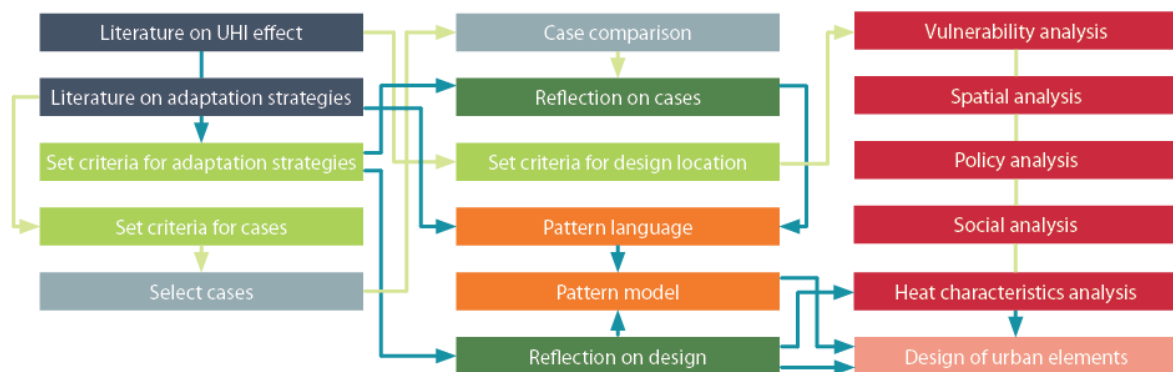


## Reflection P5

Daphne van Dooren | 1502549 | 'Warming up for the cooling down: The integration of adaptation strategies to the Urban Heat Island effect into urban design'

### Relation research and design

In my graduation project, the focus was on research in which design is used as a supportive tool. The research focused on the integration of adaptation strategies to heat (the Urban Heat Island effect) into urban design. Therefore, test designs were used to see if the research outcomes made this integration really possible. In the project research and design are linked to each other by means of a pattern language. The patterns are developed with the research outcomes, and they contain design elements. This created the possibility to implement the research outcomes directly into urban designs. The diagram below shows how the different research methods, including literature reviews and a case comparison, are linked to the pattern language. Then this pattern language is used for the implementation in the various urban designs. The implementation of the patterns in the designs, led to adjustments in the pattern language. As a result, the research and designs influenced each other.



Overview of the research approach, explaining the relations between the methods.

### Urban Metabolism and the Urban Heat Island effect

The Urban Metabolism research group focuses on the flows in the city, from which my project fits in the flow of air/heat. I experienced that heat is clearly a dynamic aspect of an urban environment. The climate in a city is a very complex process, which is influenced by many things. In Rotterdam this was visible, because data showed that the temperatures differed throughout the whole city. So, this was not a gradient in temperature difference, but it was depending on the characteristics of the location itself. This means that a change in the city, leads to a change of the local climate as well. I enjoyed working on something as complex as this, and tried to make a clear overview of how heat is related to the physical environment. This was difficult, but I think I succeeded in doing this by making a measuring method for heat related characteristics, which turned out to be the key in relating the research to the design.

### Urban heat in the social context

When I talk to people about my graduation project, it becomes clear that people do not know that heat can be a problem in the Netherlands. Therefore, I think it is important to raise awareness among people, and to show them that they can also do something about it themselves. Recently they made a start with this, by explaining that heat can be a threat in the national news. The research is not focusing on producing solutions to the problem of heat, but focuses on how these solutions can be part of urban design. In this way, urban design still focuses on the social,

economic and environmental context, but at the same time helps to adapt to heat. This will make it cheaper and easier to apply the adaptation strategies in urban plans.

### Planning and process

The initial planning changed only a little during the process. After the P2 presentation I decided, in consultation with my first mentor, to start earlier with the designs. This was to create a better reciprocity between research and design. In the period between the P2 and P3, the progress was slowed down a little. Because of that, I finished the designs later than planned. Therefore, there was not much time left to have an elaborated reflection on the designs. This was only done in short in the research conclusions. After the P4 I focused on improving the representation of the designs. In general, the process went well, and I managed to work approximately according the schedule I made at the beginning.