



  
SKAFTKÄRR

The energy-efficient neighborhood in Porvoo



## Development project for an energy-efficient housing area

**One of the most important goals of the Skaftkärri project is creating a concept which can be utilised on a national level, and which enables building residential areas that are as energy-efficient as possible.**

Town planning is one of the most important tools in developing and planning communities. The purpose of the Skaftkärri project is to develop measures to guide energy efficiency and planning as well as to look for ways to reduce emissions in all phases of the planning process.

The project aims to create new models for operations and solutions for increasing regional and house-specific energy-efficiency. The project examines the ways in which town planning can have an impact on the energy efficiency in a certain area through practical planning work.

*"The Skaftkärri pilot project is a part of Sitra's five-year Energy Programme, the purpose of which is to help communities reduce their energy use and greenhouse gas emissions. The Skaftkärri project has clearly demonstrated that significant emissions reductions can be achieved in Finland if the evaluation of energy and emissions impacts is included in all town planning. It is wonderful that the project has encouraged other municipalities to invest in energy planning as well. One might say that energy-efficient town planning has been initiated in Finland as a result of the Skaftkärri project."*

*"Town planning can significantly influence the energy efficiency of areas."*

**Jukka  
Noponen**  
Director  
Sitra



# Energy efficiency as a cornerstone for town planning

**The town planning work for the Toukovuori neighbourhood is the first pilot plan based on the Skaftkärr structural plan.**

Energy efficiency has been taken into consideration in all phases of town planning in the Skaftkärr area. In the first phase, a structural plan for the area was drawn up, and different options were widely considered by examining traffic arrangements, energy solutions and the energy efficiency of the buildings in the area. As a result of the project, energy efficiency thinking has spread in Porvoo from planning to practical measures as well as execution. The construction chain from planning to implementation will now be developed also from the point of view of energy efficiency.

*“One of the central emphases has been planning smooth traffic solutions with low emissions. The plans include a fast, high-quality bicycle lane between the Skaftkärr area, Porvoo centre and local services, and with good connections to bus routes and pedestrian paths. These kinds of high-level light traffic routes encourage inhabitants to walking and bike riding, which also advances energy efficiency.”*

**Eero Löytönen**  
Director of  
City Planning  
City of Porvoo



*“Skaftkärr will mainly be a residential area. This is why the building supervision also invests in the training and counselling of one-time home builders. Maintaining professional competence and learning new things is also important. For this reason, quality training will also be provided for professionals in housing construction, such as the main planners and other experts.”*

## Anticipatory quality management as a part of building supervision

**With the Skaftkärr project, building supervision operations have been developed towards anticipatory quality management.**

Energy-efficient building requires comprehensive and professional planning and careful implementation. In addition, more emphasis should be put into the quality of construction. The building supervision plays a significant role in ensuring building quality. Counselling and training of one-time home builders and experts in the field of construction ensure the implementation of energy efficiency goals.

As a part of the Skaftkärr project, an energy counselling point has been established in the Kevätkumpu library in Porvoo. The purpose is to create energy awareness among local residents. For example, the library organises energy evenings where experts in the field hold lectures on energy use. It is also possible to borrow energy consumption meters from the library.



**Martti Kiiltomäki**  
Building  
Supervision  
Manager  
City of Porvoo

# Controlling carbon dioxide emissions through district heating

**Energy-efficient building also poses challenges for energy companies in the future. During the Skaftkär project, new business models supporting energy-efficient building have been created for the use of energy companies.**

The aim of the Skaftkär project has been to promote new, innovative, clean and economically competitive heat and energy production solutions, such as solar energy. Traditional heating forms have also been developed in the project in a manner that meets the new requirements imposed by energy-efficient building. For example, producing district heating in an area with passive and low-energy buildings requires development of business models as well as customising district heating production and distribution to the changed circumstances.

*“The houses in the Skaftkär area will be connected to district heating, which is the best solution in terms of carbon dioxide emissions. Seventy percent of the Porvoon Energia district heating is already produced through renewable energy, and with the new bioenergy plant in Tolkkinen, this will rise to ninety percent. Our starting point are high-quality and environmentally friendly operations. Participating in the Skaftkär project suits the company’s values very well.”*

**Patrick Wackström**

Chief  
Executive  
Officer

Porvoon Energia



*“The installation and use of monitoring equipment for energy usage are very simple. The real time monitor clearly shows the energy consumption in our house. The measuring process has been of concrete benefit to us: it is easy to see the impacts of different energy-saving measures and, as a consequence, unnecessary electricity consumption has been clearly reduced. Every single person can contribute to mitigating climate change with everyday eco-acts like these.”*



**Leena  
Tuomi**  
Porvoon

## Making electricity use visible

**The new Skaftkär residential area aims to save energy by making invisible energy use more visible.**

The area is meant to serve as a development platform for smart buildings and appliances by involving the end user in the product development process. Part of the project is a Living Lab for continuous enhancement of energy efficiency. The goal is to create a framework for interaction, development work and reducing electricity consumption in an intelligent and applicable control system.

A main electricity meter will be installed in the households participating in the Living Lab for energy consumption monitoring. The meter makes it possible to monitor the consumption of electric power in real time through the Internet. The system enables the development of focused energy counselling and advances more sensible energy use among residents.

# Towards sustainable development through cooperation

*“Skaftkärr has been a significant project for Porvoo.”*

**The purpose of the Skaftkärr project is to increase energy efficiency in the built environment and in the everyday life of citizens. Cooperation between different parties has played a significant role in the planning for the area.**

The Skaftkärr project consists of planning a residential area that will be built with the aim of a smaller carbon footprint and sustainable solutions. The area has been planned as comfortable but also energy-efficient. Emphasis has been placed on energy consumption by reducing the emissions of mobility solutions, the energy efficiency of buildings and energy solutions in the area. The Skaftkärr area is approximately 400 hectares in size, and there will be at least 7,000 inhabitants.

The project is vast and one of a kind in our country. The experiences and results will be widely utilised in other parts of Finland as well. The project is a good example of wide-ranging cooperation between different groups of experts. A vast number of authorities, energy producers, contractors, device manufacturers, companies and future residents have been involved in the planning and innovation process.

**Fredrick von Schoultz**  
Deputy Mayor  
City of Porvoo



*“The first town plans have been approved and construction has begun. In addition to these concrete measures and results, changes in the way of thinking are just as important, if not more so. Porvoo Group has become engaged in the programme of measures for carbon-free living. Our main objective is to actively participate in the mitigation of climate change globally. I believe that the Skaftkärr project is a gateway to totally new urban development in Finland.”*



