CA²RE

CONFERENCE FOR ARTISTIC AND ARCHITECTURAL (DOCTORAL) RESEARCH

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The Architectural Research European Network Association (ARENA), the European Association for Architectural Education (EAAE) and the European League of Institutes of the Arts (ELIA) are seeking to offer a joint platform for research in all fields of architecture, design and arts. This includes subjects such as environmental design, sustainable development, interior design, landscape architecture, urban design/urbanism, music, performing arts, visual arts, product design, social design, interaction design, etc. One of the objectives is to support early-career researchers, PhD students and Postdocs in the fields of architecture and the arts, and to improve the quality of their research. Another objective is to show that senior researchers CARE about the work that is being done by more junior researchers.

CA²RE, the Conference for Artistic and Architectural (Doctoral) Research will be hosted in April 2018 at the Aarhus School of Architecture, in association with ARENA, EAAE and ELIA. CA²RE is intended to bring together senior staff and early-career researchers to improve research quality through an intensive peer review at key intermediate stages. It wishes to contribute to the open and diverse fields that exist in architectural and artistic research, not giving priority to any single approach. The conference will support established research methods, but especially welcomes new and emerging fields such as research by design and artistic/creative practice. The aim is to create an international event in which early-career researchers, doctoral students and postdocs can present their research project to experienced researchers and have their work discussed by international panels in these diverse fields.

CA²RE brings together senior staff and early-career researchers to improve research quality through an intensive peer review at key intermediate stages. It wishes to contribute to the open and diverse field that exists in both architectural and artistic research, not giving priority to any single approach. The conference will support established research methods, but especially welcomes new and emerging fields such as research by design and artistic/creative practice. The event will invite researchers, at whatever stage of their research, to meet and participate in two-way discussions. Above all, CA²RE wishes to offer a lively, diverse and inclusive environment that brings together young researchers within a multi-disciplinary setting.

The Aarhus School of Architecture CA²RE event is the third in the CA²RE series, following the Ghent early-April 2017 initiative of the KU Leuven Faculty of Architecture and the second CA²RE conference at the University of Ljubljana, Faculty of Architecture. Further editions will be hosted in other cities across Europe. The Technical University of Berlin is hosting the CA²RE event in September/October 2018, and the March/April 2019 event will be hosted by the University of Lisbon, Faculty of Architecture. In September/October 2019 we move back to Ghent, and in March/April 2020 our host is the Glasgow School of Art.
## PROGRAMME

### Friday 13 April 2018  
**Godsbanen**

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<td>16:00-17.00</td>
<td>Opening of the Research Exhibition FORSK!</td>
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<td>17:00-17.15</td>
<td>Opening of the CA²RE Conference - Claus Peder Pedersen</td>
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<td>17:15-17.30</td>
<td>Booklaunch - “Emerging Architectures - The Changing Shape of Architectural Practices,” Walter Unterrainer</td>
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<td>Opening lecture by Siv Helene Stangeland, Helen &amp; Hard Architects. Introduced by Charlotte Bundgaard</td>
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<td>Petra Pferdmenges, Roberto Cavallito, Eli Støa, Walter Unterrainer, Boštjan Botas Kendra</td>
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<td>11:30-12.30</td>
<td>Hanne Van Reusel, Walter Unterrainer, Ruth Baumeister, Sara Lusic-Alavanja, Edite Rosa</td>
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<td>Eva Sollgruber, Alessandro Rocca, Ruth Baumeister, Tadeja Zupancic, Kevin Mccartney</td>
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<td>14:30-15.30</td>
<td>Jingwen Shan, Edite Rosa, Eli Støa, Ruth Baumeister, Walter Unterrainer</td>
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<td>Arkitektskolen Aarhus - Laden Nord</td>
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<td>Conference Reflection Summary</td>
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MAP - AARHUS SCHOOL OF ARCHITECTURE - LADEN NORD (MEETING MONDAY)
Tourism is a significant and growing economic sector and a primary transformative driver.

The research focus is on the relationship between tourism and the coastal area of Ringkøbing Skjern municipality, an area with 3.3 mio annual tourists (2016). I am interested in the positive and negative interference that occurs at this intersection, and I seek to explore and describe creative methods of investigating this field of interference. The urban territory of the small coastal town Hvide Sande is selected as a situation of interest for further in-depth study.

This Ph.D. is part of a trans-disciplinary research project that, through qualitative methods seeks to investigate and decode place-based behaviors, situations, controversies, and potentials as a contribution to a more nuanced debate on coastal tourism development. The hypothesis is that a transition within tourism development, from the predominant focus on tourist demand (often shortsighted trends) towards a focus on place-based affordances, is beneficial for both coastal communities as well as an attractor of tourist. We want to investigate how such tourism development can be used as positive spatial transformation strategies in urban coastal territories. The strategic purpose of such a maneuver is to create denser and more ambiguous coastal cities holding a greater programmatic complexity. The desired outcome is coastal cities which are less negatively impacted by standardized tourist gazes and damaging seasonal fluctuation.

The entry to abovementioned is an explorative Research by Design approach. Central to the research is a collaborative development and establishment of a series of site-specific design interventions that will function as laboratories for collecting qualitative empirical data. The design-interventions are developed, tested and refined in an iterative process in dialogue with local actors. In relation to the abovementioned research focus, it is investigated how the design processes revolving the experiments affect the construction, destabilization, and reorganization of actor networks and how design experiments articulate a discussion about, and actuation of the affordances of a place.

The research and preliminary conclusions will be presented in a PP presentation, supported by physical material (scale models, image boards, maps).
Within my current research on INCLUSIVE URBAN TRANSFORMATION, I am working on one side on urban transformation projects Brussels in my practice Alive Architecture, on the other side I expand this research through my teaching practice in the studio BRU.S.L.XL of my Master students at KU Leuven (Campus Sint-Lucas Architectuur). My proposal for the CA²RE conference is based upon the case study BRU.S.L.XL - Brussels North of our student work.

SITE: Brussels north was up to the 60’s a very lively neighborhood with cafés and a social life. The area was transformed into an office district. The WTC1, 2 & 3 were vacant until 1992 and the streets lack social life. Among many other actors, some of our students of KU Leuven (Campus Sint Lucas Architecture) are activating the building since this September 2017.

ACTORS: The actors in the area are extremely diverse: Besides the owners of the buildings that have an interest to reactivate the buildings there are office workers moving in the street, refugees are spending their days in the next by Park Maximilian to ask for Asylum, inhabitants of a series of social housing close by and a farm that has the interest and the necessary subsidies to bring multiple actors together. How is it possible to respond to the existing social, spatial and economic situation to respond to generate encounter among multiple actors and still respond to the needs of each of the actors?

EXHIBITION: The exhibition I propose is a shortened film of our students that involve the observation of multiple spaces of the WTC1 and the surrounding public realm. In the background we can listen to interviews with actors from multiple backgrounds. The presentation of this film will be the background of a performance that I wish to realize within the framework of the conference.

