. After the production of tobacco stopped in 2009, complex was bought by the City and it is now managed by organisation *Tabakfabrik Linz Entwicklungs- und Betriebsgesellschaft mbH*. Tabakfabrik has since then been transformed into centre for creative industries, education and production.

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Factory turns into a production site of ideas

It was recognized that Tabakfabrik is a valuable place and a big opportunity for the city and its citizens, that cannot be developed in a conventional sense and should be planned carefully through the temporary and flexible use and experimenting. This concept is compatible with the approach that designers had when making open, large and easily adaptable spaces in Tabakfabrik. Tabakfabrik is seen not as a commercial, but as a social and cultural project that should revitalize social demands by being committed to principles of participation, transparency, openness, creativity and social responsibility.

Nowadays the space is used by several organizations. Space rental policy in Tabakfabrik supports non-profit initiatives and takes into account cultural and symbolic capital that users bring to the place. As a result, tree rent types are present, enabling balanced mix of non-profit and commercial use: commercial, special rate and cultural rate. Tabakfabrik is recognized as an open lab for people who want to develop new kind business or culture in collaboration with others. Tabakfabrik is seen as a landmark that should be discovered by citizens again. A huge courtyard is transformed into a public space and

A.G. TRIO

events such as conferences, workshops, lectures, exhibitions and concerts are organised in the complex.

Tabakfabrik has become an international example of best practice and the initiative has received numerous invitations to urban development congresses as a best practice example: *Kulturführer Mitteleuropa* 2013 (Institute for the Danube Region and Central Europe in Vienna), *Cultural Heritage and the EU-2020 Strategy* in Vilnius, international *CCI Klubenquete zu Kreativquartieren* in Vienna. According to a study conducted by the *KMU Forschung Austria* and *Linz Institute for qualitative studies*, the Tabakfabrik should become a lighthouse of the Upper Austria's creative industry. More than 200 people now work in previously unused buildings and in the past four years, about 400,000 people have visited about 450 events.

ENTWICKLUNGS- UND BETRIEBSGESELLSCHAFT MBH (CC-BY-SA-3.0)

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6. CONCLUSIONS

ACCORDING TO THE EXPERT INTERVIEWEES in this baseline report, the future city is as an attractive and citizen-centred place, which seeks to decrease the consumption of natural resources. Each case city is now working its way out of heavy production and the consumption of natural resources towards a new, technologically advanced and sustainable direction. At the same time the cities are facing an urgent need to refurbish their building stock for greater energy efficiency.

It is obvious that the transition is still in process and it is not clear what follows next. The following years will show how citizens and organisations adapt and accept the new direction, and how the job market transforms in the midst of major structural change. However, emission reduction targets have already given birth to new global demand for clean technology and services that enable sustainable lifestyles. The experts agreed that being a forerunner in developing and adapting these technologies and services can be beneficial.

As Matti Kuronen, Director of Technical and Environmental Affairs at City of Lahti puts it: "Investments in low-carbon society and resource effectiveness may turn into an competitive advantage. Especially if we face a global energy crisis, a city with a low-carbon strategy, such as Lahti, should do better than other cities of its size. In any case, these investments are at least a good backup plan. If they don't bring immediate success, their resource effectiveness still provides a solid basis for future development."

However, the various interviewees from different professions and expertise areas all, almost unanimously, reported to have noticed that it is often a real struggle to transform goals into concrete action. Our analysis is that cities, companies and other organisations are lacking in profitable and functional models linking existing structures to action, which could then enable a shift towards sustainability.

The index of retrofitting projects verified that the Nordic countries have reached a situation in which refurbishing an area is increasingly not only a matter of worn out and outdated building stock. Recent retrofitting projects have considered sustainability issues from various different viewpoints: resource efficiency, social problems, the vitality of the local service economy or intercultural issues. Fairly many projects have multiple goals, but instead of working together, their actors tend to consider their goals separate. True win-win-win situations - the ones that ignite overarching change in attitudes, expectations and in the ways in which people perceive opportunities in their neighborhood - are less common.

