CA2RE

CA2RE+ LJUBLJANA

Re—for—mu—la—tion

Book of Proceedings

CA² RE+LJUBLJANA

Conference for Artistic and Architectural Research
& Collective Evaluation of Design-driven Doctoral Training Programme

Reformulation —Book—of —Proceedings

University of Ljubljana, Faculty of Architecture
and Academy of Fine Arts and Design

Ljubljana and online, 24————28 September 2021

Reformulation
Book of Proceedings

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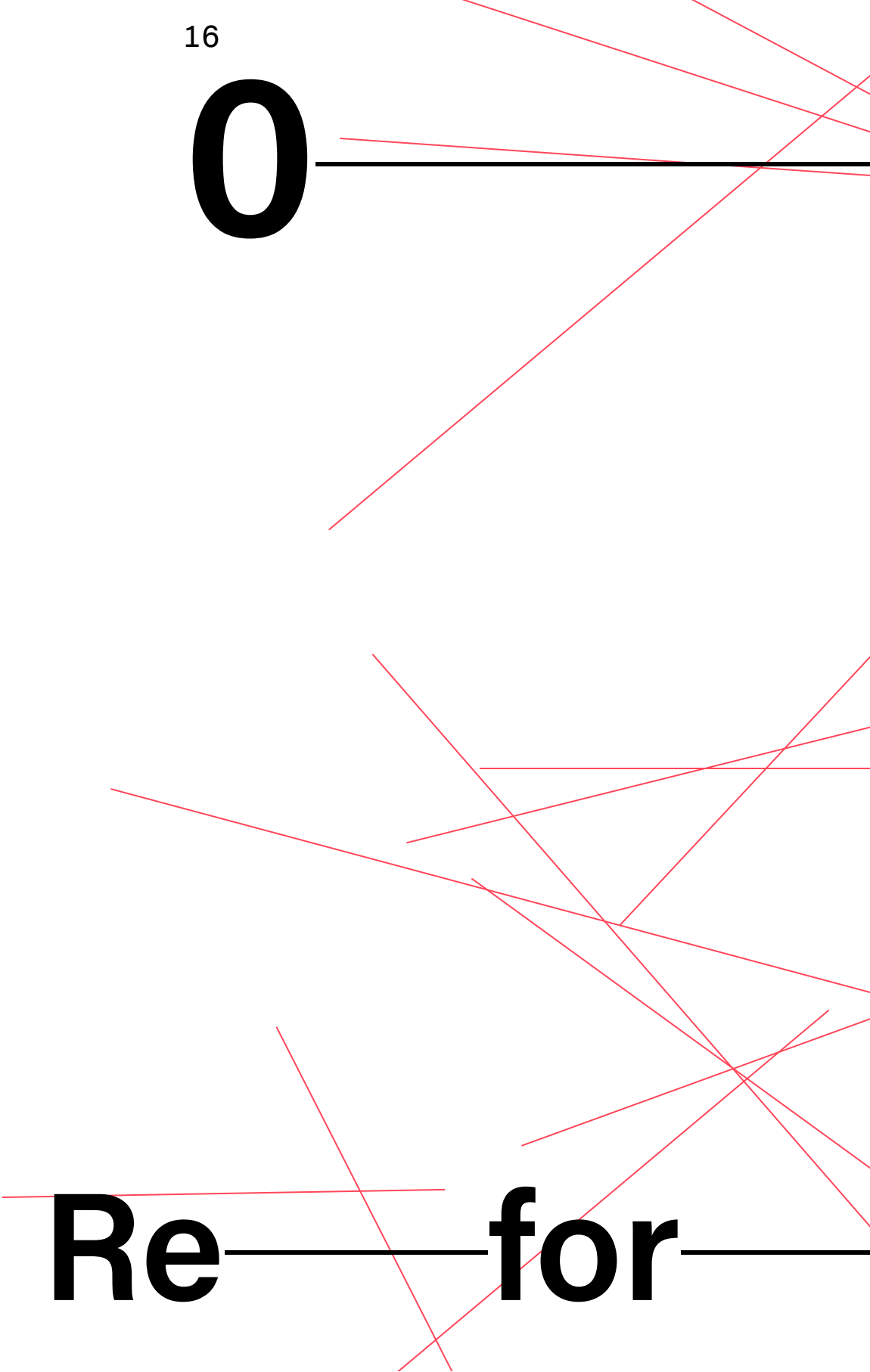

Re—for—

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The CA²RE / CA²RE+ LJUBLJANA event is a part of the CA²RE+ Erasmus+ Strategic Partnership. It is the 5th of 6 Intensive Study Programmes for Doctoral Candidates within the Strategic Partnership running 2019 – 2022. The project is developed as a parallel and a trigger to the continuity of the CA²RE Conferences for Artistic and Architectural REsearch.

The Ljubljana event addressed the topic REFORMULATION. The event built on the topics: OBSERVATION, SHARING, COMPARISON, and REFLECTION explored at previous CA²RE+ events. It represented a first step in building an extended DDr FRAMEWORK.

The event strived to reformulate and refresh the idea of the doctoral evaluation training as an event. It translated and expanded the DDr STRATEGIES and EVALUATION processes to increase their relevance to related disciplines that have previously informed DDr. This step redefined the experiential DDr knowledge explication through performances and discussions with the broadest possible audience. It aimed to identify the boundaries of DDr's relevance: when is the approach specific enough to be engaging and generic enough to be applicable?

The event raised the question of what the CA^{2}RE community needs to reformulate to strengthen DDr: How can we qualify the different levels of observations and reflections on the research to evaluate the quality of DDr? How can we address general research criteria of relevance, rigour and originality in ways that make them stimulating for researchers and strengthen the intersubjectivity of DDr? How can we improve our understanding of the processes of ongoing DDr? How can design questions be directed into research questions and aims, and how do we assess the research relevance of these questions and aims? How can relational and situational design activities become relevant research contributions outside their specific context, and how does this become relevant for other research approaches? How can the individual researchers approach their research to make it accessible for new panellists? How can we translate the common ground and shared understandings that are developed through DDr to new audiences? To rephrase, redraw, reconstitute, retransform, reconstruct, regenerate … are all actions described during the last CA^{2}RE/CA^{2}RE+ event in Hamburg. What do they reformulate, why, how and when? The

CA²RE/CA²RE+ Ljubljana discussion will engage in these type of questions.

LJUBLJANA expressed its artistic and architectural research tradition through this project step with its sensitivity to delicate and even vulnerable places of our contemporary architectural and urban environments. The architectural culture in Slovenia reflects the small-scale hybrid landscapes of settlements with a very high level of vulnerability of places, due to both natural and cultural spatial dynamics. The research culture is thus hybrid and inclusive, open and flexible to a wide variety of DDr research approaches.

LJUBLJANA also built on the experience as the organizer of the second in the CA²RE conference series in Autumn 2017. If that event was oriented to the supradisciplinary field or the arts and architecture, the CA²RE+ in Autumn 2021 looked to the wider context of humanities and social sciences. It took the advantage of the established research ties between the Faculty of Architecture, the Academy of Fine Arts and Design, and also the Faculty of Arts and the Faculty of Social Sciences. It brought environmental psychologists, philosophers, anthropologists, urban sociologists, geographers, experts in cultural studies, experts in human resource

management, and other related experts into the discussion.

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Friday——24 Sep.

09:15 **Registration** ———— onsite registration desk

09:30 **Exhibition Setup** ———— Fabiani's Auditorium
(relevant for presenters: onsite coordinated arrangement in the Fabiani's Auditorium and potentially at other places at the Faculty of Architecture / online individual finalisation)

11:30 **Coffee/tea break**

12:00 **Exhibition Setup** ———— Fabiani's Auditorium
(finalisation)

12:30 **Registration** ———— onsite registration desk

13:00 **Conference Opening** ———— Fabiani's Auditorium, Fabiani's Zoom
Tomaž Deželan, Matej Blenkuš, Lucija Močnik Ramovš, Urs Hirshberg, Ilaria Valente, Andrea Braidt, Tadeja Zupančič, Boštjan Botas Kenda

WELCOME

Tomaž Deželan, Advisor to Rector, University of Ljubljana (UL)
Matej Blenkuš, Dean of the Faculty of Architecture, UL
Lucija Močnik Ramovš, Dean od the Academy of Fine Arts and Design, UL
Urs Hirshberg, President of the ARENA - Architectural Research European Network Association
Ilaria Valente, Vice-president of the EAAE - European Association for Architectural Education
Andrea Braidt, President of the ELIA - European League of Institutes of the Arts

MODERATORS / INTRO

Tadeja Zupančič, Vice-dean for Research, Faculty of Architecture, UL
Boštjan Botas Kenda, Academy of Fine Arts and Design, UL

14:00 **Lunch break**

15:00 **REFORMULATION FOR...: Moments, Actions, Objectives and Challenges in Reformulating the Research Journey**
Cecilia De Marinis, Dorotea Ottaviani, Maria Veltcheva

WORKSHOP

17:30 **Coffee/tea break**

18:00 **INTEGRATION AND AUTONOMY OF EPISTEMIC CULTURES AND COGNITION STYLES IN PRACTICE-DRIVEN ARCHITECTURAL RESEARCH**
Marjan Hočevar

KEYNOTE

19:00 **Exhibition Opening and Book Launch** ———— Fabiani's Auditorium, Fabiani's Zoom
Claus Peder Pedersen

Saturday——25 Sep.

09:00 **Registration** ———— onsite registration desk

09:20 **Intro**

09:30 **Sessions**

FABIANI'S AUDITORIUM & ZOOM

Essayistic Film Fragments on Cooperative Architecture
Riccarda Cappeller

S: Schröder —— P: Berlingieri, De Walsche

VURNIK'S AUDITORIUM & ZOOM

An Investigation of the Significance of Wilderness in Western Culture through Garden Design
Silvia Maria Mundula

S: Rocca —— P: Roth-Čerina, Hočevar, McGarry

PLEČNIK'S AUDITORIUM & ZOOM

School Patios
Valeria Wiendl, Silvia Alves

S: Rosa —— P: Valente, Van Den Berghe, Buchert —— O: Schwai

10:30 **Sessions**

FABIANI'S AUDITORIUM & ZOOM

Places Built by a Character
Viktorija Bogdanova

S: Zupančič, Robinson ——
P: Gasperoni, Peder Pedersen, Venrooij —— O: Leveratto

VURNIK'S AUDITORIUM & ZOOM

Public Thresholds
Mar Muñoz Aparici

S: Cavallo, Harteveld ——
P: Robinson, Wiberg, Salema —— O: Berlingieri

PLEČNIK'S AUDITORIUM & ZOOM

The Interpretation of "Interiority" through Research in Design Context of Public Space
Sarah Javed Shah

S: Muro —— P: Akin, Ballestrem, Rosa

11:30 **Coffee/tea break**

12:00 **Sessions**

FABIANI'S AUDITORIUM & ZOOM

VURNIK'S AUDITORIUM & ZOOM

The Agency of Nature
Sara Anna Sapone

S: Corradi, Longo ——
P: Juvančič, Aagard, Akin

PLEČNIK'S AUDITORIUM & ZOOM

Water Resilience
Elena Verzella

S: Massarente ——
P: Haarmann, Milić, Bovati

13:00 **Sessions**

FABIANI'S AUDITORIUM & ZOOM

How to Use a Monument
Or Haklai, Enrico Chinellato

—— P: Roth-Čerina, Cavallo

VURNIK'S AUDITORIUM & ZOOM

Sharing Landscape
Isabella Spagnolo

S: Bertelli, Bovati, Oldani ——
P: Schwai, Hočevar, Lagrange

PLEČNIK'S AUDITORIUM & ZOOM

Enabling Systems for Open Transformations within the Existing Built Context
Jakob Grelck

S: Borrego Gómez-Pallete, Pasel —— P: De Walsche, Correia, Montanari

14:00 **Registration** ———— onsite registration desk

14:00 **Lunch break**

15:00 **Sessions**

FABIANI'S AUDITORIUM & ZOOM

Geometries of Time
Taufan ter Weel, Mariacristina D'Oria

S: Cavallo, Sohn, Corbellini —— P: Zupančič, Ginckels, Telles

VURNIK'S AUDITORIUM & ZOOM

Narrative as a Design Tool in Marginal Landscape
Marianna Frangipane

S: Di Franco —— P: Hočevar, Schwai, Robinson

PLEČNIK'S AUDITORIUM & ZOOM

The Ecology of Coexistence in Groundscapes
Francesca Gotti

S: Postiglione, Briata —— P: Weidinger, Akin, De Walsche

16:00 **Sessions**

FABIANI'S AUDITORIUM & ZOOM

Reflexive Practice
Maja Zander Fisker

S: Oxvig —— P: Robinson, Gasperoni —— O: Cavallo

VURNIK'S AUDITORIUM & ZOOM

The Design of the Monumental Grounds Moved by the AlpTransit Construction Activities in the Swiss Landscapes
Chiara Pradel

S: Rocca —— P: Peder Pedersen, Weidinger, Eeckhout

PLEČNIK'S AUDITORIUM & ZOOM

University Campus between Urban Resilience and Typological Innovations
Pablo Gamboa

S: Gritti —— P: Buchert, Alkan, Dombois

17:00 **Coffee/tea break**

18:00 **REFORMULATION AND CREATIVITY**
Matija Svetina

KEYNOTE

19:30 **Conference Dinner** ————
(onsite happening)

Sunday——26 Sep.

09:30 **TYPES AND FACES OF LJUBLJANA** ———— The city center of Ljubljana, Fabiani's Zoom
Domen Fras

WALKING DISCUSSION (CITY TOUR)

A type walk leads us through the material, historical, cultural, and linguistic diversity of the letterforms in the center of Ljubljana. The concept of a walk uncovers a crucial skill that is decisive for a typographic education and points out two issues: How to observe the type? How to understand what you are watching?

The onsite group of participants, let's meet behind the faculty, under the pergola!

11:30 **Registration** ———— onsite registration desk

11:30 **Coffee/tea break**

12:00 **Sessions**

FABIANI'S AUDITORIUM & ZOOM

Material Driven Architecture
Ina Samdal

S: Ragna Grytli —— P: Peder Pedersen, Vuga

VURNIK'S AUDITORIUM & ZOOM

Housing and Innovation
Oljer Cardenas Nino

S: Pierini, Espegel —— P: Ginckels, Juvančič, Bnin-Bninski

PLEČNIK'S AUDITORIUM & ZOOM

Low-cost DIY Upgrade Strategies for Improved Comfort in Poor Brazilian Houses in Hot Climates
Nadir Bonaccorso

S: Carrilho da Graça, Matos Gameiro —— P: Haarmann, Bovati, Domingo-Calabuig

13:00 **Sessions**

FABIANI'S AUDITORIUM & ZOOM

A Messy Autoethnographic Documentation of Making with the Environment
Berilsu Tarcan

S: Nilstad Pettersen, Leigh Edwards, Are Øritsland —— P: Aagard, Borrego Gómez-Pallete, Berlingieri

VURNIK'S AUDITORIUM & ZOOM

Safe Spaces
Beatrice Balducci

S: Rocca —— P: Botas Kenda, Dubowitz, Pais

PLEČNIK'S AUDITORIUM & ZOOM

14:00 **Registration** ———— onsite registration desk

14:00 **Lunch break**

15:00 **Sessions**

FABIANI'S AUDITORIUM & ZOOM

Autotrophic Economy
Pepa Ivanova

S: Venrooij, Poedts —— P: Vuga, Wiberg, Zupančič

VURNIK'S AUDITORIUM & ZOOM

Identifying Informal Settlements in Post-War Aleppo and Possible Applied Solutions
Yara Aboasfour

S: Rosa —— P: Dubowitz, Pais, Weidinger

PLEČNIK'S AUDITORIUM & ZOOM

16:00 **Meetings/Discussions** ———— Fabiani's Auditorium, Fabiani's Zoom
(informal discussions of the participants)

17:00 **Coffee/tea break**

20:00 **ASPECTS OF REFORMULATING WITHIN MOZART'S MUSIC: Design-driven Research, Emerging from Amadeus' Basso Continuo and Cadenzas**
Dalibor Miklavčič & ENSEMBLE 1778

KEYNOTE LECTURE-RECITAL

Meeting point: 19.45 at the main entrance of the University of Ljubljana buiding, Kongresni trg 12!

ENSEMBLE 1778:

Tina Zajec, 1st violin, Vivijana Rogina, 2nd violin, Izak Hudnik, violoncello, Primož Štular, double bass, Annemarie Glavič, 1st flute, Barbara Spital, 2nd flute, Dalibor Miklavčič, piano & conducting

LECTURE-RECITAL

W. A. MOZART:

Sonata for Keyboard Instrument and Ensemble C maj KV278
Sonata for Keyboard Instrument and Ensemble C maj KV336

MOZART'S CONTEMPORARY (name revealed during the lecture):

Concerto for Fortepiano and Ensemble D major (Allegro con Spirito/Grazioso/Allegro)
Concerto for Fortepiano and Ensemble F major (2nd Mvt: Tempo di Minuetto)
Concerto for Fortepiano and Ensemble E-flat major (3rd Mvt. Presto)

Monday——27 Sep.

09:15 **Registration** ———— onsite registration desk

09:20 **Intro**

09:30 **Sessions**

FABIANI'S AUDITORIUM & ZOOM

Rural Habitat at 0° Latitude
Valentina Dall'Orto

S: Gritti, di Campli, Tagliabue —— P: Van Den Berghe, Pais, Venrooij —— O: Borrego Gómez-Pallete

VURNIK'S AUDITORIUM & ZOOM

Development of a Handover Approach in Design for Dementia
Lieke Lenaerts, Niels Hendriks, Andrea Wilkinson

S: Hendriks, Geerts, Wilkinson, Maldonado Branco, Brankaert —— P: Botas Kenda, Pimlott, McGarry

PLEČNIK'S AUDITORIUM & ZOOM

Bolhão Market
Rita Machado Lima, Nuno Valentim Lopes

S: Correia —— P: Montanari, Rocca, Haarmann

10:30 **Sessions**

FABIANI'S AUDITORIUM & ZOOM

VURNIK'S AUDITORIUM & ZOOM

PLEČNIK'S AUDITORIUM & ZOOM

Design Method of Low-tech Ecological Rural Settlement in China
Dan Hu

S: Bovati —— P: Cavallo, Liekens, Bogalheiro

11:30 **Coffee/tea break**

12:00 **Sessions**

FABIANI'S AUDITORIUM & ZOOM

Archrypt
Mariacristina D'Oria, Gianluca Croce, Valentina Rodani

S: Corbellini —— P: Venrooij, Rosa, Borrego Gómez-Pallete

VURNIK'S AUDITORIUM & ZOOM

The Right to Choose
Ana Belčič, Sara Eloy

S: Planišček, Mali —— P: Ballestrem, Lagrange, Domingo-Calabuig

PLEČNIK'S AUDITORIUM & ZOOM

Ark Architecture
Alberto Petracchin

S: Marini, Rocca —— P: Mahall, Dombois, Correia —— O: Topolčanska

13:00 **Sessions**

FABIANI'S AUDITORIUM & ZOOM

Systemising Spatial Affects
Wiktor Skrzypczak

S: Ballestrem —— P: Leveratto, Zupančič, Bnin-Bninski —— O: Peder Pedersen

VURNIK'S AUDITORIUM & ZOOM

Healing Homes
Rose-Ann Mishio

S: Rocca, Leveratto, Bovati —— P: Domingo-Calabuig, Topolčanska, Milić —— O: Mahall

PLEČNIK'S AUDITORIUM & ZOOM

Embedded Movement
Paula van Brummelen

S: Borrego Gómez-Pallete, Pasel, Sauer —— P: McGarry, Triggianese, Eeckhout —— O: Ottaviani

14:00 Lunch break

15:00 Sessions

FABIANI'S AUDITORIUM & ZOOM

Belgrade on Screens
Miljana Nikolić

S: Mahall —— P: Venrooij, Fras, Alkan —— O: Bnin-Bninski

VURNIK'S AUDITORIUM & ZOOM

The Housing Issue in Global South Countries
Alessia Macchiavello

S: Montedoro ——
P: Heinemann, Domingo-Calabuig, Pimlott

PLEČNIK'S AUDITORIUM & ZOOM

The Potential of a Tectonic Approach for the Experiential Qualities of Architecture
Tim Simon Meyer

S: Ballestrem, Borrego Gómez-Pallete —— P: Leveratto, Gasperoni, Wellinger ——
O: Robinson

16:00 Sessions

FABIANI'S AUDITORIUM & ZOOM

Approaching Industrial Ruins in a Post-communist Landscape
Monica Tusinean

S: Borrego Gómez-Pallete, Weidinger —— P: Cavallo, Roth-Čerina, Guilherme ——
O: Zupančič

VURNIK'S AUDITORIUM & ZOOM

House Plans
Carla Rizzo

S: Biraghi —— P: Fitzsimons, Eeckhout, Salema ——
O: Heinemann

PLEČNIK'S AUDITORIUM & ZOOM

The Matter of Form in Invisible Components
Gino Baldi

S: Muro —— P: Topolčanska, Dubowitz, Correia ——
O: Ballestrem

17:00 Coffee/tea break

18:00 In Other Words
Primož Vitez

KEYNOTE

Tuesday——28 Sep.

09:20 **Intro** ———— Fabiani's Auditorium, Fabiani's Zoom

09:30 **REFORMULATION OF DESIGN-DRIVEN RESEARCH** ———— Fabiani's Auditorium, Fabiani's Zoom, Miro Whiteboard 2
Observers

WORKSHOP

Discussion of the participants about the meta-level session observations.

11:30 **Coffee/tea break**

12:00 **Workshop Summary** ———— Fabiani's Auditorium, Fabiani's Zoom, Miro Whiteboard 2
Tadeja Zupančič, Boštjan Botas Kenda

13:00 **CA^{2}RE Feedback / Wrap-up** ———— Fabiani's Auditorium, Fabiani's Zoom

WRAP-UP

All participants

MODERATORS

Tadeja Zupančič
Boštjan Botas Kenda

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Workshops

Reformulating without Words

Matthias Ballestrem, HCU Hamburg

Individual position statement

The CA²RE+ conference themes have a double nature: They refer to the aim of the CA²RE+ strategic partnership project on the one hand, and to Design Driven Research on the other. Thus, the position papers on reformulation can be understood as an invitation to the CA²RE+ partners to engage in an effort to reformulate their approach to DDr and formulate a common base for DDDr programs at their universities. But it can also be understood as a research technique in a design-based doctoral project. This short text will give an example of the latter and reflect on reformulation as a means of pointing at, understanding and making visible what is hidden in the multi-dimensional presence of an architectural project.

In her projects, Helga Blocksdorf encounters these moments "in the design process where the idea, bearing in mind all analogue and digital design tools with the obligation to build according to the state of the art, overlaps with planning law, building physics and fire protection requirements and above all with structural-constructive questions and condenses into a seemingly unsolvable problem" [1]. These moments and the resulting spatial situations in the projects, she calls "seismic points" or "fault lines", as she identifies them as the moments that will decide over the architectural quality of the project. "If one succeeds in solving this seismic point — potentially quasi in passing — an imaginary reduction of complexity emerges, which can point beyond itself and manifest the precious moment between thinking about architecture and the everyday use of things" [1]. This also means that suceeding in solving these seemingly unsolvable problems will make them invisible as such. The solving "in passing" expresses Helga's demand that a solution should result in an elegant, casual, almost normal situation.

Figure 1: Helga Blocksdorf: Seismic Point in Project Rieckshof
(Copyright Ruben Beilby)

Fig. 1 shows the seismic point in her project „Rieckshof". Here, in an otherwise less complex building, a number of elements collide: The old outer masonry wall made of irregular fieldstones is cut open to form a large opening. The consequently necessary new lintel interferes with the ring beam. Right next to this, from its column, a concrete beam projects into the interior. And finally, the stair from above that is running alongside the beam, bends here to open up into the large ground floor space and ends in a large almost pedestal-like last step. All this comes together in a concrete, particular and singular physical materialisation: A situation that physically embodies the negotiations between an old

existing structure, its architectural refurbishment from a barn into a foto studio, and sudden client decisions late in the construction process.

If you know where to look, the process of negotiation is made visible through an architectural language of slight offsets between the elements: They work together, but they remain strangers to each other. They complement each other, but they don't fully fit together. Helga uses an architectural language that does not fully smooth out the counteracting agendas, but subtly gives them a remaining narrative presence in the space.

In order to make such situations visible and readable as a contribution and creation of new knowledge in architecture, Helga developed a specific modeling technique: white foam models that reduce the project to the elements that construct the seismic point (Fig. 2). These models are reformulations. They are saying the same thing in a different way and thus, they are lifting and explicating what might not be obvious otherwise. They function like a diagram insofar as they overemphasize a particular aspect in the complex project. They function as pointers that focus the attention on the seismic point and understand the solved dilemma in it. Hille von Seggern points out that "understanding is also a form of dialogue, a way of finding a new language" [2]. The language of these reformulations is spatial, the practice is modeling, and its media is models. Even though the foam models are reformulations, they remain in the language of artefacts to produce an access to the knowledge created through and embodied in the architectural project.

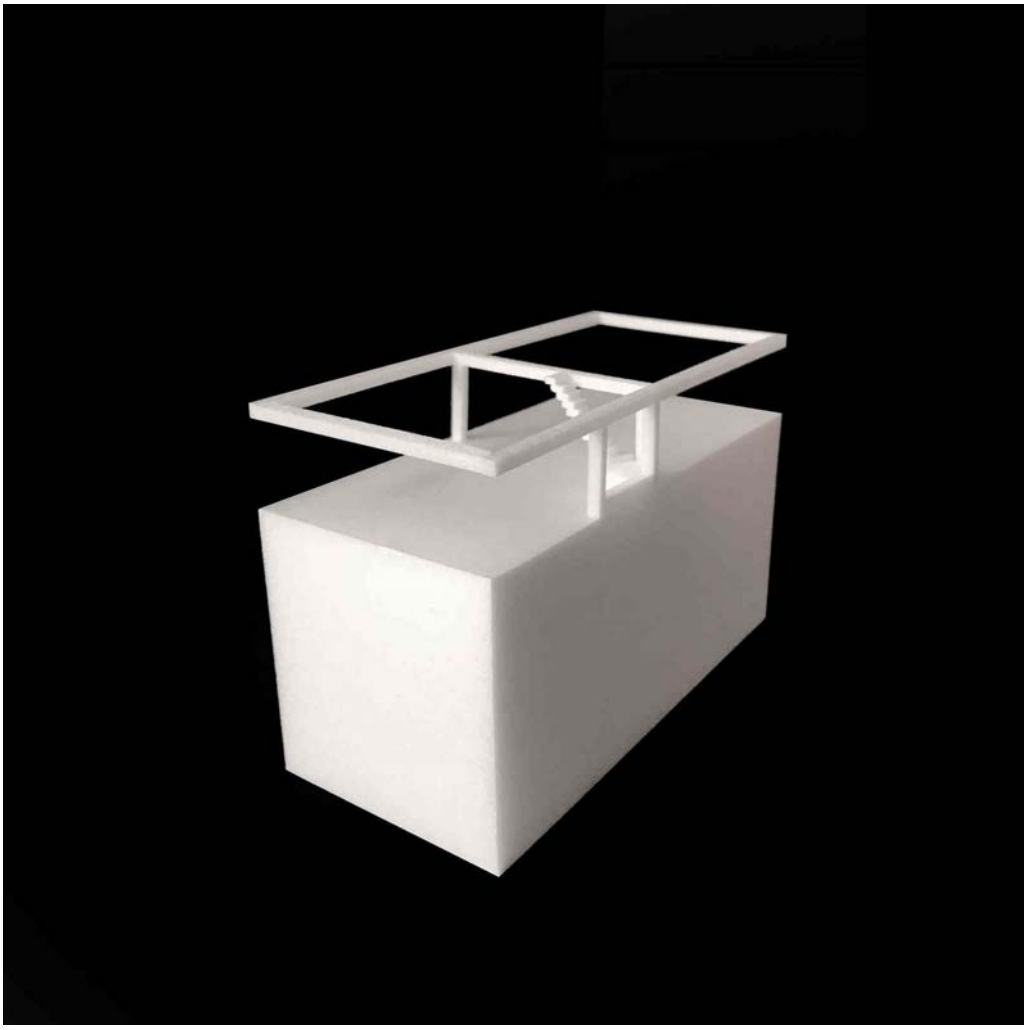

Figure 2: Reformulation of the Seismic Point in a white foam model. (Copyright Helga Blocksdorf Architektur)

1————Blocksdorf, Helga (2020): "SEISMIC POINTS/FAULT LINES—fathoming the tension field between construction and design", https://www.helgablocksdorf.de/downloads/abstract_HelgaBlocksdorf.pdf, from June 22, 2021.

2————Seggern, H. von (2019). "Crossing Fields: Designing and Researching Raumgeschehen", In M. Prominski & H. von Seggern (Eds.), Design research for urban landscapes: Theories and methods. Abingdon, Oxon, New York, NY: Routledge (pp. 8–32), p.14.

Reformulation in a Design-driven Approach

Ignacio Borrego Gómez-Pallete, TU Berlin
Ralf Pasel, TU Berlin
Jürgen Weidinger, TU Berlin

Group position statement

Reformulation is an productive action that questions the preliminary conclusions and enables, after an iterative process, to reach a higher and unexpected knowledge. To transit again along a known path with fresh eyes, with a reconstructive attitude, lets the uncertainty get inside the method, but at the same time makes it possible to proof the results and acces to new discoveries.

We understand the reformulation for design-drive research in CA2RE Ljubljana 2021 in two different levels: the first and more inherent to the design-driven research is the reformulation of the research itself, and the second level appears in the frame of the doctoral training itself, and it would refer to the necessary reconfiguration of the structure of the CA2RE event under the light of the experience and conclussions of the series of events in the last five years.

The methodology for design-driven research that is developed in the design-based doctorate program [PEP- *Programm Entwurfsbasierte Promotion*] at the Technical University of Berlin focuses on different phases which promote the reformulation of the research question.

The design-based doctorate program [PEP] is organized and executed by Prof. Dr. Ignacio Borrego, Prof. Ralf Pasel, Prof. Jürgen Weidinger (TU Berlin); Prof. Donatella Fioretti (Kunstakademie Düsseldorf) and Prof. Dr. Matthias Ballestrem (HCU Hamburg). It is dedicated to the design disciplines, in particular architecture and landscape architecture. The design-based doctorate creates a direct reference to architectural practice and other design practices, which drives the further development of research methods, especially through the interaction of theory and practice.

Design is a means of acquisition scientific knowledge especially specific to prospective disciplines such as architecture and landscape architecture. The goal is to use this capacity as a research tool. PEP pursues an

integrative approach to design, education and research, in which the design process provides a new access to knowledge.

In design-based research, the implicit knowledge that is inherent in the creation process of design, which is mostly based on practice, is made explicit. Design-based research reflects on self-design practice as such and is reflected on the basis of one's own projects and design processes. Both design-based and the more specific practice-based approaches are suitable to produce knowledge. The materialization implied in a practice-based research introduces a deeper immersion in the design process, but the core of the knowledge production is situated at any design level.

This design-based doctorate is ultimately about iteratively encircling a topic area through continuous design and through the design process to such an extent that a concrete and well-founded discourse result becomes explicit. This iterative process, where the research question is analysed once and again is the core of the reformulation of the research till the final definition of the specific contribution. The action of designing is the tool, the design is the research object, and the scientific interpretation of both, design and result, is the outcome.

The action of design is intuitive and the project as a result is a complex substrate with endless interpretations. It os only when the designer analyzes and makes explicit the acquired knowledge, when this process becomes valuable from a scientific point of view. The knowledge must be univocally transferable. In order to bridge the gap between this intuitive process and scientific knowledge, the audience must be able to perceive and understand the same message that the author is producing. There should not be space for external interpretations.

The fundamental question of a research work, i.e., the actual doctoral topic, consequently results from

precisely this compression process of creative work, which is carried out, tested, simulated and, if necessary, implemented based on the development of new and thematically relevant design projects. It is crucial that the design-based doctorate goes beyond the subjective approach to knowledge and makes a concrete contribution to the respective research field.

In our case of design-based research in PEP, Doctoral candidates must have already produced a body of work, i.e., a sufficient number of designs or realized projects, which allow the PhD candidate to start the process of extracting knowledge out of them. A design-based doctoral project within the framework of PEP consists of two intertwined and interdependent parts, i.e., a design part and a written part. The design components of the design part are not only illustrative, but represent independent research results.

Besides this iteration around self developed designs, PEP has formulated a procedure that structures the process of extraction of knowledge from design practice, and demands a reformulation on several phases:

To enter the PEP doctoral program at TU Berlin, applicants present the outline of their proposed doctoral studies, based on their own projects. The presentation of their portfolio is based on a reformulation on their practice oriented on a research question.

After that, new projects contribute to the clarification of the research question. Reflections on the new projects sharpen the argumentation and form the basis for those questions that will be investigated through the next projects. The addition of new designs forces the reformulation of the approach.

In the middle of the process, when the research question is outlined, they are required to analyze the state of the art. Search for architects and designers in general who are involved with a similar approach to design to

learn from it and reformulate the relevancy of their design-driven research.

Close to the end of the doctoral research there is a milestone presentation that has the structure of approx. 75 % of the doctoral studies, including preliminary studies through the candidate's own body of work, working out the topic of the doctorate (research question), examination of the doctoral topic by means of at least three projects developed in the process of the doctoral studies and reflection on the projects until the research question has been clarified and comparison of the results with related positions of the discourse in theory and practice. In this presentation a new reformulation of the research is expected before the final presentation.

With this research-by-design approach, the design projects serve as case studies and sources at the same time, with your own design work being constantly compared to existing references and practices and using methods that go beyond that that are suitable for locating the project thematically and in the context of the state of the question.

The other way round, the findings out of design-based research can have an impact on the design practice and, in turn, promote a reciprocal sharpening of architectural creativity.

It is particularly illuminating that this form of knowledge production through research-by-design complements established scientific practices and that expanded knowledge can be achieved through this form of knowledge. The potential of creative and design-based or practice-based research that emerges here impressively shows the extraordinary possibilities that can be combined with this young form of knowledge generation in the future.

Until this point we have expressed the reformulating properties of the design-driven process at our program

in Berlin but there is another important level of reformulation in the frame of CA2RE to improve our understanding of the processes of ongoing design-driven research. This new reformulation could affect not just the diverse researches taking part in this events, but the focus and classification of them.

The CA2RE events are outstanding for their diversity. This richness spans different disciplines around art and architecture, and also differnts cultures around Europe. Besides this scope each researcher is focusing on a specific content. We are in a natural way tending to group presenters and peer reviewers according to content and it would be interesting to classify researches just from a methodological point of view without regard to the content. This multiplicity of topics demands a methodological management beyond the specific content, and a taxonomy of design-driven research methodology could be an interesting reformulation of our massive scientific interchange.