PERFORMANCE: While the film will be running in the background, I propose to do a performance around a table on which multiple spaces and actors of the neighborhood are represented through images pasted upon cardboard. Over the period of the performance I will point out key moments in the film while I will move around the images of spaces and actors on a table. As such I wish to reveal how we as socially-engaged architects can reveal an approach of inclusive urban transformation that will lead to a win-win situation of the diverse actors in the neighborhood.
I would like to present the most recent insights and results of the doctoral research and practice, which is in its final year. The doctoral endeavour is an explorative journey, the insights of the doctoral research and practice have currently come together in an entangled structure of clusters (see Figure).

The first cluster discusses the sense of emergency that is being faced globally and more specifically in the architectural discipline and in XXX and the XXX site. It provides a contextualization, with an account on the history and position of ‘participatory design’ and the opportunities and frictions caused by the digital in architecture.

The second cluster will build on a constructive approach (make your own city), taking in the paradigm shift of commoning as a way to deal with the challenges and frictions of the crises. It opens the research question on how architecture can contribute to these processes of commoning.

With this the metaphor of an exploratory journey will be unraveled by describing the implemented methods, based on action-research, research by design and grounded theory.

Thirdly, the notion of ‘commonplace architecture’ will be explored and discussed by focusing on three micro-interventions. The ‘huis’, ‘tuin’ and ‘keuken’ (house, garden and kitchen) projects will be analyzed to define key characteristics of the way we, the actors on-site, have been working on creating urban commons at XXX. Aspects such as infrastructuring, architecting, the performative etcetera are listed and discussed.

The fourth and final cluster will discuss the potential of this commonplace approach as a feminist/feminist attitude towards architecture. It looks beyond and outlines prospects for the future. The idea for an iconic intervention (C0lab), the continuation of eternal learning in education and the opportunity for an office for commonplace architecture are launched.
GROSSFORM AND THE IDEA OF THE EUROPEAN CITY
A TYPOLOGICAL RESEARCH

EVA SOLLGRUBER

In the year 1995 Rem Koolhaas put forward the theory of Bigness which was highly influenced by his cooperation with the German architect Oswald Mathias Ungers on the project “The City within the City: Berlin as a Green Archipelago” published 1977 and its underlying concept of Grossform formulated by Ungers in the 1960ies. Despite fundamental differences of their theories both architects tried to understand the phenomenon of the big scale architectural project and its impact on the idea of the city. The questions posed with these theories seem to be relevant nowadays more than ever: on the one hand we are faced with the problem of a seemingly endless growth of our cities and a crisis in urban planning – a different view on the concept of the city is desperately needed. On the other hand big scale architectural projects dominate the public debate on architecture. Other than in Asia or America, in Europe scepticism towards big scale projects prevails. Architects themselves don’t know what to do with these “big” projects; how to talk about them, evaluate them and use their architectural and urbanistic potentials for their designs resulting often in the denouncement of big forms. But this condemnation is not based on a thoroughly analysis of the architectural projects and their underlying concepts but simply on misconceptions and biases.

This research project aims at revisiting big scale projects from the past with the objective of understanding the architectural culture of this type of building and assess its potential for the future development of the European city. The focus lies on public buildings of the 1960ies and -70ies that were at the heart of new city developments in Europe. Despite changed political and socio-economical circumstances important lessons can be drawn from this era for a possible future scenario of our cities. The investigation will be conducted by means of architectural analysis i.e. research on design. Buildings will by analysed and categorized establishing a typological taxonomy for the purpose of drawing conclusions on phenomena of the current professional practice and thereby enhancing the body of knowledge of architecture.(1)

Along with the progressive building technology and massive urban transformation in the contemporary age, the functional and formal requirements for urban public space is changing as well. As a young branch of modern mathematics, topology has gradually penetrated into the architectural field. It breeds alternative thinking methods with its brand-new spatial dimension, which makes it one of the heated trends in present urban projects.

Historical European cities have a peculiar urban fabric which unify buildings and blocks in a whole and compact environment. At the opposite, in contemporary cities, this character gets completely lost, and public spaces are located among buildings of various scale and style. One of the problematic issues of historical cities today is the visual and physical split between old and new fabrics, urban spaces, and blocks. My research, which is based on a comparative analysis of case-studies and on exercises of architectural and urban design, states that public spaces can play a pivotal role as transitional spaces between urban fragments belonging to different historical ages. Nowadays, pushed from the changes of contemporary architecture, public spaces mutate their nature, such as squares grown in vertical direction and complex spaces articulated in multiple layers, often more integrated with the facades and interior space of the surrounding buildings. For instance, the recently built Piazza Gae Aulenti, in Milan, appears being wrapped into the building. Cantilever structure is now widely applied to modern architectures, which leave the ground floor open public spaces while upper floors building. Moreover, each floor plan of a contemporary architecture could share different shapes and even positions. In this case, urban morphology is no longer comprehensive to analysis of urban design and public space, because it is not able to demonstrate vertical information. Then, my research is addressed to a series of selected public squares in Milan, analyzing construction timelines and regarding how their impact is, in reference with connecting the low-density areas with high-density ones, developing new relations among the surrounding buildings, exploiting new topological characters and potential qualities.
The modes of production within architectural practices have been widely investigated in the field of "Architecture and Labour" in particular considering the relationship between the economic system and the transformation of the workflows. The methods favored by scholars are mainly qualitative: archival research, case study, grounded theory and ethnography (Cuff, 1991; Yaneva, 2009). However, the focus in the content has not been on the Danish Welfare State and in its relationship with the architectural profession.

This contribution, in the form of an exhibition and an accompanying paper, addresses this gap and considers how some junctures in the economy of Denmark played a role in the definition of the modes of architectural production and its labor organization in the last twenty years (1990-2017).

As part of my ongoing Ph.D. research, the presentation has to be framed in a narrative I am deploying to disseminate architectural research contents through exhibition design. Another part of the study, in fact, was presented as invited contribution at the Milan Design Week 2017 where it visualized, with a circular physical archive of nearly 4000 projects, the production of Danish architects in the Golden Years (1945-75).

Specifically, in the paper, I am looking to some paradigmatic data, collected with a grounded theory method. The data are both the ones deriving from an interpretative analysis of 234 Danish active architectural practices based on their self-statement description; the ones related to 10 in-depth semi-structured interviews made to the directors of some of the Danish architectural offices selected as representative cases during the research.

My argument regarding the content is that the Danish Welfare State in its Golden Years was a booster for the blossoming of the architectural profession. But, its transformation and instability (e.g., with two financial crises in the early 90s and again in 2008) weakened its oversight and played a substantive role in the change of the strategies used by the architectural practices to produce architecture.

In conclusion, the interaction of theoretical arguments together with the design of an exhibition, and therefore the occupancy of a physical space along with a facilitate interaction with a broad audience, are a powerful experimental apparatus of doing research in architecture.
In Forensic Design Strategy the effects of the various possible approaches of the individual planners are set as a function of one another in order to get the best overall solution and not the best single solution for each department. This design process in inter- and trans-disciplinary teams is process-oriented and has a common goal. Within these processes the traces of design decisions are inspired by various influences from different angles of different people from different disciplines. In the case of multidisciplinary decision-making processes, innovations are created only in the various specialist areas. Through inter- and trans-disciplinary working methods, all three types of knowledge (system knowledge, target knowledge and transformation knowledge) can be implemented in the development and design process. This increase in knowledge, the manifold inspirations of other disciplines, and the security provided by a coordinated approach by all relevant decision-makers lead to a development thrust for new solutions and developments through inter- and trans-disciplinary design and planning processes.

