The Building Process as a Chain of Displacements

Following a Construction Project from Strategic Planning Through an Architectural Competition to the Building Permit

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Abstract: While research on architectural competitions can be considered a well-established field nowadays, research on the transition between the competition procedure and the subsequent project phase remains fragmentary. The paper at hand aims at addressing this gap. Standing in the tradition of actor-network theory (Callon 1986; Law and John 2004; Latour 2005) the paper is attentive to the various displacements that shape a construction project from strategic planning and preliminary studies to the end of the competition procedure and then through the subsequent project phase. In this way, the paper embeds the architectural competition into the building process and elaborates a perspective on the latter as a set of intertwining procedures that constantly assess and re-define the construction project.

Keywords: architectural competition; project phase; planning process; building process; actor-network theory

Introduction
In his book “Starting From Zero: Reconstructing Downtown New York”, Michael Sorkin (2003) provides a comprehensive account of the planning incidents preceding the “Post World Trade Center Design Competition”. For instance, Sorkin points to the fact that between March and May 2002 no less than 230 public workshops had been carried out, all dealing with the question what to do with Ground Zero. These workshops, which had been organized by various non-profit making organizations attracted broad levels of the population and produced more than 18000 ideas for Ground Zero. Between July and October 2002, a representative cross section of these 18000 ideas has been presented in an exhibition at the Municipal Art Society of New York. At the same time, rather untouched by the ideas
produced in the workshops, developers Silverstein and Brookfield as well as the Lower Manhattan Development Corporation (LMDC) commissioned four architecture firms to develop schemes for Ground Zero. Six of these schemes were presented to the public in the so-called “Listening to the City” meeting on July 20, 2002 with the result that the 4500 people attending refused enthusiasm for any of the plans. Stung by this attack on its schemes the LMDC decided to organize an international architectural competition for Ground Zero: 400 architecture firms applied, seven teams were selected to develop schemes. While an architectural competition in the view of a superficial beholder as a matter of principle stands for the production of a large variety of solutions, Sorkin (2003; 2005) argues, that the World Trade Center Design Competition achieved the opposite. As Sorkin (2005: 112) states: “Although the seven [competition entries] offered some dramatic form-making” and although several of them “include interesting ideas for the memorial”, “they are predominantly strategies for locating vast amounts of office space on […] the site. (...) Virtually every [competition entry] served to legitimate a primary lack of choice: that of the [competition] program for the site.”

Leaving Sorkin’s full analysis on the World Trade Center Design Competition as a Trojan horse aside we will pick out one of its central aspects – the lack of an adequate competition programme – in order to introduce our line of thought. Following Sorkin’s account we observe that all the various ideas and concepts produced within the vast amount of public workshops have not been adequately incorporated into the competition programme – one might argue that these ideas and perspectives have found their way into an exhibition, however not into the architectural competition and the schemes it produced.

At this point we would like to refer to Menz (2009), who divides the building process into six phases: Strategic Planning, Preliminary Studies, Project, Invitation to Tender, Implementation, and Management (see Figure 1). In his definition, Menz (2009: 207 and 211) in turn refers to the “Service Model” as provided by the Swiss Society of Engineers and Architects (SIA), “Regulation SIA 112” (2001). This regulation coordinates the client’s responsibilities and the tasks of the various planners involved during the building process by defining subphases and goals of subphases and in this way provides a useful illustration of the building process as a whole. Using the terminology proposed in Figure 1, we can note that in the World Trade Center Design Competition case the enormous and various efforts that had been undertaken during the strategic planning phase succeeded in formulating a variety of needs and solution strategies as well as definitions of the project (first part of preliminary studies phase), but did not succeed in significantly influencing the competition programme and therefore the outcome of the competition, that is, the selection procedure and the project selected.

The story told sheds a light on (problematic) displacements during the preparation of an
architectural competition. Building on this introduction, the plan for the paper at hand is to describe the chain of displacements shaping a construction project from strategic planning to the permit-obtaining procedure. After providing a brief explanation of the methodology applied and an overview of the cases studied, the paper will address displacements occurring during the preparation and the execution of an architectural competition. This will be done largely by means of literature review. In its second part, the paper will be attentive to the displacements that unfold during the project phase.