Some of the landmark projects have ambitious aims not only to improve their target area's energy efficiency, but also to enhance its social conditions and to support sustainable local business. For instance in Vivalla lowered maintenance costs and increased energy efficiency are expected to help achieve local economic sustainability. However, none of the leaders of the refurbishment projects had considered that pursuing ecological sustainability goals could be a considerable competitive advantage for local business. Integrating social, economical and environmental aspects is still a fairly rare approach in refurbishment, and seeing sustainable lifestyles as a potential boost for local business is an even more novel idea.

On average, developing a service for urban dwellers is more demanding and time-consuming than it is for example for fully-digital products. Nevertheless, there is already a considerable amount of sustainable urban service providers. Gaining a head start inevitably means taking the first step before others. In the context of business, being ahead isn't always the easiest road to success. Many startups are equipped to respond to future changes (i.e. increasing oil prices; changes in customer behaviour) and

therefore hold some great potential in the long-term. For them however, it is a challenge to build a profitable firm in the current business environment and to survive the time-span of the next 1–5 years. In other words, their markets are only just beginning to emerge. Creating new markets for any new category of solutions requires investments, great efforts and new forms of collaboration. The Smart Retro Project gives selected smart startups direct access to decision-makers, potential partnerships, intensive development sessions and urban test environments. However, only a limited amount of startups can be facilitated in the project. Therefore, there is a need for a new model of collaboration, which can then be used in future planning practices in cities, corporate ventures and in other ways to successfully introduce commercial and sustainable urban services into cities.

In the Nordic context, the case areas of this study are quite different from each other. Albeit they all have unique features, they also share many qualities and needs. They all have a growing need for new forms of activities in the neighbourhood, which used to be more lively with attractivity provided by traditional commercial services. All of the sites have faced or are facing notable changes in population in terms of its size, age structure and/or social aspects. Many residents from all of the case areas expressed a will to have more unique, local services to supplement or even replace a few of the current ones. Many experts shared the view that the future prosperity of cities is increasingly in people, their skills and motivations - in human capital. The old way of attracting that capital was through one big single employer or an institution of higher education locating to the area. People followed money and jobs. In the future it could be the other way around: money and jobs would come after people.

These and many other phenomena appear in a slightly different light in distinct local environments. This is arguably a signal of a pattern where the background drivers for changes are global while their effects are locally manifested. In the Nordic countries and in Europe as a whole, there are huge amounts of suburbs or villages of 10 000 inhabitants, such as Bagarmossen, or medium-sized cities, like Lahti, that are now struggling in the hands of the structural change of the economy. Kvadraturen shows that run-down areas can be extremely valuable in terms of history, location and infrastructure.

Urban renewal is context-specific by nature. However, trials made and documented during the Smart Retro project will contribute to planning of future urban renewals by pointing out emerging elements, collaboration models and crucial points that should be scrutinised and consulted when conducting a holistic refurbishment project. Sustainable urbanisation is a global necessity – successful sustainable solutions have great potential for multiplying and scaling it up.

7. REFERENCES

Albertslund Kommune. (2014). About Arbertslund. Retrieved 21 October 2014 from http://albertslund.dk/servicemenu/english/about-albertslund/

ARA. (2013). The suburban Innova block of flats is being renovated into a passive house. Retrieved 24 October 2014 from http://www.ara.fi/en-US/Housing_development/Development_projects/The_suburban_Innova_block_of_flats_is_be(17681)

Berninger, K. (2012). Hiilineutraali Suomi: Miten luodaan ilmastoystävällinen yhteiskunta. Helsinki: Gaudeamus Helsinki University Press.