Visualization of the “Forensic Design Strategy” in the project ASO4

Most common definition of the single disciplines in the knowledge production comes from Manfred A. Max-Neef’s “Foundations of Transdisciplinarity” based on Erich Jantsch’s theories in “Inter- and Transdisciplinary University: A Systems Approach to Education and Innovation” [Max-Neef 2005] [Jantsch 1970].

Within my research, which I am conducting as a PhD candidate and former ADAPT-r fellow at Sint-Lucas in Brussels, I am exploring an inter- and trans-disciplinary design process we (grundstein) call “Forensic Design Strategy” [Origin of forensic: Latin forōnis (is) of, belonging to the forum, public (see forum, -ensis + -ic)]. The term “forensic” is based on a form of political debate. “Forensics” is a word rooted in the Western worlds classical experience. The Greeks organized contests for speakers that developed and recognized the abilities their society felt central to democracy. These exercises acquired the title “forensics”. In our practice grundstein we are over and over confronted with the fact that the different technical experts propose solutions which only focus on their own fields. Often these solutions turn out to be counterproductive to solutions which have been suggested by experts of another field. By trying to solve these repeatedly emerging conflicts the whole design becomes more and more complex and expensive. New technology enables new achievements in design production. These processes are accompanied by an increasing number of specialist planners. It also requires new paths in the design production. The design processes in architecture are still dominated by very traditional work processes between the individual disciplines. These are characterized by a strict demarcation of the respective work areas with exactly defined boundaries and interfaces. According to common definitions, these design processes are multidisciplinary or pluridisciplinary and results in severe limitations in development new results.

The analysis of these layers in the inter- and trans-disciplinary design processes is visualized on the basis of a selection of our award winning projects. By interpreting the findings of the research work so far, the next steps are taken and the way of our working is considered in more detail. This requires new ways of decision-making and a different distribution of responsibilities. Instead of limiting responsibility through borders and interfaces, all knowledge is made accessible to other participants via competence zones. The limits of responsibility become more flexible and overlap. This results in the need for a common decision making.

FACETS OF FORENSIC DESIGN STRATEGY

MICHAEL WILDMANN
DUCTUS, MODUS, SKOPOS: MOVING ALONG THE TERMS OF TAXONOMIC LANDSCAPES
MARKINGS OF A THREEFOLD PRACTICE: MACHINES OF KNOWLEDGE PRODUCTION AND DISTILLATION

TOMAS OOMS

Keywords:
Practice Based Research, Ductus, Fragment, Taxonomy, Markings, Machines.

"To speak of my offices / I undertake to sort the essentials, / the diverse, simple things, / into an integrated work ... / And there [within the framework, as just described] I arrange my ornaments / my flowers, my colours, my green lawns / in order to attain by hard labours / the goal encompassed in my intention [corage]." Deduction liable in 'Les douze dames de réthorique' as quoted in The Concept of Ductus (M.Carruthers, 2010)

"Space is relationships" Sou Fujimoto

01. DUCTUS, MODUS, SKOPO: moving along the terms of Taxonomic Landscapes: markings of a threefold practice: machines of knowledge distillation: is a proposal for an exhibition-installation during the second CA'RE conference. Taxonometical Landscapes are developed as a method of reflection and giving an account of the Yard&World: to draw a distinction: an architectural inquiry into the liminal PhD research.

Yard&World is a framework. It represents this double ambiguous situation of being distinct but with overlap. Of being a ‘yard’ distinct from the ‘world’ but overlooking the ‘world’ and being part of the ‘world’, a ‘world’ composed out of ‘yards’. This describes a specific kind of relation. It is the architectural expression of that type of relation that is explored and is developed in a threefold practice: that of the faculty studio, the office studio and the research studio.

In this threefold practice: architecture is explored as a form of creating distinctions with the right kind of overlap. The goal is of continuously exploring architectural interventions that showcase and reflect on this concept of distinction and overlap. As a designer, I have the ambition to create spaces that are grounded and at the same time boundless. Spaces that are distinct but have an overlap. Yard&World is a continuous shifting and renegotiating of the enclosure, the distinction between wall and space, between wall and gate. Between this sphere and that realm, between Yard&World. Between U and I.

Taxonometical Landscapes are composed out of fragments taken from the threefold practice: that organises them in the enclosed space of a table top. Brought together, they aim to create a new practice. They are multi-layered ‘miniatures’, small ‘yards’ from which to look at the ‘World’. Taxonometical Landscapes are time-documents and samples of the current threefold practice. Within the Taxonomical Landscapes the fragments are as ‘marks on a piece of paper’; generating a focus on their interrelationships and the relations they have with the world beyond the Taxonometical Landscape, beyond the ‘enclosure’.

02. Taxonometical Landscapes take the following position in the research protocol: Practice > Fold > Fragment > Taxonometic Landscape > Markings > Practice > ...

03. Through participating in the second CA’RE conference I aim to address some of the suggestions raised by the panel and peers during the first CA’RE conference. These concerned mainly the ‘dialectic workings’ of the fragments (as agent images) on the taxonomic landscape. Besides this I would like to take the opportunity to address some new lines of thought that have been observed and to explore the ‘being on the road’ possibilities or limitations. The Taxonomical Landscapes are installations of physical objects, drawings and documents.

The issue then becomes how the format performs in an international setting that requires traveling?

The items that were addressed during the first CA’RE are: the relevance and effectiveness of this method of presenting/giving an account on the ongoing practice based research and to explore the Taxonomic Landscapes as knowledge generating method; what are the mechanisms for selecting fragments and what is / are my specific role(s) in the threefold practice?

Participating and debating the exhibition-installation with another focus then during the first CA’RE should serve to move the threefold practice a step further and to work on the tightly stitching of the three practices. The concrete contribution to the CA’RE will be a series of drawings printed on Graph paper. This is a set of drawings that reflect (on) the mechanism of the PhD research. The series is called: machines of knowledge production and distillation. The drawings represent the terms of Taxonomic Landscapes. In doing so ‘DUCTUS, MODUS, SKOPOS: Taxonomic Landscapes’ creates and unfolds relationships that become ‘Markings of a Threefold Practice’.

03. From fold to fragment to taxonomic landscape: protocol: machine of knowledge distillation: April 2017.
Architectural practice seems to be under a moratorium, avoiding to build in fragile topographies and hesitating to critically question this moratorium by formulating a strong cultural argument, e.g. architectural design as added cultural value. Architects are expected to leave these topographies untouched. In my Master dissertation project, The Remembered, The Experienced, situated in one of the few remaining dune areas alongside the Belgian coastline, I have questioned this moratorium. Contrary to the predominant existing typologies at the Belgian coastline—the formations of high rise apartment blocks—refuges are designed (speculative architectural designs) that are not in contradiction with the true reasons why people come to the seaside. Walking, writing and especially drawing are the main and base research actions through which I established this research. They will be further developed and refined in future research.