<table>
<thead>
<tr>
<th>Phases</th>
<th>Subphases</th>
<th>Goals</th>
</tr>
</thead>
<tbody>
<tr>
<td>Strategic Planning</td>
<td>Formulation of needs, solution strategies</td>
<td>Needs, goals and general conditions defined, strategy for solution determined</td>
</tr>
<tr>
<td>Preliminary studies</td>
<td>Definition of the project, feasibility study</td>
<td>Procedure and organization defined, project basis defined, feasibility demonstrated</td>
</tr>
<tr>
<td></td>
<td>Selection procedure</td>
<td>Project selected which will best meet the requirements</td>
</tr>
<tr>
<td>Project</td>
<td>Preliminary project</td>
<td>Concept and profitability optimized</td>
</tr>
<tr>
<td></td>
<td>Construction project</td>
<td>Project and cost optimized, schedule defined</td>
</tr>
<tr>
<td></td>
<td>Permit-obtaining procedure</td>
<td>Project approved, cost and schedule verified, construction credit granted</td>
</tr>
<tr>
<td>Invitation to tender</td>
<td>Invitation to tender, comparison of quotations, application for contract to be awarded</td>
<td>Contract ready for awarding</td>
</tr>
<tr>
<td>Implementation</td>
<td>Construction planning</td>
<td>Project ready for implementation</td>
</tr>
<tr>
<td></td>
<td>Implementation</td>
<td>Building structure constructed according to specifications and contract</td>
</tr>
<tr>
<td></td>
<td>Commissioning, completion</td>
<td>Building structure accepted and commissioned, final cost settlement accepted, defects corrected</td>
</tr>
<tr>
<td>Management</td>
<td>Operation</td>
<td>Operation ensured and optimized</td>
</tr>
<tr>
<td></td>
<td>Maintenance</td>
<td>Fitness for use and value of the building structure maintained for defined period of time</td>
</tr>
</tbody>
</table>

Fig. 1: Phases, subphases and goals of subphases of the building process.

Methodology

The findings presented in this paper base on three different research approaches. Firstly, we conducted an ethnographic study on the work of the jury boards of four architectural competitions in Switzerland. In addition to the jury assessment session we also observed meetings during the set-up of the competition brief (see e.g. Silberberger 2011; 2012). Secondly, we conducted a series of eight focus group workshops with competition organizers, competition jurors, competition participants, architecture journalists, and experts
regarding building law (see e.g. Strebel et al. 2012). Thirdly, we did a series of expert interviews with ten competition organizers and visited them at their workplaces (Silberberger and Strebel 2011; Strebel et al. 2012). For this year (that is, between August and December 2013) we arranged for revisiting seven of these ten competition organizers as well as the respective clients in order to supplement the body of data on the preparation and execution of architectural competitions by adding data with regard to the subsequent project phase. In this latter endeavour we limited ourselves to construction projects that mainly concern apartment complexes. As Figure 2 shows, we tried to cover a certain range with regard to the type of client, the “scale” of the task, the location of the construction project as well as the size and standing of the winning architecture office. Yet, we are far from claiming that our data sample is representative. Rather, we would like to highlight the explorative character of our study, therefore working with an expressive sample.