Boendedialogen. (2012). Ett år av utveckling i Bagarmossen. Retrieved 24 October 2014 from http://www.boendedialogen.se/bagarmossen/

Bråmå, Å. (2011). Går det att vända utvecklingen i utsatta bostadsområden? Exemplet Navestad/Ringdansen i Norrköping [Report]. Centrum för kommunstrategiska studier, Linköpings universitet. Retrieved 27 October from http://liu.diva-portal.org/smash/get/diva2:503474/FULLTEXT01.pdf

Campbell, S. (1996). Green Cities, Growing Cities, Just Cities? Urban Planning and the Contradictions of Sustainable Development. Journal of the American Planning Association, 62(3), 296-312. Retrieved 23 October 2014 from http://www.webpages.uidaho.edu/css385/Readings/Campbell%20Green%20Cities.pdf

City of Copenhagen: Technical and Environmental Administration. (2012). Green Roofs Copenhagen [Congress booklet]. Retrieved 22 October 2014 from www.kk.dk/~/media/91817F267DCF415ABC90C5D402ADCDAE.ashx

City of Oslo (2013). The Urban Development of Oslo. Agency for Planning and Building Services. Press: Oslo Fokustrykk. Downloaded 2 October 2014 from http://www.plan-og-bygningsetaten.oslo.kommune.no/getfile.php/plan-%20og%20bygningsetaten%20(PBE)/Internett%20(PBE)/Dokumenter%20-%20diverse/Urban_Development_of_Oslo.pdf

City of Oslo. (2011). Urban Ecology Programme 2011-2026. Department of Environmental Affairs and Transport. Downloaded 2 October 2014 from http://www.oslo.kommune.no/getfile.php/Milj%C3%B8portalen%20(PMJ)/Internett%20(PMJ)/Bilder/Vann%20og%20vassdrag/Trykksak_Urban%20Ecology%20Programme%202011-2026%20ENG%20v2.pdf

Danish Architecture Centre. (2014). Rooftop Garden Birkegade. Retrieved 24 October 2014 from http://www.dac.dk/en/dac-life/copenhagen-x-gallery/cases/rooftop-garden-birkegade/

Demos Helsinki. (2010). Kuinka kuluttaja voi vaikuttaa asumisen ympäristövaikutuksiin? Retrieved 22 October 2014 from http://www.slideshare.net/DemosHelsinki/tk-kiinteistmaailma

Ecommerce Europe. (2014). European B2C E-commerce Report 2014 [PDF]. Retrieved 24 October 2014 from http://www.adigital.org/sites/default/files/studies/european-b2c-ecommerce-report-2014.pdf

European Commission. (2013). The Energy-efficient Buildings PPP: research for low energy consumption buildings in the EU [Factsheet]. Retrieved 22 October 2014 from http://ec.europa.eu/research/press/2013/pdf/ppp/eeb_factsheet.pdf

Eike, Ø. (2009). Kvadraturen etter 1948. Kulturminneatlas for Kvadraturen, Byantikvaren i Oslo. Downloaded 2 October 2014 from http://www.kvadraturenoslo.no/content/artikler/printversjoner/kulturminneatlas_historie/5.%20Kvadraturen%20etter%201948.pdf

Eurostat. (2009). Consumers in Europe. Eurostat statistical book. Office for Official Publications of the European Communities.

FME. (2007). Reports of the Finnish Ministry of the Environment. 28/2007. Korjausrakentamisen strategia 2007-2017. Linjauksia olemassa olevan rakennuskannan ylläpitoon ja korjaamiseen.

Gray, B. (2014). Social Capital: The Secret Behind Airbnb and Uber. LinkedIn.
Retrieved 24 October 2014 from https://www.linkedin.com/pulse/article/20140604125559-10448698-social-capital-the-secret-behind-airbnb-and-uber

Grønn Bil. (2012). Eventyrlig elbilsalg i 2011. Research report viewed 2 of October 2014 at http://www.gronnbil.no/nyheter/eventyrlig-elbilsalg-i-2011-article218-239.html