Berlin, 7. 4. 2021
Prof. Dr. Ignacio Borrego,
Prof. Ralf Pasel,
Prof. Jürgen Weidinger

Framing Reformulation

Roberto Cavallo, TU Delft

Individual position statement

In contradiction to hard scientific disciplines, Architecture is characterized by an *epistemic culture* (Knorr Cetina, 1999) encompassing various fields of knowledge. Design, management, history, planning, theory, technology, to mention a few, all have their own area of expertise, own methods and inquiry tools as well as their own ways of reasoning and proving. Specific knowledge is defined in each area (Kurath, 2015) along with specific ways of studying. Nevertheless, even though this richness of subjects and positions is really fascinating, it doesn't provide unequivocal disciplinary ways of conducting research and producing knowledge. This is particularly true in the case design is involved. Architectural design is a complex and commonly a cyclical activity, depending in fact on a large number of external factors, some of them being even rapidly shifting. As matter of fact design itself typically deals with wicked problems (Rittel & Webber, 1973), which are nowadays not any more exceptions but part of the 'new normal' we have to face every day. When it comes to the built environment challenges of today and tomorrow, no doubt that complexity and uncertainty have the upper hand while, at the same time, are difficult entities to get a grip on due to the intricate and varying nature of the controversies that the world is made of (Latour, 2005). Complex and sometimes conflicting arguments or requirements stemming from different disciplinary realms or competences need to be joined together through a process of negotiation in which design fulfills a crucial synergetic role. Therefore, designing is getting more and more a tangled but at the same time also a necessary matter. However, although being *par excellence* a synthetic act, with its often unique and not replicable outcomes is design the field where the epistemic culture of Architecture is most predominant. Moreover, one must deal with the many facets of design, such as tacit knowledge, unspoken personal motives and actions that are an intrinsic part of the process of designing but

are often hidden despite being fundamental to cope with shifting and contradictory conditions (Cross, 2007).

With this preamble in mind, in the framework of the next CA2RE+ project step dedicated to *Reformulation*, thoughts and consideration are linking back to the last conference organized by the colleagues of the Hafen City University in Hamburg. An issue to point out would be that reflection and reformulation are going somehow hand in hand. Part of the input for the reformulation is likely to stem from a 'reflection *on* action' (Schön, 1983) about the way the design has been taking place, and on what could have been done differently in relation to the research premises and / or questions. While such a step would certainly be beneficial, during the last CA2RE+ conference I got extra triggered by Pierre Bourdieu's concept of 'reflexivity' mentioned by Margitta Buchert during her lecture. The interesting issue here is that in Bourdieu's work the notion of 'epistemic reflexivity' (Bourdieu & Wacquant, 1992) is central. Although related to social sciences theory, the idea of bringing into question actions and relations strengthening an 'own position' is considered by Bourdieu not merely individualistic or personal but rather a collective matter. It is the structure and position of the field that need to be analyzed, and its relations with the object of study shape knowledge claims (Bourdieu & Wacquant, 1992). Considering this viewpoint, in a design-driven PhD the reformulation can become more than a crucial moment. It goes almost without saying that reformulation is a phase in which the researcher looks back to the initial statements and research questions, pondering about the motives, approach and results so far. In the case of a design-driven research, the additional logical questions would then be about the role of design, the reasons behind that specific design or designs, but also about the process of designing and the controversies and uncertainties that needed to be faced along the way. Meanwhile, one should try to uncover the

features inherent to the personal design research journey connecting them to more generalizing, sharable, and debatable matters recognizable as peculiar characteristics or connotations of the knowledge field of design. This additional line of thought can be helpful to position and refine the specific design-driven research project, simultaneously supporting the clarification of its knowledge contribution and the terms for its transferability.

Figure 1: Landing Studio / Infra-Space 1: Underground at Ink Block, Boston-South. Photograph by Roberto Cavallo

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Reformulation for ... Moments, Actions, Objectives and Challenges in Reformulating the Research Journey

Cecilia De Marinis, Deakin University
Dorotea Ottaviani, University of Johannesburg
Maria Veltcheva, Independent researcher

Workshop

What is the role of Reformulation in DDDr? What does Reformulation mean for the researcher? And what does it mean to reformulate for the supervisor, panel member, observer, and external audience? What are the challenges, objectives, moments, and actions that affect and shape the reformulation process?

This workshop aims to answer those questions by exploring the concept of “Reformulation” from the perspective of the multiple audiences inside and outside of the CA2RE+ community.

The goal is to collect insights, red threads, commonalities, doubts, and questions revolving around this pivotal aspect in DDDr.

Integration and Autonomy of Epistemic Culture and Cognition Styles in Practice-driven Architectural Research

Marjan Hočevar, University of Ljubljana

Keynote

The entire CA2RE enterprise well reflects the dilemmas and possible directions of transformation of (academic) research caused by major societal changes. Within growing social complexity, there is a corresponding diversity in research styles that are difficult to bring into the classical framework of scientific umbrella. In its specificity, CA2RE addresses broader issues of knowledge production and utilization, which includes *inter alia*, contemporary discourses about permeating science with art (Leavy, 2020), peculiarities of epistemic cultures and cognitions (Sandoval and Bråten, 2016), use of technologies, and hybrid research practices (Clark *et al*, 2017). Buzzwords such as "responsible" and "immersive", or implementation of transdisciplinary, participatory and citizen science research practices are just some vividly discussed but still not well thought out cases in point. In this context, reserves against the universal cannons of research practices and achievements are justified and being gradually replaced by concepts such as "situated knowledge" (Hunter, 2009, Dohn *et al*, 2020) and "distributed cognition" (MacLeod, 2018; Hutchins, 2020). The call for the CA2RE community to reformulate and re-evaluate the question of what belongs to design / artistic practice-driven architectural research in order to achieve internal disciplinary and external social relevance (validation) is a specific case-in-point. From a sociological perspective, such a call for "reformulation" is a question of (self) reflexivity, which includes the question of (self) positionality in the face of complexity of the social, linked to the production of knowledge through a research style. Reflexivity is an internal dialogue that leads to action for transformative practices (Whitaker and Atkinson, 2019; Lumsden, 2019). One of the focuses on the reformulation platform may relate to the question of how to achieve a meaningful integration of different epistemic cultures and cognitive styles without compromising their individual autonomies (or even idiosyncrasies). Specifically, how to acknowledge the contingencies of the social through

design / artistic practice-driven research (Kimbell, 2011)? I am arguing that in questioning the relevance of design practice-driven research, it is about how to best reflect (and partially incorporate) other epistemic cultures and cognitive styles in order to confidently maintain autonomy in developing one's own. The starting point is a general conceptual premise on the legitimacy of social dynamics, which also applies to relations between epistemic cultures. Namely, between integration and autonomy there is a dynamic conflict which is zero sum at any point in time and positive sum in the longer run. In my exposition, I will tentatively illustrate three ideal-type cognitive styles that would require some effort in architectural design research to achieve their meaningful degree of epistemic integration without compromising the autonomy and distinctiveness of design practice-driven research. These three cognitive styles are: 1) visually artistic, 2) rationally engineering, and 3) culturally analytical. The reflection of all three can be part of the contemplated "reformulation".

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Reformulation

Thierry Lagrange, KU Leuven
Jo Van Den Berghe, KU Leuven

The position statement of the KU Leuven Faculty/Department of Architectur with regards to the conference theme of Reformulations is closely connected with the aforementioned circles of observation (see CA2RE conference Gent 2019).

Reformulation vs circles of observation

This interacting and communicating operates within an integrated set of concentric circles of observation.

— The first circle of observation, the inner circle, is occupied by the PhD candidate, who performs research actions and observes his/her research actions.

— The second circle of observation consists of the members of the supervisory team, who observe the actions and observations of the PhD candidate, and by discussing these, also observe and callibrate their own supervisory activities.

— The third circle of observation consists of the panel members (academia) at the doctoral presentations, performed during the events as outlined in this project (Learning Teaching Training Events). These panel members observe the candidate's actions and observations, and contribute to the observations of the supervisory team that is present at the PhD candidate's presentations.

— The fourth circle of observation consists of the group of peers who witness the candidate's doctoral presentations, who observe the candidate's actions and observations, and the panel's actions and observations, and hence contribute to the callibaration of the doctoral process through ongoing discussions at the formal and informal moments of the events as outlined in this funding application (Learning Teaching Training Events).

— The fifth circle of observation consists of reporters, as outlined in this funding application, who observe the

aforementioned four circles, and who contribute to the transmission of the observations ongoing in the previous circles of observation, doing so both inwards (loops of feedback into the different circles of observation) and outwards, i.e. transferring new knowledge to society.

Due to the integrated nature of these circles of observation an integrated system of callibration and validation is established through a sequence of reformulations between all the stakeholders (circles) of the observation system. This is key to come to a validation principle wherein knowledge production is made explicit through repeated reformulations, understood, accepted and transmitted. This integrated process of observations has been developed, applied and tested in order to systematically rehearse and sharpen the research through a repetitive process of reformulations.

On an institutional level

The aforementioned repetitive process of reformulations through a series of circles of observations has been institutionalized at the Faculty of Architecture KU Leuven through installing the following milestones/benchmarks of each PhD process in which reformulating the state of the reseach constitutes the core of the benchmark moment:

— 9 months milestone

— mid term presentation (24 months)

— second oral presentation (36 months)

— preliminary defence

— public defence (48 months)

In between these milestones supervisors organize doctoral seminars where several PhD students are brought together in order to formulate the state of the art of the research to their peers (supervisor, co-supervisor, assessors and PhD candidates). Out of these presentations conversations occur in which the candidate needs

to reformulate (i.e. strengthening and deepening the formulations) based on the input that has been given his/her peers. These reformulations already guarantee a momentum for the subsequent step of the research.

These reformulations not only aim for a critical assessment and a constructive argumentation but also create, produced in a context of design driven research, new perspectives towards inclusions of speculation, facing indistinctness, serendipities, intuitive approaches of the research.

At KU Leuven Department of Architecture the research group The Drawing and The Space (www.thedrawingandthespace.info) *Critical Sequential Drawing* (Van Den Berghe et al. 2020) as a specific drawing technique has been developed with which PhD students and Master students produce reformulations by drawing. This drawing method builds on the application of the iterative and cyclical processes as developed in the Lewinian learning cycles (Kolb 1984).

Gent, 5.7.2021
Prof. dr. Jo Van Den Berghe & Prof. dr. Thierry Lagrange

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Aspects of Reformulating within Mozart's Music Design-driven Research, Emerging from Amadeus' Basso Continue and Cadenzas

Dalibor Miklavčič, University of Ljubljana
ENSEMBLE 1778, University of Ljubljana

music & architecture, perception vs. formulating, historically informed reformulating, copying old art as source for new tools, reinventing 300years old methods, philology and musical translation, musical notation vs. design

ENSEMBLE 1778

Tina Zajec, 1st violin
Vivijana Rogina, 2nd violin
Izak Hudnik, violoncello
Jernej Ivan, double bass
Annemarie Glavič, 1st flute
Meta Pirc, 2nd flute
Dalibor Miklavčič, piano & conducting

W. A. MOZART

Sonata for Keyboard Instrument
and Ensemble C maj KV278

Sonata for Keyboard Instrument
and Ensemble C maj KV336

MOZART'S CONTEMPORARY

Concerto for Fortepiano and Ensemble D major
(Allegro con Spirito/Grazioso/Allegro)

Concerto for Fortepiano and Ensemble F major
(2nd Mvt: Tempo di Minuetto)

Concerto for Fortepiano and Ensemble E-flat major
(3rd Mvt. Presto)

How to Plan for the Unimagined Reformulating the Support for Design Discoveries

Claus Peder Pedersen, Aarhus School of Architecture

Individual position statement

The CA2RE/CA2RE+ network has continuously developed its presentation and peer feedback model and supporting workshops. The network has expanded, fellows from more institutions present their research, the panels have grown to cover a broader range of artistic and creative fields. In contrast, the events have kept their supportive and communal spirit. This expansion has only enriched the wealth of design-driven research practices and underlined the impossibility of applying one size fits all criteria for research rigour.

However, across this diverse field, there is still a need to deepen the understanding and reformulate the notion of discovery in design-driven research. Discovery is a well-established notion in the literature on design knowledge. Donald Schön reflects, for instance, on how it can emerge in the interdepending dynamic of reflection-in-action and reflection-on-action. The reflection-in-action refers to the considerations, choices and decisions made by the designer while designing. The reflection-on-action is a post-design reflection 'in order to discover how our knowing-in-action may have contributed to an unexpected outcome.' [1] Schön argues that practice- and thereby implicitly design-based knowledge surfaces by linking the experience of being embedded in the design activity with the distanced examination of what happened in the process. He is not addressing design-driven research, but it is not difficult to imagine how the documentation and unfolding of the activities could become a helpful methodology in design-driven research. Research is addressed in Designerly Grounded Theory (DGT), although from a different academic position. Johan Verbeke articulated DGT, and it builds, as suggested by the name, on Grounded Theory formulated by Kathy Charmaz and others in the social sciences. [2] DGT describes a qualitative research methodology based on design practice. It is, like Grounded Theory, based on inductive reasoning that uses partial understandings and insights to construct argumentations in contrast to the

hypothetico-deductive models often used in scientific research. DGT operates without a pre-established hypothesis but iteratively collects 'data' produced through designing that is registered, mapped and 'coded.' The codification is preliminary and helps refine the design operations and data collection in an iterative process that supports knowledge formation and eventually leads to theory-building. Reflection in/on action and DGT both point out that knowledge production occurs by shifting perspective back and forth between embedded actions and distanced reflections. They also both associate this knowledge production with discoveries occurring due to the perspectival changes, whether they are '…an unexpected outcome' as in Schön or the notion 'that new knowledge and theories come into being' as stated by Verbeke. [3]

The design-driven research discoveries come in many different forms and arguments. However, some of the most exciting and challenging CA2RE+ presentations have insisted on letting the open-ended explorative design processes guide the development and direction of the research and outcomes.

Suppose design-driven research discoveries are based on inductive reasoning and iterative design processes. How can future doctoral fellows propose research proposals based on explorative design-driven research that address criteria such as delimitation, contextualization, and expected outcomes that funding agencies and academic institutions require? How can we encourage and support the patience needed by researchers who search for design-driven discoveries to emerge? Moreover, can we mitigate the risks that might not happen? Are there valuable models, strategies or techniques to support open-ended design-driven research explorations? How can we support the unfolding and sharing of design discoveries to make them relevant beyond the particular design project or practice?

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3——————Ibid. P. 162

Menard's Invention

Alessandro Rocca, Politecnico di Milano

Individual position statement

There is no more solid system for understanding an architectural project than redesigning it. In the first semester of our Bachelor in Architectural Design, many Design Studios use this pedagogical tool to bring students closer to the founding elements of the project. Before the photographic era, the redesign was the basis for the transmission of architectural knowledge. The relief, and the redesign of Roman architecture, was the training ground for the young Venetian Andrea Palladio. Between 1535 and 1538, he laid the foundations of his architectural culture by redesigning, reformulating the architectural elements he discovered in the fora of Rome. In the eighteenth century, another Venetian, Giambattista Piranesi, settled in Rome and devoted himself to the representation of Roman architecture, publishing collections of prints with illustrations of classical and modern monuments that spread throughout Europe. However, Piranesi's ability did not stop depicting the existing, more or less reinvented, but deepened in a work that was an accurate Reformulation of ancient Rome, taken in its entirety.

In "The Campo Marzio of Ancient Rome, by G.B. Piranesi, a member of the Royal Society of Antiquaries of London" (The Campus Martius of Ancient Rome, the Work of GB Piranesi, Fellow of the Royal Society of Antiquaries, London), 1762, the Venetian architect produced an unlikely urban plan studded with a myriad of buildings. Recognizable monuments and spaces, such as the Pantheon and the stadium of Domitian, the current Piazza Navona, stay together with conjectural reconstructions and inventions. Often, Piranesi reformulated these hypothetical buildings without any archaeological foundations. In its mix of redesign and design, relief and invention, this extraordinary work represents the idea ofReformulation in architecture fully.

In recent years, Reformulation could be updated and transmuted in the term Montage. As Manfredo Tafuri taught us, contemporary culture no longer believes that it can reconstitute a unitary and homogeneous system.

We deal with fragments, splinters, residues and conceive a new order only as a sum of different parts. Palladio was able to reconstruct a classical system of enormous value and immediate application. Piranesi instead put together fragments that could only evoke the past through the instrument of Reformulation. As Tafuri recalls, the Russian film director, and theorist of Montage, Sergej Eisenstein, was a collector of Piranesi prints.

When Aldo Rossi produced the table of the Analogous City, he juxtaposed urban fragments extracted from many different eras and origins, including some of his designs, and the suture lines between one excerpt and another remained visible. Unity is lost forever; there remains the possibility of working through the Montage, the arbitrary juxtaposition of incoherent fragments that finds its meaning through the friction, the rejection, the similarities and differences that separate the different pieces. The theories and techniques of artistic restoration require that the new, or reformulated, parts that integrate the mutilated work must be separate and recognizable. At the same time, they must reformulate a unitary and complete perception, thus restoring the whole that was lost.

The Reformulation, in these examples, is placed in techniques that belong to the sphere of design. It identifies a terrain that lies halfway between representation and invention. We are here in a middle region where the project exists, it is a sine qua non, but it is also diluted, reduced, subject to the need to maintain a fraction of the original work. Reformulating would also be similar, in some ways, to translation. Especially in literature, translate means operating on two separate registers simultaneously.

On the one hand, the original must be preserved, made understandable, and appreciable. On the other hand, it is necessary to give the new text an autonomous form recognizable in the canons of a different language. This

objective, responding to entirely different terms and parameters, can only be achieved by reformulating the original work with various degrees of alteration.

Investigating the meaning of Reformulation helps us to identify this territory, usually in the shade, scarcely explored and less noble, where representation and invention overlap, generating gray, blurred, ambiguous areas, where the difference between the copy and the original, between the old and the new, between copyist and author, blur.

In Jorge Luis Borges' short story "Pierre Menard, autor del Quijote" (1962), a contemporary writer decides to rewrite Miguel de Cervantes' masterpiece. It means that Menard will place on paper, one after the other, all the words that make up the work, eventually producing an exact copy of the original. Menard meditates and reformulates each word, one by one, and, at the end of compositional reasoning, repeats the same creative process in the author's mind. In this way, the copyist also becomes the author of Don Quixote, overturning the classic scheme of creative construction. The normal is that there is only one author for each work, and each author can produce several works. In the "Pierre Menard" a literary universe is outlined where a single work can generate an infinite number of authors because the repetition carried out from Menard opens a series that can recur indefinitely. The story also poses another fascinating paradox: the transformation of the reader into an author. Menard is, first and foremost, a reader of the Quixote, a very attentive reader who never misses a word, capable of absorbing one hundred percent of the work. Therefore, if the novel is always the same, it is evident that its representation will always be different, modeled each time by each reader's mind in personal and unique memory. The multiple paradoxes embedded within the story enlighten the meaning of the word Reformulation and its ability to prefigure multiple relationships, middle lands, two-

way paths between reading and writing, drawing, and project.

We have confidence and appreciation for the reformulation practices that are part of the Design-driven methodology, often alongside or preceding more explicitly design-oriented operations. Therefore, we ask students to work through a series of reformulations in the Architecture Research Agenda course, which inaugurates the doctoral program in Architectural Urban Interior Design (Department of Architecture and Urban Studies, Milan Polytechnic, professors Alessandro Rocca, Andrea Gritti, Stamatina Kousidi).

The first Reformulation concerns a "position project," selected among those made by them previously, to be redesigned, highlighting the aspects that later converged in their research proposal. The second Reformulation concerns the redesign of a project which constitutes an essential reference for them. These two initial exercises highlight the relationship between study, recognizing, and applying the knowledge that stays within the design activity.

Reformulating their personal history and design references, students bring tacit knowledge to the surface. We evaluate these preliminary exercises inaugural approaches necessary to unveil the kind of architectural knowledge that must become the primary research engine.

Questions on DDDr Reformulation

Edite Rosa, Universidade Lusófona do Porto
Joaquim Almeida, Universidade Lusófona do Porto

Group position statement

The LJUBLJANA event addresses the topic REFORMULATION in the following main questions.

REFORMULATION aims to identify the boundaries of DDr's relevance: when is the approach specific enough to be engaging and generic enough to be applicable?

Regarding Ljubljana´s first question of the REFORMULATION topic, how to identify the boundaries of DDr's relevance, it may be useful to ask if we are concerned about DDr (Design Driven research) or also DDDr (Design Driven Doctoral research) or even DDDR (Design Driven Doctoral Research). Meaning this, to unveil the difference or non-existence between them. The response may lie in the next Ljubljana posed question of how we can define a DDr approach as specific enough to be engaging and generic enough to be applicable. This probably means considering the "specific" character of the design discipline and at the same time the "generic" character of the universal knowledge objectives of a PhD research. For this, we can recall to Linda Candy and Bruce Archer definitions of *Practiced based research* and *The Nature of Design Doctoral Research*.

Linda Candy characterises two types of practice related research: practice-based and practice-led. Our interest points to practice-based research is established on its similarity to our Design Driven Doctoral research. For Linda practice-based is taken where the creative artefact is the basis of the contribution to knowledge. She states, "*Practice-based Research is an original investigation undertaken in order to gain new knowledge partly by means of practice and the outcomes of that practice. In a doctoral thesis, claims of originality and contribution to knowledge may be demonstrated through creative outcomes in the form of designs, music, digital media, performances and exhibitions. Whilst the significance and context of the claims are described in words, a full*

understanding can only be obtained with direct reference to the outcomes." [1]

Thus, we infer that it is important to know that a doctoral thesis based on Design Driven research seeks to establish new paradigms. As design in the professional domain is a concrete answer to a specific problem, its investigation task is located in the sphere of empirical experience, unrepeatable and isolated and therefore diffuse, fragmented and singular, it will hardly be, by itself, considered a design research in the academic environment. Indeed, the research of a PhD in design, being specific, in the search to establish new design paradigms, will have to be "specifically" relevant, rigorous and original with a "generic" scope, necessary for the construction of a collective and universal knowledge.

On the other hand, Bruce Archer defines research in its most general sense, common to the Science tradition, the Humanities tradition and Practitioner Action tradition, as systematic enquiry whose goal is communicable knowledge. Archers themes concerning the research through practitioner action is of main interest. He distinguished between three types of research. Research about practice (where the processes of practice are observed); research for the purposes of practice; and research through practice (practice serves a research purpose from the design tools) this last one clearly linked to the nature of our DDDresearch. However he claims the importance of research nature by itself. *"Clearly, no matter whether a piece of research is about practice, or is conducted for the purposes of practitioner activity, or is conducted through practitioner activity, its status is determined by the conventions and standards of the class of research to which its procedures belong. Its reliability is determined by its methodology."* [2]

Archer also argues that practitioner activity can count as research only if it simultaneously meets the research

criteria, if it is knowledge directed, systematically conducted and unambiguously expressed. Its data and methods must be transparent and its knowledge outcomes transferable and transmissible. However, like all Action Research, for Archer, research through practitioner action is as most likely non-objective and almost certainly situation-specific.

Another interesting point of view of Archer's debate on research relates, in particular, to the academic field and its degrees. He reminds us that ultimately, for academic recognition purposes, a practitioner's activity can rarely recognize itself as a research activity, as he justifies "*One has to ask: Was the activity directed towards the acquisition of knowledge? (...) not all research, however sound, qualifies the researcher for the award of an academic degree. There are many other kinds of reward for successful pieces of research: fees, patents, profit sharing, publication, fame. Those who share in, or promote, these rewards are all much more concerned with the outcome of the research than with the research methodology.(...) A research degree on the other hand, is primarily an acknowledgment of the competence of the person who conducted the research. For this reason, an examiner of a submission for a research degree is concerned much more with the soundness of the methodology than with the usefulness of the findings. Even a negative or empty result from research might still be rewarded with an academic degree if the methodology had been impeccable. This is because the identification of an empty field, or the refutation of a hypothesis, can nevertheless be a significant contribution to knowledge, and can demonstrate a satisfactory standard of research competence. (...) Degree-worthiness is not quite the same as result-worthiness.*" [2]

From the discourse of the aforementioned authors, we can assume that the defined hypotheses and problem-raised, fed by the "products" obtained by the design practice activity, support the theoretical reflection of a DDDr results. DDDr as an action-research process,

a dialectical spiral between action and reflection that combines complementary theory and practice for the same purpose. Action — research that seeks to transform the experience from a particular design practice to give rise to general knowledge, applicable to an indeterminate number of concrete objects. The ultimate goal is the establishment of a universal condition based on the raised hypothesis, even if in an abductive hypothesis, reached through an inductive logic based on systematic knowledge.

The purpose or perhaps the relevance of the DDDresearch lies above all when taken as a supportive action-research process, inexhaustible in the particular universe in which it expresses itself (infinite design approaches, methods and techniques). Its structure aims at its applicability, universality and scientific reach as a resource of disseminating knowledge and contribution to the renewal of the architecture/design field.

How can we qualify the different levels of observations and reflections on the research to evaluate the quality of DDr? How can we improve our understanding of the processes of ongoing DDr?

The answer to how to qualifying the different levels of observations and reflections taken upon the research and presentations to evaluate their quality of DDr , as well as how can we improve our understanding of the processes of ongoing DDr, may rely on the monitoring process developed so far in our CA2RE+ community. We are keeping a written recording of the overall outcomes since the first CA2RE+ event whether in the form of platform database, reviewer's critics, external reporters and intellectual outputs. The intellectual outputs , proceedings, books and others, have recorded the main observations and reflection on and about the events. Understanding Design Driven Doctoral research as a work process in construction.

In a very brief way what has raised from the events from observation to reflection, through recording reactions

and emerging thoughts, at specified review points, is the common recognition of several possibilities inside all the *consortium* PhD presenters' works of a main set of three types of DDDr. These are mostly settled upon three key aspects, the design approach, the design method or design techniques all relevant to the design field.

The design approach is focus on a design problem statement that gives rise to the question or issue of the thesis research and its significance for the design field.

The design method is focus upon solving the problem through a design process method (state of art literature, case study analyse, experimental, analytic, etc.).

The design techniques settles upon the design media and representational techniques mainly used in the research by the PhD candidate. (As for example: analytical/descriptive or speculative dimension, visual/drawing techniques, etc.)

Although, all the former written records have transcripts, descriptions and their arguments exposed what may be missing in the collection records to evaluate, more sharply, the quality of the DDDr process is, on the one hand, highlighting from the overall elements some specific ones, carefully chosen, and its DDDr results and explaining why. Eventually these most representative ones could have an ongoing process from the beginning to the end of the CA2RE+ project.On the other hand to gather from all the CA2RE+ events the fundamental common results, something probably only reachable at the end of the CA2RE+ project time period. Now may be the right time for us to be able to program some of these key common outcomes into an effort schedule into this redesign process. Perhaps it's the right moment to clear what we all, the *consortium* community, may consider as DDDr outcomes, or main results. Meaning what we consider as key contribution(s) to knowledge, that advance design

understanding or design practice internationally and that add value to this field and general competence.

Jeremy Till gives a help in this direction affirming "*A New Model For Architectural Research*" [3] where he defends that Architectural knowledge and practice to be integrative has to across epistemological boundaries." *(...)A dynamic system thus emerges from this tripartite model, but it will only operate if academia and practice collaborate in order that the loop is continually fed with both data and analysis.(...) But this open will happen once we have cleared the three myths out of the way, and accept that architecture can, and should, be a research discipline in its own right, which both accords to the accepted criteria of research, but at the same time applies them in a manner appropriate to the issues at hand. There is some urgency in this, because as long as architecture fiddles around at the margins of the research debate, it will be confined to the margins of the development of knowledge.*

What do they reformulate, why, how and when? The CA2RE/CA2RE+ Ljubljana discussion will engage in these type of questions.

Regarding to Ljubljana last question actions what do actions described during the last CA2RE/CA2RE+ event in Hamburg. Reformulate, why, how and when?

These questions, key reading for the modus operandi of a DDDresearch, remind us the investigative process of Roman Law *"Who, what, where, by what means, why, how, when"* come up as short question marks. They allow us to inquire about subject, object, place, environment, reason, method and time. They present themselves as conditioning factors of a fact, action, artefact or issue on which there is still a lack of knowledge. To better understand it, these conditions have and still must be invoked, one by one and one in relation to the other, in their components, but also the processes that supported them and gave them meaning and relevance to achieve outcomes, or main results. Possible

questions and relationships that may help on our common DDDr journey of pursuing indefinite knowledge.

1————Candy, Linda (2007), Creativity & Cognition Studios http://www.creativityandcognit... University of Technology, Sydney.

2————Archer, Bruce (1995), "The nature of research", Co-design, interdisciplinary journal of design, January 1995.

3————Till, Jeremy (2007), "what is Architectural Research? Architecture Research: three Miths and one Model@, Building Material vol. 17, Dublin.

Turning Points

Markus Schwai, Norwegian University of Science and Technology
Bjørn Inge Melaasn, Norwegian University of Science and Technology

The thematic development along the CA2RE+ project led to the theme REFORMULATION as a core for the Ljubljana event, building on the previous topics. (OBSERVATION, SHARING, COMPARISON, and REFLECTION) The term REFORMULATION frames a rather wide field. On one side is the methodological question of changing or updating approaches or research questions towards different outcomes (or to tackle these in a new way). The other "extreme" is the search for reformulation of what DDDr can imply and mean, working for mutual consent towards a different and new description and understanding. The background for this overall question is the need for the validity of qualitative standards, for a wide range of different architectonic and artistic approaches and methods. Also the search for what I would call "research-predictability" could be a reason. In other words, how DDDr fits into recognised general research criteria of relevance, rigour and originality and strengthens the intersubjectivity of DDDr. Using a DDDr project I will try to highlight the necessity of anotherimportant feature of research, in particular DDDr, namely the openness for the uncontrollable. This necessity derives from the very often holistic and integrated multi-disciplinarity of DDDr projects. It is the combination of this multidisciplinarity and the scope to generate knowledge, in an often real-life setting, which leads to many situations where direction, approaches and methods have to be decided along the way. These are not always "safe" decisions, but what I would call calculated RISK.

An example for showing this OPENNESS will be Bjørn Inge Melaas project 'Ecologies of urban gardening.' The project starts with the assumption that the warming planet, mass extinction and the degradation of the living world are merely symptoms of a much deeper crisis. In the project Felix Guattaris' three ecologies are used to approach the research, where the environmental crisis is set in relation to to the underlying, ecological crisis in our minds, in our social relations and institutions,

"affirming that"our wellbeing is intimately connected with the health of society and the environment around us. If we destroy nature, we are also destroying ourselves." (Melaas 2021) The artistic research project approaches urban gardening as a transversal practice able to repair the mental, social and physical ecologies contemporaneously:"Urban gardening can change the way we think, the way we relate to each other (both human and more-than-human life) and it changes our physical environment, our cities and neighbourhoods." (Melaas 2021) In exploring urban gardening and its potential Bjørn Inge initiated, participated and investigated several urban gardening projects in different locations, spanning from private to public realm.

This project serves to exemplify a turning point in the research process. The most defining TURNING POINT in this project resulted from an experience when initiating one of the gardening projects in 2017. A group of dedicated people is physically establishing an urban gardening project. "This summer we will turn this asphalt desert into a productive garden in the middle of the city. A group of people, all with our individual needs, desires and motivations, has decided to take back (some) democratic control of food production, the production of our surroundings and everyday life. Consciously or unconsciously, we experiment with what Henri Lefebvre refers to as self-management." (Melaas 2021)

Figure 1: Delivery of soil, 2017 (picture by Bjørn Inge Melaas)
Melaas, Bjørn Inge, "Ecologies of urban gardening" for the book CA2RE+ strategies 2021

Two months later the involved realize that things are not working out as they thought; The plants have withered, not even weeds will grow. In the search for the reasons for their failure they, among others, invite a permaculturist asking for explanations. They learn that the soil is deadand find out they neither got theknowledge and experience necessary to succed.

"Suddenly soil goes from being a matter, a growth medium for the plants — to what philosopher Maria Puig de la Bellacasa calls a matter of care." (Melaas 2021) This realization and several other experiences in Bjørn Inges' DDDR project make the mutual dependency between humans and soil visible. Puig de la Bellacasa reminds us that care is not only necessary between humans, but also what microbes do all the timeThis makes clear that the "mental division" between nature and culture doesn't make sense, and

co-existence, based on CARE. It is this relation to soil, which in urban gardening happens through touching and working in/with the soil with our hands. This contact strengthens our relation to soil, uncovers our dependencies and teaches us CARE. Caring for the soil, with its microbes, but also our fellow gardeners.

The superficial mantras of alternative area-usage and an innovative method of participation, which urban agriculture often is connected with, are supplemented or exchanged with a different one: Urban agriculture as an invitation to CARE. "- to relate to soil, to plants, to other humans and our physical surroundings." (Melaas 2021) At this TURNING POINT it became clear that the, in the urban agriculture projects, used soil is not a container for the food to be grown in, but a living organism to cooperate with and CARE for. In return, it will CARE for us. This description of the necessary openness in a DDDr project is our try to discuss REFORMULATION as RECONCEPTUALISATION. It can be the big advantage of DDDr to allow shifts of track and steadily be able to focus on different parts, shifting between the applied part of the research and its foundation.

Figure 2: Care for soil, 2017 (picture by Bjørn Inge Melaas)

Literature

Melaas, Bjørn Inge, “Ecologies of urban gardening” for the book CA2RE+ strategies 2021

Reformulation and Creativity

Matija Svetina, University of Ljubljana

Keynote

Abstract

The keynote addresses the role of reformulation in a creative process. First, I define the criteria for understanding creativity as a psychological process rather than a product. I then provide several examples to illustrate what problem reformulation is in the psychology of creativity, how different types of problem reformulation contribute to a creative process within an individual, and why problem reformulation is essential in finding innovative solutions to problems. Finally, I discuss different approaches to promoting problem reformulation and creativity, such as problem definition, time latency, perspective taking, and intergenerational/interdisciplinary communication approaches.

In contradiction to hard scientific disciplines, Architecture is characterized by an *epistemic culture* (Knorr Cetina, 1999) encompassing various fields of knowledge. Design, management, history, planning, theory, technology, to mention a few, all have their own area of expertise, own methods and inquiry tools as well as their own ways of reasoning and proving. Specific knowledge is defined in each area (Kurath, 2015) along with specific ways of studying. Nevertheless, even though this richness of subjects and positions is really fascinating, it doesn't provide unequivocal disciplinary ways of conducting research and producing knowledge. This is particularly true in the case design is involved. Architectural design is a complex and commonly a cyclical activity, depending in fact on a large number of external factors, some of them being even rapidly shifting. As matter of fact design itself typically deals with wicked problems (Rittel & Webber, 1973), which are nowadays not any more exceptions but part of the 'new normal' we have to face every day. When it comes to the built environment challenges of today and tomorrow, no doubt that complexity and uncertainty have the upper hand while, at the same time, are difficult entities to get a grip on due to the

intricate and varying nature of the controversies that the world is made of (Latour, 2005). Complex and sometimes conflicting arguments or requirements stemming from different disciplinary realms or competences need to be joined together through a process of negotiation in which design fulfills a crucial synergetic role. Therefore, designing is getting more and more a tangled but at the same time also a necessary matter. However, although being *par excellence* a synthetic act, with its often unique and not replicable outcomes is design the field where the epistemic culture of Architecture is most predominant. Moreover, one must deal with the many facets of design, such as tacit knowledge, unspoken personal motives and actions that are an intrinsic part of the process of designing but are often hidden despite being fundamental to cope with shifting and contradictory conditions (Cross, 2007).