Based on this framework of thoughts, this research in its actual stage operates from a twofold: (1) architecture in fragile topographies and (2) the act of drawing. The dialogue between these two parts has been activated. The research is situated in the field of Design Driven Research and aims to investigate—through the selection of additional cases—the possibilities and potential of architectural interventions in fragile topographies and to do so by drawing design speculations (hypotheses) that question existing typologies that our habitual ways of seeing and our collective memories seem to qualify as normative. In these speculative designs, a search for adding cultural value (Van Den Berghe 2018) to these topographies, is the underlying purpose. A film was produced and published. The making of the film is a self-reflection on the previous research and an unlocking of upcoming research steps.

The development of additional research cases is critical with regard to how and to what extent alternative typologies, generated through speculative architectural designs in differentiated contexts, can open gateways to the aforementioned added cultural value. The additional research cases have to be selected on the basis of a range of robust criteria. These can be cases in natural as well as in cultural landscapes, like historical sites (heritage) or urban contexts.
In Europe, interest for the development of pictorial depth, and with it, a more realistic architectural depiction was reintroduced from the late 13th century. In this transitional period artists-architects were looking for a way to show what they see, eventually resulting in the invention of the mathematical method of perspective in the early 15th century in Italy.

Perspective, however, has mostly been used as an instrument for two-dimensional representation of space, in search to come closer to the reality of the world. This PhD-project, aims to explore an untouched potential of this technique. And in particular how it could play an active role as an instrument for two-dimensional production through which new spatialities are generated hence further reflections on ways we look at space are provoked.

By taking on architecture in selected Renaissance paintings as cases, and disclosing what hides behind the fourth wall by the means of the projection method, new three-dimensional contexts emerge. These decors are subjected to a process of hand-drawn perspective interventions combined with modelling and writing, and transform by this chain of actions and reactions into new spatialities that appear to be unpredictable and in no other way conceivable. The balance of authority between drawing and draughtsman demands (self-)reflection in action. Originating from my master dissertation, this research by design, mainly conducted by pencil on paper, requires a physical embodiment in order to guide the lines that generate new spaces and insights. We argue that the perspective drawing has the potential to be deployed as an instrument for creating or revealing new spaces, a mechanism used for three-dimensional production as presence, next to the initial use for two-dimensional representation. This research investigates the underlying mechanisms of this potential, and the applicability of such mechanisms on a more general level of investigation, production and understanding of ‘new space’.

These new spatialities get the status of looking machines. Their reality is not instantly reconcilable with the perception of the onlooker; the visual relation with architecture, not as self-evident as expected, provokes a conscious self. The drawn spatialities that take shape before our eyes could tell us something about how space reveals itself to us and about the way we look at it.
The work proposes the immediate as an instigator to the production of Architecture. Introducing improvisation as a technique for exploring alternative processes and interchanges in collective making. The work is the result of an artistic research practice as a performance. The point of departure for this experimental research is a 16000x300mm drawing representing the surface of a Melaleuca Quinquenervia, an unmovable object documented in the interplay of laser-photocopying and the action of acetone transfer.

SURFACE in the act of extracting figures, spaces, the project seeks to exploit the drawings surface-layers and sequences. In the act, singular spatial events on the drawing are viewed as an archaeological dig. Questioning what is extracted or merges with the surface, expanding our understanding of the surface as an active thing that accumulates and catalogues material as the archive stated by Carolyn Steedman: “The Archive is made from selected and consciously chosen document- tion from the past and also from the mad fragmentations...It is indexed, and catalogued, and some of it is lost.”

INTERPRETATIONS During the performance the surface will receive multiple actions and index’s, some interpreted through digital media, some direct action from the performers, others subjected to transformations and disruptions. The actions are intended to be intuitive as fragments and action is imbedded in the scenography. We see ‘the results’ as something in transformation, time as a strong parameter that creates an ordering strata, always in flux.

PERFORMANCE Questions will arise as the performers and audience react to the marks on the scenography and the superimposition of projections. Defined by three sequential acts the performance is to appropriate the constructed scenography. These acts will include a sequence of repeatable actions that aim to uncover possibilities from the elements as elastic or abrupt found at the performance site. We treat the site not as a pristine situation, rather as a field always in a state of change, self-modification, and a mediation becoming a new situation. Within the performance we allow for uncontrollable or unpredictable micro events in our exploration of immediate Architectures.

The adoption of digital fabrication technologies in architecture allows for novel ways of translations between designing and making, between idea and materialization, a role that since the emergence of the profession has been fulfilled by architectural drawings. This paper reflects on the role of drawing in architectural practice mediated through digital fabrication, and its impact on the allocation of authorship. Based on three design explorations from architectural practice and teaching, using computation and digital fabrication, the paper looks into different types of lines emerging from those processes: threads, traces & folds. This tentative, not exhaustive, categorization of lines is based on their agency in the translation between design idea and material artifact. The paper proposes substantiating lines as a way of researching processes mediated through computation and digital fabrication. This approach is situated them within the lineage of architectural exploration of the gap between drawing and making, instead of approaching digital fabrication as closure, where digital models provide complete determinacy of the material artifact.

SUBSTANTIATING LINES
THREADS, FOLDS & TRACES

CORNEEL CANNAERTS
What if there were a way to design with digital models similar to the way that we design with them in physical space?

As architects we are problem solvers through the making of objects; a highly physical design process similar to sculpting methodology, engaging a rich field of encounters and information seen and unseen – sensed; a process of understanding-through-doing that is capable of reaching complex levels of comprehension beyond the cognitive.

What if we can bring this level of engagement into the digital design environment with all of its power of parametric manipulations?

This research project is designed to examine these questions: first, how to bring aspects of physical modeling into the digital design environment. Second, examining what this brings to the design process, to architecture and theory.

This research uses the relatively new technologies of DIY sensors and micro-processors, adding their sensory data capability (pressure, flexion, weight, etc.) into the 3D environment, thus creating a hybrid physical-digital modeling technique. The goal is to achieve workability that approximates haptic methods and associated inherent material understanding, on which architectural practice is founded.

By focusing on modeling, the research specifically targets architectural design process, the early stages of design analysis and investigation, seeking maximum impact affecting the way we make/think about architecture.

The project is motivated by writings of Juhani Pallasmaa and works of Classical Sculpture in identifying the act of modeling/sculpting/designing as one requiring the complex metric of physical systems necessary to examining questions spatially:

In the writings of Juhani Pallasmaa, specifically identifying the problematic that contemporary architectural design practice is dominated by a visual-based, image-oriented methodology. Classical Sculpture, specifically contrapposto, which deliberately initiates the figure in an off-balance pose, thus necessitates design as direct mitigation of physical properties.

Lastly, this research is influenced by my 20+ years of architectural practice, one congruous with the shift in architecture from analogue (physical drafting and modeling) to digital; sensitizing me to what has been lost and gained in this shift.
Representation in architecture plays an important role when wanting to communicate intent or construction information, classically this has been achieved through drawings [1] or models, where it was common to work at different scales and levels of detail. Today it is possible to make high level of detail across scale with complex 3D models, 3D prints or photorealistic renderings. However, is this increased precision or level of detail necessary? And what are these technological advancements besides mere computerization of an already existing processes? Therefore, this early stage research wishes to ask the open question: “can technology be pushed past representational use? Or will it remain a tool to augment the status quo?” This idea is explored through a sculptural series that have been developed based on theories found in cognitive and computer science.
MATERIAL FORM-FINDING OF MODULAR TEXTILE STRUCTURES

AGATA KYCIA

Proposed research aims at providing novel applications for lightweight textile structures in the building industry. As construction becomes more digital and design increasingly physical, the objective is to re-introduce craftsmanship and materiality into architectural design with the help of computation.