Gustavsson, E. & Elander, I. (2013). 'My Green Neighbourhood' - Sustainability Potential of a Redevelopment Initiative in a Stigmatized Housing Estate [PDF]. Retrieved 27 October 2014 from http://www.oru.se/PageFiles/30510/%20Green%20Neigbourhood%20%2022%20nov%202013%20final%20(3).pdf

Henriksson, I. (2013). Lahti, tilastokatsaus. Väestönmuutos ja ikärakenne 2012. Retrieved 23.7.2014 from: http://www.lahti.fi/www/images.nsf/files/AD64E76D86D23A4FC2257B-7B00458605/$file/vaestonmuutokset2012_netti.pdf

Henriksson, I. (2014). Työpaikat, työlliset ja pendelöinti 2011. Retrieved 22.7.2014 from http://www.lahti.fi/www/images.nsf/files/FA331BB2E3611DC1C2257C9F00325AE3/$file/tyopaikat_ty%C3%B6lliset_pendelointi.pdf

Hoffmeyer, M. and Astrup, S. (2014). Potentialer for Lokal & Urban Bæredygtig Udvikling. Retrieved 24 October 2014 from http://rudar.ruc.dk/handle/1800/15070

Hyresbostäder. (2014). Ringdansen. Retrieved 27 October 2014 from http://www.hyresbostader.se/HSO/Area/area_info_cm.aspx?cmguid=7a8fb31b-a6fe-4f65-98e8-57dff197ca15

HållbaraStader. (2011). HallbaraStader - Mitt gröna kvarter, Örebro. Retrieved 27 October 2014 from http://www.hallbarastader.gov.se/Bazment/hallbarastader/sv/orebro.aspx

Hållbar Stad. (2014). An Integrated Approach to Resolving Poverty and Social Exclusion in Botkyrka. Retrieved 27 October 2014 from http://www.hallbarstad.se/projects/74-an-integrated-approach-to-resolving-poverty-and-social-exclusion-in-botkyrka

IMEA. (2012). Integrated Measures for Energy Efficiency Approach. Newsletter, 1. Retrieved 24 October 2014 from http://www.savingenergytogether.eu/savingenergytogether/media/com_acymailing/upload/imea_newsletter_final_eng.pdf

Infill. (2014). Barnehageprosjektene. Retrieved 27 October 2014 from http://infill.no/prosjekter/barnehageprosjektene/

Jewell, N. (2014). Colorfully Renovated Ny Krohnborg School Revitalizes a Neighborhood in Bergen, Norway. Inhabitat. Retrieved 27 October 2014 from http://inhabitat.com/stunning-makeover-of-the-decrepit-ny-krohnborg-school-kicks-off-local-urban-regeneration-plan/

Laitinen, J. (2012). Valomerkki: Energiapula ja makean elämän loppu. Jyväskylä: Atena.

Lahti, V.M. and Selosmaa, J. (2013). Kaikki jakoon! Kohti uutta yhteisöllistä taloutta. Jyväskylä: Atena.

Larsen, J. N. (2013). Sound settlements: Organizing the transformation of urban areas of the 1960s towards sustainable urban districts. Paper presented at the European Urban Research Association's 17th Conference "Cities as Seedbeds for Innovation," Enschede, The Netherlands. Retrieved 24 October from http://www.eura2013.org/media/Full_papers_Track_3A/151_Larsen_Sound_settlements.pdf

Lylykangas, K. (2012). Energy-efficiency Upgrade with Pre-fabricated Facade Elements - the Innova Project Renovation in Saturnuksenkatu 2, Riihimäki. Kimmo Lylykangas Architects, Finland. Retrieved 24 October 2014 from http://www.paroc.com/campaigns/~/media/Images/Campaigns/Paroc%20Innova/Innova-full-paper.ashx

Mazarakis, N. (2012). Social Aspects of Peltosaari Project: From an excluded reality towards a socially inclusive strategy in the area. Bachelor thesis, Diaconia University of Applied Sciences, Helsinki, Finland. Retrieved 24 October 2014 from https://publications.theseus.fi/bitstream/handle/10024/50278/SOCIAL%20ASPECTS%20OF%20PELTOSAARI%20PROJECT-%20THESIS-MAZARAKIS%20NICOLAS.pdf?sequence=1