<table>
<thead>
<tr>
<th>Title of project</th>
<th>Task posed</th>
<th>Client</th>
<th>Type of client</th>
<th>Organizer</th>
<th>Location</th>
<th>Form of procurement</th>
<th>Type of procedure</th>
<th>Winner</th>
<th>Date of jury decision</th>
</tr>
</thead>
<tbody>
<tr>
<td>Neubau Wohn- und Gewerbe- siedlung Kalkbreite</td>
<td>New construction of a housing and trade estate (90 flats + office and trade space)</td>
<td>Baugenossenschaft Kalkbreite</td>
<td>Public</td>
<td>Amt für Hochbauten Zürich</td>
<td>Zurich</td>
<td>Project competition</td>
<td>Open</td>
<td>Müller Sigrist Architekten AG, Zurich</td>
<td>01.04.09</td>
</tr>
<tr>
<td>Rosengartenhof Küsnacht</td>
<td>New construction of 12 apartments in combination with commercial space (ground floor)</td>
<td>Genossenschaft für selbstständige Wohnen (GESEWO)</td>
<td>Private</td>
<td>Keller Partner Bauberatung AG</td>
<td>Sursee</td>
<td>Study commission</td>
<td>Invitation</td>
<td>Roman Hutter Architektur GmbH, Lucerne</td>
<td>03.04.09</td>
</tr>
<tr>
<td>Mehrgeneration enhaus Winterthur</td>
<td>New construction of an apartment complex (150 flats)</td>
<td>Agruna AG</td>
<td>Private</td>
<td>Planpartner AG</td>
<td>Zurich</td>
<td>Study commission</td>
<td>Invitation</td>
<td>Bünzli &amp; Courvoisier Architekten AG, Zurich</td>
<td>31.10.11</td>
</tr>
<tr>
<td>Zürich-Enge, Wohnüberbau ng Landolt-Areal</td>
<td>New construction of an apartment complex (52 luxury flats)</td>
<td>City of Zug</td>
<td>Public</td>
<td>City of Zug</td>
<td>Zug</td>
<td>Project competition</td>
<td>Open</td>
<td>Ballmoos Kruker Architekten AG, Zurich</td>
<td>22.09.11</td>
</tr>
<tr>
<td>Ein Haus für junge Menschen</td>
<td>New construction of a house for apprentices (12 rooms and a restaurant)</td>
<td>Allreal Generalunternehmung AG</td>
<td>Private</td>
<td>Generalunternehmung AG</td>
<td>Volkenstwil</td>
<td>Study commission</td>
<td>Invitation</td>
<td>Huggerbergen fries Architekten, Zurich</td>
<td>21.06.07</td>
</tr>
<tr>
<td>Wohnüberbau ng Gries</td>
<td>New construction of a housing (3000 sqm) and trade (6000 sqm) estate</td>
<td>baugenossenschaft für mehr als wohnen</td>
<td>Private/P public</td>
<td>Amt für Hochbauten Zürich</td>
<td>Zurich</td>
<td>Project competition</td>
<td>Restricted</td>
<td>AMOE futurafrosch + DUPLEX Architekten, Zurich</td>
<td>March 2009</td>
</tr>
<tr>
<td>Projekt 1 der Baugenossensenschaft</td>
<td>New construction of a housing complex (300 flats + commercial space on the ground floor)</td>
<td>Alfred Schindler-Fond</td>
<td>Private</td>
<td>Alfred Schindler-Fond</td>
<td>Emmen</td>
<td>Investor/architektonische competition</td>
<td>Invitation</td>
<td>Senn + MVRDV, Rotterdam</td>
<td>13.08.13</td>
</tr>
<tr>
<td>Quartier Feldbreite, Baufeld C1</td>
<td>New construction of a housing complex (150 flats + commercial space on the ground floor)</td>
<td>Reorganization / conversion of a former mill into a residential building and office space</td>
<td>City of St.Gallen</td>
<td>Hochbauamt St.Gallen</td>
<td>St.Gallen</td>
<td>Study commission</td>
<td>Restricted</td>
<td>Bischof Gruber Architekten, Zurich</td>
<td>16.11.09</td>
</tr>
</tbody>
</table>

**Fig. 2:** Basic facts of the construction projects observed.

In the course of the interviews we provided the interviewees with a “project diagram” (see Figure 3), which we invented on the basis of visualizations of procedural aspects of architectural projects as have been introduced, e.g. by Rem Koolhaas and Bruce Mau in “S, M, L, XL” (1995) or Clare Melhuish in “Luis Vidal + Architects – From process to results” (2013). The chart shows a vertical division into two main phases (preliminary studies, project) and a horizontal division into “actors”: human participants and non-human participants that
are themselves divided in first and second level material. First level material comprises physical conditions (such as for instance the geology of building site, the existing infrastructure or the existing building in case of an extension). Second level material consists of all documents (plans, schemes, concepts, expertises, reports) and models produced during both depicted phases. The basic project stages (feasibility study, competition programme, preliminary evaluation, Q&A, jury assessment sessions, jury report, winning project and approved project) are already entered and obligatory passage points (Callon 1986; Scheffer 2008) – public notice, project selected, public approved – are highlighted with red dots. The representation of second level material within the project phase is an empty funnel, which linearly extrapolates the various design aspects of the winning competition entry (architecture, urban planning, structural planning, energy efficiency, cost planning, heating/ventilation/sanitation/electrical installations) in the same way as Melhuish (2013) suggests.