The need of more eco-friendly and lighter materials, more flexible designs and substantial cost reduction create new possibilities for textiles as construction material. New digital fabrication technologies such as 3D printing as well as development of highly engineered, programmable fibers allow for re-introducing textiles into the build environment as lightweight, efficient and sustainable solution.

This paper explores potentials of self-forming textile structures generated through 3D printing on pre-stressed fabrics. It focuses on potential architectural applications of that system while looking into modularity, variation and scalability. By introducing hierarchy into the 3D printed elements, various degrees of shrinkage are possible within one printed sample. Variable height and geometry of the printed filament allows local influence on the deformation of the fabric. This method enables precise control over the geometry and aims at minimizing the material needed for fabricating three-dimensional textile modules.

Looking into potentials and limitations of the 3D printing process, further topics are tested such as modularity and connection details. As additive manufacturing becomes increasingly affordable and textiles more and more robust, proposed methodology has a lot of potential for future applications in the architectural scale.
THE CRAFT OF UNPREDICTABILITY

JON ENGHOLT

Translation of design intent into built form plays a central role in architectural design, both historically and contemporary. Drawing and manufacturing software (CAD and CAM) maintains both an ability and an imperative to build with extreme levels of precision, control, and predictability. Most applications continue the lineage of traditional design processes focusing on representation and geometry rather than integration with material capacities. Some contemporary practices and research in material motivated computational design and fabrication seek to embed such capacities in strategies of material formation. Such a compound knowledge between geometry, fabrication, and assembly encapsulates Richard Sennett’s hybrid notion of craft as not only knowledge about techniques, but also judgment in conceiving material processes. (Sennett, R., 2009. The Craftsman, 1 edition. ed. Yale University Press, New Haven.)

In this sense, computational tools hold a potential to relinquish control and predictability rather than enforcing it; material effects can inform a digital framework that encapsulates the complexity of the material behavior. Initial unpredictable physical effects serve as input for further cultivation in physical experiments and prediction through digital simulation – pursuing the internal logic of the building material rather than the formal logic of a design system.

The exhibition presents findings through digital fabrication experiments in concrete focusing on physical form from the material properties of concrete: The transition from fluid to solid form and the immense weight of the material. The experiments seek to demonstrate processes of designing conditions for how the material is shaped – and investigate how these conditions affect the physical cast.

Part of the formwork is made of rubber sheets with limited ability to stretch under pressure. This behavior is altered through digitally designed cut patterns, increasing the sheet’s ability to stretch – allowing fluid concrete to pass through the cuts. The resulting form and surface is a negotiation between concrete and formwork – mediated through the cut patterns. The concrete casts are carefully designed and crafted to exhibit dual qualities: On one hand, unpredictability through a system of material manipulation and on the other, precisely controlled form in traditional solid formwork.
My PhD research (in architecture) centres around digital archives—data centres and the cloud. The cloud is an important realm in the spatial imagination of daily digital archiving practices. Data centres exist for most users only as placeless representations of stylized, clinical rows of blinking lights arranged in potentially endlessly repeated server rack units. To most, data centres remain as physically inaccessible as the cloud itself.

I navigate the threshold between the physical, the imaginary, the object and the metaphor in order to approximate the materiality, spatiality and temporality of today’s digital archives. There are two overarching themes, the geological and the meteorological. My goal is to make digital archives more palpable in the spatial imagination. The lack of visualizations for data centres and the cloud strengthen the cloud as a territory of sovereign power shrouded in vagueness.

My artistic research explores the notion of archiving and temporalities through a series of furniture objects. These artefacts function as autonomous, functional objects that can be explored practically and physically—as such they take on a life beyond my research. I would like to exhibit two pieces that I am currently working on:

1.) Glass cabinet: It is based on the dimensions of one of the three cupboards that made up Carl Linnaeus’ herbarium. Unlike other botanists of his time, Linnaeus kept his herbarium sheets unbound and stored them instead in a cabinet which, as has been argued by recent scholarship, functioned as a spatial tool in the development of his classification system. The walls of the cabinet are made up of glass panels that measure 1 U—a dimension that describes a data rack unit height that fits one server. The glass has been stained with the minerals that are found in digital technologies.

2.) A waterfall curtain: It is made up of white horse tail hair strands that I have arranged in horizontal waves to resemble a thin waterfall. In Spanish, long thin waterfalls are often called Cola de Caballo (horsetail). Depending on how long the waterfall is, the accumulated age of the horse hairs changes. The curtain is an interpretation of a temporal section.
This paper will present an ongoing PhD research in the Doctoral programme Architecture of Contemporary Metropolitan Territories – Cities and Territories at ISCTE-IUL, Lisbon Portugal entitled UAIG (Urban Areas of Illegal Genesis) – (re)living to (re)integrate. The Metropolitan Area of Lisbon (MAL) today shows about 3% of its area defined as urban area of illegal genesis (UAIG) corresponding to about 200,000 inhabitants. These areas spontaneously deployed in 60s and 70s of 20th century often have serious gaps in infrastructure, availability of public facilities and problems of spatial organization. The requalification of public space in these areas has launched new challenges to research in contemporary architecture. In a demanding society with strong participatory citizenship public space is increasingly assuming an important role in the urban design practices. Participation means the collaboration of people pursuing objectives that they themselves have defined. A public space is one which in its design and in its use stimulates a sense of belonging to a wider community beyond the bounds of the strictly private sphere. It is then a scenario that fosters contract between different people mixing uses and meeting place for individual and collective interests. A direct observation of absence of public space in areas of illegal genesis in MAL shaped the PhD research question: How public space make UAIGs (re)living to (re)integrate it in Lisbon Metropolitan Area dynamics? Based on this starting question of the research project the main goal is to develop a strategy for requalification of public space in the UAIG through collaborative participatory processes. The methodology is based on methods and tools that allow: Mapping the network of UAIG in the MAL to have an overall picture of the situation; Morphological, social and typological analyzes of the UAIGs local informal public space; Promoting micro participatory practices community design to transform public space and stimulates a sense of belonging. The main purpose of this study is to show how urban design practice can radically change cities for the better through participatory processes. As Giancarlo de Carlo (1969) states in his seminal text Architecture’s Public remains the need for the inclusion of users in the design process and the inherently political role of the architect.
A PARTICIPATORY EXPLORATION OF THE POTENTIAL OF URBAN WAITING SPACES TO INCREASE URBAN RESILIENCE

AURELIE DE SMET, BURAK PAK AND YVES SCHOONJANS

This paper discusses research produced in the framework of the ‘SWOT-Mobile’ project, an ongoing Living Lab aiming at developing and testing a model for the co-creation of solidary living in mobile homes on Waiting Spaces in the Brussels-Capital Region (BCR). We specifically focus on the aspect of temporary use of Waiting Spaces within this project. Using our preliminary findings, we reflect on the potential of such un(der)used spaces awaiting redevelopment to increase urban resilience.