Mero, P. (2013). Lahden väestöennuste 2013. Retrieved 23.7.2014 from http://www.lahti.fi/www/images.nsf/files/DF1EBEE8FB3B-4B01C2257B6B00269943/$file/Tilastokatsaus2013_2.pdf

Mintel. (2014). M-Commerce to help double Europe's online retail sales between 2013 and 2019. Retrieved 24 October 2014 from http://www.mintel.com/press-centre/retail-press-centre/m-commerce-to-help-double-europes-online-retail-sales-between-2013-and-2019

National Board of Housing, Building and Planning, Sweden. (2005). Housing Statistics in
the European Union 2004. Retrieved 24 October from http://www.eukn.org/dsresource?objectid=148653

Nore, L. J. (2012). Nye Ny-Krohnborg. Rambøll. Retrieved 27th October 2014 from http://www.ramboll.no/projects/rno/nye_ny_krohnborg

Nya Vivalla. (2013). Nya Vivalla. Öbo. Retrieved 27 October 2014 from http://www.obo.se/sv/grona-obo/Mitt-Grona-Kvarter/

Om sköna gröna Sätra. (2012). Om sköna gröna Sätra. Gavlegårdarna. Retrieved 27 October 2014 from http://www.gavlegardarna.se/sv/Kampanjer/satraprojekt/Hem/Om_projektet/

Osloby Sulten: Et tomrom midt i byen. (2012). An article written by Anders R. Christesen, published in 26 June in 2012. Retrieved 24th October from http://www.osloby.no/sulten/Et-tomrom-midt-i-byen-6915137.html

Pedersen, P. V. (2012). Active House Renovation in Albertslund. Paper presented at the World Renewable Energy Forum, Denver, USA. Retrieved 24 October from http://ases.conference-services.net/resources/252/2859/pdf/SOLAR2012_0330_full%20paper.pdf

Porin Puuvilla. (2013a). Kauppakeskus Puuvillan peruskivi muurattiin tänään [Press release]. Retrieved 24 October 2014 from http://www.porinpuuvilla.fi/1188/kauppakeskus-puuvillan-peruskivi-muurattiin-tanaan/

Porin Puuvilla. (2013b). Porin Puuvilla: Savoring a Unique Red-Brick Heritage [PDF]. Retrieved 24 October 2014 from http://www.porinpuuvilla.fi/wp-content/uploads/2013/03/Pori_Puuvilla_MIP-IM2013.pdf

Porin Puuvilla. (2014). Rakennukset ja tilat. Retrieved 24 October 2014 from http://www.porinpuuvilla.fi/alue/rakennukset-ja-tilat/

Päivittäistavarakauppa. (2014). Päivittäistavarakauppa 2014 [PDF]. Retrieved 24 October 2014 from http://www.pty.fi/fileadmin/user_upload/tiedostot/Julkaisut/Vuosijulkaisut/FI_2014_vuosijulkaisu.pdf

Reardon, M. and Dymén, C. (2014). Towards Inclusion: Botkyrka's Approach to Urban Social Issues. Nordregio News Issue 3. Retrieved 27 October 2014 from http://www.nordregio.se/en/Metameny/Nordregio-News/2014/Poverty-and-Social-Exclusion/Towards-Inclusion-Botkyrkas-Approach-to-Urban-Social-Issues/

RegGov. (2011). Local Action Plan - City of Södertälje, Sweden [PDF]. Retrieved 27 October 2014 from http://urbact.eu/fileadmin/Projects/Reg_Gov/documents_media/LAP_-_Södertälje__SE_.pdf

Renor. (2014). Lahden keskusta kasvaa ja kehittyy. Retrieved 7 of October in 2014 from http://www.renor.fi/fi/lahden-keskusta-kasvaa-ja-kehittyy

