P4 Reflection
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Graduation project: Europoint: Bridging & Connecting Merwe-Vierhavens
Research and design

"How can generative design methods be used in such a way that they add to the architecture in other ways than just efficiency?"
"How can we design an attractive ‘entrance zone’ to the harbor area while simultaneously connecting its constituent parts?"

These were the research questions as posed in the graduation plan. We can now take a closer look at how this research has been translated into a design, and how the gathered methods and knowledge have been applied to this. The generative design methods that have been applied have resulted in a variety of spatial diagrams that were evaluated on their fitness and usability in various areas. These criteria tie into the second research question; the spatial configuration as generated through agent-based simulation needed to provide indications of merging flows, shifting routes in all axis, height dynamics and a directionality that responded to the environment. When the most promising results were selected and evaluated, these were analysed and translated into rough sketch geometries further exploring the architectural potential. Once a suitable design language was found, the product was developed in the way that is common in design practice.

At the current stage of the design, when dealing with construction details and sections on a 1:20 scale, we can take a step back and see how the design relates to the generated spatial diagrams.

On the left the generated results, on the right the current design. Without attempting to analyse and compare them in-depth through these single images, we can see that basic characteristics that strengthened the initial design concept of an integration between connection and functions are still
present. Analysing and identifying these key points in the generated results was crucial in achieving this.

**Methodical approach**

This diagram shows the initial methodical concept, where both computational input (i.e. the generated models) and the designer's input feed into the design. Relating this to concepts like serendipity, we can summarise the method as a type of 'forced serendipity', where through an informed model many different output results give the designer a number of valuable results that he would not have (been able to) come up with himself, making the computational system an integrated part of the design project, rather than a means to visualise a design that has been constructed without any computation whatsoever. In this sense it very much fits within the methodical approach of the chosen graduation studio. The approach of integrating computation in the design project worked to the extent of the shape, dimension, and spatial dynamic of the design, but construction, materialisation and finer details where not obtained through computational methods.

**Project and social context**

Aspects of the design project tie into relevant issues in a wider context. The reuse of the towers and the project's attempt to locally reignite their use, radiating influence towards neighbouring sections is an example of this. The issue at hand here is the large amount of empty office spaces and the lack of initiative to reuse these spaces.

**How and why**

After the P2 stage, the computational system was left alone and the focus shifted to applying its results. This method led to an early architectural form, and consequently the possibility to spend more time shaping this form than would have been possible had I continued adding computational input. After this stage, only a solar analysis was used to feed into the design. I can conclude that this helped reach design goals faster, but also forced me to cut off other possibilities that could potentially have pushed the project further.
In a more specific methodic reflection, the chosen agent-based method as a means to generate architectural form and using this a base for the design has led to a diverse and dynamic form, with as much input from the designer as the computer. An approach such as this can always be developed further, or implemented in more aspects of the design process, but overall I am happy with the extent to which we can recognise both input streams in the current design.