With this preamble in mind, in the framework of the next CA2RE+ project step dedicated to *Reformulation*, thoughts and consideration are linking back to the last conference organized by the colleagues of the Hafen City University in Hamburg. An issue to point out would be that reflection and reformulation are going somehow hand in hand. Part of the input for the reformulation is likely to stem from a 'reflection *on* action' (Schön, 1983) about the way the design has been taking place, and on what could have been done differently in relation to the research premises and / or questions. While such a step would certainly be beneficial, during the last CA2RE+ conference I got extra triggered by Pierre Bourdieu's concept of 'reflexivity' mentioned by Margitta Buchert during her lecture. The interesting issue here is that in Bourdieu's work the notion of 'epistemic reflexivity' (Bourdieu & Wacquant, 1992) is central. Although related to social sciences theory, the idea of bringing into question actions and relations strengthening an 'own position' is considered by Bourdieu not merely individualistic or personal but rather a collective matter. It is the structure and position of the field that

need to be analyzed, and its relations with the object of study shape knowledge claims (Bourdieu & Wacquant, 1992). Considering this viewpoint, in a design-driven PhD the reformulation can become more than a crucial moment. It goes almost without saying that reformulation is a phase in which the researcher looks back to the initial statements and research questions, pondering about the motives, approach and results so far. In the case of a design-driven research, the additional logical questions would then be about the role of design, the reasons behind that specific design or designs, but also about the process of designing and the controversies and uncertainties that needed to be faced along the way. Meanwhile, one should try to uncover the features inherent to the personal design research journey connecting them to more generalizing, sharable, and debatable matters recognizable as peculiar characteristics or connotations of the knowledge field of design. This additional line of thought can be helpful to position and refine the specific design-driven research project, simultaneously supporting the clarification of its knowledge contribution and the terms for its transferability.

In Other Words

Primož Vitez, University of Ljubljana

Abstract

Anything we say is basically a reformulation of preexisting utterances.

Yet no phrase or word can be thought of as an isolated phenomenon: **every communication gesture is unique and unfolds a singular individuality**.

What authorises us to say what we are saying?

Reformulating Design and Artistic Practice-driven Research to Reach Out

Tadeja Zupančič, University of Ljubljana

Individual position statement

During the previous CA^{2}RE+ events, some key relevance-related question were formulated: What belongs to design/artistic practice-driven research? Or: What is relevant for design/artistic practice-driven research? And perhaps: Is what is relevant for design/artistic practice-driven research still design/artistic practice-driven research or something else?

The CA2RE/CA2RE+ Ljubljana aims to focus even more on the hybrid core(-s) of design/artistic practice-driven research. On the other hand, it aims to reach out with the findings of and from within that 'core'. While the user-oriented researchers (architects, landscape architects, urban designers, industrial designers…) are used to share the practical level of their findings with their users, their research (meta-level knowledge) often stays in the ivory tower of the research community involved in the discussions. The research language of other artistic researchers focused on their creative world (painters, visual artists…), can be even more cryptic for the people outside 'their world'. To reach out, the CA^{2}RE community needs to reformulate the question of what belongs to design/artistic practice-driven research into Where design/artistic practice-driven research belongs to – and how. Where is it relevant? How to achieve that relevance?

The LJUBLJANA CA^{2}RE/CA^{2}RE+ event thus addresses the topic REFORMULATION. [1] 'The event builds on the topics: OBSERVATION, SHARING, COMPARISON, and REFLECTION explored at previous CA^{2}RE+ events. It represents a first step in building an extended DDr FRAMEWORK.' The event aims at the reformulation of the idea of the design/artistic practice driven (doctoral) evaluation training as an event and process. It translates and expands 'the DDr STRATEGIES and EVALUATION processes to increase their relevance to related disciplines that have previously informed DDr. This step redefines the experiential DDr knowledge explication through performances and discussions with the broadest possible audience. It aims to identify the

boundaries of DDr's relevance: when is the approach specific enough to be engaging and generic enough' to be transferrable, or, in the case of intersubjective knowledge transfer, clear and explicit enough to enable immersion?

'The event raises the question of what the CA^{2}RE community needs to reformulate to strengthen DDr: How can we qualify the different levels of observations and reflections on the research to evaluate the quality of DDr? How can we address general research criteria of relevance, rigour and originality in ways that make them stimulating for researchers and strengthen the intersubjectivity of DDr? How can we improve our understanding of the processes of ongoing DDr? How can design questions be directed into research questions and aims, and how do we assess the research relevance of these questions and aims? How can relational and situational design activities become relevant research contributions outside their specific context, and how does this become relevant for other research approaches? How can individual researchers approach their research to make it accessible for new panellists? How can we translate the common ground and shared understandings that are developed through DDr to new audiences? To rephrase, redraw, reconstitute, retransform, reconstruct, regenerate... are all actions described during the last CA^{2}RE/CA^{2}RE+ event in Hamburg. What do they reformulate, why, how and when? 'The CA^{2}RE/CA^{2}RE+ Ljubljana discussion engages in these types of questions.

To discuss the potential relevance and impact of design/artistic practice-driven research we can adapt the research impact diagram, prepared by the EAAE Research Academy.

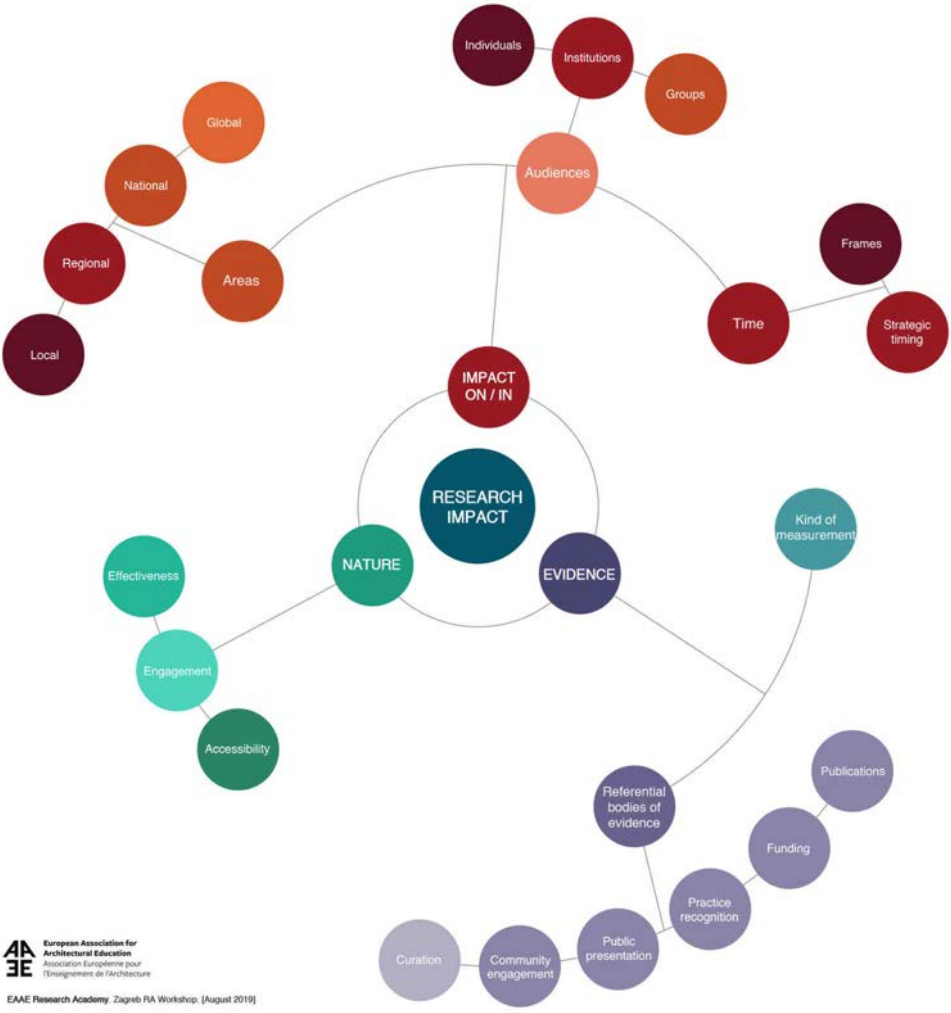

Figure 1: Research Impact Diagram (by EAAE: European Association of Architectural Education – Research Academy) [2]

What are the areas of relevance and (potential) impact on/in – the areas, defined by scale (local, regional, national and global)? What are the audiences addressed (individuals, groups, institutions)? And what are the timeframes we have in mind? What are the strategies to address the timeframes discussed? During the previous conferences, I observed a shift from long-term impact identification towards impact-while-thinking and acting awareness. The trigger of that shift was the questionnaire about the impact of the event on participants.

What is the nature of relevance and potential impact of design/artistic practice-driven research in terms of accessibility, engagement and effectiveness? How do we know what research is accessible (when and to whom), engaging, who is engaged and how, how effective are we as researchers, trying to engage 'others'?

Concerning the areas and the nature of relevance/impact (potential), appropriate evidencing needs to be chosen. What are the referential bodies of evidence and 'measurement' types? Not only publications (and their 'impact factors') and funding, but also practice recognition (awarded projects and artefacts, impact on other projects proved), public presentation (influences traced), community engagement (before-during-after project action monitoring) and curation (curatorial impact, teaching impact, management impact traced…) need to be taken into account.

1——————CA2RE/CA2RE+ LJUBLJANA Theme: Reformulation (2021): https://ca2re.fa.uni-lj.si/ref...; from June 30, 2021.

2——————EAAE European Association of Architectural Education – Research Academy –(2019): Research Impact Diagram, Zagreb RA Workshop document, https://www.eaae.be/event/zagr... from June 30, 2021.

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Identifying Informal Settlements in Post-War Aleppo and Possible Applied Solutions

Yara Aboasfour, Universidade Lusófona do Porto and Universidade de Coimbra

Initial doctoral stage (1st Year)

Supervisor: Edite Rosa, Universidade Lusófona do Porto

#

Aleppo, Reconstruction, Informal settlements

Abstract

The areas of informal Settlements have served as a separation wall between the different parts of Aleppo, these areas suffered not only from poor planning and construction, lack of public and green spaces but also from poor services, which poses a grave danger to citizens' health and to the inhabitants of the nearby neighborhoods.

During the Syrian war, most of the destruction was concentrated in the Informal areas, which formed an incubator environment for the conflict and a major battleground due to their appropriate characteristics at various levels.

In the reconstruction phase, paying further attention to the development of slums and their integration with the rest of the city should remain the most important goal in the treatment process. Therefore, this study offers guidance on how to prepare for a housing reconstruction intervention; describes the various approaches available, and aims to integrate their reconstruction into the wider recovery context.

Extended abstract

1. Statement of Problem

A greater part of the urban built environment in Syria may be termed "informal," as not being the result of architects' work in places not originally intended for construction, in violation of the law, infringing on state property and agricultural lands with the absence of planning, then it expanded ,spread and became a reality. [1]

In the case of Aleppo, the slums have served as a separation wall between the different parts of the city. According to joint studies between Aleppo municipality and the GTZ* [2] prior to 2011, 45% of the city's three million inhabitants lived in different types of slums, which have been widespread since the 1980s mostly in the

eastern half of the city and account for 35% of the city's area. These areas suffered not only from poor planning and construction, lack of public and green spaces but also from poor services such as sidewalks and paved roads, and the denial of public services (including drinking water, sewage networks,....) This poses a grave danger to citizens' health and to the inhabitants of the neighboring neighborhoods.

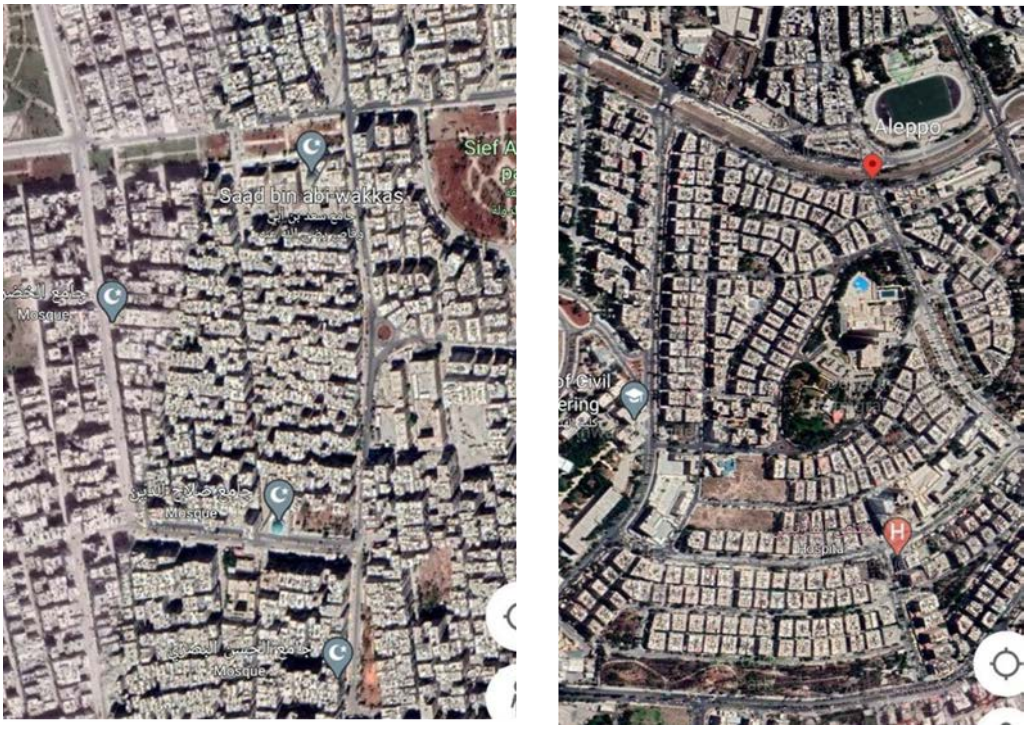

Figure 1: Aerial photos showing the difference between the urban fabric in organized and unorganized areas in Aleppo

Due to the special nature of the Syrian war that broke out in 2011, and because of the scorched-earth policy, residential buildings have become part of military fortifications, and neighborhoods and residential buildings have become direct military targets. According to the World Bank's estimates (2017)[3], until the beginning of 2017, the number of damaged homes in Syria was approximately 1.7 million homes, which constitutes 27 percent of the total Syrian houses, while 20 percent of them were partially damaged. In Aleppo, the second largest city, about 424,000 houses were totally destroyed, which made it the most damaged city in

Syria followed by Damascus. Most of this destruction was concentrated in the random housing areas, which formed an incubator environment for the conflict and a major battleground due to their appropriate characteristics at various levels (see Figure 2).

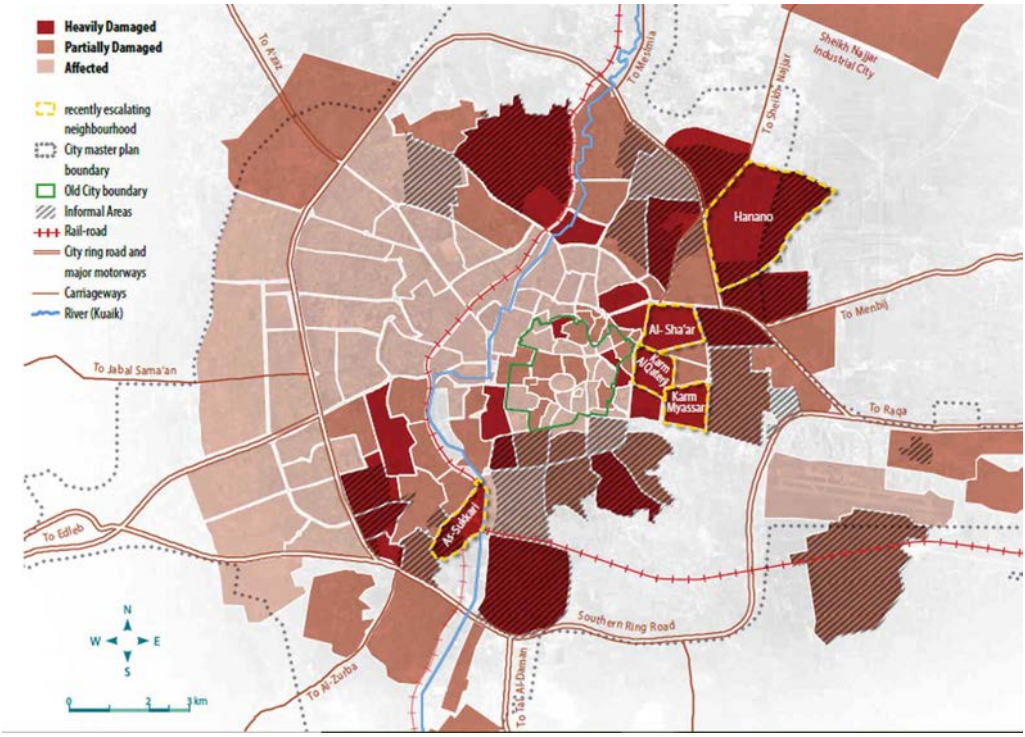

Figure 2: Damage analysis [5]

In the next few years, people are projected to return to the city at an estimated 12% population growth speed per year [4]. Accommodating those who inhabited the City of Aleppo will require a careful balance of reconstruction planning and provision of temporary accommodation while the reconstruction effort is underway. Also, paying further attention to the development of slums and their integration with the rest of the city should remain the most important goal in the treatment of these areas, through the upgrading in general with the possibility of demolition and reconstruction in an appropriate urban format in some sites and appropriate standards.

The task of reviving the residential sector after the war is not easy and requires a sincere desire, a political will

and a separate economy rooted from the economic motives of direct return [6]. It requires the concerted local and international effort, both physical and engineering; to take advantage of all the support and that local and international facility accomplish this step. Reconstruction in conflict areas is often aimed at a quick profit neglecting the indigenous rights or the privacy of the city. Therefore, we may witness the same kind of problems that were before the conflict, such as inequality in the level of services and the spread of informal settlements in light of inadequate urban plans and mechanisms for implementation. Accordingly, it is necessary to conduct new research that could form a link between the different parts of Aleppo and that avoids previous organizational mistakes.

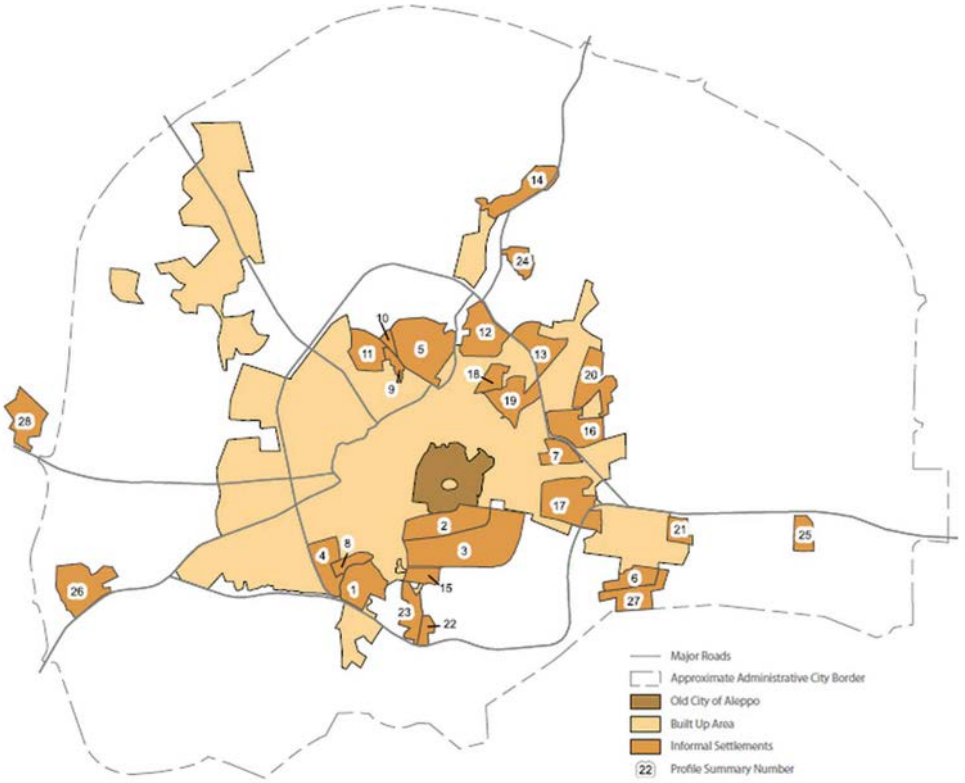

Figure 3: The geographical distribution of the Informal Settlements areas in Aleppo [2]

The study at hand is important to investigate equality in services and opportunities, and avoid reviving the same reality, that has created a rift between parts of the city,

in the reconstruction process, as well as, to prevent more informal settlements from spreading further after the war. This thinking should all be based on national standards that are different from the previous work on reconstruction in the sense that their foci are not only restricted to the restoration of the demolished housing sector, but also to the social needs of the local communities including services, public spaces, markets, sustainable designs and infrastructure and other related issues.

2. Research Objectives

This thesis aims to draw on a wide range of examples from the last two decades to highlight the main issues and to provide examples of both good and bad practices. It offers guidance on how to plan and prepare for a housing reconstruction intervention; describes the various housing reconstruction approaches available and sets out the various models of implementation that tend to be used and aims to paint a broader strategic picture of the sector. It argues that housing reconstruction interventions should take into account local resources, needs, perceptions, expectations, potentials, and constraints, thereby, reintegrating the informal housing reconstruction into the wider recovery context.

3. Research Questions

The main research question addressed in the study is:

To what extant could the reality of Aleppo's Informal Settlements be developed in the reconstruction phase process after the war?

The Specific Questions are:

— What are the general guidelines and the architectural policies approach should be followed to upgrade or reorganize the Informal areas after the war?

— What are the scales of architectural interventions could be applied in the different areas and in which level?

— What are the strategies should be followed to prevent the emergence of new overcrowded illegal settlements after the war?

4. Expected results

— Establishing an integrated methodology and general guidelines for the reconstruction of largely destroyed slums and determining the urban and architectural interventions needed to meet the challenge of post-war informal settlements in Aleppo of all their various levels of types, population and destruction. Also, to define the important planning and design requirements regarding development and its important measurements and dimensions as a response in order to reduce as much as possible the negative consequences and prevent the emergence of new illegal settlements after the war.

— To select a representative number of informal areas in Aleppo based on different characteristics and different levels of population and damage that need to be developed or reorganized to apply the architectural and urban solutions and interventions of the thesis, therefore, to compare the different results.

1———Clerc. Valérie (2015): » Informal settlements in the Syrian conflict: urban planning as a weapon «, Built Environment, Alexandrine Press, Arab cities after 'the spring,' pp.34-51.

2———GTZ (Deutsche Gesellschaft für Internationale Zusammenarbeit) is a German development agency headquartered in Bonn and Eschborn that provides services in the field of international development cooperation and international education work.

3———GTZ (2009): »informal settlements in Aleppo, rapid profiles of all informal settlements in Aleppo« (Report)

4———World Bank Group (2017): Syria Damage Assessment.

5———Reliefweb (2019): Humanitarian Overview- Syrian Arab Republic.

6———United Nation (2014): Syria Regional Response Plan: Strategic Overview.

7———THE ALEPPO PROJECT, Hungary, Center European University Available at: (www.thealeppoproject.com).

The Matter of Form in Invisible Components Role of Foundations

Gino Baldi, Politecnico di Milano

Intermediate doctoral stage

Supervisor: Carles Muro, Politecnico di Milano

form, structure, foundations

Abstract

What is the role of form in visible and invisible components? How do hidden structural elements (such as foundations) enable or influence the final appearance of visible elements? How foundation could be an active element in project?

This thesis aims to investigate the role of form in its generative relationship with structure in the contemporary swiss cultural context, focusing on foundations. This is because the area where structure and ground meets is a point of confrontation, more than ever between exposed and hidden. The purpose is to analyze and show how foundations may or may not become part of the final perception of the architectural body, evaluating their formal influence. The outcome is to understand how this invisible component could become an active element in the definition of the form (also in a reuse way).

Artefact

What is the role of form in visible and invisible components? How do hidden structural elements (such as foundations) enable or influence the final appearance of visible elements? How foundation could be an active element in project?

The structure of the thesis in a first part frames the cultural context of the research, defining the relationship between form and structure in a theoretical key and analyzing the characters of the geographical context (Switzerland). In the second part, the specific research components are analyzed, referring to the relationship with the ground (ground connection, foundations and topography). Finally, in the last part, research by design is carried out, analyzing some possible variations on the selected case study that become an active element in the research able firstly to be a narrative element and at the end an active element to test possible solution to use and reuse foundations. It is important to highlight

the reasons that lead the research in Swiss territory are defined by the intersection of different topics, where each one isn't unique of Swiss context, but by their common interconnection define this as a fruitful context for the research. Topographical aspect, Pedagogical aspect in teaching architecture, creating dialogue between architecture and engineering, a "know how" culture, a handcraft attention to detail also in technical and structural elements.

Architecture artifacts are mostly published, admired and studied for what emerges from the ground, without paying particular attention or wondering what is hidden underneath. So, there is an ambiguity, a short-circuit in the idea that a fundamental element that allow the presence of a building as artifact to be there, is invisible. The research has the objective to put this component more evident and active in the project.

The intention of the research is instead to analyze the relationship with the ground, revealing what is hidden below the ground line, investigating how a hidden structural component can influence the formal component of the visible building.

This introduce the idea of logical and physical unity between different components that can be linked to the idea of tectonics. Bottincher, [1] in fact, interprets the term tectonics giving it the meaning of a complete system that binds each part into an unique whole, endowed with meaning. (fig.1) Foundation not as an element itself, but as an element capable of transmitting and synthesizing the character of the work.

So the foundations become a spy, a "clue paradigm" [2] for research, an element that is commonly not analyzed, but able to highlight very relevant characters in the study and reading of the building. In fact, this method has been pointed out by Carlo Ginzburg, highlighting several examples of the application of this method. One of these is that used by the art historian Giovanni Morelli, [2] in the definition of a new paradigm for the

association of works of art to their author. For this Morelli outlined a method that does not start from the most striking and recognizable characters of an artist but, on the contrary, from unusual characters, which are rarely observed (such as the representation of the hands or the ears) because it is there that the true artist is recognized. Similarly, in the intention to analyze the relationship between form and structure in known case studies, where the intention is not to start from the components where this relationship is clear and evident, but from a more hidden condition, such as foundations. For Luigi Snozzi the foundations are able to communicate the framework of the architectural idea and therefore to be a synthesis of the entire design process. Therefore, to understand an architecture it is enough to observe the foundations, which become not only the point of arrival of all the loads but also the synthesis of the design process. [3] So foundations can be the lens through which to study and rethink the project.
[2] According to Diethelm [4], the contact between the building and the ground does not only determine the transfer of loads, from top to bottom but also the interface with the topography of the place, in a compositional relation and not only structural. [5] In fact, architecture is in relation to the geomorphological structure of the landscape through its form. [6] The zero point of this relationship is the ground line and a section at the surface of the earth's crust that highlighting the different layers of which the soil is composed: more or less dense, strong or weak, imposing different solutions to anchor the building to the ground. [7]

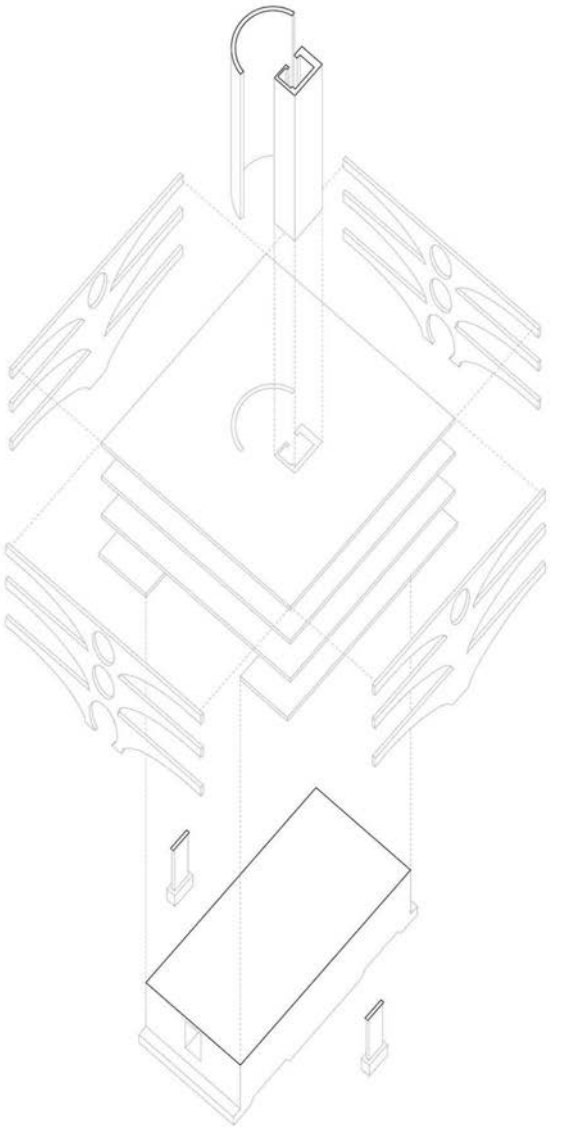

Figure 1: Architect - R. Zuber // Engineers - Conzett Bronzini Gartmann, Grono Schoolhaus - Grono , Switzerland, 2011 - Axonometric drawing

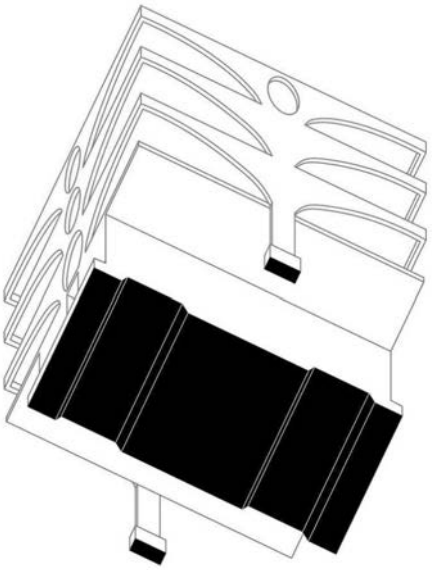

Figure 2: Architect - R. Zuber // Engineers - Conzett Bronzini Gartmann, Grono Schoolhaus - Grono , Switzerland, 2011 - Axonometric drawing – below view of foundations

In this sense, the reasoning carried out by Alison and Peter Smithson, with "Ground Notations", is central. [8] Here is highlighted the importance of the grounding of the project as a design strategy, capable on the one hand of marking the physical nature of this component as an artifact and on the other hand the link to the place that is established, introducing the possibility of foundation to become an active element.

In this sense, the competition proposal developed by Junya Ishigami for the renovation of the Moscow Polytechnic Museum (2012) is very interesting. The project, to create a new level on the ground floor, reveals and brings to light the underground level of the

foundations, making it habitable and accessible to the public. The old building is thus raised on its foundations, as in Semper's photo during the restoration of the Polytechnkkum, Zurich (1920). The foundations, previously invisible, become part of the visible form in the project, completely changing the perception and use of the space. Another example in which the foundations are inhabited is the competition recently won by Christian Kerez with Joseph Schwartz for the Textile Museum in St. Gallen, Switzerland (2021). In this project, the foundations become a "casting form" for the new underground level, freeing up a large underground space and making the existing building float. In fact, contrary to what the competition announcement suggested, i.e., to work partly on the existing roof and partly on the basement, Kerez's solution does not alter the roof in any way, modifying only the basement, creating a new, large, free atrium to host multipurpose functions. So, foundation become an inhabited space, an active component that on one side synthesizes the concept of the project and on the other side introduces new solutions of reuse.

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Safe Spaces Exploring Design Possibilities in Preparing for Emergencies

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#

critical infrastructures, emergency, preparedness

Abstract

The proposed contribution aims to discuss, from a methodological standpoint, three aspects of the author's ongoing doctoral research: the selection and analysis of the case studies, the structure of the section of research by design, and their mutual interdependence.

Paper

The research investigates the design possibilities and methodologies that underpin the approach of preparedness for disastrous events. It focuses on the design of critical infrastructures, those systems and spaces necessary for the resistance of a human environment, as hybrid and dual spaces designed to respond to both a state of rest and different times of a potential emergency. By shaping a theoretical framework, selecting case studies and designing a set of possibilities, the work aims to reflect on the relation between humans, a changing natural environment, and architecture.

In recent years we have witnessed an intensification of environmental phenomena of unusual intensity with catastrophic effects on the human environment. In the environmental crisis of climate change, the increase in the risk generates, on the one hand, new vulnerable environments to which will correspond a growing need for security.[1] On the other hand, global interest in the concept of preparedness.

Instead of mitigating the risk of a disastrous event, the idea of preparedness is to assume that a disaster will happen, enacting a vision of a dystopian future to develop a set of techniques for maintaining safety in a time of emergency.[1] It addresses the protection of critical infrastructures, the backbone of settlements, their irreducible structure,[2] the system on which human safety depends. Structures such as for water supply, energy provision, climate protection, and food

production are, in fact, the first line for surviving and the first to fail in the wake of a disaster.[3] Assuming a disaster as a potentially unstable context with which architecture must confront leads to consider multiple scenarios, duration, and configurations for a project, its functional or formal dynamicity, its relation to a state of change. It interrogates the permanence and stability of architecture, stressing principles such as transformability, adaptability, and typological hybridization: a park could be designed to be transformed into an off-grid emergency campsite; a mineral square into a temporary water reservoir; a stable into an emergency housing system; a watermill into an off-grid system able to provide energy in the wake of a disaster.

Therefore, how to design a space able to respond to the state of rest and a potential catastrophe? How can the architectural project embody a potential disaster? How can this inform the design process, and what are the possibilities and methodologies underpinned?

The entire work is structured in three macro-sections: one theoretical, one collecting case studies, and one of research by design. The first one articulates a critical reading of preparedness, systematizing theories, revisiting models, and framing the architectural debate. The second and third sections are discussed here in this paper's context.

The second section is composed of two main corpus of case studies that introduce different possibilities, methodologies, and declination of preparedness, with a geographical focus on the Japanese, American, and North European context, where a high vulnerability to natural disasters and subsequent culture of preparedness have a strong influence on the design. The cases are not selected to be compared, but instead, they are portions of reasoning where each example helps arguing the thesis. As anchors drawn to respond to both a state of rest and possible catastrophic futures, implicitly raising the question “what time is this place?”,[4] the

cases present a spatial and temporal dualism that can be drawn in different ways. The recognition of design strategies proposed, the spatial implications of the addressed phase of the emergency, the approaches to the physicality of the disaster, and the specific drawing of the duality are, therefore, the analytic lens through which the cases are studied. Here, the act of drawing itself becomes the investigative tool, allowing a work of synthesis of diverse information, and a first step of conceptualization, abstraction, and speculation. Each case is redrawn according to its evolution and behavior in different times of a possible emergency (event, response, recovery, reconstruction) that moves in the order of hours, days, months, and years. The result is a fluid and open matrix of possibilities that explore methods, principles and design solutions, and that can be further tested, deepened and implemented.

