

Reflection Graduation Project

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Hyperbody graduation studio

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Project title: Merwehaven New Ferry Station

The Hyperbody graduation studio is set to be an endeavor to integrate research with the final design product. The “computational” nature of the whole process serves as both an opportunity and challenge to develop a design methodology out of analyzing the complexity of current social and climatic context and using these presets as “intrigues” to drive the form-finding process, as well as the performance of the project.

This personal project is located in a somehow “extreme” situation: the fact that the surrounding urban context will no longer be existed provides a tricky setup for context research. Moreover, the multi-functional requirements, especially the restricted ones regarding ferry operation, are in the other way around of significant research importance. Consequently, the research process focuses on “creating” an urban context and “illustrating” the inner programme relationship. Computational tools are in crucial status at this stage. It is fair to say this project, at research level, indicates what the Hyperbody graduation studio is searching for in the sense of producing a research outcome to guide the afterwards design, in both urban and architectural level.

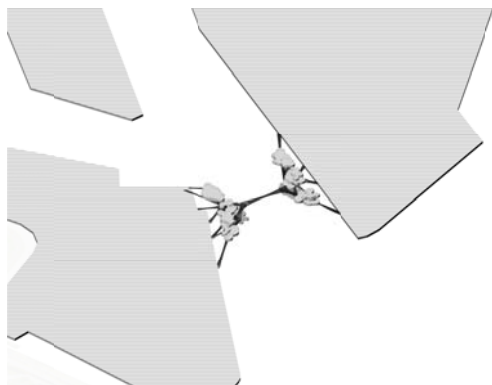
Under the main computational methodology frame of the studio, if one would name the “relationship” of personal approach and the studio outline, it is dominant that how one should choose and apply a set of certain computational approach wisely. Since the outcome of research needs to be transformed into architecture, it is crucial that one could control or limit the research process and product within a certain extent of complexity. In this project, during P2 the architectural form was strongly linked to a relatively uncontrolled computational outcome so that it showed out to be more of an ornament rather than building. The author then updated the computational approach, limiting the programme plates to be only connected by a simple branch typology instead of an uncontrolled connecting system, without losing the initial concept of integrating programme volume with connection, in purpose of constructing an urban network of digital age. So rather than vaguely naming it ‘relationship’, it is more precise to say that one should be aware of the “limitation” along with the “possibility” within the computational methodology sets in the research process. In other words, out of the sea of computational strategy, one should always be clear of how certain strategies could serve the ultimate architectural goal.

The other reflection is how top-down decisions will affect after the bottom-up computational process. There will always be boundaries when computational outcomes meet real architecture. So at certain stage of the design procedures, specifically after the computational topology is achieved, one needs to make top-down decisions to form the extinct space quality. In this project, the computational topology is somehow separated from each other: free-form floor plates, connecting ramps, vertical supports and traffic cores. If the author simply followed this topology without any top-down architectural preference, this project would become a rather unclear pile of individual elements. Regarding the design purpose again, the author takes the top-down approach to integrate all these elements into a continuous form, thus creating an “inside-out” space quality of the whole project, in

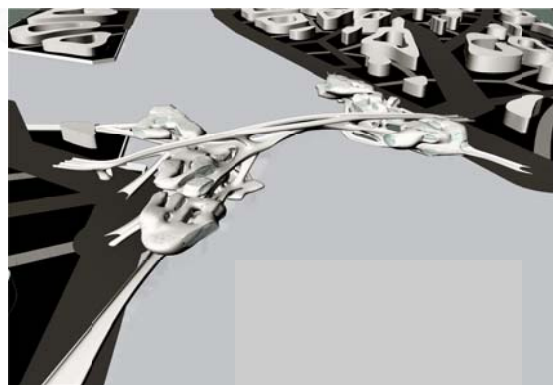
response to the original concept of programmes as connections. The distinctions of building elements in traditional modernism is retarded by the space continuity, meanwhile without losing the unique characteristics of each segment, which is achieved by previous computational topology. By this approach, the complexity of construction details is also lowered, reflecting Kas Oosterhuis' quote of "one building, one detail". This top-down decision serves as a crucial stakeholder for transforming computational language to architectural language, as well as providing an opportunity to revise some parts in the computational topology to put more control onto the architectural design.

Nevertheless, after the top-down modeling process, the computational research tools are once again implemented, but in a more practical level. The structure and skin could be a digital system, taking the advantage of computational methodology. Especially for openings in the façade, the computational system could make them follow the inside logic of the digital form, as well as indicating one of the studio's theme of "climatic ecologies" by controlling the opening sizes according to solar radiation analysis. One could figure out that the whole design process is actually a constant interactive activity among bottom-up analysis and top-down space making. These two keep back feeding each other in a highly-linked digital data exchange.

In practical or social level, this project is definitely an experimental one. However, the purpose of this kind of academic projects is to develop future possibilities of built environment, and research projects could reflect the certain social trend at that time as well as vertically inheriting past wisdoms throughout the history of architecture. If we would call this project "a mat building in digital age", which exactly indicates the current emerging technology to be influencing the architectural occupation and the whole urban development, meantime referring to the old ideals of integrating urban and architectural scale by designing horizontally spanned building network, we are actually revealing the relationship between this project and wider social context.



computational topology



architecture perspective