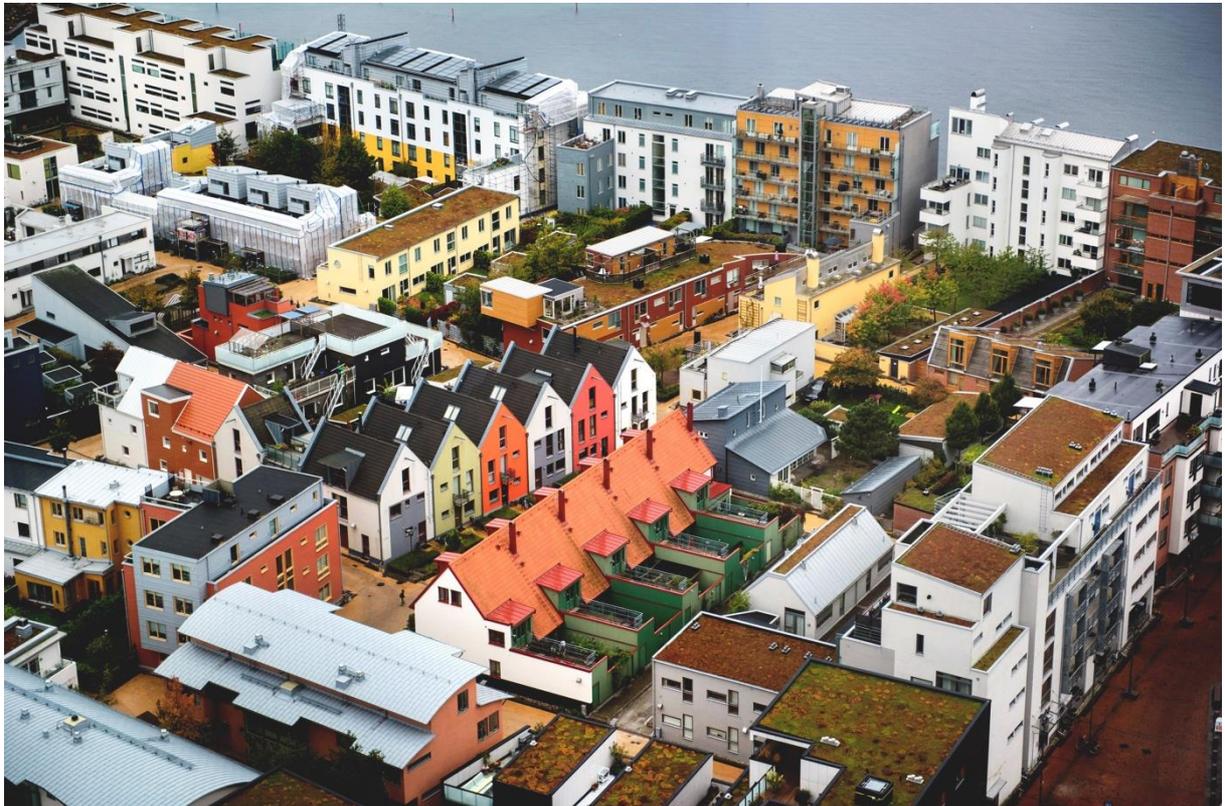


# SI.

Swedish Institute.



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**Suggestions for  
seminars in  
connection with the  
exhibition**

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**The smart city – for  
a sustainable future**

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### 1. Suggested seminars, smart cities

Sweden has expertise in many areas with the field of smart cities. Below, we present a selection of themes that missions abroad can use as inspiration when planning an event. When a mission abroad wants to arrange a seminar, please contact Smart City Sweden. They are the focal point for identifying the right expert for each seminar. They can also provide assistance if a mission abroad wants to arrange a seminar in an area within the field of smart cities that is not listed in this document.

Smart City Sweden is Sweden's national export and investment platform for smart and sustainable city solutions. The aim of this initiative is to strengthen the international marketing of products, services and system solutions within environmental and energy engineering.

Smart City Sweden can be contacted at: [contact@smartcitysweden.com](mailto:contact@smartcitysweden.com)

### 2. The sharing economy

A survey commissioned by the Swedish Government shows that ten per cent of the Swedish population has used a sharing service in the last two years. The sharing economy involves enabling individuals to rent, swap or borrow things such as apartments, cars, sports equipment or labour from each other. Digital platforms and apps that support individual initiatives or that

connect different types of services or geographic regions have emerged. But what are the implications of the sharing economy for society and cities?

*Suggested subjects for seminars:*

- Opportunities and barriers of sharing services
- How does the IoT create opportunities by uniting sharing services and making them accessible?
- In what way can sharing services create an inclusive city?