Prepper's Architecture

There is nothing ready, but everything can be ready.[5]

The first corpus investigates the Prepper movement's architecture, a counterculture born in the 1960s in the US, made of groups and individuals who, through the design and equipment of a safe inhabitable space, actively prepare for a potential emergency: environmental catastrophes, economic collapse, pandemics, nuclear attacks, various apocalypses. More than the transitory present, their architectures, often based on accidental design strategies, address the period of *during* and *after* a catastrophe, thus representing a model of an alternative but possible reality. Definable as a form of survival architecture, which combines food production, water provision, and shelter, with the implicit motto "build less, and use better what exists,"[6] Prepper's architectural culture is characterized by, on the one hand, a dualistic reading of human settlement to identify those elements and typologies to transform into infrastructures for survival. A private swimming pool

could be converted into a self-sufficient greenhouse, a courtyard into a hybrid space for food production and water depuration, abandoned garages and tunnels could become multidimensional shelters. On the other hand, by redefining the inhabitable space as an entirely off-grid and self-sufficient typology.[7]

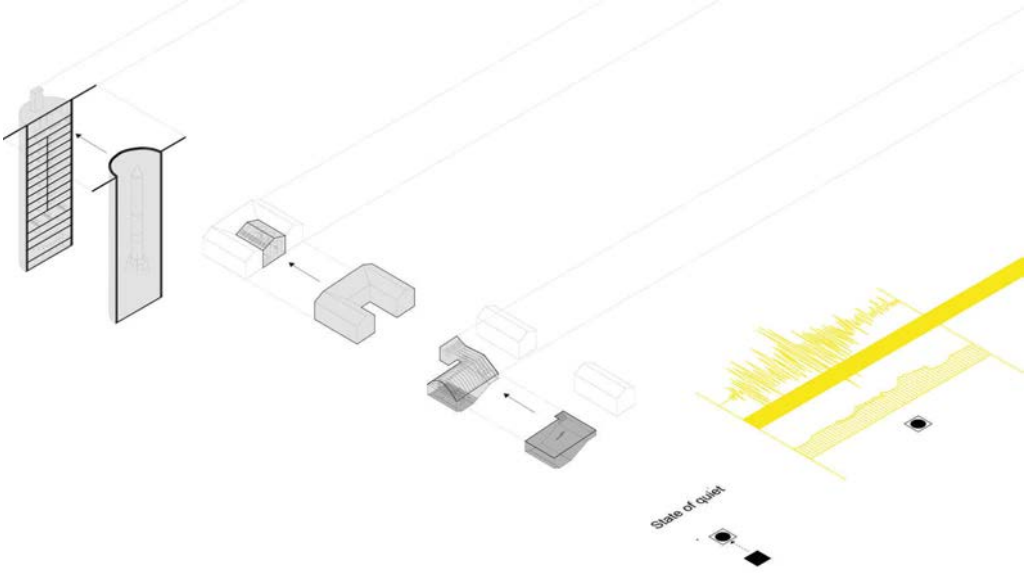

Figure 1: Preppers' design strategies. Author: Beatrice Balducci

Their design strategies are, in fact, based on the exclusion and seclusion from urban contexts that, according to one of the most popular survival guides,[8] could become increasingly unsafe in the event of natural disaster due to the collapse of critical infrastructures and the so-called "ripple effect." Two are the fundamental approaches for sheltering: "bugging-out" and "bugging-in," which correspond to different architectural answers. **[1]** From prefabricated bunkers to inhabitable greenhouses, architecture is here conceived as a tool for survival, a machine that operates,[9] an infrastructure to live, produce, provide, and shelter. By converting existing spaces into survival ones, Preppers can represent a model of an accelerated present. Instead of mitigating risk, they anticipate a disaster shifting it from a possible punctual shock to a constant disordered context to face. By combining scientific literature, DIY manuals,

pop-culture materials, and specific case studies through the tool of drawing, the aim here is to trace some of the characters of this paranoid architecture, that albeit in its eccentric nature, seems to raise exportable and translatable insight for the discipline, ranging from highly introverted solutions to new forms of integration with the natural world.

Dynamic infrastructures

The second corpus of case studies catalogs a series of critical infrastructures at different scales designed according to a logic of transformation of the space. These relate to two main hazards: earthquakes and floods. Differently from Prepper's architecture, which constantly responds to a disaster condition, these embody a multi-temporality, a state of change, and therefore are designed to transform, dynamically, in the event of a disaster. Each case, thus, addresses a different time of a potential emergency. They are analyzed with a focus, on a macroscopical level, on methodologies and design strategies proposed, and on a microscopical one, on the specific design of the transformation, highlighting the principles and solutions that inform their dynamicity. The mutation can be drawn in different ways: as a functional transformation, where the critical infrastructures are designed as dual-functional elements able to transform in the phase of the emergency according to a programmatic change of the space; as elastic deformation, where infrastructures are conceived to formally transform, temporarily, due do the interaction with the destructive factors; as a plastic deformation, where they are designed to be shaped by the disaster.

The case studies present different relationships with the physicality of the disaster: from defensive approaches based on reinforcing existing structures to symbiotic logics that go beyond the "Man VS Nature" attitude.[10] Differently from Prepper's shelters, which attempt to

find different ways to inhabit a place that seems more and more uninhabitable by designing off-grid inhabitable infrastructures, the case studies here proposed dialogue with a precise times of potential emergencies. The moment of recovery, as in the case of the Japanese Disaster Parks, spaces entirely designed as recovery-camps "in power," safe evacuation spaces, where a dual-design informs from the general scheme arrangement to a very detailed scale. Here, a system of punctual off-grid infrastructures is designed to be transformed into the backbone of a recovery camp: benches can transform into kitchens; green areas are drawn as a productive landscape for food in case of shortage; manholes can convert into camp toilets or first-aid necessity closets.[11] **[2]**

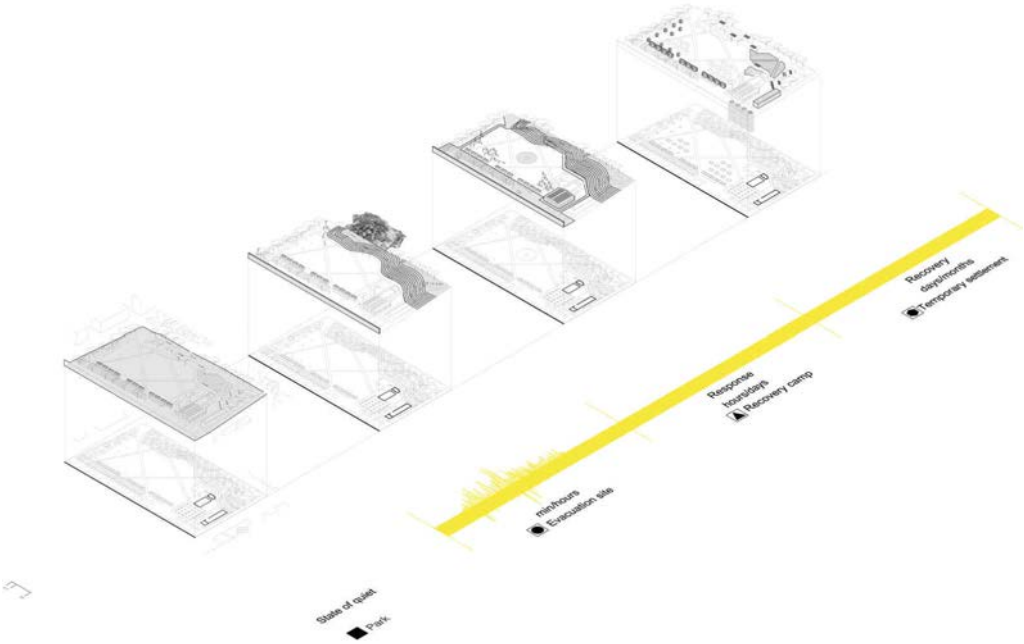

Figure 2: Tokyo Disaster Park. Author: Beatrice Balducci

The moment of the event, as for the Danish Climate Park by Tredje Natur, a water reservoir designed to transform depending on the different amounts of rainwater and typologies of floods, ranging from a mineral square to a series of ponds, to a liquid landscape and vice-versa.

The moment of reconstruction, as in the case of the M.I.T. PREP-Hub, where a specific local infrastructure, the *paati,* a water tank in the shape of a covered hall located at the corner of the main streets is retrofitted, hybridized, and redesigned as a site-specific civic center for the state of rest, as the anchor around which to settle the emergency camp and within which to shelter in case of earthquakes, as well as the repository of architectural culture from which to start the reconstruction. Each of these cases presents various degrees of controlling the uncertain disorder by design. From the controlled drawing of the space for evacuation of people left homeless by the disaster as in the Japanese case to an open design that embodies the unexpected, a yielding, incomplete space that draws an unfinished narrative universe[12] as in the case of Depoldering.

Whether in this central section of the work the grid of case studies results extensive, the diversity in the scale and typology of the projects is instrumental for building a discourse and defining general principles which are translatable to different scales. In the first corpus, the range of disasters considered is arbitrarily wide because what emerges interesting is not the specific response to the disaster per se but rather methodological and procedural reasonings. In the second one, focusing on specific cases, the choice is narrowed down to two disasters, the two most widespread in the world, which present a strong physicality with which architecture can dialogue. The dualistic reading of the environment to identify unprecedented potentials of spaces due to formal, dimensional, and performative specificities; a dual-functional approach from the general scheme to the scale of the furniture; the design of dynamic and hybrid spaces; the drawing of unfinished space shaped by the physicality of the disaster, are some of the issues that emerge from these cases. **[3]**

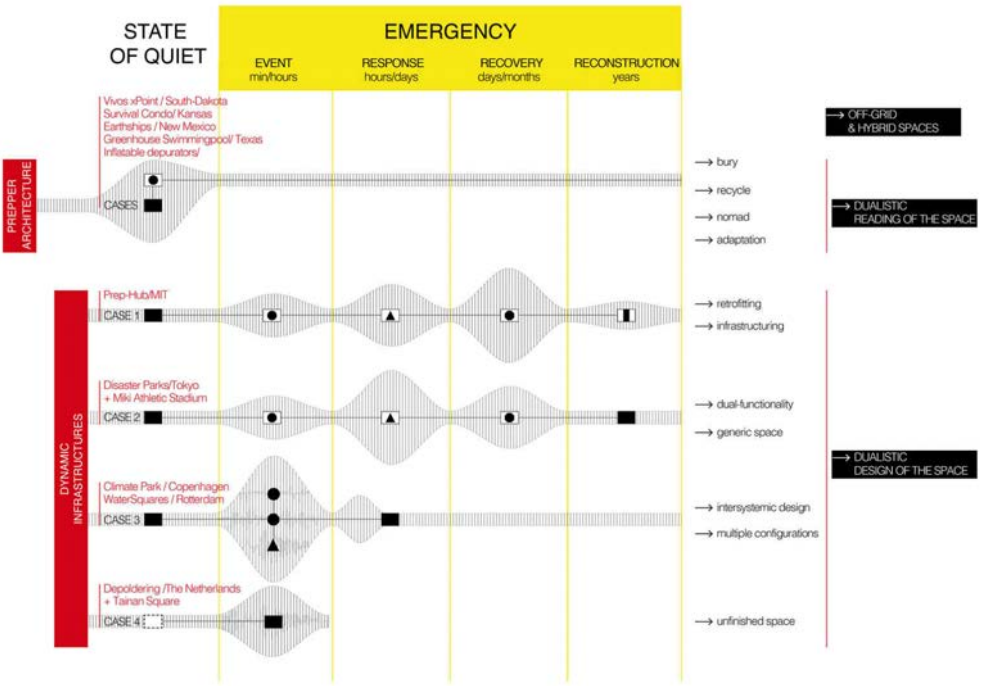

Figure 3: Matrix of design possibilities. Author: Beatrice Balducci

Prepping Norcia

The design as a specific form of research, thus the act of design itself as an investigative act, [13] defines the third section of the work.

Here, the Italian inner city of Norcia, in Umbria region, is the context for a test-bed project to synthetize, discuss and implement the theoretical, analytical, and design matrix built in previous sections. The choice of the site is manifold: on the one hand, the area is characterized by a very high seismic vulnerability, risk whose previsision remains a dark art,[14] generating a context that lives with the constant probability of disasters. On the other hand, epicenter of the disastrous shakes of 2016, it provides the opportunity to systematize the spatial responses to past emergencies and revisit them from an anticipatory and design perspective. But moreover, the area represents, due to the intrinsic character of tangled relation with a changing nature, a magnifying

glass for dynamics that, due to the climate crisis, could increasingly interest others and different contexts.

Figure 4: Prepping Norcia: an open design questionnaire.
Author: Beatrice Balducci

Here, as an open questionnaire, a series of interrogations are investigated by design. What kind of dynamicity existing elements have regarding disordered situations? Which one can be redesigned as dual and adaptable for an alternate condition of emergency? What are those critical systems on which human resistance depends? By adopting a Preppers' perspective of reading the space, and thus overlapping specific characteristics, typological aspects, and behaviors during the past emergency within a synthetic map, different elements that compose the human environment are observed and analyzed through their inherent actual or potential duality, resulting in an abacus of speculative dynamic behaviors. Between them, three types of critical infrastructures (the stables, the infrastructural areas S.A.E., a former watermill system that, in dealing with different aspects of the emergency management, appear as structures that, speculatively, concur in the construction of human resilience, are then studied and redesigned as anchors, dual spaces adaptable for a time of emergency. More than a single architectural outcome per se, each of them is developed in options and hypotheses, even contradictory, to explore the range of approaches emerging from the case studies matrix, from more defensive to symbiotic with the natural world. **[4]**

The stables, spontaneously inhabited during the past emergency due to the planimetric arrangement and dimensions that allow adjustments and

transformations, can be re-thought as a hybrid, off-grid infrastructures with an architectural scheme that allows different configurations over time, testing a range of possibilities from Preppers' solutions to the Disaster Parks' principles, from a stable to a temporary housing system.

The infrastructural areas for temporary emergency housing, a specific infrastructural platform provided by the Civil Protection, with foundations, water and electricity connections where standardized and prefabricated modules are installed in few months, incubate a duality that can be explored in grafting a relation with the multiple times of the site. Closed to the historical walls of the city, a punctual system of former watermills represents the third test-case of the work. Formerly used to control and divert the flow of an intermittent torrent. This system, critical for the resistance of a fundamental ecosystem of the wetland, could be revisited as an off-grid, adaptive one that, formally interacting with this fast-changing ground, can draw strength from it, becoming batteries, new anchors in emergency conditions.

To conclude, although the design phase seems to arrive as the third section of the work, it does not have a demonstrative purpose. On the contrary, it fluidly moves across the work, exploring, questioning, expanding, and overturning the previous parts as an open-ended process.

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The Right to Choose Democratising Older People's Housing Design trhough Mass Customisation

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old-age housing, community-based ageing, mass customisation

Abstract

This paper presents the topic of non-institutional old-age housing responding to the needs of older people craving both community and independence. This is done in the context of the potential transformation of existing Slovenian single-family houses into co-housing units for community-based ageing that promotes socialising, resource sharing, and reciprocity. The proposal responds to the need to address a universal issue of our ageing population in their largely maladjusted, privately-owned housing, considering a factor that is often neglected – the need for personalisation. To guide this architectonic adaptation, we present a design-driven research method, based on a mass customization approach, used as a tool for tackling a socially prevalent problem. The tool employed was a formalised design method that can cater both to the demands of mass, large scale problems and equally, to personalised needs, and deliver a large number of design solutions that meet diverse requirements; a transformation shape grammar.

Paper

Old age is often seen as a time of lessened capability, disease and need for constant care, however, with recent advances in medicine and prolonged life expectancy, the notions associated with old age are being challenged and transformed. Older people are active, have various lifestyles, are increasingly independent and live longer. They crave autonomy and a sense of agency over their own life, just like people of other ages. It is also a matter of changing demography — the ratio of older people in our society has increased by four times since the onset of the industrial revolution and we can expect the next generation's old age duration to take up as much as one-third of their life expectancy [1] [2]. Put simply, people used to live into their sixties, but now we can expect them to reach their

eighties or nineties. In Slovenia, organised housing for older people is mostly limited to retirement homes and a limited scope of (mostly commercially driven) sheltered housing. Both of those represent housing styles that employ age-based segregation. This reflects the societal view of older people as outsiders and does not fit ideals of inclusivity and integration that should be pursued if we are to produce progressive, socially advanced housing solutions.

Evidently, diverse and well-developed social networks are an important component of older people's lives. They even influence health by providing feelings of acceptance and inclusion — older people who have rich social lives better retain their cognitive capabilities, whereas social isolation can produce a chronic stress state and thus speed up ageing (4). Retirement homes provide older people with social interactions, but due to a limited number of available rooms, they often need to move to distant regions to use these services, and the people they end up living with do not represent their chosen social network. Because of this, they can still feel isolated or detached from society [5] [6]. Forming alternative, non-institutional and personalized dwelling solutions can contribute to older people's empowerment, inclusion and sense of personal agency. An approach to this that is being endorsed by experts of various fields, is *ageing in place*. This refers to housing solutions for older people that allow them to continue dwelling within their familiar and chosen social environments, with some degree of independence, without needing to move or leave behind their lifestyles [7]. This is especially relevant in Slovenia, as data shows that neighbourhoods form well-integrated social networks and neighbours are even viewed as an important source of secondary caregiving for older people. Despite this, it is still important to address the problem of loneliness in older people. The survey on the housing needs of pensioners and other older people [8] found this to be a widespread phenomenon in Slovenia. The

intensity of feelings of loneliness is also related to architectural barriers that hinder older people's freedom of movement [9]. As much as 67% of older people who report feeling lonely regularly face three or more physical obstacles at home on a daily basis [10]. Living space characteristics can influence social interactions — they are enhanced when people have opportunities for mutual contact and appropriate, well-accessible spaces for socializing [9] [11]. For a sense of community, it is not enough for people to share a place of residence, the space must enhance and cater to joint activities that promote the development of reciprocity, social support and mutual exchange of knowledge and skills [12].

In Slovenia, over 90% of housing is privately owned and older people are often homeowners [10]. Single-family houses, usually consisting of 120 – 200 square metres of habitable space, make up a large percentage of the built environment [13] [14]. A large proportion of the houses in question was built in the 1970s, with pattern-book houses gaining popularity. Many of those houses were self-building projects, with the older people who own them being personally involved in the construction process. With the moving away of any potential children, these houses are now often inhabited by only a single older couple or even a single person. The houses can differ from contemporary building standards regarding spatial compositions, plumbing, heating, insulation and other technical infrastructure that adheres to older standers, making maintenance costly and difficult. Nevertheless, older people often view their ability to dwell in this housing type as the symbol of independence, "normalcy" or social relevance and are therefore reluctant to let it go. Most wait until a serious illness or disability makes mobility and everyday tasks impossible before moving to an institution, like a retirement home – it is often the last resort. Older people can, e.g., develop a mobility impairment and be forced to leave their home environment, despite being otherwise independent. We are left with a gap – there is a lack of

housing adaptation solutions that make ageing in place a viable option. A solution that is endorsed by the main Slovenian older people's representative organization, is *co-housing.* The organization even produced a publication championing this as an alternative to institutional old-age housing [15]. Henceforth, typical single-family houses have been chosen as a possible resource – they are very common and largely underused, while communal old-age housing is needed and lacking.

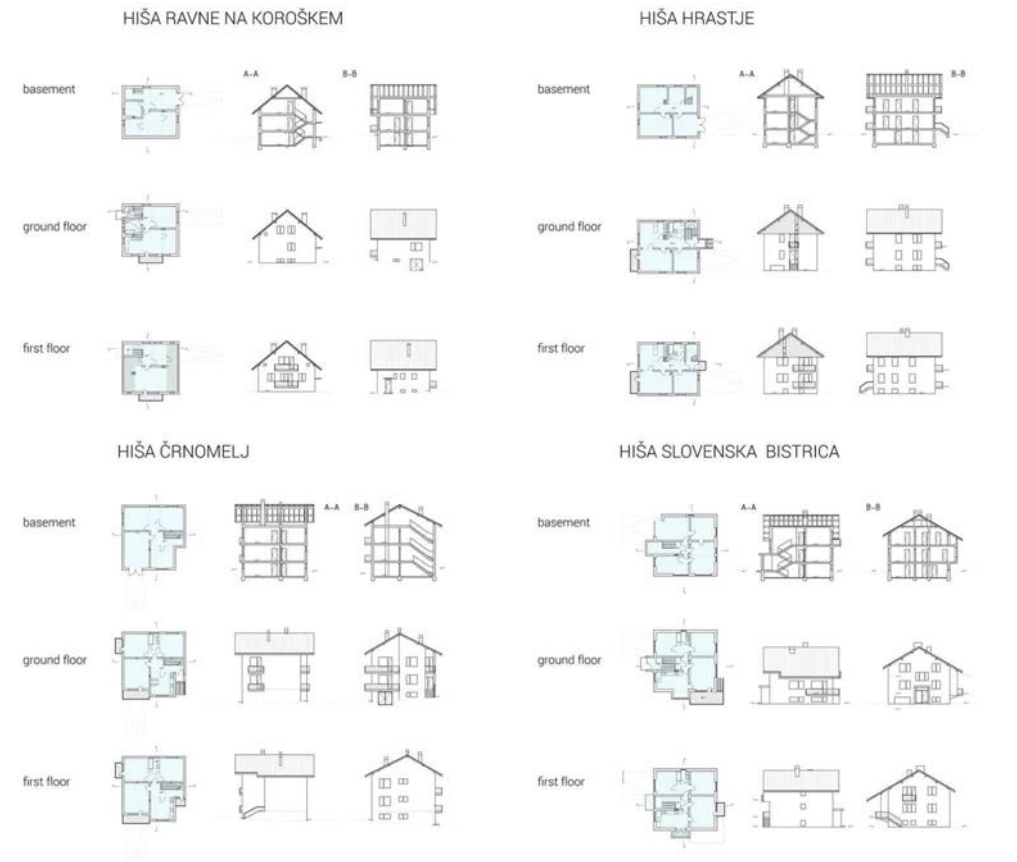

Figure 1: *Four selected typical Slovenian single-family house examples, floor plans gathered from owners in the field. Source: Ana Belčič*

Figure 2: *Locations of the four selected typical Slovenian single-family house examples.*
Source: Ana Belčič

Co-housing signifies a way of communal living that brings together people who are not connected by social ties but wish to co-inhabit a household with other people. This way they can share resources and benefit from the support and social relationships formed in such an arrangement. Usually, individuals or couples are provided with personal spaces — usually at least a bedroom — whereas communal spaces are designed to increase socializing — usually including at least a common kitchen and dining area. Co-housing helps older people age in a chosen community, increasing the potential for collaboration in household tasks, as well as sharing leisure activities. This also helps potential professional caregivers visit multiple people at once, reducing costs. Significantly, older people could combine limited personal budgets towards refurbishing an existing, spatially accommodating single-family house. Co-habitation can also establish a system of mutual help and support between people with various ability levels or preferences. The act of communal living can help support feelings of increased safety and the ability to depend on other household members [16] [17] [18] [19].

We can therefore assume the hypothesis that community-based ageing in a chosen co-housing group can prove to be more attractive than institutional living. Judging the availability and large size of typical Slovenian single-family houses we can also assume that architectural solutions to repurpose them as co-housing units for older people can be developed. We

can achieve that through renovation and spatial adaptation efforts, which raises the following questions: what are the key architectural factors that influence the independent, safe, and community-oriented use of living spaces for the elderly? How to use them to design a system for transforming existing typical single-family houses into cohabiting communities? How can the problem of old people's living be addressed with a systematic approach that can incorporate adjustments to the needs of the individual user?

Figure 3: *Inferring the grammar - colour-coded variations derived by the students in the workshop. Source: Student workshop, supervised by Ana Belčič, Sara Eloy and Anja Planišček*

We decided to construct a workshop on the possible repurposing of typical single-family houses that would employ the elements of *mass customisation* to test the feasibility and potential of this method in resolving the problems of Slovenia's old age accommodation. *Mass customisation* is a way of both controlling and democratising design by providing design alternatives for personalisation within a coherent systemic framework that

helps tackle a wide-ranging problem. As explained by Kolarevic and Duarte, mass customisation can be used as a tool to help lower building or refurbishment costs using large-scale production methods, while satisfying the unique requirements of each individual household to guarantee customer satisfaction [20]. This gives us two objectives – firstly, to find the design code and secondly, to discover how the design code can be manipulated to generate customized designs [20]. The system employed in this study is driven using *shape grammars*. Shape grammars were invented by Stiny and Gips in the seventies. A shape grammar is a set of shape rules applied step-by-step to generate a set, or language, of designs. Shape grammars are both descriptive and generative. The rules of a shape grammar generate or compute designs, and the rules themselves are descriptions of the forms of the generated designs [21]. It is a method of architectural design that operates by determining clear design intentions and rules that allows for the formalization of the design process, providing us with an extended "universe of solutions" [22]. In the vocabulary of architecture, it could be described as a combination of standardised, unified construction (or renovation) with personalization, adapted to the end-user, as well as the environment [23]. Furthermore, shape grammar theory has also advanced over the years to expand its scope into including parametric logics, emergency features and parallel formalisation, among others. All these extensions to the original shape grammar formalism have been developed to compute certain kinds of designs more easily or expressively than with a standard shape grammar, as explained by Terry Knight [21]. For the functional renovation of existing buildings, we can employ the use of transformation shape grammars. Such a transformation grammar needs to be *parametric* due to the variety of shapes and dimensions of the rooms found in existing dwellings – it needs to be designed to identify rooms, walls, and spaces whilst taking several features into account [24].

Figure 4: Determining the design rules based on the changes made to the floor plan – an example.
Source: Student workshop, supervised by Ana Belčič, Sara Eloy and Anja Planišček

By using shape rules and a sequence of actions, working as an algorithm, shape grammars enable the development of a wide variety of compositional design solutions to a specific architectural situation by responding to different dwelling requirements. In this case, it makes it possible to develop a formalised design system to approach various single-family houses and transform them into co-housing communities for specific users – older people with prescribed scenarios. This was the basic premise for organising the workshop, intended to employ and test the concept. The workshop was conducted in May 2021 and represents an analysis of a set of Slovenian single-family houses and the study of their potential transformations into co-housing units. The exploration of different co-habitation options was, as mentioned, scenario-driven to help produce an initial framework for more possible lifestyle choices to be expanded on further in the following studies. The chosen scenarios consisted of three options. The first was a married couple, 65 and 75 y/o, active and quite healthy who wish to co-inhabit it with another couple (or two) while keeping adequate marital privacy. The second was a widow, 78 y/o needing some assistance in everyday chores and in the garden, willing to share

the house with people of various generations. The third was a gentleman, 81 y/o, with mobility issues, who craves the company of other people of a similar age to spend time with. The scenarios targeted the supposed owners of single-family houses and possible constellations of their cohabitation with other people. From this exercise, developed with architecture students, a simple shape grammar was inferred. In our case, the starting point was assessing the geometric properties of single-family houses and associated plots, and the transformation was guided by the parameters for transforming the architecture of existing houses into co-housing communities. Transformation parameters were designed according to the desired architectural features best befitting the user profiles. The workshop produced 12 variations of co-housing units for older people, set within four different typical single-family houses, providing a useful exercise for the further development of research.

Among the 12 variations, some particular solutions appeared to repeat in a similar way – for instance, the joining of various rooms to form a larger communal area, particularly on the ground floor, and the composition of an enlarged bathroom that can cater to two bedrooms. Such similar solutions, as well as others — more specific, were inferred into a transformation grammar. The main discovery was the fact that personalisation needs to address not only the various living and co-habitation scenarios, but also the desired scale, technical difficulty, and budget of each renovation. We must address the fact that some of the options discovered within the design process by the students would, in real life, have larger financial and building construction requirements than others. This was recognised as a possible expansion of the research and development for the mass customisation project, which is planned to be tackled in the PhD dissertation, entitled *The renovation of single-family houses for community-based living of old people.* We could also assign a label to each

solution according to the estimated technical difficulty and costs. To put it simply – each intervention could have an S, M and L version to suit different users and their capabilities. Overall, the experiment showed that single-family houses were flexible enough to facilitate the organization of co-housing units for older people, and have clear potential for re-use.

Figure 5: Two different approaches to dealing with the same floor plan
Source: Student workshop, supervised by Ana Belčič, Sara Eloy and Anja Planišček

Apart from the compositional and structural aspects of the project, the problems of application need to be addressed. The fact that most of the housing is privately owned makes organized refurbishment more difficult. It also means that solutions on a mass scale would involve the support of various stakeholders, governmental bodies, experts, and of course older people. It would also require new financial and management mechanisms to be developed. Nevertheless, the transformation grammar could be used immediately by planning and construction companies that would apply it on demand to suit individual clients or client groups. This design method can also become a tool for educating

and informing the public of the wide variety of options available for the re-use of the existing building fund for accommodating older people who wish to age within their chosen communities.

It is also evident that within the workshop, we have only skimmed the surface by trying to establish if and to what extent these houses can be transformed into functional co-housing units. What is missing is to delve deeper into exploring more playful, unexpected variations. Much of this can also be achieved through thinking about how transitions from the outside space to the interior play a part in both developing the compositions and relationships with the neighbouring community. Entrances, terraces, ramps, sunken or elevated features, balconies, even perhaps vertical gardens – all of those options are yet to be further explored since the detached houses we are looking at usually have ample plot sizes and appear in various contexts and terrains. They must be explored not only as architectural elements but as social catalysts within space. With this in mind, scenario and functionality testing must advance into deeper creative territory. The expansion needs to help the resulting shape grammar evolve into something that can provide a foundation for a truly free and open-source design language. A design language that is – most importantly – also accessible to older people who can use it directly to express their needs and influence as well as shape their dwellings.

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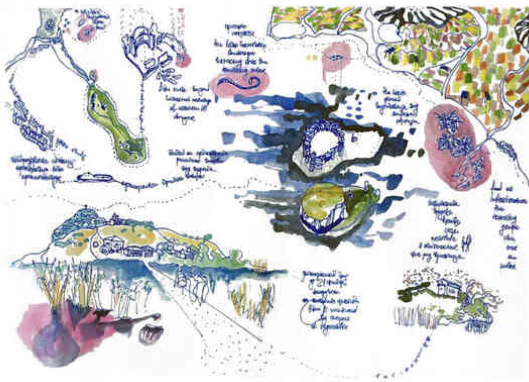
Places Built by a Character Transforming a Literary Tool into a Design-oriented Perspective Multiplicity

Viktorija Bogdanova, University of Ljubljana



Final doctoral stage

Supervisors: Tadeja Zupančič, University of Ljubljana; Paul O Robinson, University of Ljubljana

#

keywords: poem-drawing, character, architectural design

Abstract

This exhibition / research paper aims to trace and to *reformulate* the characterization experiences of my personal design practice in the past few years. The elaboration aims to offer an insight in the modes of characterization covered by the dissertation, and the ones out of it (the 'grounded' practice and the art therapy experiments). Some of the characters dwell in hypothetical projects, far from the actual reality, while some of them are 'built' upon interviews with real personalities. Some of them are architectural entities themselves, while some of them are mixtures of personal stories alternated with a different / alternative plots of development. *All* of them communitcate between each other in a perplexed manner. The paper/discussion/exibition aims to trace the *meshwork of discussion* between the characters from different projects of my design practice, that is – to offer a panoramic view on the varieties of the inner world of the characters, and at the same time, to offer the reader a perspective through the eyes of the characters, in writing, drawing and poem-drawing.

Paper

Introduction

When we read a novel, we often feel indirectly invited to dive in the life of personalities who co-create the story, immediately, on the first page. We try to understand what does the character feel, what happened to him/her, who does s/he encounter, how does s/he relate to the inner life, to other humans and to the physical and metaphysical environment. It is as if we were seduced by the author: we are *opening up* our own memories and experiences; aiming to put ourselves in the skin of that person, we unconsciously become 'naked' and vulnerable in front of our own eyes. In some of the characters we may recognize parts of ourselves,

while our innerness may completely disassociate with others. However, probably the most meaningful novels ever written make the reader to emphasize, to understand – or at least to search for – the reasons behind the behaviors of each character, de-stabilizing the certainty of the personal values, de-stabilizing the protagonist-antagonist dichotomy.

What if we try to write architecture through a conscious active imagination of the future inhabitants?

What if we try to speak through the (imaginary) language of various personalities: a grandfather waiting for someone on the window, a child holding a warm bread in his hands on the bakery's entrance, two sisters discussing the meaning of life on a table near the river, a family having a Sunday walk, a young couple discovering joyful corners of sharing in a single neighborhood?

What if we try to imagine the new structures we design as living being in an intense discussion between each other? A discussion or a noise? A discussion or a (verbal or physical) fight?

What if we try to imagine one's design proposal as an architectural novel, and to read the world of its heroes, semi-heroes and anti-heroes (needs, desires, vices, fears, dreams) as a mold for the future spatial idea? Can this reading help us to understand reality 'as life itself' before we try to organize spatially the living of the new generations? Can this reading teach us to listen to the different voices present in a specific place? And finally, can it help us re-read and re-evaluate our own architectural lines, models, statements, beliefs and philosophies?

What if we try to build our environment upon a critical and *embodied* understanding of the present experiential narratives and the future imagined experience of another?

This exhibition / research paper aims to trace and to *re-formulate* the characterization experiences of my personal design practice in the past few years. The elaboration aims to offer an insight in the modes of characterization covered by the dissertation, and the ones out of it (the 'grounded' practice and the art therapy experiments). Some of the characters dwell in hypothetical projects, far from the actual reality, while some of them are 'built' upon interviews with real personalities. Some of them are architectural entities themselves, while some of them are mixtures of personal stories alternated with a different / alternative plots of development. *All* of them communitcate between each other in a perplexed manner. The paper/discussion/exibition aims to trace the *meshwork of discussion* between the characters from different projects of my design practice, that is – to offer a panoramic view on the varieties of the inner world of the characters, and at the same time, to offer the reader a perspective through the eyes of the characters, in writing, drawing and poem-drawing.

Characters in poem-drawings – PhD research experiments

Through the eyes of another, I tried to observe the modification of my understanding of spatial experience. The aim of my dissertation *Emotive immersion through experiential drawing* [1] was to discover how and when can the entwinement of literary and visual instruments enhance one's sensitivity in re-reading and imagining places.

