Urban adaptation to climate change. What can we learn from cities in the forefront?
For cities to successfully adapt to climate change the climate risks need to be understood and planned for. In Malmö, Sweden collaboration and integration of climate change consideration into ordinary work strengthens the resilience to heavy rain.

Climate change holds a lot of uncertainty. What risks will increase? How well prepared are we? What can we do about it? As the knowledge about the effects of climate change increases better and more effective measures can be planned, but when we have all the information it is too late to act. Therefore, a good way to implement measures that reduce climate change risk in cities is through cycles. This gives space to learn from what has been done and adjust the measures before continuing. The climate change adaptation (CCA) strategy and its implementation are connected in a process containing three phases: "scoping" where the latest knowledge is collected to help out prioritizing which measures to implement, "planning" where the organizational structures are set up and measures are prioritized and "implementation" where the measures are acted out, while at the same time they are monitored to be able to evaluate their performance. Within these phases criteria for successful implementation were found.

The understanding of the CCA process and success criteria was used to assess Malmö municipality 's strategy for reducing flood risk due to heavy rainfall; the "Cloudburst Management Plan". The assessment showed that Malmö is good at the planning phase: there are good structures to collaborate between departments and learn from the staff with the most experience. Malmö is also good at integrating CCA into the ordinary processes of the city. They have combined different types of measures, which are effective in reducing flood risk, but also useful when it is not raining, for example through making the city more attractive. When starting, Malmö did not define well enough what risks can be considered acceptable. This has led to setting too ambitious goals which are expensive to reach and could take resources needed elsewhere. Currently, they are discussing how much flooding is acceptable, which will help prioritize what type of measures to implement and at what pace the city can be come flood resilient. A surprising finding was that the discrepancy between what is written in the plan and how it is implemented is quite large. As more information is gained Malmö has been able to adapt the plans and act on new information. Impressive!

The results of this thesis can be used by other cities that are developing CCA strategies, to see what factors need to be in place for a strategy to be successful and to use lessons learned from Malmö.

Urban areas are especially vulnerable to climate change. Yet, they have just started to adapt. Cities need to learn how meet the demands for new homes and job opportunities without increasing the risks – how to write and implement CCA strategies that work both in the short- and long-term. The space in the cities are limited. Many functions coexist and there are conflicts, for example between building homes in attractive locations and saving enough open space to manage flood risk. By looking at CCA through urban planning, these conflicts can be addressed.

Since CCA is a new field for cities there is not much research on successful CCA strategies in urban planning, especially not of how cities go from theory to action. The first part of my

study was therefore to find out if there are general criteria for successful implementation of CCA strategies. This was done through a scoping study. The criteria I found were used to assess Malmö municipality's Cloudburst Management Plan through document analysis and interviews.