Fig. 3: Project diagram used in interviews.

The idea behind this chart is to illustrate and trace the connections, associations and relations between the different project stages and actors. In addition to the project diagram we furnished our interview partners with the competition project as represented in the jury’s final report. We actively encouraged our interview partners to edit the project diagram and to draw into the plans representing their competition entry in order to illustrate and support their statements (Figures 4 and 5 provide an example of this conduct).
Displacements during the set-up of the competition brief

Silberberger (2011) has shown that the authors of a competition programme – by trying to describe the (design) problem or (building) task respectively and not its solution – aim at providing a certain scope for the competing architecture offices and at the same time at making them fulfil certain specifications. In particular, Silberberger (2011) has elaborated that writing a competition brief is not about compiling a list of specifications to be worked off by the competing architecture offices but about setting up a stage that facilitates (further) growth of insight into the (design) problem at hand. In his paper Silberberger (2011) discusses how those who write the competition brief translate the contents of feasibility studies (e.g. detailed figures regarding interior spaces) into a competition brief.

Tying in with this research, the series of interviews that we conducted quarried three major challenges competition organizers are faced with when translating the results of strategic planning into a competition brief. One interviewee mentioned that for instance the considerations regarding fire safety oftentimes reach a level of detail during the strategic planning phase (and within feasibility studies) that is not adequate for an architectural competition. If one incorporates these highly detailed considerations one-to-one as requirements into the competition brief, “architectural questions would be eclipsed by mere sub-disciplines,” as the interviewee put it. All interviewees in unison argued that the information gathered during strategic planning has to be organized into a hierarchy so that at least some of it can be put aside in order to not supercharge the brief with specifications regarding sub-disciplines. Yet, translating feasibility studies into a competition programme does not just mean reducing information. But, as another interviewee stated: “In a competition programme you have to define scope for the competing architecture offices. And you must advise them of that scope.” That is, the information gathered during strategic planning also has to be assessed in the sense that the authors of the brief have to decide which information enters the brief in the form of binding instructions and which of the parameters defined by means of feasibility studies should be loosened (again). Hence, the translation of the results of strategic planning into a competition brief does not just imply getting rid of parts of the vast amount of information gathered by means of feasibility studies, but primarily to translate the perspective on the (design) problem itself, that is, to develop a more adequate, more precise idea of the (design) problem at hand.

Displacements during the creation of competition entries

In the preceding section we have seen that the set-up of a competition brief can be considered a full-blown design process (although it is usually not referred to as one) defining the competition’s space of possibilities. In this section we will be attentive to a rather obvious design process: the translation of the competition programme into various competition
entries. Various scholars have researched how architects proceed when designing a building. The literature ranges for instance from Schön’s classic “The reflective practitioner” (1983) to recent research from Yaneva (2009).

Out of this vast body of literature we would like to pick the work of two scholars, Darke (1979) and Kreiner (2010), to make our point. Following Darke (1979), architects do not start from the constraints and do not react to the entirety of constraints when designing. Rather, they develop an essential position, an approach towards the (design) problem. Subsequently they test this essential position or approach – the “primary generator” (Darke, 1979) – in an iterative process against the various constraints. Kreiner (2010) investigated how architects deal with competition briefs. He observed that competition participants time and time again ask themselves whether they understand or interpret a certain specification as a binding “instruction”, as an “indication”, which should be implied into the design, or as an “inspiration”, that is, as a reference value, which can be drastically reinterpreted if necessary. Combining Darke’s and Kreiner’s analysis, it can be stated that architects that participate in a competition do not treat all specifications equally, but in the same spirit as the authors of the brief organize them into a hierarchy: Within an iterative testing procedure they modify their essential approach according to certain specifications but also translate the specifications given in the brief, say into an indication or inspiration, if necessary.