But this reading happens on levels beyond the spoken: it is a product of dialogic imagination [2]. I re-read *not* what I *think* I see at first sight, but I have a dialogue with my different personalities on different levels of depth: the architect, the inner child, the writer, the emotive dreamer making a story of the waves coming from the senses, while interpreting this story into a meaningful spatial narrative. I re-read not what an interlocutor or an

interviewee is telling to me, but I aim to understand what is happening beyond those words:

A dialogic listening skill is when somebody says to you something you look at the intent of what they are saying beneath the words. That is, you don't take language at face value as carrying abounded set of meanings. But you are trying to look at intentions about what people mean to say but don't have the words for, or the things they are afraid to surface. [3]

The trope of character brings to the architect the possibility to imaginatively understand the perspectives of different place-inhabitants, the passerby, the fountain, the candelabra, the porch column, the tower, the maple tree, the chimney, the river, etc. In the case of the mentioned objects, the character trope merges with a personification trope since the objects behave, speak, and interact with each other as living beings. I create characters through poem-drawings. In poem-drawing, words may appear along/over/inside the drawing, in the format of variations of inhabitant's feelings (embodiment of multiplicity of perspectives), technical descriptions of elements (detail drawings), short stories of imaginary places, naming, comparison, short explanations of narratives unfolding in the building, lexicographical excerpts, references associations.

An explicit literary use of character in architecture can be found in Tschumi's *Manhattan Manuscripts* [4] or Hejduk's *Vladivostok* [5], where the urban creatures are the characters/heroes of the narrative. Character as a trope is also present in Van Den Berghe's Book of Narratives – the fourth part of his doctoral dissertation. He writes a poetic prose through the skin of the 5-year-old Van Den Berghe. He is not just writing: he is excavating the importance of his own memory through drawing and model-making of a house, while interpreting its meaning as an external researcher. It is a story about his relationship with his grandmother's house,

consisting form drawings, writings, models that aim to trace the design principles present inside his own mental space, as core spatial childhood memories. In the dissertation, Van Den Berghe builds upon an interpretation of Husserl's concept of alter ego in *transcendental subjectibity*: "the indispensable intermediary between the self as given and the self as other" [6]. Van Den Berghe created different inner personas to be able to reflect on his own work from another perspective: "Each of us is several, is many, a profusion of selves" [7]. The *persona creation* has a crucial role in the practice based research; it is necessary to step out of myself as a maker and to inhabit myself as a research critic and an architectural scientist.

Figure 1: Bogdanova. *Ascending*. The very first sketch: the hill and the curtain seen from the front, the "necklace" of houses.

In this research paper, the aim is to point to the varieties of characterization as research-through-design project instruments, and as instruments applied in the practice out of the dissertation. A further information on the methodology, the approach and the state-of-the-arts can be found in Introduction and the Approach, criteria and methodology chapter of the dissertation.

I will show two different examples where poem-drawings served as mediums for trascending my self from my own body in the experience of another.

a) The *Imaginary Visitor (fig. 1 – 4)*;

The *Imaginary Visitor* was born at the end of a design process. It was a design proposal for Observatory Houses in Roccascalegna Castle. If this (wo)man visited the Castle as it is now, (s)he would see a beautiful abandoned fortress, detached from the town spreading bellow. When walking the beautiful traditional street bellow around the Castle, (s)he would end in a blind corner.

The Travelogue of the Imaginary Visitor aims to discover, test and emphasize the validity the design proposal built to resolve the three core problems of the location: 1) the inadequate connection between the city's being and its most important marker — the Castle; 2) the blind end of the main street below the hill; 3) a current deficiency of care about the specificity of the spatial, cultural treasures of the place.

b) The trans-temporal trialogue: a *Young Woman* (1944), a *Girl* (2018) and an *Old Lady* (2084); [8]

The transtemporal trialogue happened at the beginning of an experimential research with two of my collegues, Danica Spasevska and Maja Nikova. We were talking about the possible variations of poem-drawings in re-reading and imagining places. They wanted to discover

how will the combination of writing and drawing methodologies manifest in their language of expression. After the first cycle of reflecting upon our own relation to the place of research (Ohrid), we tried to inhabit three different personas from different time frames. The aim was to discover if there were *timeless* spatial values that need to be respected regardless of the period. The construction of the personas happened as a combination of our spatially re-visited and interpreted personal experience (participatory observation) and the interpreted interviews we did with the Ohrid's citizens.

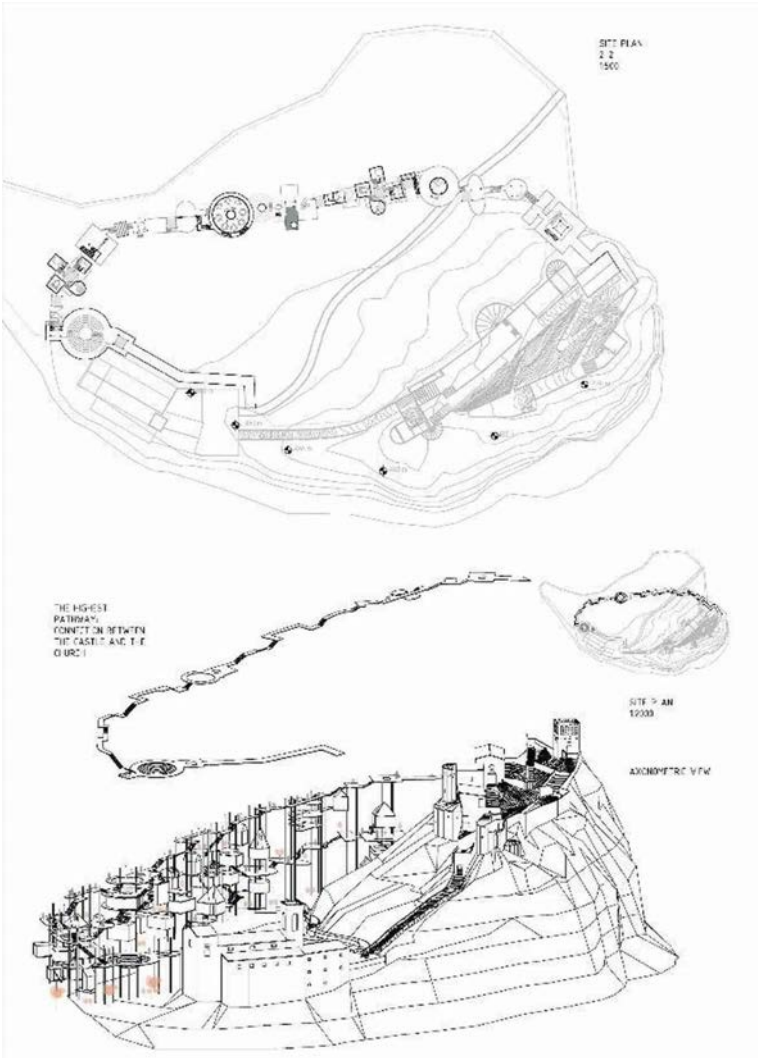


Figure 2: Bogdanova and Spasevska. Observatory Houses 2017. *Embracing*. Plan and axonometry: the previous cut-off of the Castle and the Church from the town is developed into a vertical curtain—a meshwork of streets that connect the backside of the Castle with the main street of the village (spreading on the right side of the Castle on this image).

An inspiring step of fiction courage was the imagined experience of the Old Lady (through Spasevska, fig. 5). While walking the dystopian wall between the Lake and the amphiteatrically structured Old City, she is reflecting on the feeling of suffocated beauty. Comparing her childhood memories with the present condition (2084), she is explaining how the desire to protect the old core has lead to overprotection. The living city turned into a suffocated archeological laboratory, deprived from the love relationship between the city and the lake. The story is an apophatic way of reflection: not pointing to what should be done, but circumscribing what should not be done. At this point, the fear of drawing the extreme of what should not be built or designed disappears: "Drawing may work as a tool for the liberation of the spirit though play, expressing a series of possible critiques and taboos, which do not need to be read as an offense or a damage ... drawing solutions which would fall under the stroke of these critiques." [9]

The 2084 story was inspired by two true stories spoken by two different interviewees. First, the owner of the house on the lake, transformed into a prison during the war, occupied as a strategic point that controls the port in front of the house. Second, the citizen of the new city, with the opinion the "nothing can be added, nothing can be changed" in the old urban tissue. 2084 represents a prison born from the desire for aggressive protection.

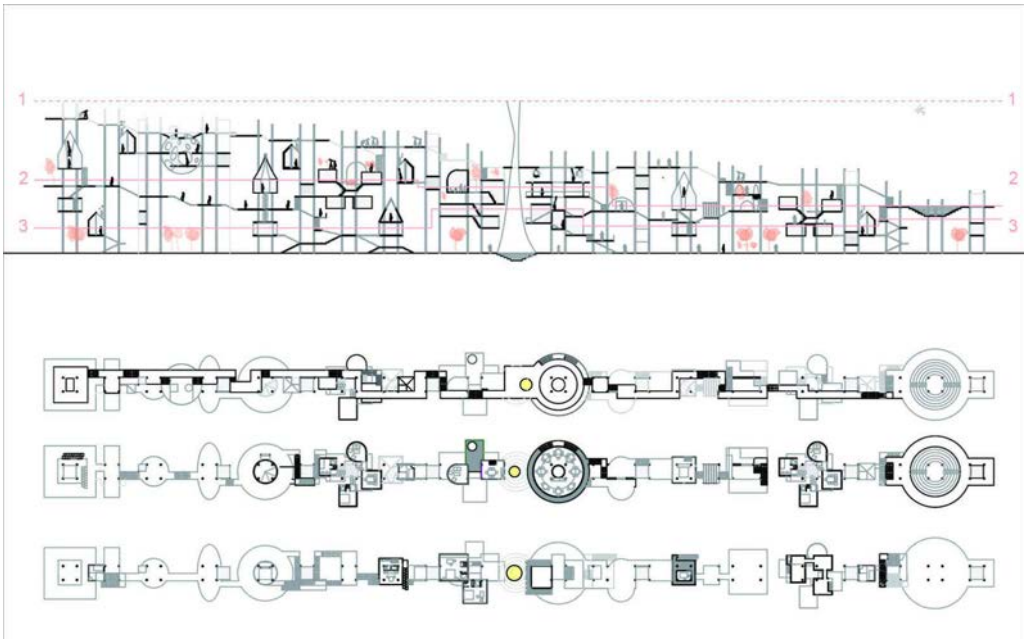
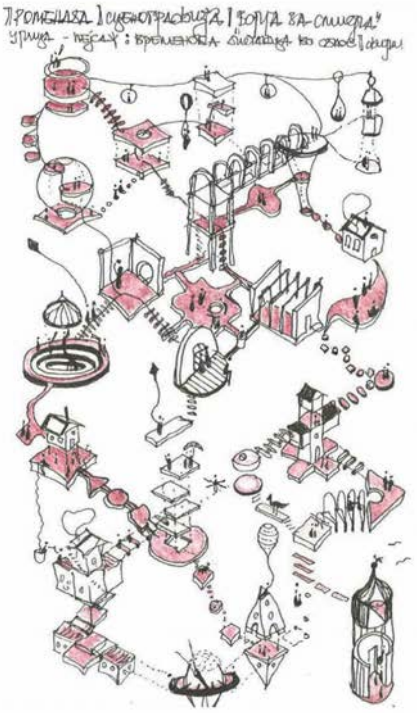
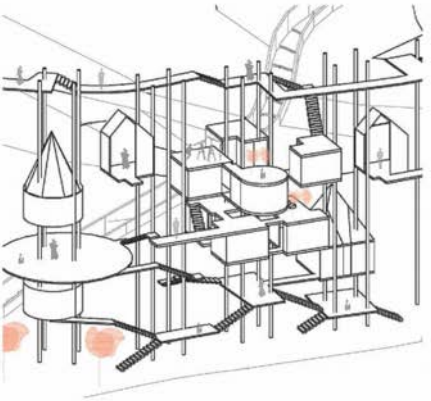


Figure 3: Bogdanova and Spasevska. Observatory Houses 2017. The *unfolded* vertical and horizontal sections of the designed part of the embrace. The variation of observatory houses is intertwined with a few branches of pathways. The rooms in each house are exploded into a configuration that creates many open terraces, making it possible for visitors to observe the sky from unexpected places. The border between private and public is softened to the edge of melting.



- putting myself in the skin of a Visitor
- a first-person expression in writing
- naming the newly-proposed spatial beings
- listing the aims through a human perspective
- comparing the first sketch with the result in axonometry; grounding/ contextualizing the concept
- discerning how the movement of the structure (climbing, enveloping, embracing, floating, turning) reflects on the visitor
- testing the radicality of desired atmospheres



Travelogue of an Imaginary Visitor

My steps are yearning
for a wholeness inside the Path.
Its ending
(a beginning of an inner branching)
creates waves in my desires,
statements, inner questions.

"Arriving at each new city,
the traveler finds again a past of his that
he did not know he had:
the foreignness of what you
no longer are or no longer possess
lies in wait for you in foreign,
unpossessed places." (Calvino)

The promenade between the city
and the untouched nature
houses my memories by overcoming them,
by embedding the same
inside a new, different I.

The vertical walking necklace
should be my temporary home:
like searching for peace on a crossroad.

The constant sky-framing is omnipresent:
on an urban level (between the two markers):
The constant sky-framing is omnipresent:
on an urban level
(between the two markers of Roccascalegna:
the Castle on the higher
and the Church on the lower point)
and on the level of dwelling units
(absence of room, uncovered platforms,
porches penetrated by the rain, gates, walls,
patios, architectural elements
with disturbed meanings).

Climbing towards the Castle
from a dignified distance,
I can feel that I am embracing it,
without burdening its beauty
with touristic aggressiveness.

Departing from my room,
I step though observatories,
amphitheaters, squares, walls,
a meditation chapel,
while floating above Old Via Del Castello.
With every choice
made during my way,
I discover a new frame, new lens,
new strangeness of the Landscape,
the Castle, the Sky.

Figure 4: Bogdanova and Spasevska. Observatory Houses 2017. Travelogue of an Imaginary Visitor, with a comparative illustration of the first concept drawing (above) and a fragment of the axonometry (below). In-between the two drawings is a list of the things that the Travelogue brings to the reader through metaphorical circumscription rather than description.

"Maybe the Modernism contains the meaning of the (unwanted) guest – the character in the anecdotes for the (non-)hospitality of Ohrid. It is not enough just to preserve yourself, it is also necessary to defend yourself from aggression." (Popovski, 1996, 28)

When the remnants of the Fortress became foundations of the new shell,
each sigh of my childhood along the lake transformed into a soulless wave.

Through the black corridor built by 'new' desires
my body-wounds are bridging *above* my inner city from the past.

Silenced are all crevices, views, balconies, silenced are all feelings.
I gather my steps in the rhythm of a decaying cobblestone,
I breathe in and breathe out climbing the upper Fortress.
My senses are searching for their dearest urban image,
where the city and the lake are still murmuring their secrets to each other.

The fortress is smoldering through its stone walls, untouchable, on the top.
The lake is holding arduously the reflection of the skyscrapers,
mourning the urban metamorphosis,
alienated, abandoned, on the bottom.

In-between them: all my fears for what the city may become
are taking shapes of extensions, egocentrically in silence.
So, I choose to remain on the top – closer to the sky.

Figure 5: "2084". Danica Spasevska. Hypothetical dystopia.
Beauty enslaved. 2018.

Characters in poem-drawings: experiments beyond the PhD research

The construction of the characters of this design solution happened somewhere in the middle of the design process. It was a design proposal for a dwelling neighborhood. It was done in the office Ravnikar Potokar in Ljubljana, by Robert Potokar, Ajdin Bajrović and me. The solution is a story about transforming a former territory of communal services into a dwelling neighborhood and an underground waste menagement center. We proposed *a necklace of houses* growing in height: a reflection of the typology of the surrounding.

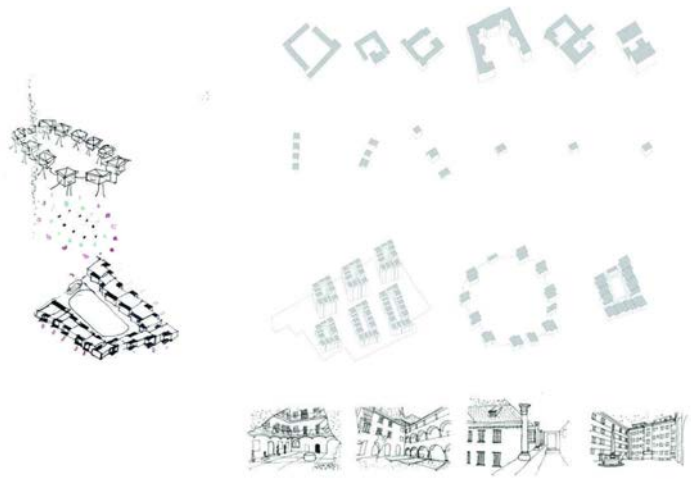


Figure 6: The necklace of houses: the new architectural character. Ravnikar Potokar d.o.o., Robert Potokar, Ajdin Bajrović, Viktorija Bogdanova. 2nd award.

The characters were drawn to help us understand the imagined scenarios more thoroughly (fig.6 – 10). Until this moment, the main characters were the architectural creatures dancing in plans, sections, axonometries and diagrams on the technical drawings, observed from above. But we wanted to learn something else: the perspective of the inhabitant. First, the heroes were drawn: the grandfather taking care of the niece, the little girl discovering the neighborhood as a playground, the lovers living on the opposite sides of the promenade, or

the sculptor working among the plants on the roof terrace. Then, the act of drawing called for a verbalization of their daily spatial encounters: short stories were written to trace the advantages of the project from the voice of an embodied experience.

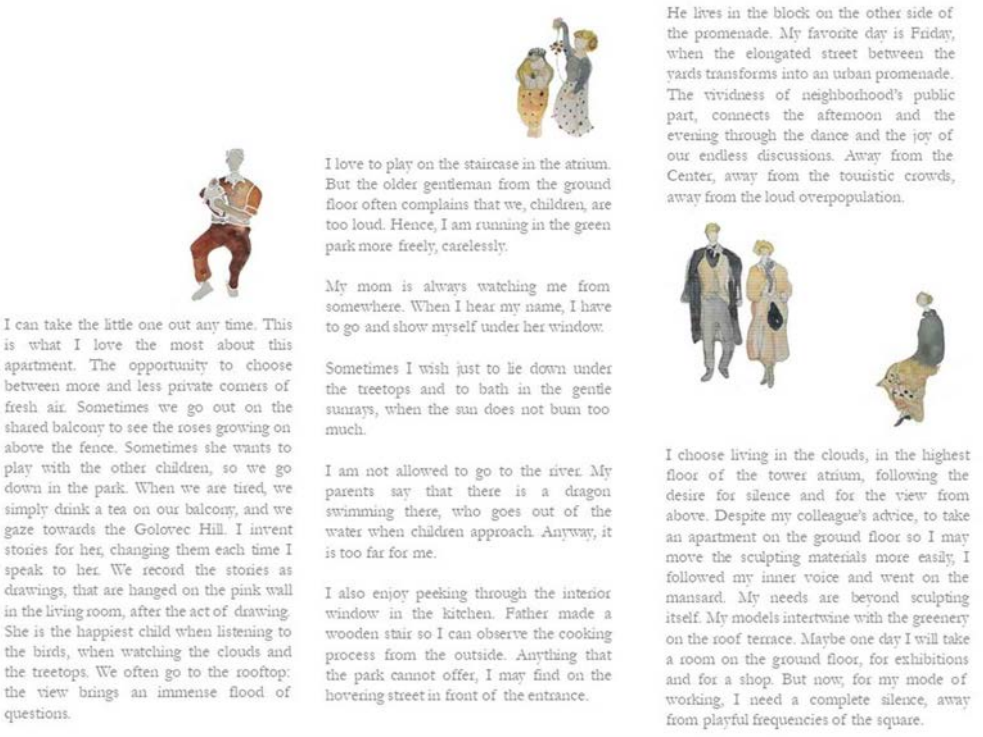


Figure 7: Character's narratives. Mestni Kare Povšetova. Ravnikar Potokar d.o.o., Robert Potokar, Ajdin Bajrović, Viktorija Bogdanova. 2nd award.

The construction of the characters further helped us in the visual representation of the strengths of our project. These personalities moved further and closer in our perspective drawings, allowing us and the readers to observe the project not as an external evaluator of abstract composition of volumes, but as an inhabitant who may see a diagrammatic view of the environment as a "roentgen" image of the architectural structure's spirit.

Concluding threshold

The three chosen examples show three different manners of integrating the characterization through poem-drawing. The *Imaginary Visitor* allows an insight into visitor's journey to the new structure, leading the reader through the corners that may not be visible in the technical drawings. *The Young Woman*, the *Girl* and the *Old Lady* show how characterization through the poem-drawing language may become transferable in three different dialects / variations, integrating the personal experience and the interviewee's testimony into a design-project-oriented interpretation. The *Grandfather* and the other heroes from the dwelling neighborhood show how characterization through poem-drawing may assist non-architectural readers to have a closer insight and understanding of the value of the design process and the design project.

Figure 8: Processual collage / testing perspective in a residential design proposal (unpublished). Authors of the project: Ravnikar Potokar d.o.o., Robert Potokar, Ajdin Bajrović, Viktorija Bogdanova.

Figure 9: Processual collage / testing perspective in a residential design proposal (unpublished). Authors of the project: Ravnikar Potokar d.o.o., Robert Potokar, Ajdin Bajrović, Viktorija Bogdanova.

Figure 10: Processual collage / testing perspective in a residential design proposal (unpublished). Authors of the project: Ravnikar Potokar d.o.o., Robert Potokar, Ajdin Bajrović, Viktorija Bogdanova.

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Low-cost DIY Upgrade Strategies for Improved Comfort in Poor Brazilian Houses in Hot Climates

Process and Results

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Final doctoral stage

Supervisors: Guilherme Carrilho da Graça, Lisbon University – Faculty of Science; Pedro Matos Gameiro, Évora University – Faculty of Architecture

#

poor houses, indoor comfort, DIY thermal improving.

Abstract

This paper presents the process and the results of a Research by Design (RbD) investigation on passive techniques to improve the indoor temperature of poor houses in Brazilian hot climates. Poor houses, offering an overheated indoor environment, have been analysed. The paper gives a more detailed description of the in-situ research phase, which informed the hypothesis through the experience with the contacted communities, setting up the pre-requisite: all strategies applied should be effective; low-cost; Do-It-Yourself (DIY) friendly for self-construction. Design and post-design phases, sequentially alternate during the investigation, three times, until the pursuit of viable solutions. Radiant barrier and Tetrapak insulation board solutions presented the best results at the lowest price, for 5€/m2 and 1-2€/m2, respectively. The research presents suitable and validated low-cost materials and technics to be used to shape both thermal and physical spaces in this poor context, showing a possible path to find "the place of architecture in a planet of slums" (Fiori Arantes, Pedro (2008): O lugar da arquitectura num planeta de favelas. Opúsculo, Ed. Dafne. Porto.).

Paper

Introduction

The 2020 Global Poverty update report [1] estimated that 46.2 % of the world population lived on less than 5.50US$ per day, with a slight increase of 0.2 % since 2015, where 12 % lived in slums [2]. Poverty is a multi-dimensional problem related to monthly income, access to a job, education, health care, and social life. These effects, in Brazil, can be detected by looking at the urban tissue where, from one side, we see the typology of the closed condominium, an illusion of living on a private island, excluded from the outside chaos [3], while on the other, the informal constructions, self-built, filling

the urban voids [4]. Today, poverty reduction suffers a reversal tendency due to the Covid-19 pandemic and its global economic effects, armed conflict, and climate change [5]. In hot countries around the world, this type of poor construction shows differences marked by culture, natural resources, and industrial development, which may influence indoor behavior [6]. Low thermal mass envelope in poor houses, in high outdoor temperatures, tends to warm up the indoors beside the levels of comfort [7]. Thus, this unsolved and complex spreading reality may be urgently addressed.

Methodology

For the pursuit of the goal have been used Research by Design (RbD) driven strategy [8], complemented by a scientific methodology, for experimentation and analysis. Both qualitative and quantitative approaches informed and defined the extent and the limits of the investigation hypothesis. A constant realignment of the construction of the artefacts, based on trial and error, was followed to validate the proposed solutions [9]. The research is divided into two phases organized into three different stages [10], repeated two times **[1]**.

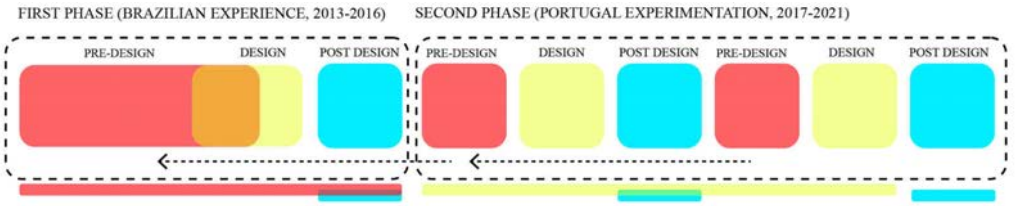

Figure 1: Map of the RbD methodology travelled.

In the first stage, the literature review was complemented by *in-situ* research. This approach informed the question formulation, allowing the development of the first Design stage, characterized by the design project of a solar chimney. The first design proposal for improving comfort sensation by evapotranspiration, showed uncertain results, suggesting the implementation of different strategies to be explored individually and combined, compelling to return to the pre-design stage to

re-design and verify the effectiveness of the new proposals. To overcome the limits of the results of the campaigns has been applied a dynamic simulation, using EnergyPlus v.8.7 [11], to validate the model and to evaluate effectiveness in multiple hot climates.

Brazilian experience phase

On a planet of slums, how is a poor house? How is built? How is lived? How is its thermal space? How much could be the budget for improvements? What strategies may be effective to improve comfort in such communities? The first phase objective was set up to answer the many questions raised.

The first phase was held in the cities of Fortaleza and Sobral (1+2 years), both in Brazil. Establishing contact with a poor community during the first months seemed an improbable goal to achieve due to the violent and suspicious environment in Fortaleza [12]. Yet, I could find a job (paradoxically), working on the front line of a Governmental expropriation in 5 slums. Each had a formal representative who maintained the team safe, guiding us through the community during sunlight and mediating with the residents. I visited more than 200 houses and spoke with their owners, observing the traces of living.

The poor permanent house has a spontaneous genesis and is built outside the regulations. Starting as a unique piece, that will be extended by the householder's means and time, the residence is always evolving, even when achieving the last stage of the shelter (the brick house, focus of this investigation), unfinished and ephemeral, like life itself [13]. The constructive technique is the most rudimentary, and the used materials are the cheapest [3]. The most common type of envelope is made by a single layer of brick commonly shared with the neighbour and rarely plastered on both sides, which forms the muscles house without bones **[2]**. On the walls is settled a wood structure, on which a ceramic

roof tile lies directly, covering the internal space [Table 1].

Zone	Walls (%)			Floor (%)				Roof (%)		
	Uncoated Brick or Mud	Finished Brick or Mud	Fitted Wood or Other	Ceramic, cement, or stone tile	Wood	Cement floor	Other	Clay tile on wood structure	Clay tile on concrete structure	Concrete structure or Other
Brazil - all Regions	6.6	88.6	4.9	78.3	7.2	13.8	0.8	49.8	32.1	18.1
Northeast Region	8.3	91.2	0.5	68.9	0.3	29.3	1.4	72.5	16.9	10.6

Figure 2: House construction composition in Brazil. (Source: IBGE. Residential Survey by sample of 2019, in Portuguese.)

The internal distribution is organized by the structure support. The entrance is used, at night, as a shelter for the bike or the motorcycle owned. The rooms, are often open on the roof level, allowing air circulation. The bathroom is located close to the outdoor sewage solution, with no relationship with any internal space. Houses have hooks on the walls to support the hammocks. Each space support multiple usages. Most owners stores used or found construction materials to be employed in the future.

If Occidental architecture works on the transformation of the environment to adapt it to human's necessity, this survival architecture tries to contain transformations, implementing the necessary for sufficient favourable surviving conditions [14].

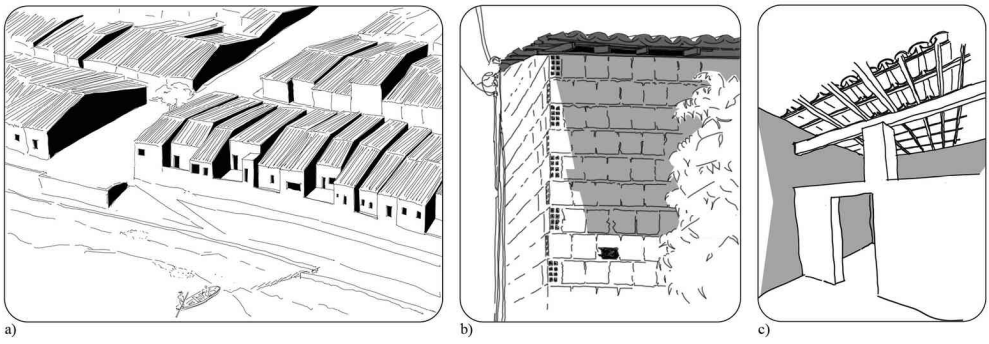

Figure 3: D. Expedito poor neighborhood: a) context b) envelope construction c) roof composition.

Soon I understood that I have to reformulate my RbD approach to adapt and operate in this context, using what Levi-Strauss called the "first science": the *bricolage* [15]. In this type of fragmented construction, I had

also to re-evaluate the concepts of (dis)order and chronology. Hypothesis pre-requisite was sketched: the roof, responsible for 50 to 70% of the indoor thermal behaviour [16], was set as the envelope side to be improved; all strategies should be efficient, low-cost and suitable for self-construction in a DIY mode.

In Sobral, supported by the University of Architecture INTA, I started contacts with the resident association of the community of D. Expedito, located on the left side of the Acaraú river, upgraded in 2000 with basic sanitation and road infrastructure [17]. I was allowed to survey five houses and interview the owners. Houses overheat during the day and use as a mitigator tool a simple fan.

The first strategy proposal was inspired by Fathy's houses, where natural ventilation acts as a cooler, improving comfort through evapotranspiration.
A portable plug-in rooftop solar chimney (CHS), to induce indoor ventilation using cheap or recycled materials locally available, was studied, designed and prototyped **[3]**.

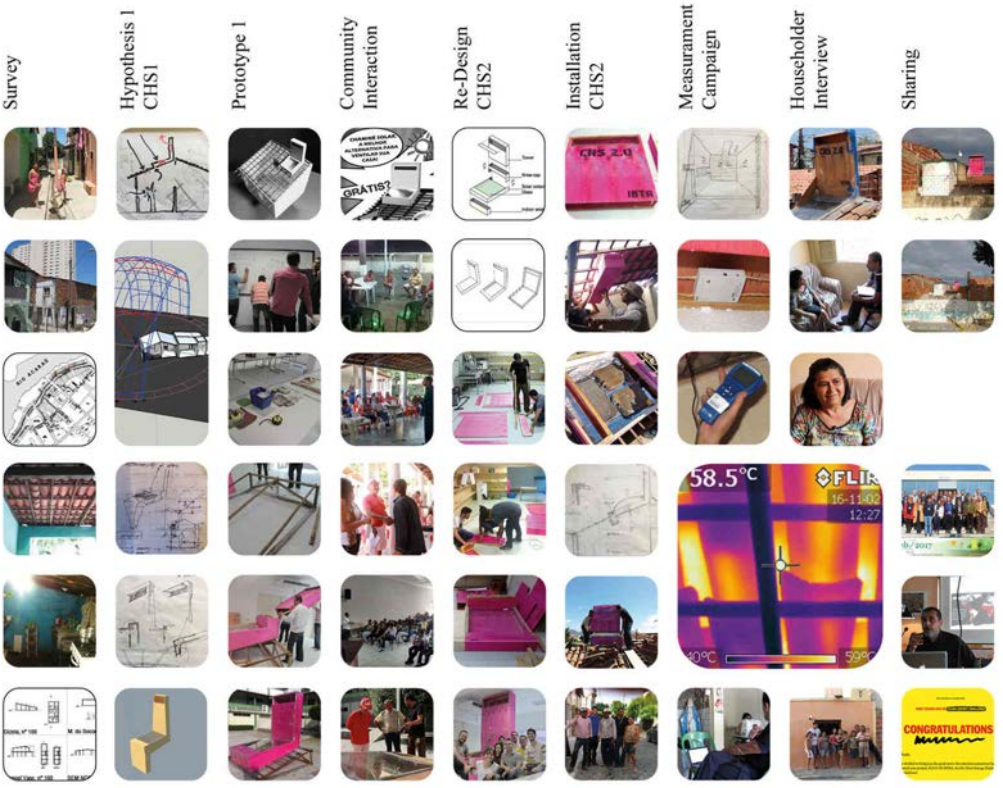

Figure 4: Brazilian Phase Atlas

The project was presented to the community. I had the idea of creating a workshop with the interested residents, free of charge, to build up to five CHS and install them. Only Lucineide's family agreed, being unable to help in the construction of the artefact. During an architectural summer workshop, the CHS2 was built and installed. After four months of use, the qualitative results collected were positives, reporting improvements in indoor comfort. Nonetheless, six days measurement campaign showed non-conclusive results, showing a slight indoor temperature increase. Data analysis observation appointed to the introduction of complementary strategies to achieve the goal [18].

Note: the day before the installation, Lucineide's husband called me to cancel the experiment. In the meeting that followed, he was ensured that no cost will be supported by his family. In the end, he asked me if I was an inventor and finally agreed.

Portugal Experimental phase

The research continued at the Faculty of Science of the University of Lisbon, where was built a test cell, using bricoleur technics, to install passive strategies and measure it in a controlled environment. The CHS3 was improved and resized. Have been selected and studied for their low cost and simple construction **[5]**, as complementary strategies: a reflective roof coat strategy (Albedo); Radiant Barrier insulation (RB). All strategies have been implemented and evaluated.

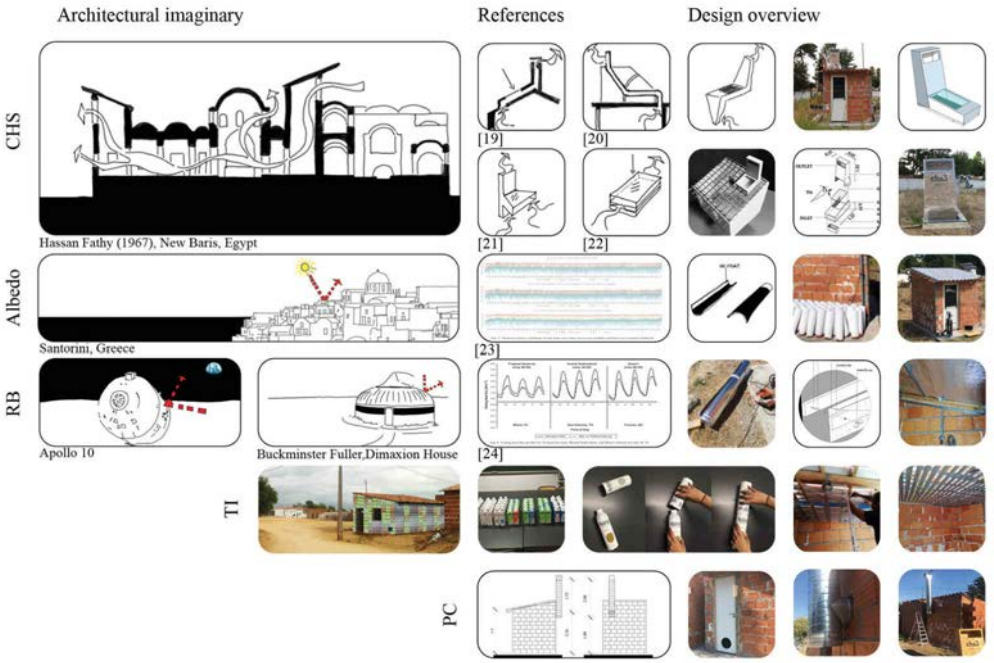

Figure 5: Scheme of all strategies applied - Design Stage. Reference note: CHS[19 20 21 22]; Albedo[23];RB[24].

