

Category: artifact

The Potential of a Tectonic Approach for the Experiential Qualities of Architecture

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topic

The research project is investigating the relation between the tectonics -understood as the poetics of the construction - and experiential qualities of the architecture.

This focus of the investigation resulted from the observation of several DesignBuild projects I have realized in various contexts throughout the last years within my architectural practice. The comparative study of these projects showed that most of the projects were characterized by a high degree of affordance, which became obvious through the willingness of their users to appropriate and interact with the architecture. These interactions that clearly form a part of the individual architectural experience are apparently not evoked by functional aspects or formal gestures but by the physical nature of the architecture and its construction. As Juhani Pallasmaa argues, an authentic architectural experience is depending on the comprehensibility of the construction to the senses.¹ Going beyond structural needs, our design intention in the arrangement of the structural parts of the construction was always, to define the spatial structure and the architectural expression in mutual dependence. For those qualities that “are expressive in a relation of form to force”, Eduard E. Sekler uses the term tectonics.² This understanding of the term tectonics will be the focus of further investigation.

research question and goal

Along a series of three DesignBuild Projects, I am researching the question, how through designing and building yourself, tectonic qualities are entering the architecture and why these can generate specific experiential qualities. In this context, the physical organization of architecture in relation to the organization of the own body plays a role just like phenomena we share between our body and the architecture, like gravity. Also the implicit physical and manual knowledge, which is common to most people through their interaction with the material environment becomes relevant in this consideration.

How can we make use of that knowledge in order to create tectonic poetics in architecture? The goal is to be able to define and characterize a working method that generates a coherence in the construction, the spatial structure and the architectural expression. That means getting clarity about the process and every important step and decision that causes or prevents that desired result.

methodology and findings

In the focus of my research are the DesignBuild Projects that are realized by myself either in my practical work as architect or in the context of the university with students. They serve as case studies and should provide findings on the research questions.

The initial point of the research is marked by the reflection on the DesignBuild projects realized within my practice throughout the last years, for instance:

the KAIROS Pavilion which consists of 327 prefabricated concrete pieces of 7 different types all based on one specific cross section.

¹ see Pallasmaa 1996.

² see Sekler 1965.

the POVERA Pavilion which is assembled with modules made of filigree wooden slats to form an ellipse-like overall shape.
the VERTIGO Pavilion which is stacked from red-painted wooden blocks to form a permeable box.

In all projects the design process started with defined materials and the final result is characterized by a specific architectural expression. By analyzing and evaluating these projects I tried to uncover their architectural qualities and name them. Differentiating between the perceiving subject and the architectural object the outstanding terms have been interaction, appropriation and affordance as part of the experience with the architecture and the coherence of the structure, the construction and the architectural expression, a specific scale, simple and comprehensible details, basic geometries and an expressive materiality as the crucial characteristics of the physical object.

Within the framework of this theoretical analysis in the early stages of my research the origin of the architectural qualities was assumed in the haptic properties of the materials both within the design process and the experience of the architecture. While I have started to research practically the focus of my research has moved from the haptic properties to the handling and joining of the materials/elements and is now seen in the tectonics. In the following I will present the first findings:

In September 2019 I could realize (together with a group of students) the ALBERTO Pavilion as a first DesignBuild project within the PhD that gave me the possibility of participating in the process and observing carefully the progress of the project.

By documenting and evaluating each step of the process from the first sketch to the architectural experience with the final project I did a first try to define its meaning for the architectural expression and accordingly for the architectural experience. The reflection has led to a sequence of phases including several design decisions:

1. ELEMENT Choosing proper materials that fulfill on one hand structural needs and on the other hand atmospheric intentions. The capacities of our own body are defining the dimensions of the single elements and by this giving scale to the architecture.
2. JOINT The detailing of the joints connects the parts and puts them in a context, it considers the materials inherent properties and answers to structural needs but moreover it fulfills creative intentions to give the joining a meaningful expression. Technical and handcraft possibilities are determining the simplicity and coherence of the details and by this the comprehensibility of forces that the construction needs to resist to.
3. STRUCTURE Elements and details are merged into a spatial structure through repetition including variations and exceptions to highlight specific moments. Repetition can be a strategy to rationalize the structural system and to simplify the architectural language in order to enhance the legibility and the traceability of the construction.
4. GESTALT Taking final decisions in order to concretize the architectural expression and react to contextual circumstances. Formal gestures are always based on the structural system. This phase can also take place partially during construction.

This sequence is an approach to define the specific working method and resulted from the reflection on the ALBERTO Pavilion. It needs to be verified and refined throughout the research with the help of further DesignBuild Projects.

The experiential qualities of the ALBERTO Pavilion could be evaluated by making use of different strategies to document people's interaction with the built architecture. By observing how people moved unselfconsciously through the architectural structure or how they appropriated the architecture and interacted to it I could estimate the degree of invitation character and affordance that the architecture provides. By listening to peoples impressions and critics I could get clarity on the architectural expression. By watching artists performing within the architecture I could follow how they are consciously reacting to the physical nature of the architecture and the construction.

Those observations emphasized the relation between the tectonics and the architectural experience.

state of the research

The mentioned sequence of design steps ELEMENT, JOINT, STRUCTURE, GESTALT as a working method to bring the tectonics into the architecture was recently tested in a seminar with students. Strictly following the defined steps they designed small spatial structures as DesignBuild projects, unfortunately because of Corona Pandemic just as projects and not as built architecture.

At this stage of my research I'm trying to figure out at which point in the process the tectonic qualities occur. The reflection and evaluation of the students results in relation to previous findings will be part of my following presentation at Ca2re Milan.

Bibliography

Sekler, Eduard F. 1965. *Structure, Construction, Tectonics*.

Rasmussen, Steen E. 1980 (first 1959). *Architektur Erlebnis*, Stuttgart

Pallasmaa, Juhani. 1996. *The Eyes of the Skin - Architecture and the Senses*. England: John Wiley & Sons.

Frampton, Kenneth. 1995. *Studies in Tectonic Culture: The Poetics of Construction in Nineteenth and Twentieth Century Architecture*. US: MIT Press

Design Driven Research

My Research derives directly from my practical work as an architect and is based on a series of Design Build Projects I have realized so far.

My interest focuses on their intrinsic qualities and the process beyond the architecture.

The projects serve as case studies and are developed, realized and reflected regularly throughout the research. They form the methodological starting point of the process of opening up knowledge.

The format of the DesignBuild projects allows an intuitive and experimental working method in which the act of making is more than just building what was planned before. Instead it becomes part of the design process since it gives the possibility of taking decisions and adaptations in progress.

Being actively involved in the process of each project allows an intensive reflection on the progress.

Accordingly, I can learn from the previous project in order to apply the knowledge to the following.

By documenting people's interaction with the built architecture and discussing their impressions and critics on its experiential qualities I am developing an awareness of the architectural qualities.

TECTONICS, ARCHITECTURAL EXPERIENCE, DESIGNBUILD

Bio

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3rd year of research, 1 of 3 case studies

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Tim Simon-Meyer graduated in Architecture by the Universität der Künste Berlin and Universidade Autónoma de Lisboa. He worked for several architectural offices such as PezovonEllrichshausen or Max Dudler before founding his own practice AtelierJQTS together with Joao Quintela. Between 2015 and 2017 he was teaching at the Technische Universität München and since 2017 has been teaching at the HCU Hamburg.

PROCESS

TECTONICS

INTERACTION



KAIROS Pavilion, 2012

VERTIGO Pavilion, 2014

POVERA Pavilion, 2015

ALBERTO Pavilion, 2019