Displacements during jury assessment sessions

After having briefly described how architects translate the specifications given in the brief into competition entries, this section will deal with the question how juries in architectural competitions “translate” the parliament of competition entries into a winning project. As in the case of architecture practice, jury practice in architectural competitions can be considered a field well researched. Chupin (2010; 2011) mostly referring to the field of design methodology (and to scholars as for instance Simon, 1969; Schön, 1983; 1984; Rittel and Webber, 1973; 1984) compares the jury board’s assessment of the competition entries to the practice of an architect designing a project. In describing the jury’s evaluation as a reflective practice he highlights the jury’s active role in shaping the winning project as well as the interrelation between the board of jurors and the submitted architectural projects. Kreiner (2006) and Kreiner et al. (2011) also address the interrelation between competition entries and the board of jurors. Mostly referring to the field of organisational studies and decision-making theory (and to scholars as for instance Lave and Wenger, 1991; Weick, 1995; March, 1999) they point out the inconsistency of the jury board’s perception with regard to the optimal solution for the problem at hand. In their accounts Kreiner (2006) and Kreiner et al. (2011) show how the interplay between certain competition entries and the board of jurors results in major changes regarding the perception of the ideal solution throughout a sequence of jury
sessions. Tying in with this research, Van Wezemael et al. (2011) provide an account of how a specific feature of one competition entry provokes a jury board to rethink its preconceptions with regard to the task posed.

Against this background, it can be argued that the competition programme does not necessarily constitute a stable, robust definition of the competition’s solution space. Rather, it has to be considered an intermediary fixation, which can be translated into a new space of possibilities during the jury assessment sessions. Taking up this point, Silberberger (2012) introduces the concept of non-trivial machines as proposed by von Foerster (1984) in order to address the aspect of uncertainty within jury deliberations while at the same time elaborating that the jury board does not proceed arbitrary but in a procedurally sound way. In particular Silberberger (2012) focuses on the instrument of the so-called “honourable mention”, which Regulation SIA 142 (2009) defines as follows: “In planning and design and build competitions, outstanding entries, that were initially excluded from the awarding of prizes because of critical violations of terms specified in the competition brief, can be awarded an honourable mention” (art. 22 sec. 2). In addition “(c)ompetition entries that are awarded an honourable mention can be ranked by the jury on the first place and can be recommended for further development and completion” (art. 22 sec. 3). That is, while EU law requirements – transparency, non-discrimination and equal information – demand a “once and for all” valid brief (Volker, 2010), the juries in Swiss architectural competitions are allowed to “rework”, “redesign” or translate specifications given in the brief while judging the submitted architectural projects.

**Displacement during the project phase**

In this section we will put forward a central hypothesis concerning the translation of the winning project of an architectural competition into a project that obtained the construction permit. As Figure 1 shows, during the project phase the client and the executing architecture office primarily deal with economic aspects (“concept and profitability optimized”, “project and cost optimized”). Our hypothesis concerns this shift from general (architectural) questions, which predominate the strategic planning as well as the preliminary studies phase to economic issues. One would assume that the project, which is determined to best meet the requirements in an architectural competition may cause serious problems when having to be cost optimized. This is simply due to the fact that economic aspects cannot be considered decisive selection criteria in jury deliberations. Therefore, the question is how the client and the executing architecture office incorporate the jury board’s recommendations with regard to optimizing the winning project (as stated in the jury’s final report) into the construction project. This question is particularly interesting due to two reasons. Firstly, as we have shown in the preceding section, the decisions made during jury assessment sessions are the
outcome of a potentially controversial discussion and therefore the achievement of a collective. Yet, this collective (except for maybe two of its members) dissolves as soon as it produced its decision. In this way, the transition between preliminary studies and project phase constitutes a disruption, which can be compared to the disruption between strategic planning and the set-up of a competition brief as described by Sorkin (2005), where most of the 18000 ideas produced in the public workshops leave the process. Secondly, according to Gilbert and Jormakka (2005: 76), “the contestants and the jury operate with cultural capital which, for the client, means little and whose laws invert the logic of the economic world”. Hence, the future business partners – above all, the client in an architectural competition does not know with whom he will be working in the successive building process (since the competing architecture offices remain anonymous during the competition) – may extremely differ about how to optimize the project and its cost. On this basis it becomes understandable why many architects regard the project phase as almost something like a “restart”, that is, as a phase within which ideas, but also persons involved are swapped and replaced.