The paper starts with a background section, exploring of the phenomenon of temporary use (TU). In this section, we situate TU in a historical perspective and distinguish between the different reasons for TU. Next, in the methodology section, we elaborate on the Living Lab and action research methods used in the ‘SWOT-Mobile’ project. In the results and discussion section we present the SWOT-Mobile project, as case of ‘TU as (action) research’, fitting in the current stage of the development of spatial planners and designers’ interest in the temporary use of Waiting Spaces, in which Waiting Spaces are becoming become platforms for engagement and are taking up a transformative/transitory role in the making of the city. Furthermore we are discussing the approaches and results of the action research cycles realised during the first of three years of development of the project. Finally analysing the preliminary findings of the SWOT-Mobile project, we conclude that Waiting Spaces are indeed becoming become platforms for engagement and that they can take up a transformative/transitory role in the making of the city. But, the contribution of the SWOT-Mobile project is still very much under development. It remains to be seen if the encountered constraints will be overcome and if the model, being developed, will indeed provide an innovative answer to the lacking social housing provision in the BCR and the reduction of the abundant amount of un(der)used spaces in the long run.
The undeveloped open space along the Western ring railway L28 has long been marginalized in Brussels planning processes. Thanks to its natural, historical and ecological richness the urban edge area is an excellent research object, especially in the context of urban sound design. Within the context of public park/place development along the Brussels railway line L28, urban sound is dominantly discussed as a nuisance to suppress. Urban studies increasingly recognize sound as a medium for community building and political action. Recent research in urban sound studies focuses on how collective listening practices help to develop a critical ear for urban space, thus contributing to productive reflection on future spatial plans. The search for alternative strategies for engagement, critical and spatial design is supported and inspired by the work of artists and musicians making new aesthetic experiences and new ways of (physical) mobilization developments possible. Understanding an urban area in transition as a negotiable atmosphere of sonic and vibrational possibilities, encourages a review of the role and position of sound and vibration in the design of transitory processes for public railway park/places. Via (pro-) active involvement in the design and participatory processes for transitional public railway park/places in Brussels, the Ph.D. project questions pre-established thought patterns on urban noise and urban development. Through hyper-contextual urban sound design, the project explores methods and tools for working with sound and vibration in the design of urban transition.
TEXT / GROUND COMPARISON OF HOUSING FOR AUTOMOBILES

MASHA HUPALO

The plan is always an intention, a desire to be something else. Urban planning documents predict future activity distributions and physical forms according to fundamental assumptions and aspirations based on an idea of the unitary city. From the beginning of the last century seeing the city as a single entity to manage and control was closely related to the ideals of regulated transport, water, energy, and communication networks symbolising universal rationality. According to Stephen Graham and Simon Marvin, integrated networked infrastructure became a key element in two further developments: the idea of the comprehensive urban plan and an influential range of utopian schemes (2001). In this way, plans and an influential range of utopian schemes (2001).

Inevitably the "past" textual futures emerge as a unique repository of values. They reveal and conceal, just like any other conversation partner. Therefore, a meaningful conversation with the field is both physical and textual, since the field itself can be reduced neither to the collection of prescribed and accidental artefacts nor to the visionary plans. Such sorts of fieldwork aims to distil a meaning out of seemingly abstract and predictive numbers and text on paper and compare these prescriptions to a present situation on the ground.

The current investigation consists of the study of twelve parking sites in Los Angeles, Hong Kong, Copenhagen and Moscow, planning documents that condition them and a comparison of their underpinning values to a current situation on the ground. Be it one of the surface parking lots in Downtown Fashion District in Los Angeles or a free-standing mundane garage box in Ørestad - both are the spatial results of several legislative narratives. The narratives that turn individuals from variables in formulas of the planning legislation to active negotiators in the process of speculation that brings virtue to standards and guidelines.

The plan is always an intention, a desire to be something else. Urban planning documents predict future activity distributions and physical forms according to fundamental assumptions and aspirations based on an idea of the unitary city. From the beginning of the last century seeing the city as a single entity to manage and control was closely related to the ideals of regulated transport, water, energy, and communication networks symbolising universal rationality. According to Stephen Graham and Simon Marvin, integrated networked infrastructure became a key element in two further developments: the idea of the comprehensive urban plan and an influential range of utopian schemes (2001). In this way, plans and an influential range of utopian schemes (2001).
PLAYING ‘COMPLEXITY’ TOWARDS AN ASSEMBLAGE STUDY OF URBAN TRANSFORMATION

KIM NØRGAARD HELMERSSEN AND DR. JAN SILBERBERGER

In a philosophy of science perspective architectural ideals are typically characterized by concepts that include individual ideas and subjectivity (Kurath 2015). This position is challenged in this paper, presenting early findings from a comparative research study of teaching and research at different architecture schools in varying national contexts. Presenting an example from a fieldwork study at the Royal Danish Academy of Fine Arts, School of Architecture, it is argued that urban design could benefit from the imagery of a board game, substituting the concept of the ‘master mind’ with a number of heterogeneous players, competing about and negotiating urban form. Always subject to the inevitable factor of chance, the board game presents urban growth as it is – complex and unpredictable, comprising a multitude of heterogeneous actors, whose meetings and conflicts are essentially productive. Besides challenging traditional approaches to urban planning, the study presents an alternative approach to design teaching. With the introduction of the board game as a design instrument, the focus shifts from the designer to the design, which potentially becomes something more than the sum of the individual design proposals. Arguably, the instrument, anticipating actor-network theoretical perspectives, presents early steps toward an urban design method, and holds potentials for further investigation and development.
Drawing Out Gehry is a set of drawings in dialogue with Frank Gehry’s drawing of the Boyarsky collection. It forefronts the autonomy of information within the drawing, in this case, Frank Gehry’s drawing and its capacity to distance itself from acquired meaning and assigned representation.

In this particular drawing process, there is a transfiguration that takes place from one drawing to another, from one point of view to another. The transfiguration of visual information from one state of the drawing to another is a process of mediation and cannot be accurately described in words, but is to be seen and sensed in the drawing.

This paper forms part of a series of investigations towards an understanding of the status and positioning of the drawing within the discipline of architecture. Drawing does not have a fixed relationship with architecture, and remains in my drawings within the associative realm (spatial association) and on the exterior of spatial intent.

In that sense, the drawing’s relationship to architecture stays at arms length.

As I am raising the issue, I’d like to nurture an understanding through this new set of drawings. I’d like enter the drawing I am kept from at arms length and expand on the Drawing Out Gehry drawings. These new drawings are to interrogate a relationship to architecture and qualify the nature of their architectural capacity.

This field of investigation is situated in a battleground between Eisenman’s and Hejduk’s differences regarding the status of an architectural drawing. The conviction that architecture can only exist in its ultimate build form by Eisenman is dismissed by Hedjuk, as a drawing for him is a complete piece of architecture. The essence of their difference in point of view is touched upon with the following excerpt:

“I remember Dr. Eisenman coming to Berlin and seeing these two pieces in this great hall. They were 50 feet high [ ], they were giving off something. We talked about an aura. A thing like that. And he said to me: “That’s not architecture, because you can’t get in them.” And I looked at him and said: “You can’t get in them.” In other words, he was not in the position to get into them. You can only get into something if you understand or are willing to.” (Michael Blackwood Productions. John Hejduk: Builder of Worlds)
‘If you live in a house - the house will not fall.’