### **3. Create a living lab**

Research is dependent on access to objects. A number of unique projects across Sweden involve researchers moving in with students. Two examples are [HSB Living Lab](#) and [KTH Live-in Lab](#). The combined accommodation and labs house students and become a catalyst for innovation. The combined residential and research environment makes it possible to quickly gather a large volume of data on human behaviour. It also provides a unique environment in which to test, for example, new technology.

*Suggested subjects for seminars:*

- How is a living laboratory created?
- How does a living laboratory work in practice?
- What experience has been gained from existing projects?

### **4. Eco-governance – the holistic systems perspective**

Collaboration and a holistic approach is required in order to deal with and interpret increasingly complex challenges for the cities of the future. This is called eco-governance. Sweden is home to several good examples involving the development of new neighbourhoods where various stakeholders have come together and agreed on common goals. Hammarby Sjöstad and Vallastaden are two examples.

*Suggested subjects for seminars:*

- Opportunities of a holistic systems perspective for the smart city
- What do future partnerships look like – less silo mentality and more cooperation?
- What are the lessons learned and results from Swedish projects?
- How can we work with eco-governance?

### **5. District heating – the new generation of urban energy systems**

Sweden's shift from oil to district heating in the 1980s is likely the greatest contributory factor towards reducing Sweden's greenhouse gas emissions. District heating currently accounts for 80 per cent of heating and hot water in apartments in Sweden. About eight per cent of district heating is generated from surplus energy from industry.

***Suggested subjects for seminars:***

- Lessons learned from Sweden's implementation of district heating
- How can surplus energy from industry be used to heat homes (e.g. in Borlänge)?

## **6. Creating value from waste – rubbish to heating & sewage to biogas**

Sweden has managed to reduce the proportion of waste being sent to landfill to 0.7 per cent, which is unique globally. In some countries as much as 90 per cent is sent to landfill. In Sweden, we have managed to turn waste into value – through factors including behavioural changes, regulations and cooperation.

There are many different examples of waste management systems in Swedish cities. Automated vacuum collection, optical sorting of household waste, smart public waste bins and well-developed recycling stations. Waste is recycled or converted. Incinerated waste is becomes electricity and heat and sewage is converted into biogas for buses.

***Suggested subjects for seminars:***

- Incinerating waste to produce electricity and heat
- Biogas from sewage and food waste
- Instruments for speeding up the transition
- How are citizens incentivised to change their behaviour – involvement, education?

## **7. Nature-based solutions for viable cities**

Green roofs, walls and open surface run-off systems provide a range of benefits for people, the environment and the city's infrastructure. They create the conditions for richer flora and fauna in the city and strengthen urban ecosystem services such as climate adaptation, protection against cloudbursts and improved health through noise reduction, recreation and their contribution to cleaner air in the city. Malmö is home to the Scandinavian Green Roof Institute with a test bed for new nature-based solutions in a circular economy involving urban nutrient recirculation and carbon capture through the large-scale implementation of biochar in urban vegetation systems.

***Suggested subjects for seminars:***

- How can we incorporate the functions of nature into the city and thereby increase the city's resilience against climate change?
- How can green solutions in the city be part of a circular economy with biochar as the new black?
- How do you build sustainable green roofs, green walls, raised beds for urban trees with water reservoirs and other surface run-off solutions?

Trade organisation with experts: Scandinavian Green Roof Institute

## **8. Citizens' initiatives that develop the city**

Hammarby Sjöstad was Stockholm's first large-scale urban development project with strict environmental requirements. When the neighbourhood was built, the goal was to reduce the total environmental impact by half compared with an area built in the early 1990s. But the work was not finished when the scaffolding was taken down. Instead, a committed citizens' initiative took over with the ambition to "renew a new city". The initiative, called ElectriCITY, works to develop Hammarby Sjöstad into a neighbourhood that takes the leading and acts as a driving force in terms of contributing to Stockholm becoming a climate-smart and fossil-free city by 2040. ElectriCITY is organised as a cooperative that has around 40 members or partners, among them organisations such as Scania, Vattenfall, Skanska, KTH and RISE.

### ***Suggested subjects for seminars:***

- How can a successful citizens' initiative be created?
- Experiences from Hammarby Sjöstad and ElectriCITY – Hammarby Sjöstad 2.0

## **9. Green financing and green currency**

Green bonds are a financing instrument and an economic instrument. These bonds are used to develop green cities and are a way to finance projects. The market is growing and several cities have started working with this successful form of financing that is suitable for both developed and developing countries.