The data collected for each strategy were non-comparable, suggesting a better performance of the radiant strategy over the others. A simplified dynamic simulation to validate the model was performed with no conclusive results [25].

A second test cell was built beside the first one, to be used as the default model cell and the strategies were reviewed. A design of a REcycled Tetrapak Insulation Board (RETIB) and a simple tube pipe chimney (PC) for

natural ventilation was implemented for the experiment **[5]**. A validated simulation model allowed to apply the suitable strategies in multiple hot climates.

Results

RB and RETIB, presented a maximum decrease of interior operative temperature of 2.5ºC, at 27.5ºC outdoor temperature, and a 2.3ºC at 26.6ºC, respectively, with an increase of thermal comfort period up to 37.8%.

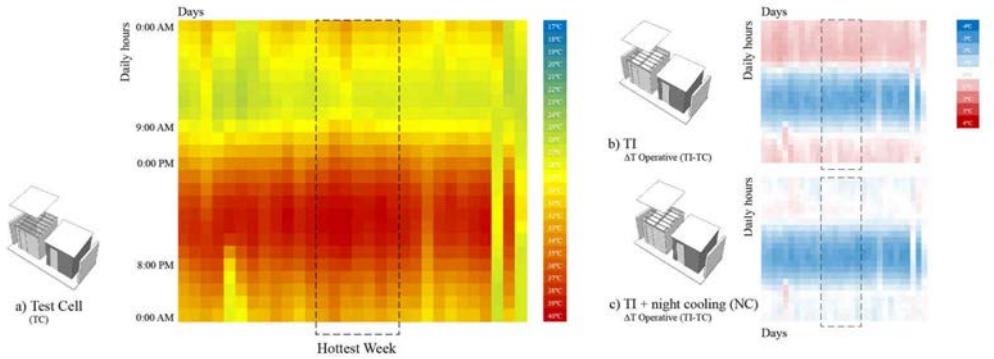

Figure 6: Heat map of TC indoor simulation in Teresina (BR): a) indoor heat of TC; b) ΔT using RETIB; c) ΔT using RETIB+NC.

The introduction of natural ventilation, through the PC and the CHS3, proved ineffective during the day. The validated simulation applied, presented a maximum decrease of 3.45 ºC with RB and 3.39 ºC with RETIB **[6]**. Have been noted overheating during the night and corrected with a single-window opening, (0,40 m^2), only for night cooling **[6]**.

Country	Estimated Slum Population		City	Metropolitan Population	Climate Type	Extreme Period Determination		MAX ΔT Op H-W (ºC)		MAX ΔT Op YEAR (ºC)	
	nº (thousand)	%			Koppen	Hottest Week (H-W)	Max Temp (ºC)	RB	RETIB	RB	RETIB
Brazil	27,826	16									
			S. Paulo	12 325 232	Cfb	10/09-16/09	34ºC	2.14	2.09	3.45	3.39
			Fortaleza	2 686 612	Am	02/04-08/04	33ºC	1.71	1.68	2.18	2.17
			Manaus	2 219 580	Af	17/09-23/09	35ºC	2.48	2.43	3.00	2.98
			Recife	1 653 461	Am	26/03-01/04	32ºC	1.62	1.60	2.32	2.31
			São Luis	1 108 975	Aw	17/12-23/12	36ºC	1.71	1.69	2.17	2.14
			São Gonçalo	1 108 975	BWh	17/12-23/12	37ºC	2.22	2.17	2.82	2.77
			Duque de Caxias	924 624	BSh	06/10-12/10	39ºC	2.60	2.57	2.95	2.90
			Teresina	868075	BSh	06/10-12/10	40ºC	2.55	2.51	2.84	2.79

Table 1: Validated simulation results using RB and RETIB.

Conclusions

The results show that Radiant Barrier (RB) and REcycled Tetrapak Insulation Board (RETIB), at the cost of 5€/m2 and 1 – 2€/m2 respectively, act as a mitigator and must be accompanied by a night cooling strategy. Both materials can be used as roof insulation, allowing to re-shape internal spaces, both physical and thermal, at a very low-cost price. The solar chimney proved to be non-effective in hot climates, inducing the hottest outdoor temperature inside the house. Nonetheless, this artefact should be studied in different environments and climates, using controlled ventilation, with cooler airflow.

From my experience, such improvements should be introduced in the community through resident associations, by recognized organizations (Universities, ONGs, others) to access this context and aid in their organizational process. Involving actively the population concerned [26], giving them the tools to upgrade their environments, maybe a strategy, while global approaches to eradicate poverty are implemented.

On the methodological plan, Research by Design proved to be effective, allowing to swing between qualitative and quantitative methods, when needed, in the search for both questions and answers. In this research, the achievement of equilibrium between both approaches turned to be the key to the investigation and may show the importance of the RbD methodology used, to better comprehend and participate in our complex human world.

Note: All Figures rights belong to the Author, except graphics on Fig. 4, referenced on [23] and [24].

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Essayistic Film Fragments with Cooperative Architecture

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Intermediate doctoral stage

Supervisor: Jörg Schröder, Leibniz University Hannover

#

essay film, cooperative architecture, design modes

Abstract

Re-positioning architecture and urban design as social and creative agency, a different understanding of space alternative approaches and interdisciplinary design modes for its creation process are formulated with the examination and creative exploration of the concept of cooperative architecture. The research on three case studies here work as exemplary projects for cooperative architecture and are used as tool to identify design-research steps. One method experimented with, is the essayistic film making. In the conference first film fragments were be presented in an installation while reflecting on their creation process – a way of thinking and doing that is able to transport spatial experiences in an innovative way, which leaves space for imagination.

Artefact

Approach

Can Batlló (Barcelona), Exrotaprint (Berlin), Granby Four Streets (Liverpool) **[1]** are chosen as three exemplary case studies in various urban, political and social contexts, that incorporate a more holistical understanding of design. One oriented at social and ethical, more human-related values, such as co-creation, cooperation and the aim to create a collective work of art or labour as living space, setting existing architectures and urban spaces as condition for alternative happenings and "design as material tool"[1] to realize them.

The case studies are used as departure points to analyse, abstract and define design modes that are able to cope with the complex contemporary challenges, such as climate change, segregation or migration, in a productive way, focusing on how they are created and transformed, looking at the role the architects and designers involved take and what constitutes their

action. The spatial situations of the case studies within this are understood as positive examples for the creation of future habitats.

Figure 1: Three case studies Exrotaprint (Berlin), Granby Four Streets (Liverpool), Can Batlló (Barcelona)

Research setting and direction

The empirically based research brings together an ethnographic field research and critical questioning with a collective architectural and urban analysis, and an explorative design part using visual techniques to investigate the creation and communication of spatial experiences through the performativity of the case studies. This research framework is used for knowledge creation on both, space as political endower, continuous process and creative invention, and the agency of architects and urban designers as cultural, assembling and cooperative practice. A main research question is how the selected case studies can be experienced and communicated as atmospheres, showing their hidden qualities and capacities that lay in the way the spaces create possibilities for a different kind of action. This refers to Lefebvre's dialectic understanding of space as shaped through social relations and shaping society.

The DDR in my research relates to the idea of the designer-researcher as bricoleur[2] and the development and testing or recreation of new or combined forms of

investigation, offering multiple perspectives and addressing a field in-between science and art. In my research this is about making the spaces selected as case studies speak. They become characters instead of immobile objects, and graspable as positive examples for future habitats. Space in this sense is understood as instrument for the production of narrative media, used for creative invention and critical reflection. "Critical thinking" as Zardini states, "is no longer driven by language, semiotics, text, and signs, but by a rediscovery of phenomenology, experience, the body, perception and the senses"[3], which in this case is realized in various formats, reacting to the found material and its capacity to transmit atmospheres and a phenomenological understanding, showing the performativity of space.

Approach and Method

One possible approach to foster this "making spaces speak", is the use of essayist filmmaking as a different kind of spatial thinking and communicating – a tool for inspiration and individual imagination, opening up both the design- and research process. Here it is used as tool to transmit an experience, the atmosphere, capacity and hidden values of space.

It is about an interpretation, critical questioning and reinvention or assembling and use of the data collected in the field research, analysis and creative exploration, working on visual and textual attempts to transfer the intangible and tangible aspects of space. **[2]**

Figure 2: site-writing

"The filmmaking process is understood as assemblage of technologies and techniques for amplification of cultural and corporal Logics of affect"[4] As an assemblage, film consists of many fragments – historical views, explanations, creative interpretations or free associations – that through their visual language and ways of combination allow new kinds of connections. Especially in the essay film the working with fragments and gaps is a major characteristic. It uses the in-between of two images, that as the unwritten words in a text, lead the reader to a more active engagement.

As Moholy-Nagy argues, vision is itself a way of thinking, bringing together vision, perception and thought.[5] **[3]** This idea is used in order to create spatial experience, using film-fragments to grasp and transport complexity inherent in larger urban spaces, it is an approach to access a new architectural and urban language.

Figure 3: wild thinking in research process

Artefact

The artefact, consisting in first film fragments on cooperative architecture still under construction and some film stills presented as snapshots of the work in progress, was thought as an invitation to discuss and to provoke additional associations. It was presented in form of a lecture- and film-preview, that also explained the research framework, aim and methodology. **[4]**

It, meaning the artefact, consists of first trials to deal with the performativity of Can Batlló, showing the discovery, image-collection and -ordering throughout and after the field-research. It consists of the co-production and complex relations, topics and past histories as fragmentary experiences timescapes and the contradictions of the place, being used and abandoned at the same time and offering possibilities for different uses, exchange and learning.

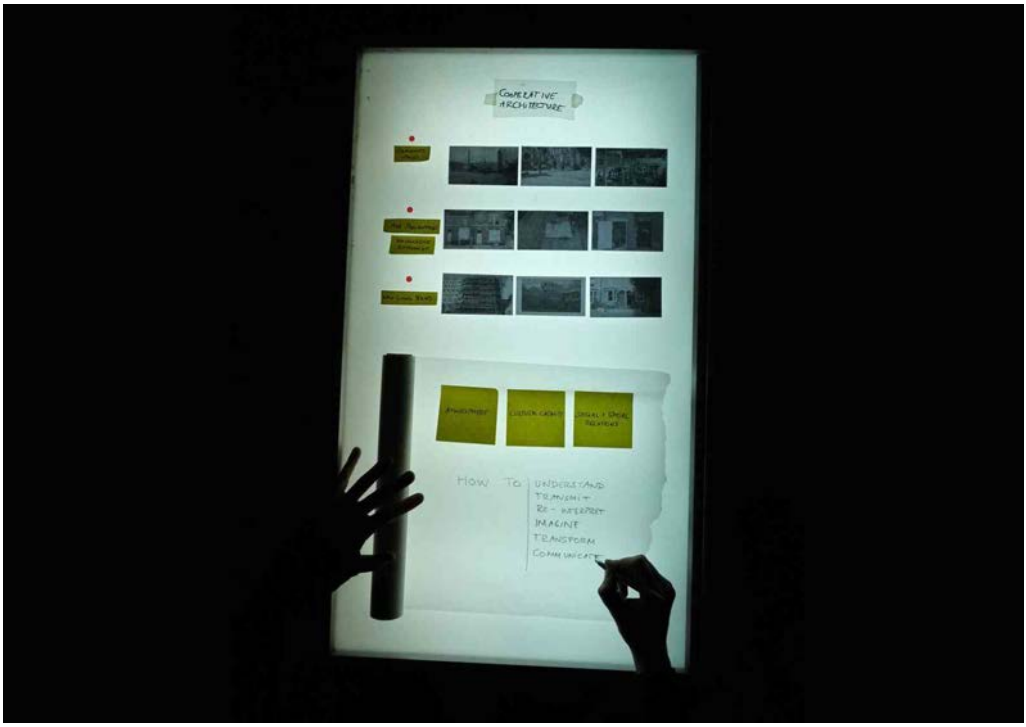


Figure 4: filmmaking process

Design Driven Research

Design Driven Research in my understanding is bound to the creative use of interdisciplinary tools and methodologies for an alternative knowledge production, encouraging new ways of thought and action in relation to a necessary ethical dimension. It is about creating and communicating experiences through an aesthetic – visual or haptic– language, that is based on a continuous reformulation and re-invention, fostering an open-ended and throughout the research process changing approach that shows alternatives to an existing reality. This connects to an inductive reasoning and a design-immanent "art of action"[6], that is important in both, design theory and practice.

In my research, looking at the creation process of future habitats, explicitly the performativity of spatial situations in transformation and the agencies applied, DDR helps to dig into the design tools and approaches used by the architects and designers involved –

conceptualizing and defining them as design modes. This is crucial for a progress and different understanding of the discipline, creating relations in-between various sets of knowledges, practical projects, social questions and a creative design. Assembling, Co-creating and contextually researching as forms of (inter-)acting are then rather connected to an integrative and composite, a cultural agency, instead of a singularly spatial one.

All images are elaborations of the author.

1——Von Borries, Friedrich (2016): Weltentwerfen. Eine politische Designtheorie. Berlin, Edition suhrkamp, p. 82

2——Cappeller, Riccarda (2021): »Urban Bricoleurs«, in: Jörg Schröder, Maurizio Carta, Federica Scaffidi, Annalisa Contato (Eds.) Cosmopolitan habitat. a research agenda for urban resilience, Berlin, Jovis, , pp. 154–159.

3——Zardini, M. (2005): »Toward a Sensorial Urbanism«, in: Mirko Zardini (Ed.), Sense of the City: An Alternate Approach to Urbanism, Montreal: Canadian Centre for Architecture; Lars Müller Pub, pp. 17-27.

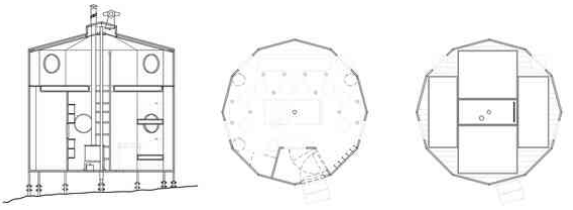
4——Carter, Sean / McCormack, Derek P. (2006): »Film, geopolitics and the affective logics of intervention«, in: Political Geography, 25(2), 228–245. doi:10.1016/j.polgeo.2005.11.004

5——Moholy-Nagy, Lazlo (1969): »Vision in motion«, Chicago: Paul Theobald and Company.

6——Von Borries, Friedrich (2016): Weltentwerfen. Eine politische Designtheorie. Berlin, Edition suhrkamp, p. 125

Housing and Innovation Technique and Domestic Space in the Residential Works by Pierre Jeanneret, a Contemporary Analysis for Design Housing Solutions

Oljer Cardenas Nino, Politecnico di Milano



Initial doctoral stage

Supervisors: Orsina Simona Pierini, Politecnico di Milano; Carmen Espegel, Universidad Politécnica de Madrid

Abstract

Under the name Housing and innovation: Technique and domestic space in the residential works by Pierre Jeanneret, a contemporary analysis for design housing solutions, the doctoral thesis focused on the research carried out by a forgotten modern architect and his quest to solve the domestic habitat in different geographical and emergency contexts is presented, with the aim of contributing and enriching contemporary research on prototypes, techniques and tools for new residential proposals that respond to contemporary socioeconomic and climatic conditions, pursuing what Walter Benjamin wrote: "*Nothing that has ever happened can be taken for lost*", since the new is accompanied by the redemption of everything past.

Extended abstract

Under the name Housing and innovation: Technique and domestic space in the residential works by Pierre Jeanneret, a contemporary analysis for design housing solutions, the doctoral thesis focused on the research carried out by a forgotten modern architect and his quest to solve the domestic habitat in different geographical and emergency contexts is presented, with the aim of contributing and enriching contemporary research on prototypes, techniques and tools for new residential proposals that respond to contemporary socioeconomic and climatic conditions, pursuing what Walter Benjamin wrote: "*Nothing that has ever happened can be taken for lost*", since the new is accompanied by the redemption of everything past[1].

Pierre Jeanneret: The great unknown

Considering that there are many works that can be highlighted as part of the legacy of the modern movement, the work of Pierre Jeanneret stands out for possessing sufficient qualities to justify the contemporary review that is proposed. A review that deepens the residential works developed by the architect outside the *Atelier 35 rue de Sèvres*, mostly unknown and little

studied, whose research in various fields of housing, typological, technological, economic and cultural, contributed to the construction of the domestic habitat of the twentieth century. In addition, Pierre Jeanneret gives the image of the true creator, of the man thirsty for constant discoveries. He looks around, invents and proposes with the generosity of those who live intensely. His whole life is a search for truth. To unravel, to understand, to find new answers.

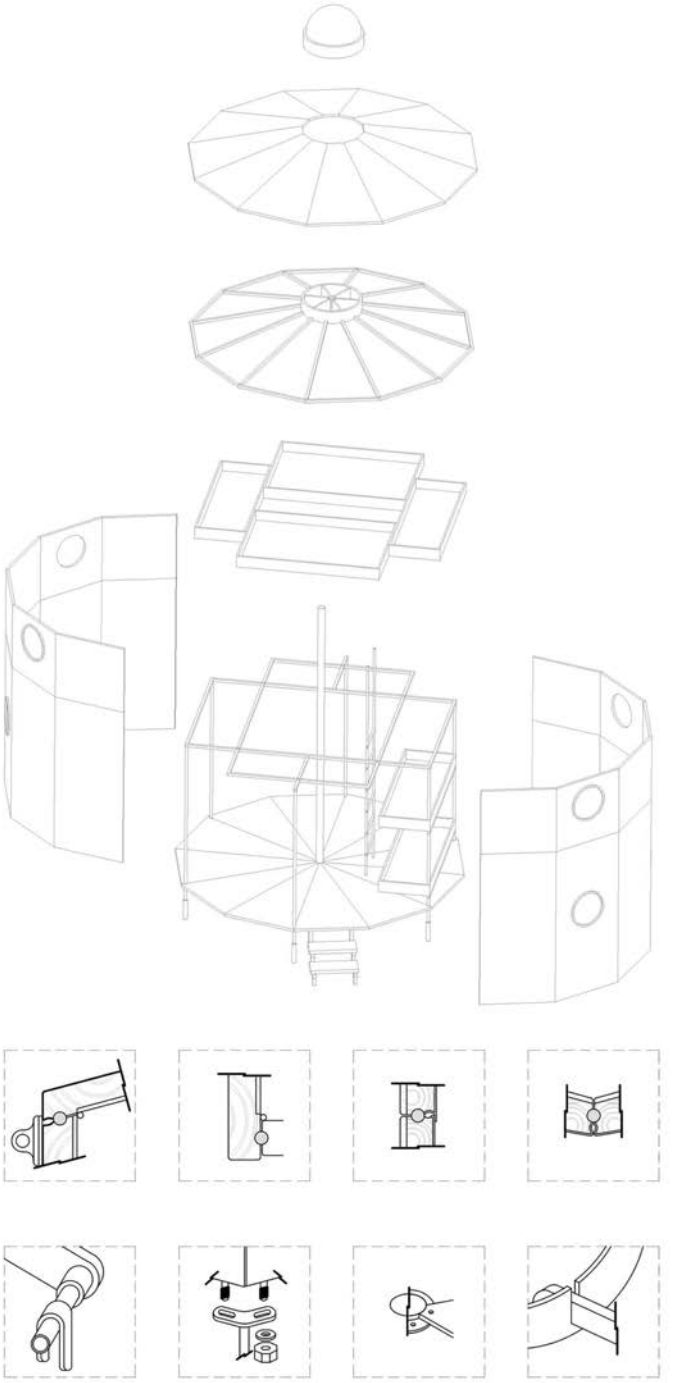


Figure 1: *Tonneau hut*, Pierre Jeanneret and Charlotte Perriand, 1937. Axonometric reconstruction of the model made by Pierre Jeanneret and Charlotte Perriand showing the assembly of the shelter and the way the different parts are assembled and details of the joints of the different parts of the shelter. Above: joints between floor, wall, and roof panels. Below: joints of the tubular structure, and stiffening cables. Axonometry drawing by the author.

Time-frame: Approach to the residential work of Pierre Jeanneret

What is known of Pierre Jeanneret's work is related, for the most part, to the works carried out in association with Le Corbusier. An extensive production that began in 1922 and ended in 1940, as a result of the war, resuming again in late 1950 with the commission for Chandigarh. Of these two stages a long bibliographical reflection can be found which, for the most part, focuses on the figure of Le Corbusier, leaving Pierre Jeanneret as the operational and technical executor of the projects. Even worse, of the decade after the separation, between 1940 and 1950, his production is unknown, a period little documented that has only left record in the collaborations that he made with other architects and designers such as Charlotte Perriand and Jean Prouvé; but that represented a stage of experimentation and conceptual deepening on the meaning and form of domestic space.

Now, with the above in mind, how can we determine P. Jeanneret's contribution to the construction of the modern habitat and thus its implementation in contemporary residential research if we do not know his residential work in depth? It becomes inevitable to reconstruct and know the work of P. Jeanneret before making any formal or technical analysis of the projects, reconstructing them in such a way as to see the research period as a holistic process in order to extract the elements, systems or technical or architectural themes that contribute to contemporary design, as Josep Quetglas puts it: "*The act of seeing does not consist in the passive and automatic reception of a fixed and established image in front of us, but in the active process of elaborating, approaching, separating, building relationships. The eyes receive an impact, and the memory sets off in search of possible links, producers of meaning*"[2].

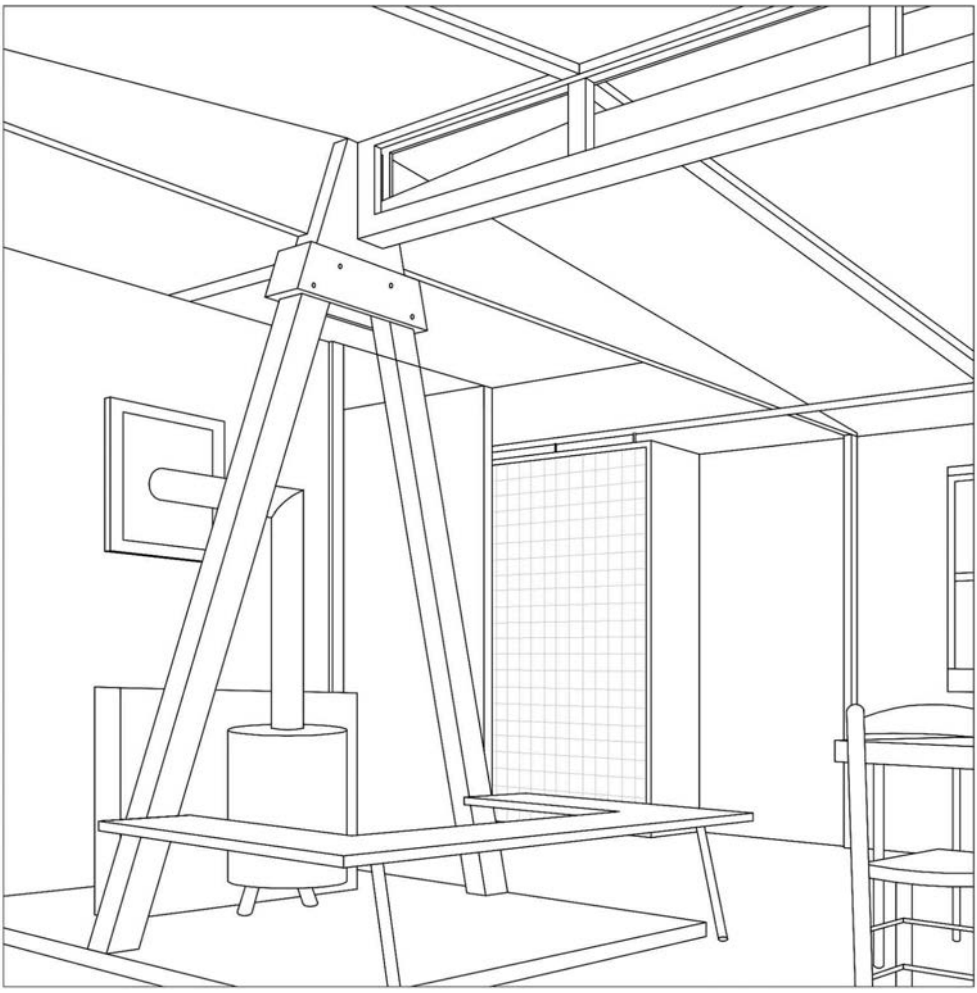


Figure 2: *Maison Demontable 8 x 8*, Pierre Jeanneret and Jean Prouvé, 1941, BCC. Redrawing of the central space with the V's portico, a light and itinerant wood structure as part of the space. Perspective drawing by the author.

Hypothesis: About innovation and technic

As the title of the thesis indicates, the research wants to stipulate the innovative and technical character of P. Jeanneret's residential projects seeking to discern that it was orchestrated as a process of heuristic projection. In order to do so, it is necessary to determine what is meant when we talk about innovation and technique, starting with the meaning and etymology in order to begin to understand. In one hand, to innovate is to

create or alter something, to introduce a novelty; its own Latin etymological root indicates it: "*in*" (to penetrate, to be inside) and "*novus*" (the new). The definition resonates in the words of Alvaro Siza: "*Architects do not invent anything they just transform what already exists*". But what does exist and what was new in the work of P. Jeanneret? It will one of the questions the thesis want to afront. In the other hand, technique, from the Greek, derives from the word *tekton*, carpenter or builder. It can be understood, if the intent is not specified, as Bruno Reichlin explains it in three different ways: the frist one, "*la costruzione intesa nel suo aspetto materiale, e quindi la struttura e il suo guscio, i materiali e i dispositivi tecnici che si collegano a essa, le installazioni come pure le modalità di fabbricazione e il procedimento di messa in opera"*. The second one, *"l'immagine "tecnica" dell'opera, vale a dire ciò che nell'opera compiuta è dato di vedere e comprendere della sua costruzione. (...) indicata con il termine "tectonica".* And the last one, "*il complesso dei saperi, dei metodi e degli strumenti di cui gli architetti (...) si sono dati per occuparsi in modo razionale ed efficace della concezione, e quindi dell'innovazione e della creazione, architettonica" (...)"*[3].

Following this order of ideas, the thesis is structured from the four main periods of the residential work of P. Jeanneret, the first, his training and collaboration in the atelier *35 rue de Sèvres* between 1922 and 1940 [1]. The second, with a greater burden of research and exploration to the resolution of the residential unit, industrialization and housing for the masses between 1937 and 1945 [2]. The third, the search for a local character of architecture, starting from an exploration that began before the split with Le Corbusier and carried forward with the construction of villas and chalets during 1940 – 1951, and finally, the design and construction of the city of Chandigarh, during 1951 and 1965 [3], with the formulation of about thirty residential models that were part of the main body of the city.

Each of the periods will be analyzed following the structure drawn from the third idea of technique, understanding as the instruments, and the way the architects project. In the case of Pierre Jeanneret, it's the Photography. Pierre Jeanneret, used photography not only as a form of documentation[4], but beyond that, what this thesis wants to demonstrate, was an instrument of design, a tool that allowed him to study his environment, reflect on what he was seeing and thus appropriate these images to make them part of his study, for what to do as an architect. We want to understand the value of the photographed images and their influence on the generation of the architectural form and its architecture, how the image (of the event, object, building) has remained both on paper and in memory and has been used in the generation of new architecture.

The objective, then, is to build a map of interactions that highlights the relationships between the photographed by Pierre Jeanneret and his architectural projects, establishing a theoretical basis from the Warburgrian approaches on the image and the production of ideas and how they can be reflected in photography from the plans of authors such as John Berger, Walter Benjamin, Jesus Vassallo, Josep Quetglas or Susan Sontag and similar photographers such as Walker Evans, August Sander or John Szarkowski.

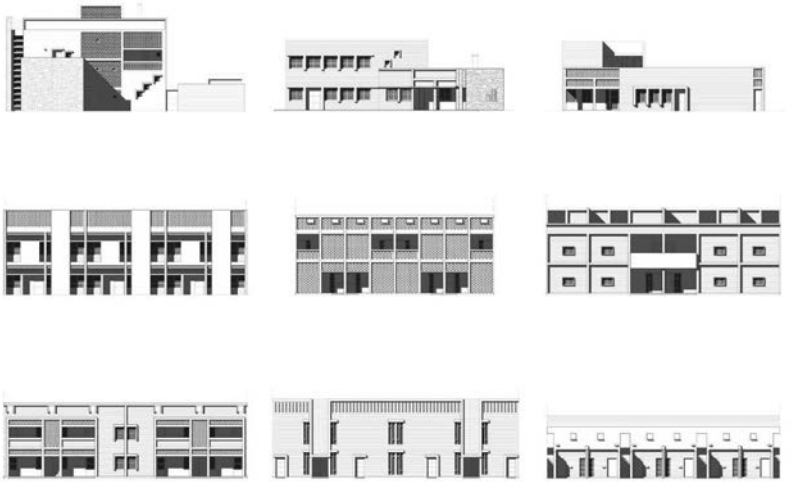


Figure 3: Chandigarh houses, Pierre Jeanneret. Some examples of the government houses designed between 1951-1965, the cases mixed different typologies and social categories. Facades drawing by the author.

Organization

The thesis proposes to establish two moments of approach to the proposed theme. The first, a conceptual and introductory moment where we establish the basis of photography as a document, and its use in architecture in relation to Pierre Jeanneret, since our goal is to unveil the work of P. Jeanneret through photography, it is necessary to understand the first steps, his apprenticeship as a photographer and his first teachers. In order to, in a second, empirical moment, present the various cases where the image and the project have contact, confronting the images and the projects (whether built or not built) and establishing the elements and contents that unite photography and architecture. With the diversity of cases, we want to establish the argumentative bases that we want to verify with the thesis, and above all, the different declinations that the photographic image can have in order to use it as an instrument of design.

1————Quetglas, Josep (2020): A Casandra: Cuatro charlas sobre mirar y decir. Madrid: Ediciones Asimétricas, p. 21

2————Quetglas, Josep (2017): Restos de Arquitectura y de critica de la cultura. Barcelona: Arcadia, p. 144

3————Reichlin, Bruno (2007): "Intruduzione", In AA.VV, Jean Prouvè: The poetics of the technical object. Ginevra – Milano: SKira

4————Libros como Jacques Barsac, Charlotte Perriand and Photography: A wild-Angle Eye (Milan: 5 Continents Editions, 2011) o Tim Benton, Le Corbusier Secret Photographer ayudan a entender la relación que dichos arquitectos han tenido con la fotografía. En el caso de Pierre Jeanneret, son mas de 3000 las fotografías que se encuentran en el Fondo Archivo Pierre Jeanneret perteneciente al Canadian Center for Architecture, aun por estudiar.

Narrating the City A Narrative Typology of Place-making Process Through Script, Storytelling and Performance

Enrico Chinellato, University of Bologna

Doctoral application

#

narrative, place-making, script

Abstract

This research explores a narrative typology of place-making process by studying its implication in the context of urban renewal through three tools: the script, the storytelling, and the performance.

A first section will examine and define the notions of script, storytelling and performance as they relate to different kinds of narratives at stake, while circumscribing what can be recognised as narrative in creative place-making process in the context of urban renewal.

A second section will elaborate an applicative procedural model as the base for the theoretical definition of a narrative typology of place-making process. The notion of script/scripting is here understood as a narrated process of three phases: in-script, de-script, and re-script.

A third section will present a design-led textual/visual report of the application of the procedural model on a localised case study focussed on the Mahane Yehuda market and the Beit Alliance site in the historical center of Jerusalem.

Extended abstract

"Objects alone do not make a place. It is how people feel about and respond to the elements in their environment, as well as other people who share their space, that help determine what a place is." Leonardo Vazquez [1]

The heterogeneous nature of the contemporary city's transformations concerns a multitude of aspects which cannot be grasped through a mono-disciplinary lens. Cities are called to face complex challenges that do not find solutions in monosemic paradigms of intervention. There is in fact a tension laying at the crossroad of stability and adaptability [2] which is leading to the

emergence of a *polyrhythmic reading* of mechanisms that allows cities to exist in a dynamic state while maintaining cohesion. Across the fields of architecture and urban design, an ever-increasing number of practitioners experiments with complexity-based creative approaches drawing from principles of arts-based civic engagement, community-driven design, and social change. These are translated into transdisciplinary *creative place-making* activities. As introduced in 2010 by economist Ann Markusen and arts consultant Anne Gadwa, in creative place-making:

"(...) partners from public, private, non-profit, and community sectors strategically shape the physical and social character of a neighborhood, town, city, or region around arts and cultural activities. Creative place-making animates public and private spaces, rejuvenates structures and streetscapes, improves local business viability and public safety, and brings diverse people together to celebrate, inspire, and be inspired." [3]

During the past 30 or more years, this practice has started developing around the concept of *narratives*, with scholars such as James Throgmorton [4], Leonie Sandercock [5], and Lieven Ameel [6], exposing the emergence of what Sandercock defined a "*story turn*" [7].

In this sense, creative place-making becomes a process addressing the issues of the built environment by pursuing civic dialogue, promoting the inclusion of communities' often conflicting points of view into the public narrative. This is then achieved through a design-led creative and dialogic understanding of place-related symbols, cultural references and stories in such a way that they form a coherent whole [8], so that a *place* is therefore brought into being through a series of *public performative acts* [9]. Lynda Schneekloth and Robert Shibley emphasized that the first "most important activity of professional place-makers" is to generate "an

open space for dialogue about the place", where "all knowledges are valued, shared, and used in the process of decision making" [10]. As there is never only one story of a place, nor a correct one, they also noted that "to appreciate a place and people does not, however, imply an uncritical stance towards it". In fact, "to act responsibly in the historical moment requires knowledge of that time/place/cultural reality; wisdom to recognize that one never has sufficient information or insight on which to base a 'rational' decision; and courage to proceed anyway." [11]

This research explores a narrative typology of place-making process by studying its implication in the context of urban renewal through three primary tools: the *script*, the *storytelling*, and the *performance*. Through these notions, the research will sketch out an applicative procedural model as a guideline for the *articulation of a place*. This model aims at: first, examining how *stories* of, and for an urban environment, rising from *events* involving human and non-human actors placed in a temporal and spatial setting, are built on top of older ones; second, evaluating how a new understanding emerges along the way thanks to its implementation through design-led and art-based participatory activities.

