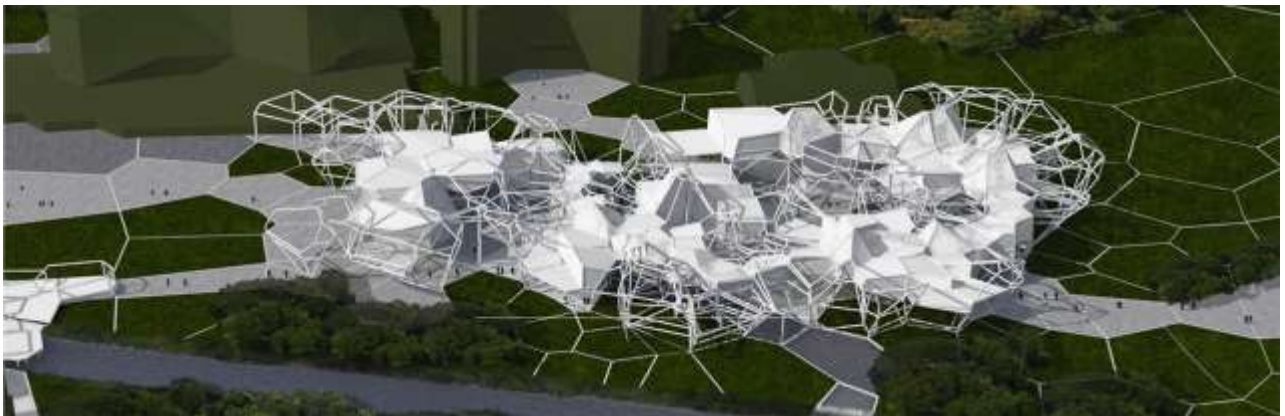


POLITECNICO DI TORINO
Master of Science in Architecture Construction City
Honors theses

FROM THE CELL 0 TO WHOLE

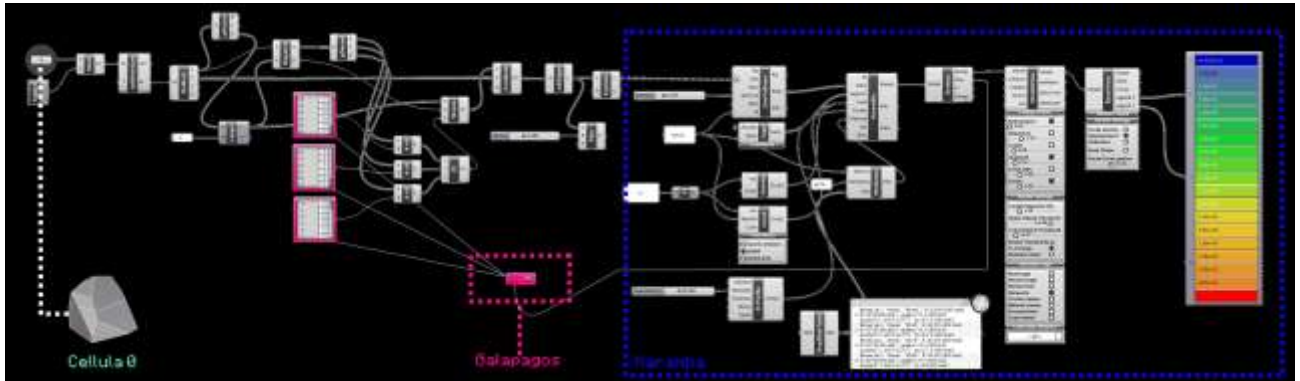
by Matteo Chierigatti
Tutor: Marco Trisciuglio
Co-tutor: Alberto Pugnale University of Melbourne

“From the Cell 0 to whole” is the ending of the excursus planning that I began with my colleagues Gaia De Intinis, Luca Di Tullo and Michela Racca with the Thyssenkrupp Elevator competition “Istanbul Disaster Prevention and Education Center”. The project that we realize was a very complex structure based on reasoning about urbanism, fruition of spaces and competition brief. The weak point of the project, that connote the entire structure only as a proof of concept, was the lack of a structural and executive concreteness. Because the purpose of the building is being the benchmark in Istanbul for disaster prevention and education, the structural component is fundamental. The form that we create was not based on structural choices but was the consequence of plan design that lead up to the three dimensional shape.



Disaster Prevention and Education Centre, Istanbul

Aim of this thesis is to give a structural and executive worth to the work that we have done for the competition, retracing your footsteps and being straight, without denying the work earlier done, but improving it. My analysis is only focus on a portion of the structure due to its complexity, the one that I define “Cell 0” that is both starting point and summary of the entire composition. To hit the mark I use the algorithm modeling tools using Rhinoceros, Grasshopper, Karamba e Galapagos.



Grashopper algorithm

I don't realize a new form starting from zero but, using generative modeling tools, I improve the features of an existing form. I define my algorithm and my parametric model and what I've reach is a new form that is different from the starting one but structurally correct.

Further step of my work, once I define the starting structure, was to conceive the "Cell 0" as a temporary pavilion. In this phase I better analyze the executive features in order to realize the entire area of the disaster prevention and education center.



Temporary pavilion

Whit my work I don't want to find a definitive solution but what I really want is to find infinity solutions starting from the "Cell 0". What I would also say with my work is that in this year the grow of architecture and design is the result of a mature way of research that, supported by a exhaustive control of the digital tools, release the designers and architects from software constraint. Parametric architecture, generative design, algorithm architecture are the new word of a new paradigm that see the computer only as a neutral partner and not the reason for being.

For further information, please contact:
Matteo Chierigatti, e-mail: matteo.chr@gmail.com

Maintained by:
DAD – Department of Architecture and Design, e-mail: dad@polito.it