Roti. (2013). Korjausvelasta ennakoivaan kiinteistöhuoltoon [PDF]. Retrieved 27 October 2014 from file:///Users/mikkoannala/Downloads/roti_2013_rak.pdf

Schönning, K. (1997). Bagarmossen [PDF]. Retrieved 24 October 2014 from http://www.stockholmshem.se/Global/Boende/Vara%20omraden/Soderort/Bagarmossen/Bagarmossen1.pdf

Sharing Copenhagen. (2014). Green places. Retrieved 24 October 2014 from http://www.sharingcopenhagen.dk/english/green-tours/green-places/?category=2648

Skanska. (2014). Shopping Center Puuvilla. Retrieved 24 October 2014 from http://www.group.skanska.com/en/Projects/Project/?pid=9300&plang=en-us

Sköna gröna Sätra. (2010). Sköna gröna Sätra - Program och förstudier inför stadsdelsförnyelse i Östra Sätra, Gävle kommun [PDF]. Retrieved 27 October 2014 from http://www.temagruppen.se/Documents/Tema_ostraSatra.pdf

Snøhetta. (2014). Powerhouse Kjørbo. Retrieved 24 October 2014 from http://snohetta.com/project/40-powerhouse-kjorbo

Statistics Finland. (2007). Finns consume eleven times more now than 100 years ago. Retrieved 24 October 2014 from http://www.stat.fi/tup/suomi90/heinakuu_en.html

Statistics Finland. (2014a). Statistics Finland - Turnover in service industries. Retrieved 27 October 2014 from http://www.stat.fi/til/plv/2014/07/plv_2014_07_2014-10-14_tie_001_en.html

Statistics Finland. (2014b). Statistics Finland - Turnover of trade. Retrieved 27 October 2014 from http://www.stat.fi/til/klv/2014/08/klv_2014_08_2014-10-14_tie_002_en.html

Statistik om Stockholm (2013). Områdesfakta. Retrieved 24 October 2014 from http://www.statistikomstockholm.se/index.php/omradesfaktax

Stockholmshem. (2014). Bagarmossen. Retrieved 24 October 2014 from http://www.stockholmshem.se/Boende/Vara-omraden/Soderort/Bagarmossen/

Stockholm Stad. (2014a). Bagarmossen–Skarpnäck. Retrieved 28 October 2014 from http://bygg.stockholm.se/Alla-projekt/Bagarmossen-Skarpnack/

Stockholm Stad. (2014b). Skarpnäck- Skarpnäcks Gård, Kansliche-fen 1. Retrieved 28 October 2014 from http://bygg.stockholm.se/Alla-projekt/Skarpnack--Skarpnacks-Gard-Bagarmossen/

Svenska Bostäder (2014). Söderort. Retrieved 24 October 2014 from http://www.svenskabostader.se/sv/Vara-bostader/Vill-du-bo-hos-oss/Vara-omraden/Soderort/

The City of Lahti. (2013). Lahden kaupungin strategia 2025. Retrieved 22.7.2014 from http://www.lahti.fi/www/images.nsf/files/929701668024465BC2257B5C002329AE/$file/Lahden%20kaupungin%20strategia%202025%20p%C3%A4ivitys%202013.pdf

VTT Research. (2014). Tuloksia Peltosaaren asukaskyselystä. Summary of survey results. Retrieved 22.10.2014 from http://www.riihimaki.fi/Tiedostot/RIIHIM%C3%84KI_tiedostot/RMK_Peltzi/Ajankohtaista/SubUrbanLab_Peltsi%20asukaskysely-lyhyt%20tuloskooste_VTT.pdf

Wohlsen, M. (2014). Apple and Amazon Have a Problem: People Don't Want to Buy Stuff Anymore. Wired. Retrieved 31 October 2014 from http://www.wired.com/2014/10/apple-amazon-problem-people-dont-want-buy-stuff-anymore/.