Summary of report **2010/11:RFR3**

Committee on Civil Affairs, Committee on Transport and Communications, Committee on Environment and Agriculture

SVERIGES RIKSDAG

Sustainable Cities – with a focus on transport, housing and green areas

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Long-term decisions in all sectors are essential in order to achieve sustainable urban development. The planning of a sustainable transport and housing sector must be integrated with the planning of available green areas. Accessibility is the key concept; this includes access to services, facilities and activities, to cohesively-planned green areas close to housing and to linked cycle and walking path systems. As concerns the transport sector, new technical solutions and cleaner fuel may reduce emissions, but this is not enough to create a sustainable transport system. We need to change travel habits – car travel must be reduced and sustainable transport methods must increase. Improved utilisation of sustainable transport such as walking, cycling and public transport also leads to health advantages and creates lively, more secure cities with greater contact and closeness between people. Housing and construction must be designed with the aim of minimizing climate impact, and at the same time be financially viable to live in. They must also offer good indoor climates as concerns comfort and health. Green areas in the city play a vital role for inhabitants as concerns beneficial health effects, at the same time they increase the cities' ability to adapt to unpredictable developments such as climate change.

Background

Currently more than half of the inhabitants of the world live in urban areas and according to forecasts this figure will soon be 70 per cent. Consequently, the design of urban areas is of decisive importance for sustainable development from the economic, ecological and social points of view.

As a large part of greenhouse gas emissions occur in urban areas, these are of central importance for how emissions can be reduced and

adaptation to climate change improved. Urban areas offer great opportunities for more sustainable living. The high population density implies shorter travel times between home and work, a higher proportion of public transport users and smaller housing units with lower energy needs.

On the behalf of the Committee on Civil Affairs, the Committee on Transport and Communications and the Committee on Environment and Agriculture, a report has been done with a focus on future sustainable and climate-smart urban areas. This report is a compilation of research results with a focus on transport, the built environment and green areas in the cities of the future. The report is published in the Riksdag Report Series (2010/11:RFR3) and can be downloaded in Swedish from the Riksdag website (www.riksdagen.se). Below is a summary of the report as well as of parts of a public seminar on the theme "Sustainable cities – from knowledge to practice" held at the Riksdag on 8 March 2011. The entire seminar can be seen on the Riksdag website under the Webcasts section. The seminar lecturers and authors are themselves responsible for the content of the text below.

The transport sector

The transport sector is one of the sectors that contributes most to total carbon dioxide emissions. Many of the problems currently faced by traffic systems are the result of communities historically being planned for high levels of *mobility* instead of focussing on high levels of *accessibility*. Sustainable transport policies should be designed with the objective of offering high levels of *accessibility*, i.e. making it easy to reach the places inhabitants want to go; schools, workplaces and stores. *Mobility* – access to transport – is merely a means of achieving the benefit of accessibility. Even if new technical solutions and cleaner fuels may reduce emissions, this will not be sufficient to create sustainable transport systems if traffic volumes increase in urban areas. Consequently, it is vital to change travel patterns, car travel especially must be reduced. As compared to car traffic, sustainable modes of transport (walking, cycling and public

transport) take up considerably less space. Increased utilisation of sustainable transport such as walking, cycling and public transport also leads to health advantages and creates lively, more secure cities with greater contact and closeness between people.

In order to create sustainable transport behaviour it is necessary to:

- establish a policy in which the accessibility objective, not mobility, characterises the transport sector and urban planning;
- focus on sustainable solutions such as walking, cycling and public transport;
- always plan urban areas in the following order of priority: walking, cycling, public transport, car traffic;
- plan how land use, location of services and activities and transport issues are to be interlinked;
- prioritise cost-efficient measures that also fulfil other social objectives e.g. improved health status as a result of increased pedestrian and cycle traffic;
- clearly include municipal, regional and national levels in traffic planning; individual cities own neither the problem nor the solution;
- include citizen participation in the practical planning activities as focus will then shift from technology to human needs in everyday life;
- establish an ombudsman for future generations.

Malmö City – an example of a campaign to increase cycling.

Integration of solar cells into a building construction:
Gemeindezentrum, Ludesch, Austria (photo Ulla Jansson)

Energy-efficient buildings

An increasing number of energy-efficient buildings are under construction in Sweden. In order to create a more sustainable and energy-efficient built environment, it is important to apply a holistic approach which means focussing on the building's entire life cycle. Sometimes it is claimed that the energy saved in the operation of energy-efficient buildings is used up on the additional material necessary to achieve the energy efficiency. However research shows that the energy used in a building's operational phase is the largest portion of energy in its life cycle. Reducing operational energy consumption is thus the measure most important for the reduction of total energy needs. As follows, a holistic approach and long-term thinking are necessary in planning. Housing must be designed with the aim of minimizing climate impact and at the same time be financially viable to live in. In addition, the indoor climate may not be negatively affected by energy-efficiency measures. It must retain good quality from both the health and the comfort aspects.