A further complicating matter regards unexpected incidents that can occur once the project phase is in progress. During our interviews several such unexpected incidents – ranging from unexpected modifications of zoning plans to the discovery of listed walls dating back to the beginning of the 17th century, from the “appearance” of geological problems to emerging difficulties in structural planning – have been mentioned. In the following, we will focus on one specific unexpected incident in order to illustrate our case.

The “Kalkbreite” case
The example discussed stems from the “Neubau Wohn- und Gewerbesiedlung Kalkbreite” (see first entry in Figure 2). As Figure 2 shows, this construction project comprises, besides affordable housing, office and trade space, which is planned to be located on the ground as well as on the first floor. Only shortly after the architectural competition had been finished, that is, right at the beginning of the project phase, the client (Baugenossenschaft Kalkbreite) started to promote its trade and office space to potential future tenants. Among others, a cinema exhibitor showed interest and soon agreed to rent spaces for 25 years guaranteed, which obviously means economic security and moreover is considered to entail further tenants (as for instance a café, a restaurant or bar). Eventually, negotiations between representatives of the Baugenossenschaft and the cinema exhibitor led to planning a cinema with five halls. This meant that the winning competition entry not only had to be modified regarding structural planning and noise prevention, but also that the project perimeter originally defined had to be reworked. The latter therefore posed a two-fold problem concerning design aspects as well as administrative issues regarding urban planning laws. Design-wise, integrating a five-hall cinema resulted in an additional “oriel” (see red mark in
Figure 4) in the first three stories, which had to be (and finally was) approved according to building law.

Analysis of the “Kalkbreite” project phase

We present the project diagram, edited during the interview with representatives of Baugenossenschaft Kalkbreite in Figure 5. Immediately catching the eye is the hand-drawn vertical line marked with an “x” and notes in the first level material row and with a scribbling rupturing the winning project’s funnel. The “x” represents the introduction of the cinema exhibitor as a key tenant while the scribbling depicts the entailed disruption of the project phase’s “funnel”. Furthermore, we see cascades of arrows, two starting from the scribbling and ending in the jury report and the competition programme, pointing successively “backwards”. The cascade of arrows symbolizes the gradual mobilization of documents that had been produced earlier in the process. Moreover, some vertical double-headed arrows connect a circle in the first level material row with the feasibility study in the second level material row. Also there is a horizontal line connecting this circle with the “x” on the hand drawn vertical line mentioned above. The connection between the circle and the feasibility study illustrates the detailed clarifications regarding noise prevention and cost effectiveness that the Baugenossenschaft commissioned as part of the feasibility study. The horizontal connection to the “x” refers to the significant impact on the renting concept (instead of a
bookshop, restaurant, bar, café and other loosely defined “small” enterprises a cinema with 5 halls enters the arena).

Fig. 5: Edited project diagram (interview Baugenossenschaft Kalkbreite).

Within the interview it became apparent, that for instance the jury’s final report is taken into account even months after the jury’s final decision (in case problems or interruptions occur) as a model supporting the necessary decision-making. Hence, in our case, Latour’s concept of “distributed agency” (1987) does not only apply to a material level – the various scattered material, which is mobilized by local actors – but also exhibits a temporal dimension in the sense that former decisions fixed in earlier documents are folded into current problem solving events. Across our set of interviews, we argue that especially in the case of disruptions within the project phase, mobilizing or falling back on documents produced in earlier phases plays a crucial role in re-constructing continuity. At this point we can refer to Latour’s concept of “circulating reference” (1999), which he elaborated in order to describe the efforts necessary for making the research process reversible, that is, for allowing to trace back from “abstract” representations in a scientific paper to the “original” material and in this way for enabling the re-enactment of the research process. A simple linear development of a construction project can easily be traced back. Yet, as soon as problems or interruptions occur, the complexity of the planning process rises, which entails a growing uncertainty regarding reversibility. This calls for a detailed and precise documentation of every decision-making process as most of the responsible human actors are just temporarily involved and oftentimes only oversee a specific subphase of the building process.
Conclusion

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