The research is structured on three levels of investigations as follows. The first section operates a literature review, examining and defining the notions of script, storytelling and performance as they relate to different kinds of narratives at stake, as well as to where they originate, while circumscribing what can be recognised as narrative in creative place-making process with regards to the context of urban renewal.

The second section connects these strains in order to elaborate an applicative procedural model as the base for the theoretical definition of a narrative typology of place-making process. The notion of script/scripting is here understood as a process of three phases: *in-script*

(mapping of the existing stories *of* a place), *de-script* (formation and performative execution of novel acts as a mean of intervention *on* a place), and *re-script* (evaluation of newly generated stories *for* a place). (fig.1)

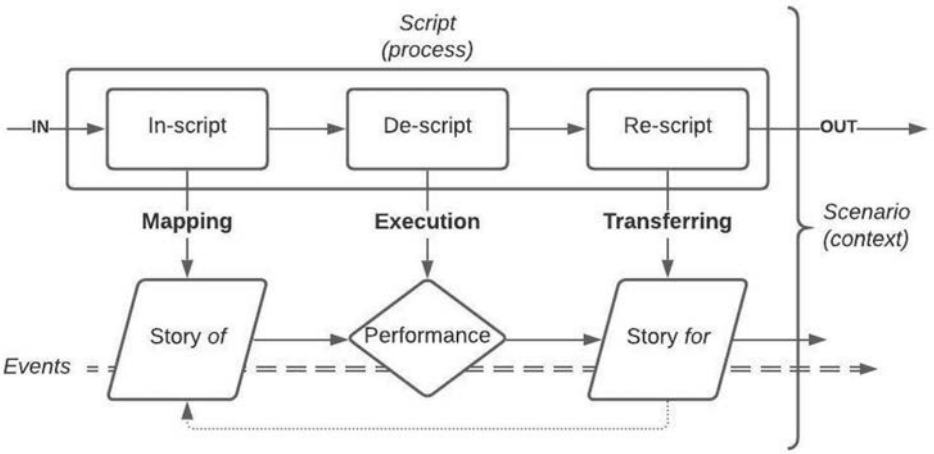


Figure 1: Applicative procedural model (script process)
[Diagram: Enrico Chinellato]

With the third section, the research presents a design-led textual/visual report of an early-stage application of the procedural model on a localised case study focussed on the Mahane Yehuda market and the Beit Alliance site in the historical center of Jerusalem. This is an instance of a site characterised by difficulties with establishing and maintaining a unified narrative, as formal top-down planning codes find themselves opposed by a highly polarized reality through which sub-groups shape the place according to their own set of informal urban stories.

For more than 20 years the area had been fought over both in the political arena and in the public opinion. The spatial analysis of the built environment reveals a fragmentation of the public space system, which is caused by a concentration of 'leftover' abandoned or underused urban spaces, as well as of parking areas, and worsened by strong physical divisions between the neighboring residential districts, ultimately failing to become a place of collective exchange and meeting.

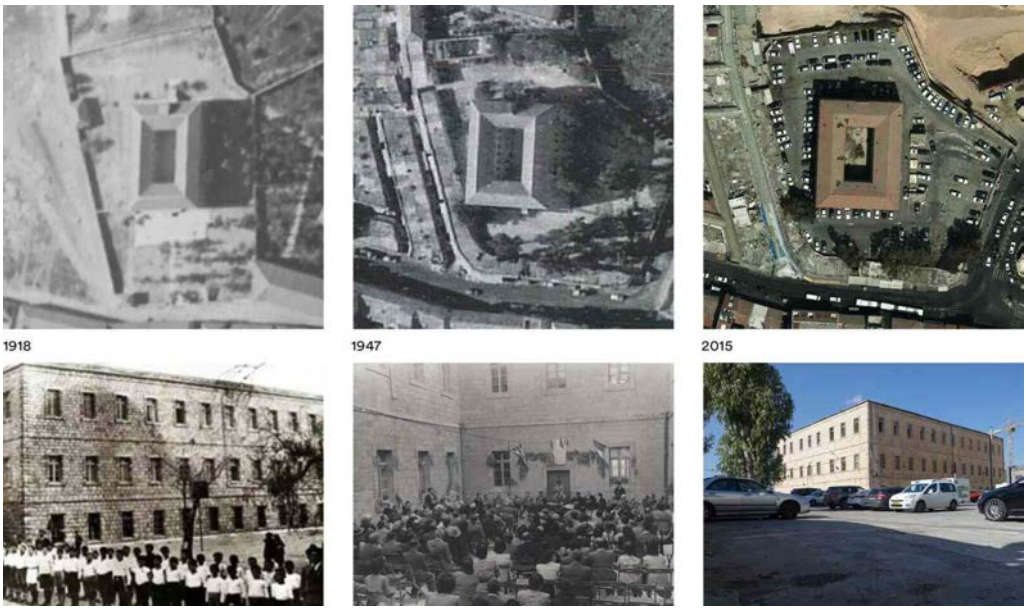


Figure 2: Historical development of the Beit Alliance site
[Content: Enrico Chinellato]

However, it is argued that the paradoxical disconnection between the Mahane Yehuda market and the nearby Beit Alliance site is to be found in the lived condition of the place, rather than in the spatial one. Abandoned in 1990, since 2016 the Beit Alliance building has received new life thanks to the Jerusalem-based NGO 'New Spirit', who reactivated the building through temporary uses by renewing only the bare essential while hosting cultural events and coworking spaces for creative practices and start-up. Nevertheless, although being physically connected to the most lively place of the city, the area experiences a condition of alienation in its spatial and lived dimension.(fig.2)(fig.3)

During a period of eight months I conducted studies through ethnographic fieldwork in this area, focussing on the ongoing activities happening in and between the Alliance building and the market, the surrounding neighborhoods, and their relation to the planned future of the site. The fieldwork entailed semi-participant daily observations, study of relevant documents, spatial surveys, mapping, meetings with residents and members of the NGO, and various actors involved in the Jerusalem creative place-making scene, and interviews

with about 20 actors, which were aimed at highlighting citizen's perception and awareness of the place, as well as its stories.(fig.4)

Figure 3: Current happenings inside the Beit Alliance building
[Photo: New Spirit]

In short, following the procedural model this data formed the base of the *in-script* phase, which was then translated into the *de-script* phase representing the conceptualisation of novel acts as a means of intervention on the place. In the case at hand, together with the NGO's support and the involvement of several local artists, this phase was elaborated through the organisation of a creative public participatory workshop, aimed at confronting existing narratives while imagining new stories for the area through the development of a one-year long event. The stories were reconstructed mostly from conversations and visual/textual observation notes with the participants. They were then interpreted into a script of the event through visual storytelling as an illustrated calendar. Each month a particular temporary happening will take place in the spaces in and around the Beit Alliance building, gradually reshaping them in physical and perceptual terms: each physical

action, which develops the event in space in material terms, corresponds to a story, apt to build awareness in terms of new uses of the space and personal identification with it through making -performing. Month-by-month, an illustration and a short text tells a story that seeks to portray an imaginary in-person experience of what is happening in the place. (fig.5 – 7)

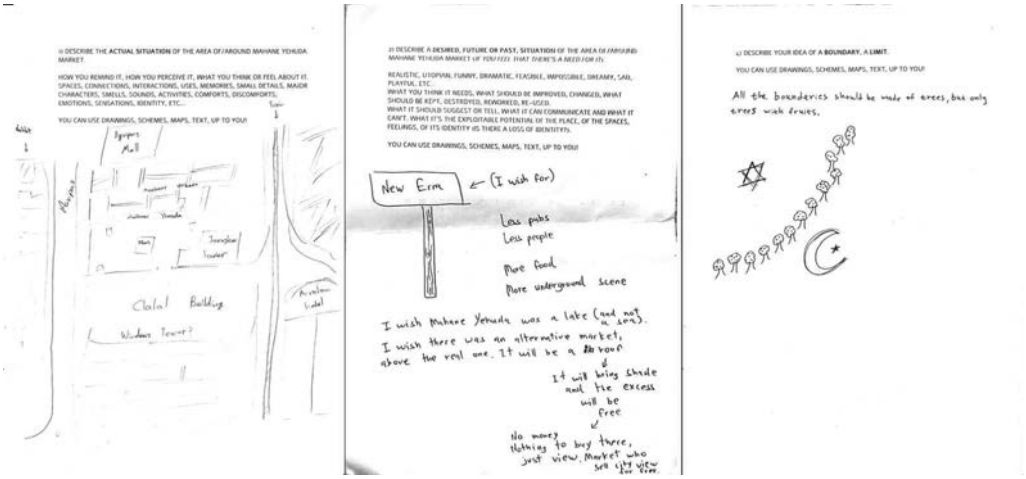


Figure 4: Examples of interviews responses from various citizens [Content: Enrico Chinellato]

This process helped the actors to formulate what is relevant to them. It is important to note that this conceptual scenario, or plan, has the capacity to tell an explicit story. However, scenarios and plans themselves are not a story [12]. In fact, these newly generated stories rather represent a way to talk about what is going on in a place and what should or can be done with that place. The evaluation of these newly generated stories was carried out in the *re-script* phase by operating a new round of interviews with the participants of the workshop, which highlighted how stories of decline were starting to be followed by stories of hope.

The case here introduced, together with the findings derived by its investigation through the application of the procedural model, is used as an illustration of what more we can learn about creative place-making processes from a narrative perspective.

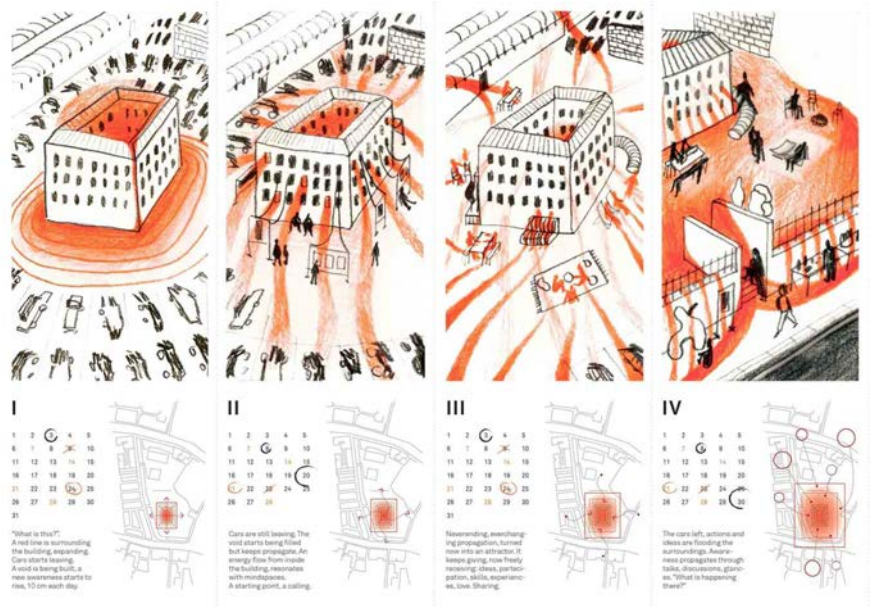


Figure 5: Illustrated calendar, months I-IV [Content: Enrico Chinellato]

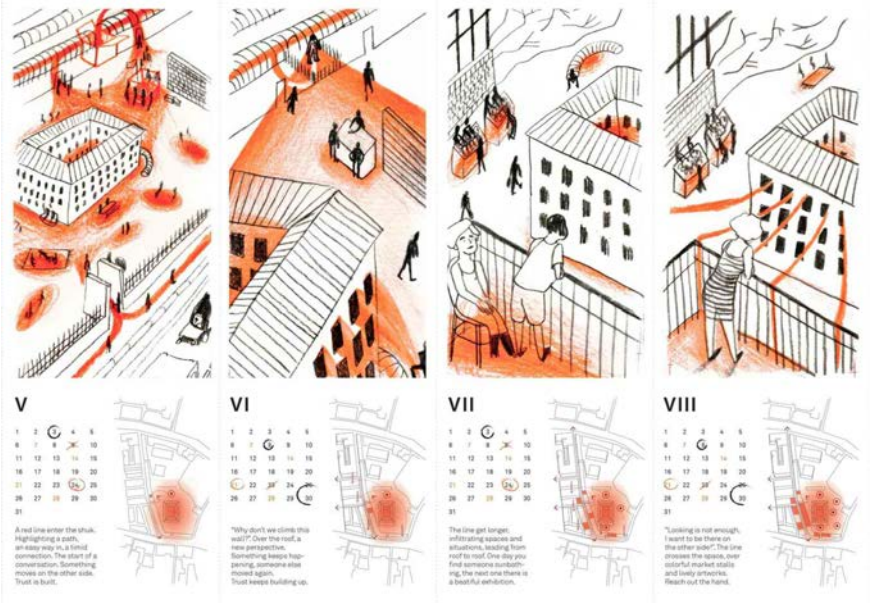


Figure 6: Illustrated calendar, months V-VIII [Content: Enrico Chinellato]

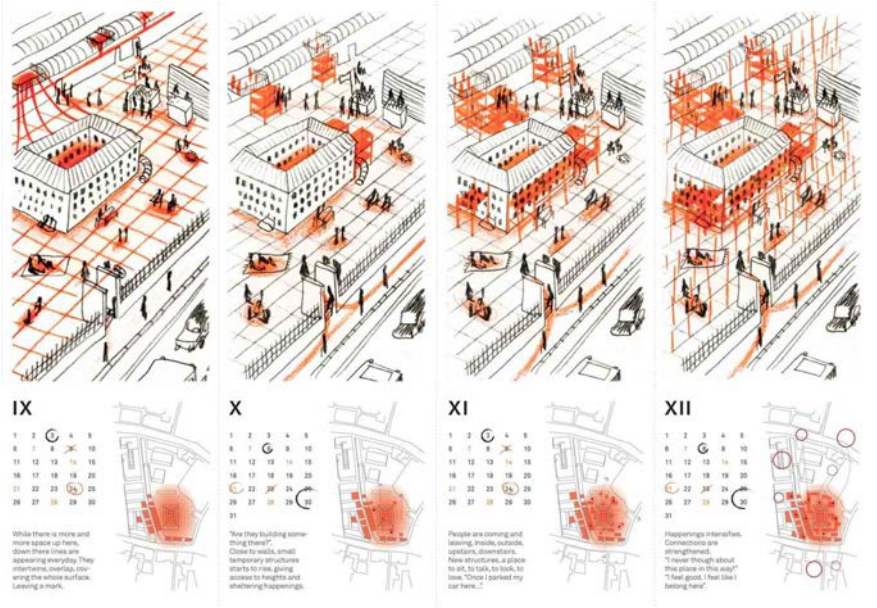


Figure 7: Illustrated calendar, months IX-XII [Content: Enrico Chinellato]

1 Vazquez, Leonardo (2012): "Creative Placemaking: Integrating Community, Cultural and Economic development," white paper.

2 Rosner-Manor, Yaara/Borghini, Sayfan G./Boonstra, Beitske/Silva, Paulo (2020): "Adaptation of the urban codes - A story of placemaking in Jerusalem", in: Environment and Planning B: Urban Analytics and City Science 47, pp. 251–267.

3 Markusen, Ann/Gadwa, Anne (2010): "Arts and Culture in Urban or Regional Planning: A Review and Research Agenda", in: Journal of Planning Education and Research, 29(3), pp. 379–391.

4 Throgmorton, James (1992): "Planning as persuasive storytelling about the future: Negotiating an electric power rate settlement in Illinois.", in: Journal of Planning Education and Research 12, pp. 17–31.

5 Sandercock, Leonie (2003b): "Dreaming the sustainable city: Organizing hope, negotiating fear, mediating memory", in: Throgmorton, J. and Eckstein, B. (eds) "Stories and Sustainability: Planning, Practice, and the Sustainability of American Cities." Cambridge, MA: MIT Press.

6 Ameel, Lieven (2020): "The Narrative Turn in Urban Planning: Plotting the Helsinki Waterfront", Routledge, London.

7 Sandercock, Leonie (2010): "From the campfire to the computer: An epistemology of multiplicity and the story turn in planning.", in: Sandercock, L. and Attili, G. (eds) "Multimedia Explorations in Urban Policy and Planning". Dordrecht: Springer.

8 van Hulst, Merlijn (2012): "Storytelling, a model of and a model for planning.", in: Planning Theory 11, pp. 299–318.

9 See Fischer-Lichte, Erika (2009): "Culture as Performance" in: Modern Austrian Literature, vol. 42, no. 3, pp. 1–10.

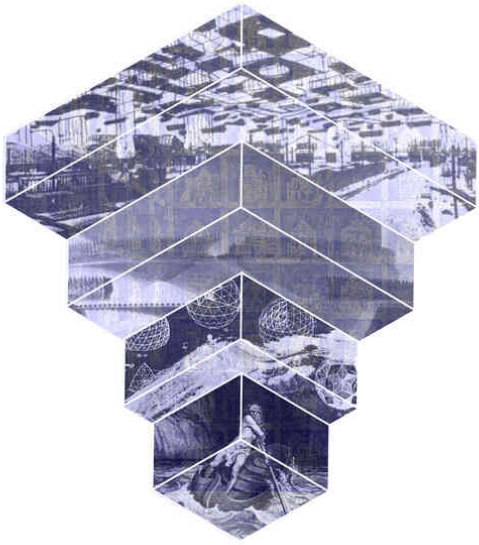
10 Schneekloth, Lynda/Shibley, Robert (1995): "Placemaking: The Art and Practice of Building Communities", Wiley, pp. 6, 14.

11 Ibid., pp. 8, 10.

12 Albrechts, Louis (2005): "Creativity as a drive for change.", in: Planning Theory 4: pp. 247–269.

Archrypt
The Time-capsule as a Design-driven Method

Mariacristina D'Oria, University of Trieste
Gianluca Croce, University of Trieste
Valentina Rodani, University of Trieste



Research project developed connecting our individual PhD research trajectories.

Supervisor: Giovanni Corbellini, Politecnico di Torino

#

Apocalypse, time-capsule, archeology of the future

Abstract

The architectural discipline has always had to interface with the constant threat of disasters, offering its performative skills. The contemporary condition has provoked several catastrophes, accelerating the perception of a global situation perpetually in the balance. Taking to the limit the threat of a more or less imminent "end of the world," the project considers the idea of collecting and archiving the attempts that the architectural discipline has produced in contexts dominated by specific criticalities, hypothesizing a time capsule to be transmitted to the posterity of a future post-apocalyptic society. The process of selecting and cataloging projects and related associated disasters feeds the archive's construction, defined by a ready-made operation of archetypal forms. The project's transmission required a different comparison with the methods of translating the message concerning the possibilities offered by the different media and related containers in the contexts of performance and exhibitions.

Artefact

Welcome to the End Times

The pressing warnings from the scientific community about the depletion of available resources and the irreversible effects of climate change, the perpetuation of recurring economic crises, the exacerbation of social inequalities, and the escalation of new nationalisms and conflicts suggest the perception of the imminent advent of one or more disasters of global proportions [1].

While on the one hand, there is a debate on what strategies could avert or postpone the catastrophe occurrence, on the other hand, emerges the question of preserving the traces of a threatened world and

transmitting posterity the signs of our existence as instruments for the archaeologists of the future.

Is it possible to organize a repertoire of knowledge, theories, and projects so that this heritage constitutes not only a cultural archive but also a potential operational kit capable of offering our disciplinary relevance even in a remote and uncertain future?

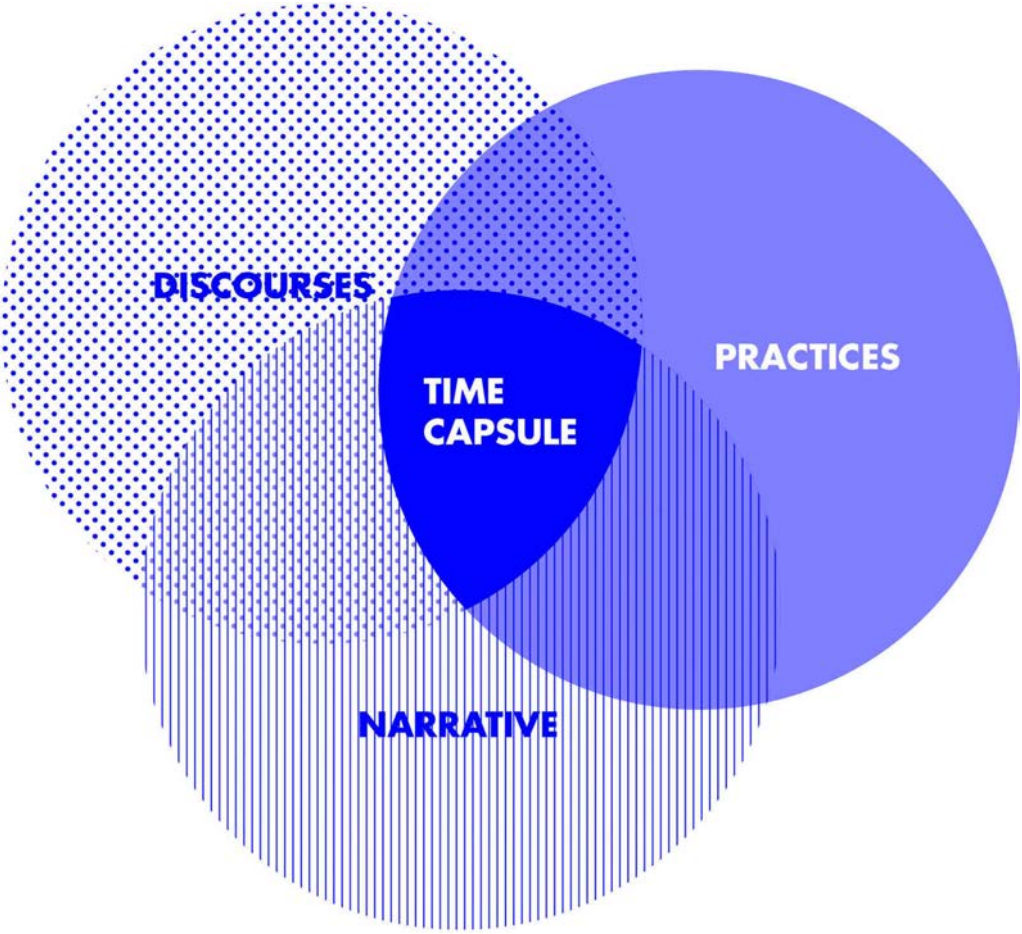


Figure 1: Conceptual diagram of the research field; image by the authors.

The idea of transporting the traces of one's existence to the future is structured with modernity. The proper notion of a time capsule as "a container used to store for posterity a selection of objects thought to be representative of life at a particular time" is exemplified by the *Crypt of Civilization*, created by Thornwell Jacobs in 1937 **[1]**. The research investigates this conceptual device in architectural terms, considering architecture

as a time capsule *ante litteram* and exploring its potentiality as a design-driven methodology.

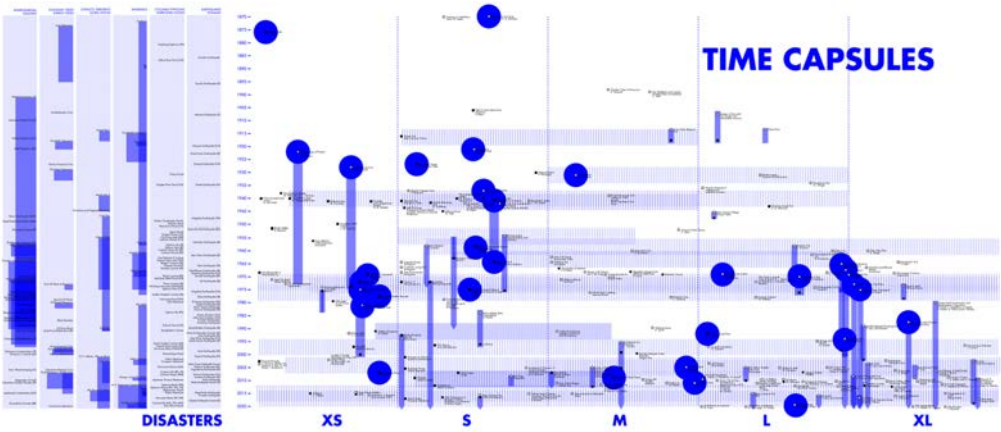


Figure 2: Archive selection diagram organized by scale and time factor; image by the authors.

Learning from the End Times: the archiving process

The selection process focuses on the relation between architecture and disaster, letting a heritage of design strategies emerge. As recalled in a recent book, crises accelerate situations that are often already elaborated within the disciplinary debate [3]. Therefore, architecture seems to have an intrinsic capacity to evoke the disaster to which it is then called to respond. Rather than claiming a resolving role for humanity's problems, this feature emphasizes the architecture's ability to underline the contradictions of the socio-economic contexts in which it elaborates its production and mandate.

The project recognizes 1945 (the year of the atomic bombings of Hiroshima and Nagasaki) as the catastrophic event par excellence: the time difference between that year and our contemporaneity is projected backward to establish the time frame boundaries to select the archive content.

Consequently, the analysis of the most significant disasters with global relevance, according to the size of the destructive event, its duration, and the number of

victims, let the disaster categories emerge: environmental/health disasters; economic/financial/energy crises; wars/conflicts/terroristic attacks; epidemics/pandemics; cyclones/floods/typhoons/hurricanes; earthquakes and tsunamis.

The selected projects may directly relate to a specific disastrous event [4] [5]; others express the change of architectural, cultural paradigm stimulated by a specific *Zeitgeist* or by an epochal critical turning point (for example, the recycling processes in the shadow of the environmental or economic crisis [6], or narrative forms that critically take the current condition to extremes adopting dystopian or utopian narratives [7]. **[2]**

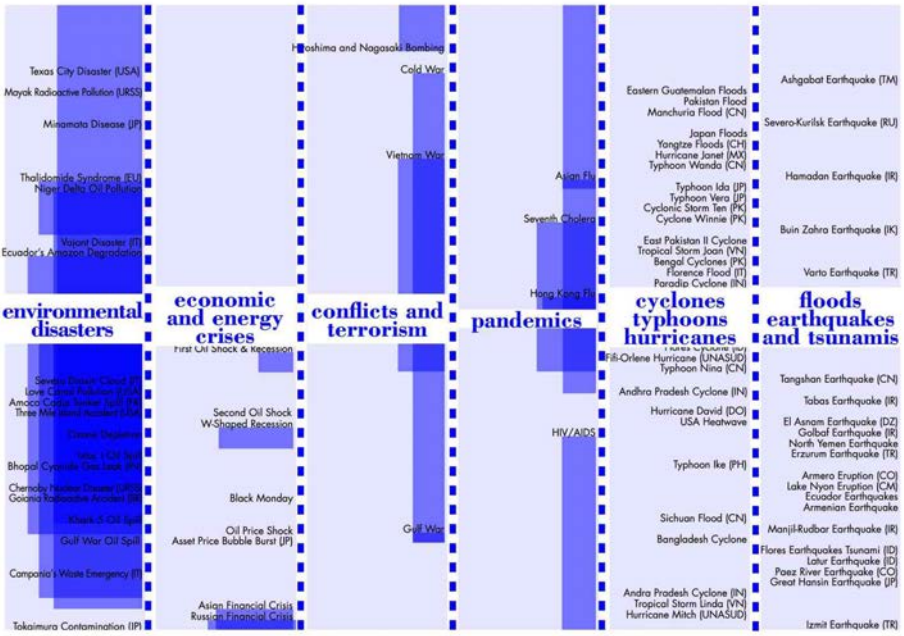


Figure 3: Detail of the archive selection diagram illustrating the categories of disasters; image by the authors.

Hence, the archive organization resulted in a diagram, which consistently follows a horizontal scan from the smallest scale to gradually increase to the size of the landscape, reaching that of the entire planet. **[3 –6]**

The densification of catastrophic events over time corresponds to an increase in the projects' time horizon (as can be seen from the vertical lines) and their transcalar value (highlighted by horizontal lines) at these intersections between time and scale factors, time capsule devices are frequently noted. **[7]**

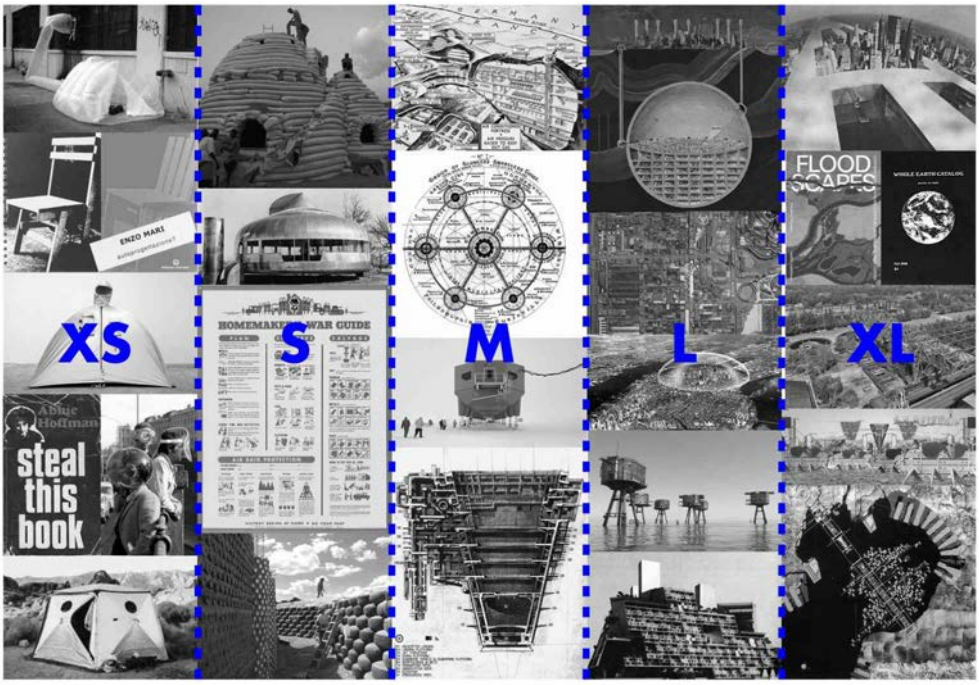


Figure 4: Illustration of the archive organization by scale-factor; image by the authors.

Figure 5: Diagram of the archive organization by scale-factor; image by the authors.

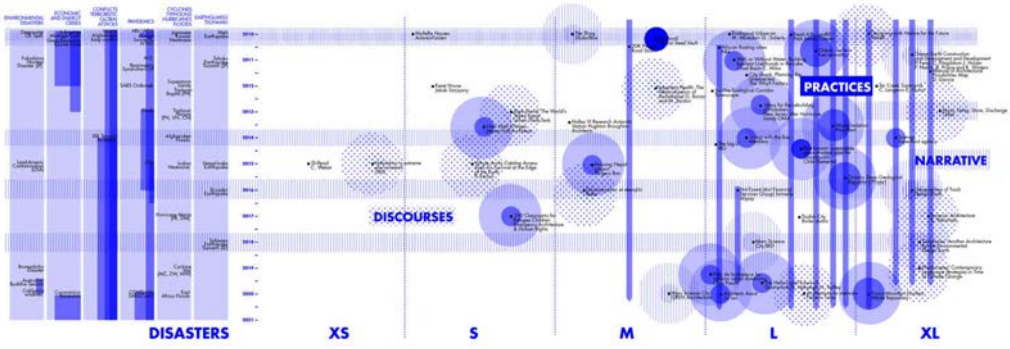


Figure 6: Focus of the archive selection diagram on the interval 2010-2021; image by the authors.

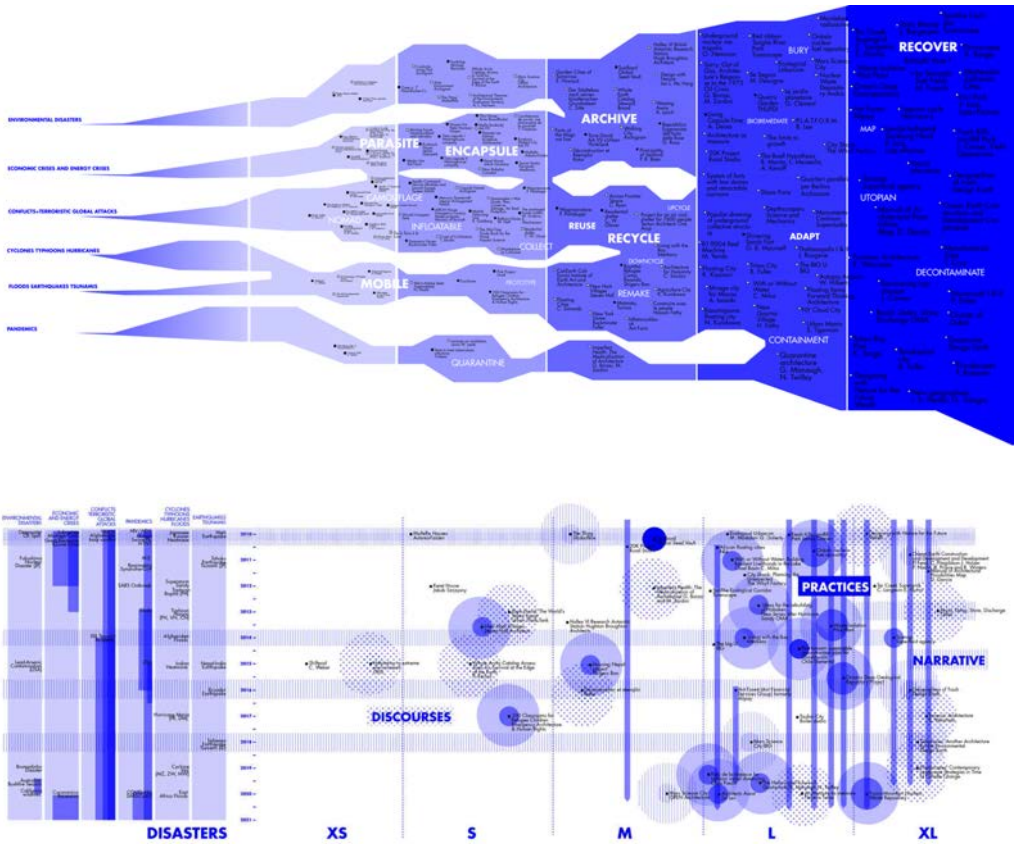


Figure 7: Diagram highlighting the correlation between disasters categories and architectural strategies; image by the authors.