In order to achieve the objective of sustainable building in the future:

- existing buildings must be made energy efficient;
- incentives to stimulate the construction of low-energy buildings must be created;

- user behaviour patterns must be changed in order to reduce energy consumption;
- the trend towards a larger living area per person must be reversed;
- when building or renovating, only material with long sustainability periods should be chosen;
- sustainability must be prioritised before lower costs in connection with public procurement.

Green areas

Green areas in cities have an important function as concerns adaptation to climate change. They absorb a large fraction of the carbon dioxide in cities and are also important for the preservation of biodiversity, or simply described the richness of variation in nature. A high level of biodiversity generally means that several different species carry out the same task. Pollination is one example of such a task, and it has proved that certain bee species are considerably more sensitive to air pollution and warmer climate than certain bumble bee species. As certain species risk elimination due to a warmer climate, it is thus of great importance to maintain diversity in order to retain nature's ecosystem services. Other positive effects of green areas include the potential to reduce noise and the absorption of particles and hazardous substances produced by road traffic. Access to green areas close to homes also leads to health advantages, increases integration and contact between people, as well as contributing pedagogical value.

In order to use urban green areas and their valuable services in a sustainable manner, the following is necessary:

- Different types of green areas need to be highlighted. This applies to gardens, allotments and golf courses that act as the large green wedges in city outskirts. Small and apparently insignificant green areas can play an important role for the ecosystem services and biodiversity of an urban area.

- Linked green areas must be included in city planning. These create accessible green areas for city inhabitants at the same time as species mobility is facilitated which maintains biodiversity. The biodiversity of the city can contribute to increased resilience, i.e. improved ability to adapt to unexpected events.
- Accessible green areas close to housing must also be included in city planning. Research shows that green areas should be located within 300 metres of a home in order to provide the desired health effects such as reduction of blood pressure and perceived stress.
- Dealing with climate change and preserving biodiversity must be done by joint agreement as they are closely interlinked.

A vision of Kungsträdgården in 2050, Stockholm, based on the ideas of upper secondary school pupils as concerns sustainable cities.
(Collage: Henrik Markhede/Spacescape).

Sustainable cities – from knowledge to practice

At a public seminar held at the Riksdag on 8 March 2011, the report entitled ”Sustainable Cities – with a focus on transport, housing and green areas” (2010/11:RFR3) was discussed. Two examples, Norra Djurgårdsstaden in Stockholm and Malmö City, were presented in order to show how knowledge has been transformed into practical measures. Some of the conclusions of the seminar are presented below. The entire seminar can be viewed on the Riksdag website (www.riksdagen.se) under the Webcast section. The seminar programme is found after the conclusions.

Question

Purely theoretically, how many inhabitants should a sustainable Swedish city consist of from the ecological, social, cultural and economic perspectives?

Reply

It is difficult to give a precise answer, but from a transport point of view the city should be reasonably dense in order to maintain good public transport. Cycling is normally convenient for perhaps 4–8 km. Walking for 1–4 km.

Globally what is happening in urban development, especially in China, is that when the megacities reach a certain size they link up with other cities. This gives a ripple effect in urban development. However this concerns much larger cities compared to those we have in Sweden: There is, however, a limit for such growth when, in the long run, they will no longer be practicable energy-wise, nor will they be socially desirable.

Question

How is the current knowledge coordinated and put into practice? Who ensures that traffic planning, transport, housing and green areas work together?

Reply

In Malmö the politicians have taken responsibility for this. They have put their collective foot down and pointed out the direction to take. They have set up high-level objectives. Then they task city officials to execute their vision. This is when everyone must contribute their part to development efforts. It is a gigantic team effort in which everyone is equally important.

Experience gathered from cities outside Sweden shows that when the process has been initiated, a common vision has been adopted, and work started up, things start rolling and positive events occur which had not been believed possible.

It is vital that the politicians are part of the process. They set the agenda.

Sustainability is a long-term investment, a marathon project. Many generations of politicians will have to continue this work.

Question

What is the most important consideration that the audience can take with them from the discussions today?

Reply

To use existing infrastructure in a more efficient manner. This can be achieved by coordinating the different measures and by establishing a unit in the city or municipal administration to review the transport system and link together not only public transport, cycling and walking but also goods transports. It is also important to emphasize the correlation between transport and poor health. More information is continuously gained concerning how noise and air pollution affect people's health and also how important it is that people exercise more to prevent poor health.