Gothenburg was the first city in the world to start working with green bonds and has been doing so since 2013. Sweden has great expertise in this area and even offers training programmes within the field of green financing.

It was announced in December 2017 that Sweden is opening a knowledge centre for sustainable investment, the Stockholm Sustainable Finance Centre.

*Suggested subjects for seminars:*

- What does green financing involve?
- How instruments such as green bonds can be used to speed up the transition to sustainable cities
- Lessons learned from the use of green bonds in Sweden

## **10. Build sustainable wooden buildings**

Wood is climate-neutral and the only renewable building material. It is also a durable material. There are currently wooden buildings in Sweden that are several hundred years old. An increasing number of buildings in Swedish cities are being built from wood. In addition to all the reasons stated above, wood is easy to maintain and has a warm feeling. There are many exciting wooden projects around the country. For example, several wooden buildings are being built in Vallastaden in Linköping, one of which has flexibility as a theme. Sharingsweden.se also has a tool kit that delves deeper into this theme. This theme can be used for lectures on smart cities but may also be something that is good to combine with SI's Woodland Sweden exhibition.

*Suggested subjects for seminars:*

- Building sustainably with wood
- Sweden's foremost project in the field of sustainable wooden buildings

Trade organisations that can guide you to expert assistance: Svenska Trä, Träbyggnadskansliet

## **11. Culvert systems – more space for the residential environment when infrastructure is placed underground**

Vallastaden, a new neighbourhood in Linköping, has a sustainability profile. A solution has been developed there that involves the utilities infrastructure being placed underground. Drinking water, waste water, electricity, fibre, district heating, district cooling and automated vacuum collection all runs in the same culvert. Maintenance can be carried out and elements replaced without having to dig up streets. In addition, this is a smart solution for densely built areas. The solution frees up more surface areas for trees, bike parking and other things.

*Suggested subjects for seminars:*

- Lessons learned from the construction of the culvert in Vallastaden

## **12. Behavioural changes – from unsustainable to sustainable**

Setting goals and starting to work in a sustainable manner does not just involve having the right solutions in place. To a great extent, it involves changing behaviour. For example, in Sweden it is natural for us to begin sorting waste from an early age.

### ***Suggested subjects for seminars:***

- How can sustainable behaviour be created?
- How has Sweden worked to change behaviour with regard to recycling?
- What incentives at an individual and societal level can accelerate behavioural changes?

## **13. Energy systems of the future**

The energy systems of the future must be able to cope with the transition from fossil to renewable sources and ensure the energy supply is safe and financially sustainable.

### ***Suggested subjects for seminars:***

- How do smart electricity grids make the transition to a renewable energy system possible?
- What does Sweden have to offer? For example, among the most reliable electricity grids in the world in terms of reliability of supply, deregulated electricity market, very high proportion of renewable electricity. A good environment for pilot projects and great expertise and research activities within areas such as electric power and environmental engineering.
- Lessons learned from projects in Sweden, e.g. FED, the Fossil-free Energy Districts project, an initiative of the City of Gothenburg that aims to reduce the use and dependence on fossil fuels in buildings. A unique local marketplace for electricity, district heating and cooling is being developed in collaboration with partners.
- The opportunities and challenges of digitalisation in the energy system of the future.
- Energy storage, a prerequisite for the transition to renewable energy supply.

Organisation with experts: [Swedish Smart Grid](#)

Online training in this area is available: [KIC InnoEnergy](#)

#### **14. How can the connected city contribute to a sustainable city?**

In a smart city, digitalisation and new technology are used to make life easier and better for people and companies. Everything that can be digitalised will be digitalised, and the structured transformation that occurs in cities as a result of digitalisation means that we must find new forms for collaboration, innovation and development.

Kista in Stockholm is home to the world's largest arena for open innovation, Urban ICT Arena. Everyone who wants to contribute to a sustainable city has an opportunity to be involved in this partnership. Urban ICT Arena has, among other things, developed a model of how to get started with creating smart, connected and sustainable cities with the aid of IT.

The model is based on four layers:

- hardware where data is generated – e.g. sensors in cars
- software that sorts, stores and analyses data
- services that are being developed for the smart city
- business models that seize upon how digitalisation is changing business

#### ***Suggested subjects for seminars:***

- How can the connected city contribute to a sustainable city?
- How does Urban ICT Arena work strategically to create a connected city?
- How can innovation be initiated with a flexible model for collaboration?
- How can we teach people about digital transformation – attitude to crypto currencies, take responsibility for the data they generate etc.?

Organisation with experts: Urban ICT Arena