Tarkovsky, A., qtd. in ‘Mirror’ (1975)

Observing spatial reality through the eyes of a child brings freshness in the way of perception, a revelation in each new look at the same object. Therefore, the embodied memory of the parental home represents a tangible palimpsest of inner mirrors of the self, an unexplored archive-laboratory of incorporated spatial patterns. Rooms, objects, neighborhoods, receive importance according to their relation to our beloved ones. In other words, the (personalized) built reality can be measured as a somatic diary – a collector of shared memories.

The paper exhibits decomposition of the (inner-outer) spaces of the protagonist’s childhood in Tarkovsky’s ‘Mirror’, and a parallel examination (analysis and reordered synthesis) of the author’s personal memories of the parental home. The tools of investigation are poem-drawings and models, as processual modes of excavating inner spatial memories, and of personalized interpreting of Tarkovsky’s oneiric places. The elaboration of spaces follows the route(s) of the living center prototype as a guiding thread: Tarkovsky’s mother, author’s grandmother.

There are few expectations of this paper/exhibition. First, it is expected that it will reveal ways how poem-image entwinement can lead to a semantic replenishment, how can it intensify a synesthetic expression by the author, and a more holistic perception by the observer. Second, the comparison between the two parallel examinations is expected to exhibit repeatability in some spatial appearances, as well as variability in their layeredness (person-specific, site-specific, medium-specific). Third, the research through the self is expected to examine how the meaning of architectural space can be re-created through its relation to the beloved prototype, how the ‘language’ can be transformed, how ‘trivial things’ can evolve into a ‘water, solid, stratified’, both flowing through and building our most personal spatial memories (Tarkovsky, 1975*).

Finally, the paper aims to disclose ways how deeply personal spaces can evolve into patterns of design-approach; how recognizing and re-creating fragments of their constitution in others (self similar) exteriors keep this inner home of memories from falling.

This research project aims to investigate the potential of ambiguity as an underlying principle in the construction of immersive and implicating architecture. If ambiguity emerges in the interference of precisely articulated concepts as is discussed by Ana Maria Rabe in her discussion on Eigengesetzlichkeit (being-coherent to its own sets of rules) in the essay on the space in Las Meninas and Umberto Eco’s idea of openness from his essay The Open Work, it holds within it the apparent ability to construct situations of engagement in an architectural space through an unveiling of an inherent logic. More precisely ambiguity may be located in the moment of oscillation between definition and openness at the interference of one system with another.

To explore this relation in spatial terms the research is departing from a comparative approach to pictorial space and its notation through the rules of descriptive geometry under the focus of the construction of an enhanced spatiality through increased spatial depth or flatness. The target is to develop knowledge on these terms beyond their linear measurability towards an understanding of their experiential quality in the practice of drawing. Precedents of such drawing techniques can be found in Michael Webb’s Temple Island Project.

This project resides strongly in the field of architecture research, which is largely concerned with embodied experience but at the same time lacks emphasis on the critical tools to encourage spatial embodiment in the design process. Through my practice I am attempting to develop new tactics for architectural education and review the relationship of drawing and spatial embodiment through ambiguity.
At the CA²RE Conference in Ghent in April 2017 I presented a paper titled PhD by Prior Published Work – A Case for Appropriation, outlining a PhD that would develop a position between the conservative attitude to research that values explicit knowledge, and the liberal one where researchers reflect on the tacit knowledge embodied in their work. I described this intermediate or hybrid position as an integrated paradigm where the constructed work and the written words act together as a “Dialectical Critical Practice” (Fraser: 2013) in which design is a carrier of knowledge. At the CA²RE Conference in Ljubljana in September 2017 I situated these works within the wider discourse on architecture in Ireland since the 1980s. I examined the pavilions of Ireland that I had curated for the Venice Architecture Biennales in 2012 and 2014, and I situated them within a history of architectural representations of Ireland in the century since independence.

In the next stage of development I will explore the ways that these histories have influenced my architectural design process and the ways that the pavilion designs relate to my other design work; houses; landscapes; and other spaces. This exploration will seek to link levels of architectural knowledge across the projects through examination of their designs. In doing this it will shift the focus from the theoretical level of explicit knowledge articulated in earlier CA²RE papers to an exploration of the tacit knowledge embodied at the level of siting, structuring, and layering space.

By bringing this proposal to CA²RE Aarhus I hope to continue the process of peer-review that began in Ghent and to help to sharpen the quality of the emerging doctorate. It is intended that the subsequent stages of the PhD would be presented at the following CA²RE conferences in Berlin and Lisbon, as the research develops, in a manner similar to the PRS.
The relationship between the architect and the client departs, almost always, from distant points of view, despite the common purpose of convergence and approximation. Not so common, although the vast architectural historiography examples, is the production of architecture from and for the architect’s own use.

The theme of the architect as author and user of the space he conceived, sets the will and impulse for a research that starts from the most exceptional and sensitive side of the discipline. This means an assumption of an apparently unidirectional relationship, by the annulment of the client, at least in its more traditional form. It question if a “home” design project “for” the architect, can generate also a theory of architecture parallel to the discipline in the act of designing. An understanding of concepts, ideas, motivations and impulses as decision-making, thus constitutes a premise of this research. From this universe of more limited and specific central character, the architects own-house designed by himself, it is intended to reveal other “thinking mechanisms” beyond what seems to be more common in design practice.

Through the analyses of Alvar Aalto’s Muuratsalo Experimental House, as a case-study, are tested some of the essential research concepts to, approaching what may be different in the “mechanisms of thinking” of the architect’s self design from his professional activity for others, as problem of architecture to promote reflection. The purpose of the research is therefor to investigate if there is a change in the design methodology, when removing the figure of the “client” to find out whether the design project is more or less justified and if it seeks to clarify the reasons for the options taken at each stage. Finding out in this process if there are new mental links to be described, represented and transmitted to other peers, close the objective of the research, summed in the following questions:

- Does there exist different mechanisms of thinking in the architect’s performance when he designs for himself from when he designs for others?
- Which architectural tools may identify, sort, analyse, expand upon and understand these mechanism of thought?
- Comparatively to the more conventional situations of architectural production, has the design of the architect’s own house added reflection to the discipline?
REINFORCED CONCRETE PROTOTYPES FOR INDUSTRY IN ITALY
THE BAY AS STRUCTURAL DEVICE FOR ARCHITECTURAL EXPRESSIVENESS.

VITO QUADRATO

The relationship between architectural expressiveness and formal structure was the leitmotiv of the Italian structuralism in the second post-war two decades. The design of industrial structures radicalized this relationship because of the production processes nature that imposed to the architect the dimension of standardisation, repetition and economy of means. This approach reduced the distance between architectural form and informal building.

This research aims to show how this condition transforms the idea of design process by some Italian authors, in the restricted field of reinforced-concrete structures for industry. The architectural Form becomes a process that faces with all the aspects of the project: the technological content (cooling, ventilation and water-drainage systems), the economic side, the engineering start up. In this way, the project of industrial structures is an outcome of the components design, constituted by structural elements (pillars, beams, secondary systems of coverage), and controlled by the project of a structural bay, as a device of the design process.