It is important to invest in the building of passive houses (low-energy houses) and at the same time renovate existing housing stock, especially the large apartment blocks of the 1960s, in order to achieve sustainable housing. At the same time indoor and outdoor environments must be taken into consideration, as well as their connection to the buildings.

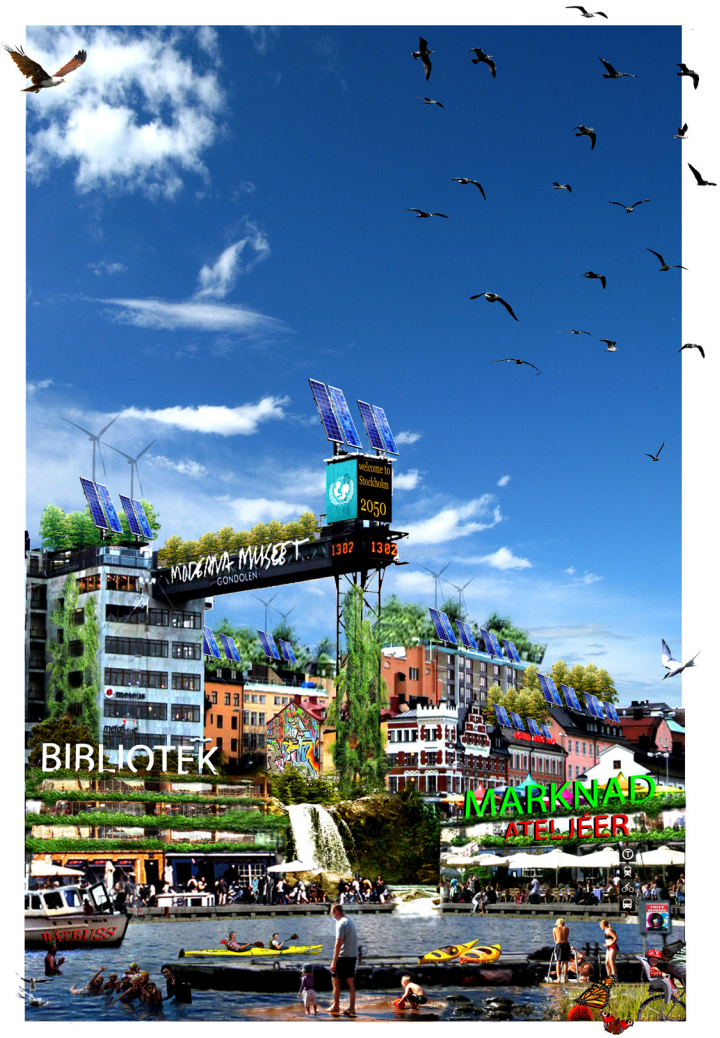
Cities and climate change form an equation that is difficult to solve.

Here we have to experiment, be innovative and learn so that this meeting will not be too traumatic in the future.

New, smart electricity grids (grids that intelligently integrate the behaviour patterns of users linked to the grid in order to efficiently deliver electricity in a sustainable, economic and secure manner) should be introduced. This will require new systems of regulations and new business models.

Take long-term decisions and stick to them! This is not as much about party politics, this is more about long-term thinking. We need to identify where we are, where we are going and why.

Malmö City – an example of a green roof.



A vision of Slussen, Stockholm in 2050, based on the ideas of upper secondary school pupils as concerns sustainable cities.
(Collage: Henrik Markhede/Spacescape).

Public seminar held at the Swedish Parliament (Riksdag)

"Sustainable cities – from knowledge to practice", Tuesday 8 March 2011

Program

1.00–1.05	Opening, Anders Ygeman. Chair of Committee on Transport and Communications
1.05–1.10	Introduction, June Carlsson, Facilitator
1.10–1.25	***Sustainable transports***, Doctor Marie Thynell, Gothenburg University
1.25–1.40	***Sustainable construction and housing***, Professor Bahram Moshfegh, Linköping University
1.40–1.55	***The function of green areas in cities***, Professor Thomas Elmqvist, Stockholm Resilience Centre, Stockholm University
1.55–2.10	Coffee break
2.10–2.30	Discussion
2.45–3.00	***Example of utilisation of new knowledge in urban planning***, Malmö City. Katarina Pelin, Environmental Director Malmö City.
2.30–2.45	***Example of utilisation of new knowledge in urban planning***, Norra Djurgårdsstaden. Staffan Lorentz, Project Manager at Planning Office, Stockholm City
3.00–3.20	Discussion and conclusions
3.20–3.25	Closing, Lars Tysklind, Chair of the Parliamentary Reference Group that has led the work with the report

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