

Master thesis at Building Technology

Title

Building stock model for Göteborg (Energy supply side)

Background

The city of Göteborg has ambitious environmental goals towards a more sustainable development. Buildings are responsible for around 30-40% of the national energy demand and carbon emissions. Thus, buildings (residential and non-residential) as well as the energy supplying systems providing heat, chill and electricity will play an important role for the future pathway of Göteborg. Today, there are various opportunities to increase the environmental performance of the building stock, among others the energetic refurbishment of the building envelope, the demand for zero energy and/or zero carbon new buildings from 2018 onwards according to the European energy performance building directive, the use of renewable energies etc. Many questions remain, e.g. is there a favorable strategy to achieve the aforementioned ambitious goals, where to set priorities etc.?

Aim/Purpose

The main purpose of the Master thesis will be the development of a building stock model of the city of Göteborg. The Master thesis will probably be conducted in close cooperation with a second Master thesis treating the building demand side and possible future scenario developments.

Method

After a decent literature study the following work may be carried out:

- Analyzing already existing energy related studies, reports and data sources to feed the building stock model, e.g. current split of energy carriers, distribution of household appliances etc.
- Adaptation of an appropriated model structure based on the work that has been done for the building stock model of the city of Zurich/Switzerland
- Development of future scenarios in 5 year steps up to the year 2050 maybe in cooperation with Göteborg Energie AB, Mistra Urban Futures
- Application of the development scenarios within the building stock model
- Interpretation and critical discussion of the results achieved

Supervisor

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Examiner

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