In the field of single-storey frame-structures, many Italians architects proposed, through the design of factory a new Modernist order, based on the relationship between pillars, beams and secondary system of coverage. What are the key distinction of this new order? Certainly, the presence of a great technological content, consisting of enormous cooling, ventilation and water-drainage systems. All cases that I selected for my research the architects tried to give an architectural expressiveness absorbing the technological content in the cavity of structural elements. Hence, the most important feature of this new order is the adoption of a hollow structural form in which all the elements are shaped in a specific way. This aspect defines a specific quality of the industrial prototypes, developed through the professional partnership between the architect and the engineer. The knowledge about this kind of industrial prototypes is useful on one hand to admit these building as an Italian historical heritage that needs to be preserved, on the other hand to understand how it is possible transform these buildings through a new adaptive reuse.
WEAKNESS AS MODE OF OPERATION
CONSTRUCTING ARCHITECTURE, THEORY AND ARTISTIC RESEARCH

KARIANNE HALSE

Weakness is a term which usually comes with negative connotations. This paper seeks to unfold the spatial and generative potentials of weakness in the construction of architecture and theory, and as a creative driver in artistic research. The overall concept of weakness proposes dynamic relationships and emerging capacities and - through fragmentation and assemblage - composing realities without reducing to one synthesis.

ARCHITECTURE. Opposing the idea of building architecture as a static and rigid entity where energy is spent on counteracting wear and tear, the concept of weakness provides expanded margins for negotiation with forces and uncertain future circumstances. Through practice-based experiments of weak tectonics, the overall research project investigates how weakness can foster a dynamic relationship between architecture and environmental forces and processes.

Architecture and its environment are approached as an assemblage, which acts as a series of (intentionally) changing spatial conditions over time.

THEORY. A vocabulary of operative terms is built up throughout the research project, consisting of shared terms across relevant disciplines, or terms with associative properties. The terms are organised as individual index cards (with definitions or theoretical positions) and act as a dynamic tool of theoretical fragments. Terms are continuously added, discarded and combined - constructing theoretical relations and frictions. This ‘weak theory’ construction (Stewart, 2008; Pétursdóttir and Olsen, 2017) is mobile and open for modification, and provides a space to be moved by other theories and practice-based experiments, facilitating ‘quick shifts between innovation and analysis’.

ARTISTIC RESEARCH. The various fragments of different medias and techniques, such as layers of images, computer- and hand drawing, index cards of terms, paragraphs of written text, material components, etc., are continuously re-worked and re-arranged as assemblages. The relationship between fragments creates a space of possibilities, which poses questions, making preliminary connections and allows one to jump between fragments and follow trajectories.

Weakness as a mode of operation acts as a creative driver, transcending boundaries and potentially generating previously unseen connections, alternative perspectives, and speculations.
THE CONSTRUCTIONAL CATEGORIES SHOULD BE SEEN AS VECTORS THAT EXERT THEIR CONCEPTUAL INFLUENCE ON A SPACE OF POTENTIAL CONSTRUCTIONAL APPEARANCES WHERE TECTONIC FORMS EXPRESS ASPECTS OF LOADBEARING CONSTRUCTION AND CONJOINING CONSTRUCTION, WHILE ATECTONIC FORMS OF APPEARANCE SUPPRESS OR DISSIMULATE ANY REFERENCE TO THESE.

TECTONIC EXPRESSIONS IN BRICK ARCHITECTURE

UDO GARRITZMANN

Introduction:
This paper is part of a broader research effort which contributes to the understanding of the term tectonics in the field of architectural design theory. It leads to a general theory of tectonics, which broadens and differentiates the term’s comprehension. Preliminarily, I have termed it Framework for Tectonic Thinking (FTT). It provides a mapping of potential tectonic expressions and a vocabulary for their distinction. The FTT is considered to be a conceptual tool of the architect that can be employed in the analysis of buildings, in their conception, and as a trigger for imaginations of tectonic possibilities. In this paper, I will apply the FTT to the analysis of historical and contemporary brick architecture.

Research question:
Which kinds of brick architecture can be associated with the different tectonic positions in the FTT?

Research method:
The FTT approaches tectonics in a descriptive and analytic way. It distinguishes three constructional categories (loadbearing construction, conjoining construction, and constructive expression), each with two oppositional poles (loadbearing versus non-loadbearing; solid versus filigree; tectonic versus aTECTONIC respectively). They describe a space of potential tectonic expressions, in which eight—conceptually pure—tectonic expressions can be distinguished:
• textile
• ceramic
• stereotomy (stone construction)
• carpentry
and their aTECTONIC counter-positions:
• a-textile
• a-ceramic
• a-stereotomy
• a-carpentry

The categories and their polar distinctions are considered to be non-dualistic. They do not imply a value judgement. The expression of loadbearing construction is neither better nor worse than the expression of non-loadbearing construction. The same goes for the each of the poles of conjoining construction and of constructive expression. The categories and the tectonic expressions that they describe are also considered to be non-essentialist. They do not prescribe ideal types of (a)TECTONIC expression that should be approximated as close as possible. The categories preferably should be considered as vectors that occur in typical constellations, which can lead to a variety of expressions. Hybrid tectonic expressions are as valuable as pure tectonic expressions.

In this paper, I will apply the descriptive and analytic categories of the FTT to brick architecture.
In recent decades, adaptable do-it-yourself (DIY) urban spaces have proliferated in many cities across the world. Such spaces have become solutions to local problematic, misused or underutilised spaces. Citizens have taken power into their own hands, with the aim of developing the places with a better purpose, for and by themselves. The research defines adaptable DIY urban spaces as ‘citizen-led interventions activating open urban spaces for social life.’ Examples of such spaces include Oak Cliff Build a Better Block intervention in Dallas, USA, el Campo de Cebada in Madrid, Spain, and Ebenezer Gate in Bristol, UK. There are a number of claims in the literature (although not rigorously evidenced), that adaptable DIY urban spaces may contribute to the development of social capital in the neighbourhoods close by. However, these spaces can be controversial too – as they are unregulated and may not be desirable for everyone.

The research examines whether, and to what extent, adaptable DIY urban spaces promote or hinder social capital; and uses spatial and social affordances to examine the relationship(s) of adaptable DIY urban spaces to social capital. There are eight domains of social capital developed by Forrest and Kearns (2001): empowerment, participation, associational activity and common purpose, supporting networks and reciprocity, collective norms and values, trust, safety, and belonging. These social capital indicators are used in the research to study spatial interactions, i.e. the flow of people, objects and materials.

The presentation focuses on developing a methodology that maps out afforded socio-spatial relationships within adaptable DIY urban spaces. Alongside observations and interviews, the focus is on developing sketching as an analytical technique. Analytical sketching techniques include thirty-second sketching sequences, socio-spatial analytical plans, sections and diagrams, and documentary sketching. The sketches are piloted and further developed to provide a framework for socio-spatial analysis to examine the connections between how adaptable DIY urban spaces are used and developed (processes), their features and qualities (forms), and their relationship with the elements of social capital described above.

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