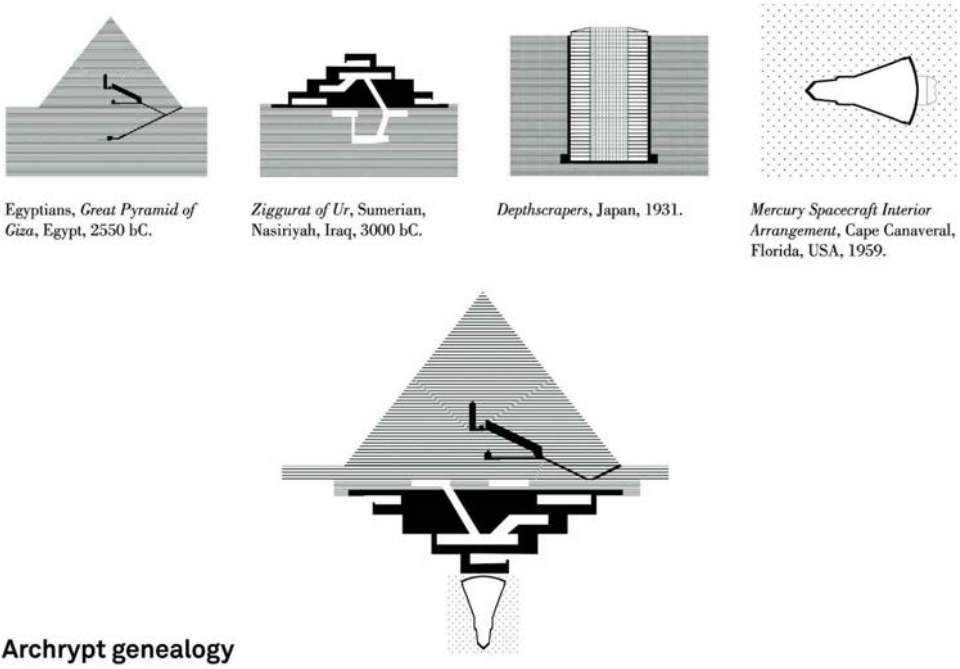


Figure 8: Archrypt genealogy; image by the authors.

Additionally, the archiving process provokes the emergence of transversal connections between projects that materialize a corpus of design strategies, beyond time and space scale factors: from adaption to containment, bury, inflate, camouflage, but also recovery, reuse, and so on... **[8]**

The process raises a productive flow in which the archive feeds on additional ancillary considerations that define the internal logic of this cataloguing. Finally, the archive unfolds geography of narratives, practices, and discourses intertwining apocalypse and architecture: drawings, diagrams, models, visions, texts, samples of anthropic and natural materials alternates and are collected according to the time and space scale factor.

The archive for the post-apocalyptic future: first design experimentation

Exploring the time capsule as a design-driven method assembled two consequent artefacts, characterized by extremely different expiring-date horizons (geologically

long vs. ephemerally short). The first is *Archrypt*, an archive where the relation between the selected content and the designed container elaborates a significant space for the post-apocalyptic future.

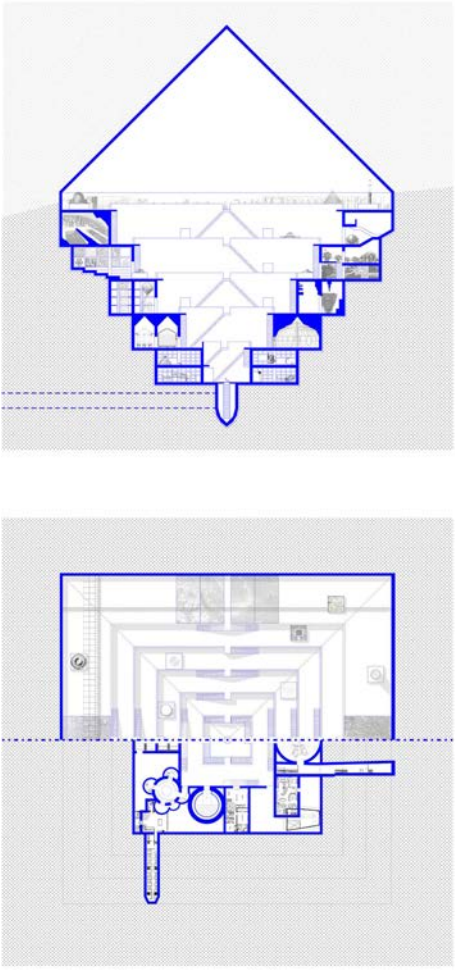


Figure 9: Archrypt section and plan; image by the authors.

Tracing the genealogy of architectural time capsules [8], four main categories are identified: the burial, the archive, the bunker, and the spaceship **[9]**. The archive form derives from the assemblage of these archetypes, the ziggurat, and the stepped skyscraper, reversing its direction and density, obtaining a cavity to organize the archive content. Moreover, through a ready-made operation, a pyramid (exterior landmark) and a space shuttle (symbolic underground entrance) are superimposed at the extremes of this volume. The archive vertical scan

follows the projects' size. The lower level hosts 1:1 scale artefacts [9]; going to the upper levels, the projects' scale increases, and therefore, the dimensions of the maquette decrease exhibiting urban and territorial models and visions [10] **[10]**. In contrast, the vertical connections cross the different scales identifying the thematic paths related to the six disaster categories, ending at the upper level with the message intended for the man of the future and the dimensional references to decode all the archive projects [11].

Figure 10: Thornwell Jacobs, *The Crypt of Civilization*, Georgia (USA) 1937-40; retrieved from https://crypt.oglethorpe.edu/?attachment_id=173 (last accessed June 30th 2021).

Archrypt aims to be a critical-operational work on transmitting architectural memory through an architecture of memory. *Archrypt* refers to the ancestral dimension of architecture connected to its function of time capsule ante litteram.

The performative archive for the post-apocalyptic now: second design experimentation

Facing the outbreak of the Covid-19 crisis, the multimedia installation and performance *Apocalipsis cum figuris* [12] confronted a real catastrophe as a condition where the architecture itself became the material object and immaterial medium of experimentation: the imposed social distancing implied the reformulation of the archive methods of use. Consequently, the building has been temporarily converted into a time capsule by following four main design principles: inaccessibility, extension of architectural elements through different

media, simultaneity of representation, and dynamic interaction among environmental conditions.

Thus, the archive is designed as a performative and narrative apparatus, where the multimedia/dynamic stream of interactive information produced an inversion: architecture does not contain but speaks for itself. **[11 – 13]**

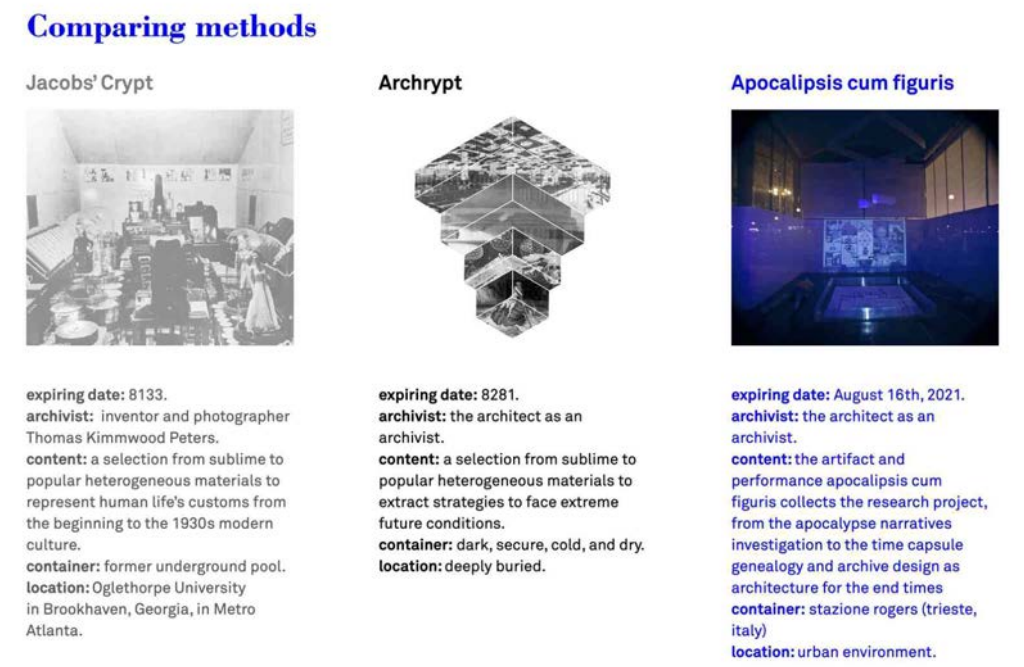


Figure 11: Comparing research methods and outcomes between Thornwell Jacobs' *Crypt of Civilization*, authors' *Archrypt* (conceptual artefact) and *Apocalypsis cum figuris* (artefact and performance); image by the authors.

An open-epilogue: unfolding the time-capsule reformulation

By adopting the time-capsule as design-driven method, the research project investigates the archive device both on a theoretical level, collecting and selecting contents, and on a design level, by defining the physical container as the outcome of the archiving process.

The elaboration and the outcomes determine two parallel and inverse processes: on the one hand, the design of an archive by an organized community, informed and

aware of its condition and destiny; on the other hand, the impossibility of foreseeing what will be the cultural and cognitive requirements of the possible capsule discoverers and what processes that such a collection of projects could trigger in them. This indeterminateness reserves a projective potential, a territory in which the real and the imaginary are explored using an extreme narrative register, which abandons any claim to objectivity to prove its possible limits and translate them into a material configuration.

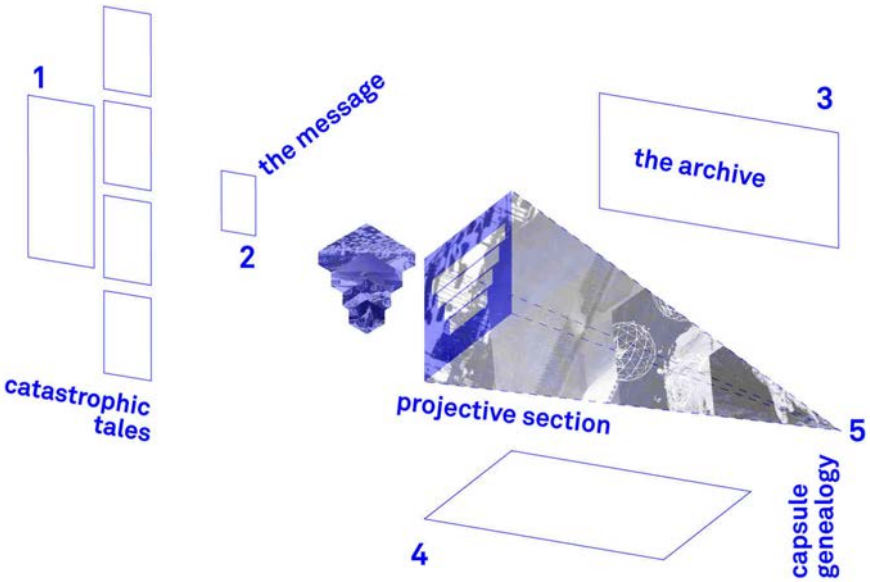


Figure 12: Artefact proposal for CA2RE Ljubljana 2021.

Figure 13: *Apocalipsis cum figuris*, images of the performance displayed in Stazione Rogers, Trieste, Italy (3-16 August 2020).

1————AA.VV. (2018):»Apocalypse: A Field Guide to Surviving the Future of Architecture«, Archifutures 5.

2————AA.VV. (2016):»At Extreme«, Brakets 3.

3————Doglio, Federica / Zardini, Mirko (2021): Dopo le crisi 1973, 2001, 2008, 2020, Siracusa: LetteraVentidue.

4————Chateigné, Yann/Miessen, Markus eds (2016): The Archive as a Productive Space of Conflict, Berlin: Sternberg Press.

5————For example, the emergency architecture of Ito, Toyo (2011-2015): Home for All.

6————As in the case of the projects of Bergdoll, Barry and Martin, Reinhold (2012): Foreclosed Rehousing The American Dream, New York: MoMA.

7————One of the examples is that of Constant, Nieuwenhuys (1956-1974): New Babylon.

8————Jarvis, William E. (2021): Time Capsules: A Cultural History, Jefferson: McFarland Publishing.

9————As Haus-Rucker-Co' Mind Expander (1967-1969) by for the XS selection, or Fuller's Dymaxion house (1928-1945) for the S scale.

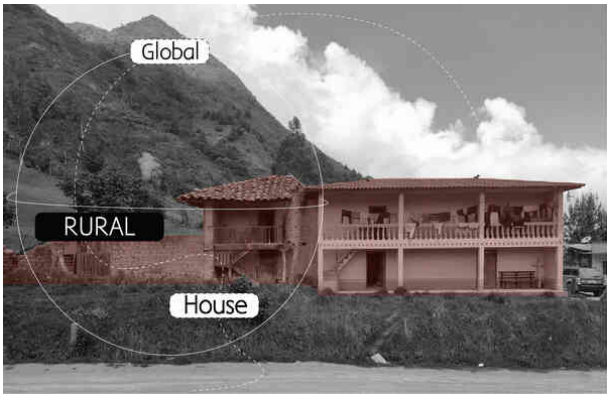
10————For example Isozaki's Mirage City (1997) and Superstudio's Continuous Monument (1969-1970).

11————As Le Corbusier' Modulor (1948-1955), architectural histograms.

12————The multimedia installation Apocalypsis cum figuris has been displayed in Stazione Rogers (Trieste, Italy, 3-16 August 2020, the performance has been developed in collaboration with Samuel Iuri (PhD University of Trieste) and Taufan ter Weel (PhD TU Delft). See <http://www. stazionerogers.org/ content/apocalipsis-cum- figuris>.

Rural Habitat at 0° Latitude
The Architectural Project as a Tool for a Critical Investigation on Living

Valentina Dall'Orto, Politecnico di Milano



Initial doctoral stage

Supervisors: Andrea Gritti, Politecnico di Milano; Antonio di Campli, Politecnico di Torino; Franco Tagliabue, Politecnico di Milano

Rural, House, Global

Abstract

The research is focused on individuating a proper representation code, useful for the interpretation of the blurred condition of contemporary rurality, through the analysis of the house. The dwelling has been selected as it embodies the material expression of changes of spatial practices occurring in the Global South. Its architecture often manifests a process of cultural hybridization, resulting in anonymous spatial paradigms in perpetual transition, rather than a strong relation with the territory.

The investigation will take place in the Andean region of Loja, in the southern Ecuador, a frontier land crossed by several environmental and socio-economic crucial issues, deriving in the generation of original praxis in the production of domestic space.

Architecture in envisioned as an important agent of transformation in re-shaping the future of rural environment, for this reason it's relevant to speculate on the project tools to build up a critical representation of contemporary rurality.

Extended abstract

The research deals with the themes of the **project of rural dwelling**, through an **analysis** of the architecture of the **house** in its different declinations. The house has been selected as a **material expression** of changes of inhabiting practices occurring in the **Global South**.

The **complex and multifaceted scenario** presented by the **contemporary countryside** is an object of debate in different fields of knowledge. A multiplicity of conceptual categorization and the **blurred** nature of rural subjects invite researchers to study it through unexplored optics.[1]

In this framework, **architecture** is envisioned as an important **agent of transformation** in re-shaping the future of the rural[2].

In the Latin American context, *non-urban* territories represent a **conflictive environment**, far from the pastoral image dominated by an untouched nature. Currently are crossed by processes dictated by a forced adaptation to **global market logics**, by **migrations** and consequent cultural **hybridizations**, which have also led to a **profound change in dwelling spatial practices**. Such violent events shape a different function for the architectural device for living. The house no longer represents the *specific constitutive matrix of the place*[3] , but often appears completely **unrelated to the context**.

This invite researchers to questions, *how as architects, can we conceive a critical representation of contemporary rurality? And consequently, which architectural research instruments allow an effective reading of the complex dynamics that are shaping these territories through the analysis of the house?*

From a bibliographical analysis, it immediately appears clear the difficulty to ascribe **what is *not urban*** through predetermined categories. Some authors identify **rurality as a spatial condition** while others deny its existence, stating that there is **no longer any** *outside* **to urban world**[4] .

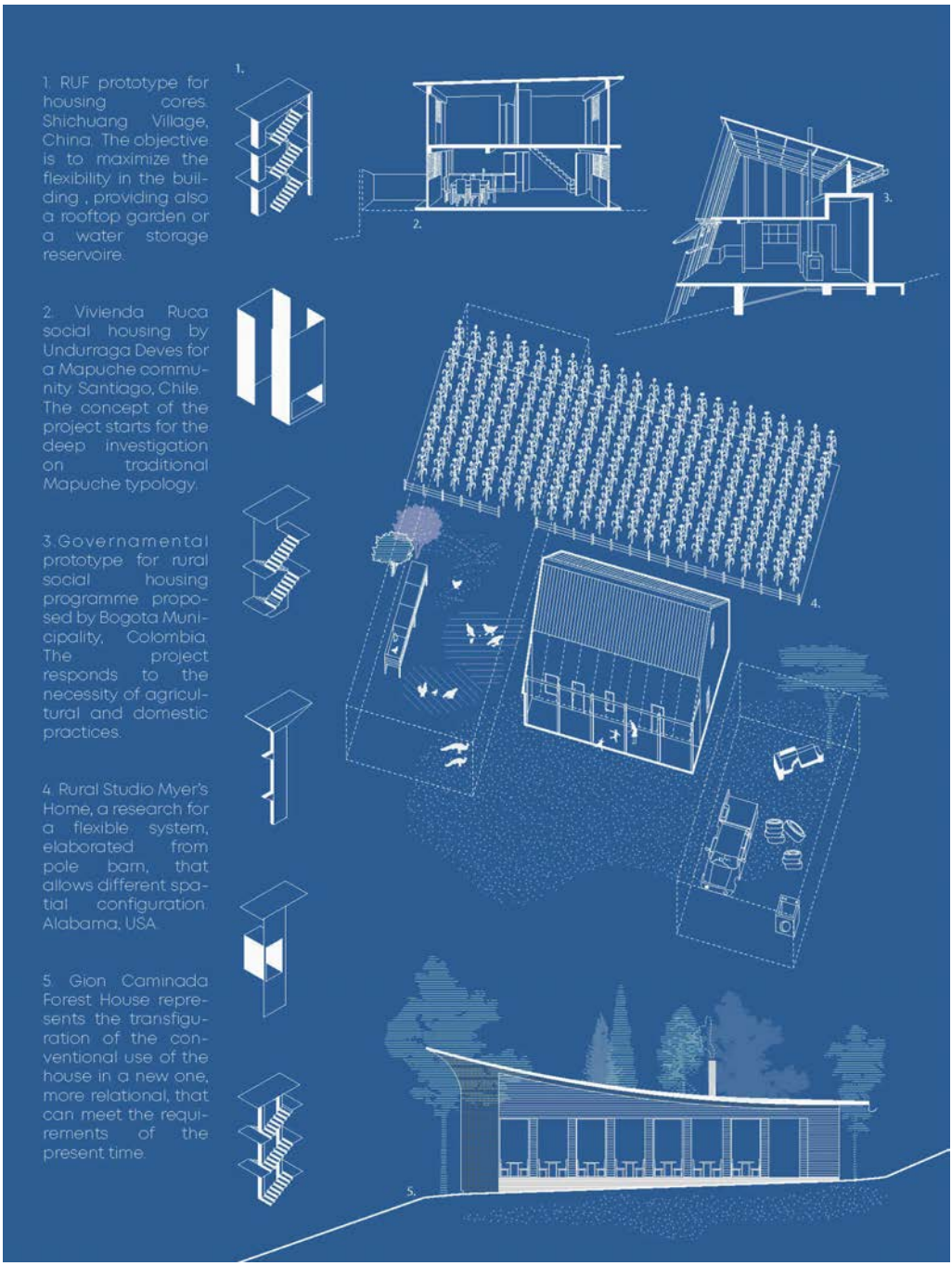


Figure 1

Regarding the **design practices**, some relevant exercises have been identified at different latitudes for their capability to **reinterpret** this blurred reality. Several projects deal with the **frontline** of the **urbanization process**, addressing its consequences by **maximizing the flexibility** of the building, to respond to the

changing necessities of the users. Some experiences along these lines are the **20'k-Home-Programe by Rural Studio** or the **prototypes building-cores by RUF** for the Chinese village of Shichuang[5]. Simultaneously, the European experimentation of **Gion Caminada** reflects a continuous **dialogue with tradition** speculating on the concept of "**cosmopolitanism**", differing from "globalism", interpreting the former as the act of **focusing** on a **specific placewithout losing the overall vision [1].**

The proposed research will be developed in a **territory** characterized by a mainly mountainous orography and an unstable climate, a frontier land that presents several **environmental** and **socio-economic critical issues**[6]. The **Andean region of Loja, in the South of Ecuador,** is crossed by phenomena such as **intensive agriculture** and **miner exploitation**, while the marked inequalities induce the generation of original practices in the **production of space**. The emergence of new forms of subsistence impacts on the settled **dwelling** transforming into an **orbital** one, as often the domicile changes depending on the economic activity carried out during the year. In this framework, the **house becomes an 'infrastructure'** to support these mobile economies, it is marked by a **non-domestic character** as temporarily inhabited by different subjects of the extended family.

The province has a varied ethnic component, reflected in a diverse architectural production; in part due to the presence of the **border** with Peru, which causes a constant flow of people, goods, but also international images and models.

Additionally, the rural area includes **indigenous territories** inhabited by Saraguros people and recognized by the 2008 Constitution[7].

Through the investigation on the **case study**, it's arguable to **examine worldwide phenomena** such as the **interweaving between transnational economies** and the **circulation of images and models**. The **results**

of the research will therefore be **referred** to a **localcondition**, but **extrapolated** to **different latitudes** once despoiled of the proper specificity of the place.

The PhD exploration is focused on the analysis of the house in its different manifestations, both traditional and hybrid. From this perspective, **traditional and contemporary architectural productions** seem to be placed in an **antithetical relationship**, despite the difficulties in situating them in a specific temporal or formal horizon.

The first, a complex cultural product **congruent with the image of its creator,** expresses a **coherence between the form, its constitutive parts and the function associated with space**. It demonstrates an **organic unity with the surrounding landscape**[8] **.** Its spatial conformation is strongly marked by the presence of **productive activities associated with life ones**. The spatial requirements of domestic-agricultural practices, such as drying and storing the crop, and the contextual conditions, are decisive for the daily actions of the dwellers. The essentiality of the interior allows that activities such as eating and sleeping could occur indistinctly in the different rooms. Although there is **no univocal typological classification**, these buildings are characterized by a **simple plan**, in the form of **I, L, [** or **H** and a combination of closed volumes and portals in façade. The **portal** is a particularly **relevant architectural element** since it **relates the introverted body with the exterior.** In addition, **the corridor** is the **only component** of the house that seems to **survive** to the **inexorable** process of **homologation** of domestic architecture. It is also used to **resolve** the relationship with **the slope**, especially in the case of isolated houss[9] . **[2]**

Contemporary housing appears as a result of the **flaking of places**, a process of radical **hybridization of cultural practices** that manifests its uncertainty through imported **architectural forms in perpetual transition**. The transformation leads to a progressive rejection of

the type, in favor of the **homologation** of domestic spaces to **different paradigms,** characterized, especially in the so-called *remittance houses*, by singular decorative elements.

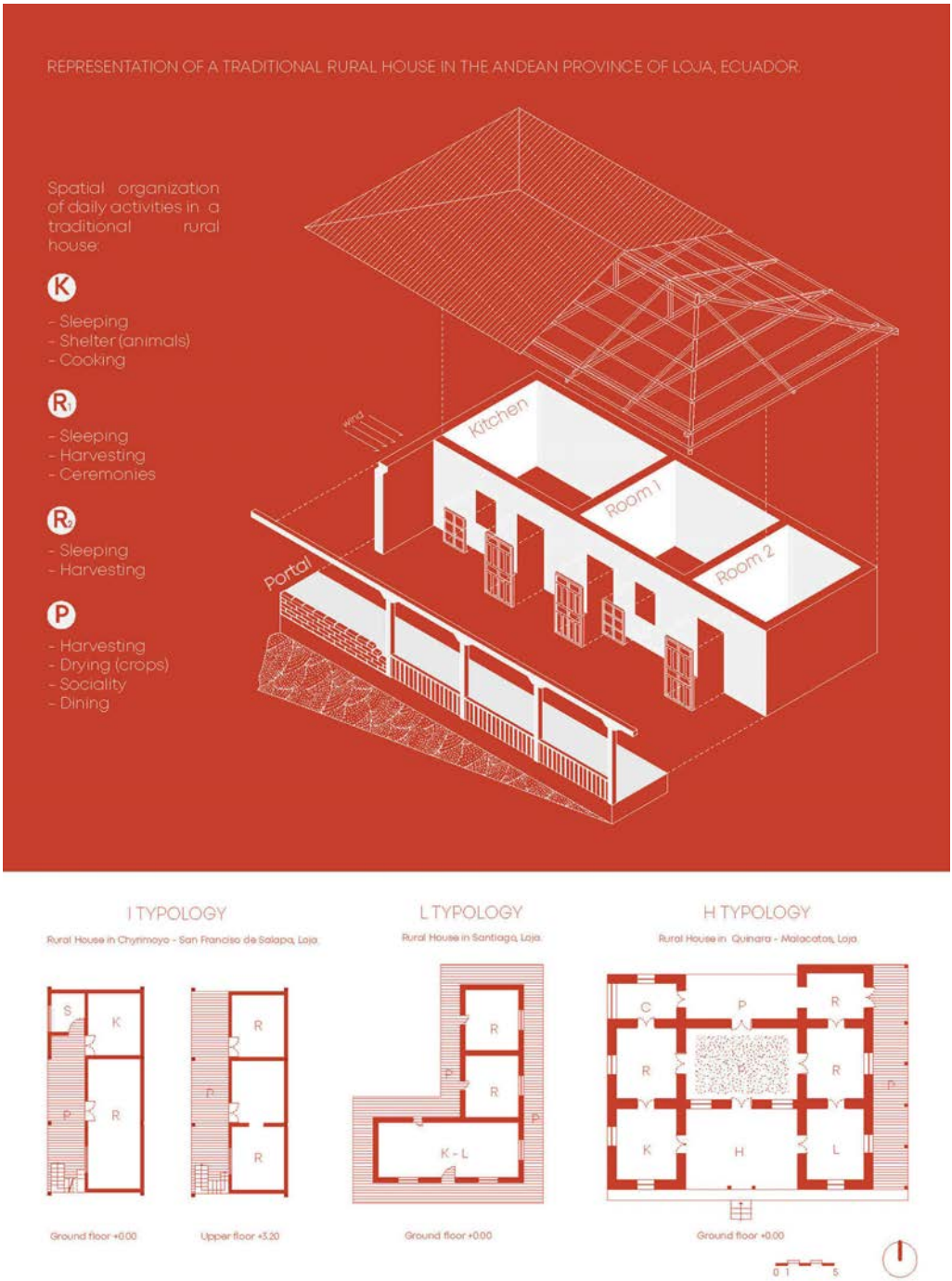


Figure 2

Governmental social housing programs for rural areas **contribute** to the circulation of **models totally unrelated to the context,** as they are a reproduction of the ones offered for urban centers, thus establishing a notion of **domesticity** that doesn't provide **any link with the local** conditions[10]. **[3]**

An important variable identified relates to the **transience of the spatial characters**; evidenced by the difficulties in placing the elements conforming the house in a **predefined temporal or formal horizon**. From a preliminary survey, both the traditional and the contemporary dwellings appear as an interesting **collage** of elements produced in different socio-historical contexts, whose **interaction** and **evolution** are part of this study.

The reflection on the instruments of the project is focused on establishing an appropriate methodological path for the reading of the intrinsic conditions of contemporary rurality through its spatiality. This process will facilitate to obtain **a representative tool-kit** useful for the purposes of the **architectural design**.

The relevance of this investigation lies on the necessity to set up the **instrumental basis** for a **decolonial architectural discourse**. As Ananya Roy (2009) argued, the dominant theories on the design and governance of cities and territories are rooted in the Euro-American experience and are therefore unable to account for the multiple forms of space production in the southern hemisphere.[11] Regarding the case study, coloniality also emerges from observations of the construction of the countryside from urban points of view, values and desires that flatten the complexity of the rural in simplified images. The expected outcomes concern the **design of a representation code** that allows, through the analysis of domestic space and its components, to **read the intrinsic conditions of rurality in the Global South.**

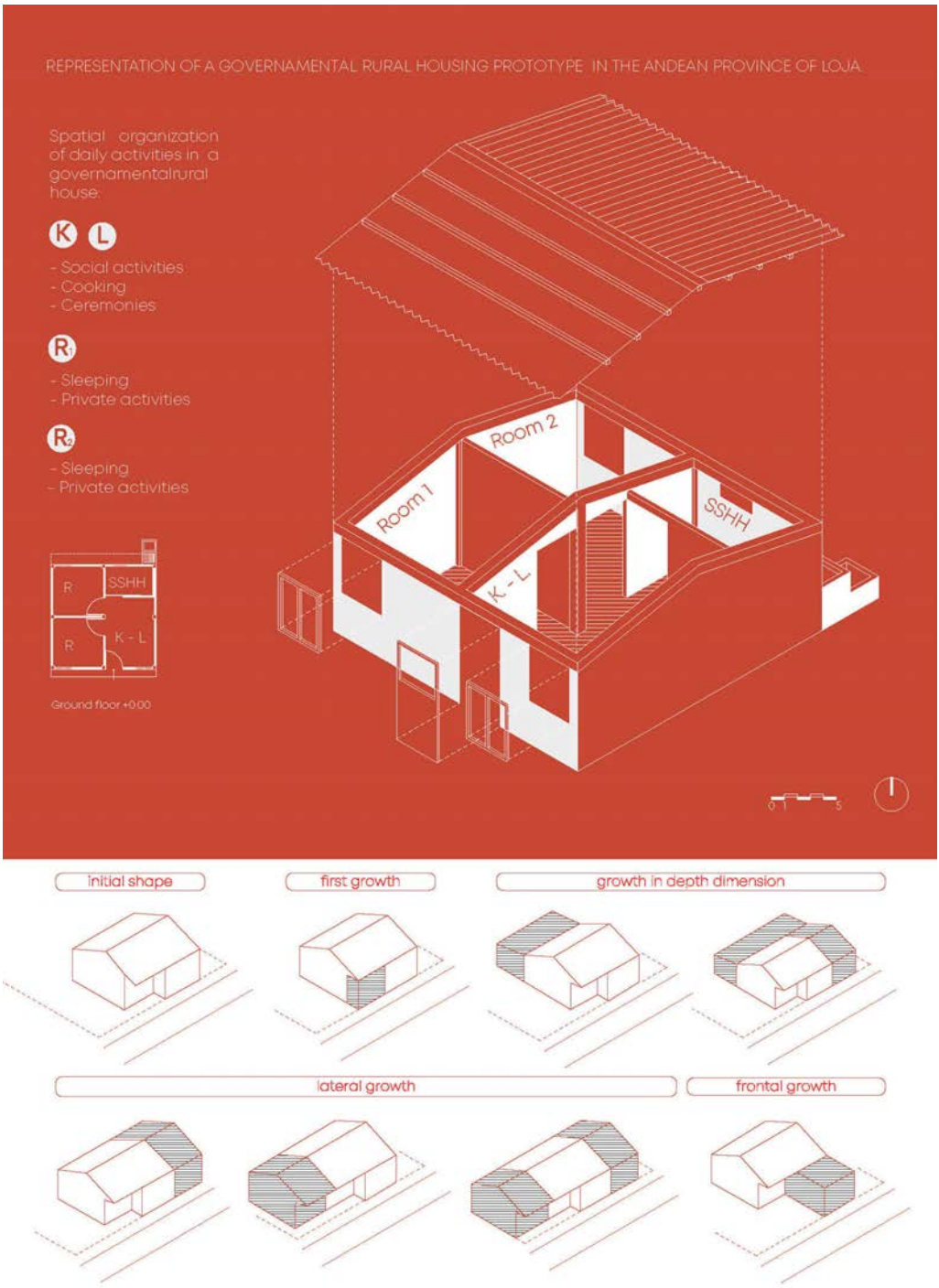

REPRESENTATION OF A GOVERNAMENTAL RURAL HOUSING PROTOTYPE IN THE ANDEAN PROVINCE OF LOJA
Spatial organization of daily activities in a governamentalrural house:
K L
- Social activities
- Cooking
- Ceremonies
R1
- Sleeping
- Private activities
R2
- Sleeping
- Private activities
R
SSHH
R
K - L
Ground floor +0.00
Room 1
Room 2
K - L
SSHH
0 1 5
Initial shape
first growth
growth in depth dimension
lateral growth
frontal growth

Figure 3

1———Regarding the concept of “blurred countryside”, Antonio di Campli defines it as a "mosaic of situations in which collisions and conflicts occur, but also alliances between strategies of transformation, visions and imaginaries". Di Campli A., Coccia L. (2019), RuralEstudio, Quodilibet.

2———Roskam Cole. 2016. Inventing the Rural, in Architectural Design – Designing the rural N.242, edited by Bolchover, Lin, Lange. Jhon Wiley and Sons.

3———Sereni E. (1961), Preface of “Storia del paesaggio agrario italiano”, Laterza, Roma

4——— Neil Brenner in Theses on Urbanization, referring to the significance and to the planetary scale of urban condition stresses its ubiquity, denying the existence of the rural as a spatial category. On the other hand, some authors question this absolute position, as Rem Koolhaas expresses in Countryside: A report. Here, through a recognition of experiences and projects in the global rural, is highlighted the necessity to rediscover countryside as a place to resettle, experimenting new ways of development. Brenner N. (2013), Theses on Urbanization, Public culture, Duke University Press. AMO, Koolhaas R. (2020), Countryside, a report: Countryside in your pocket, Taschen

5———The impact of the design-and-build program proposed by Rural Studio is particularly relevant in re-shaping the rural communities of the Black Belt in West Alabama. Rural Studio researches for a cost-effective architectural design that transcends its common existence as a commodity for the rich and becomes a routine enrichment of the built environment. Hensel M.U. (2015), Rural Studio: Incarnations of a Design-and-Build Programme, article in Architectural Design. The operation of Rural Urban Framework constitutes an interesting exploration envisioning the future of housing in rural villages of China, exposed to an accelerated process of urbanization. The project addresses the consequences of this phenomena through the proposal of a three storey core that could maximize the flexibility in the building construction, providing also a rooftop garden or a water storage reservoir. Bolchover J., Lin J., Lange C. (2016) Designing the Rural: A Global Countryside in Flux, John Wiley & Sons;

6———Alvarado M. (2018), Territorialidades campesinas en Loja, Ecuador: análisis de sus dinámicas organizativas a partir de tres casos de estudio. EUTOPÍA. Revista de Desarrollo Económico Territorial N.° 13, junio de 2018, pp. 89-113 ISSN 1390 5708/e-ISSN 26028239.

7———Constitución de la República del Ecuador: https://www.oas.org/juridico/pdfs/mesicic4_ecu_const.pdf

8———Sanchez C, Jimenez E. (2010), La vivienda rural: su complejidad y estudio desde diversas disciplinas, Revista Luna azul n. 30 pp 174-196;

9——— Hermida M. (2015) Valores formales de la vivienda tradicional, la provincia del Azuay en Ecuador como caso de estudio, Arquitecturas del Sur XXXII, Num. 46

10———The Ministero de Desarrollo Urbano y Vivienda (MIDUVI) is responsible for the development of social housing programmes in urban and rural areas. The architectural proposal of the "casa para todos" program for rural areas can be found at the following link: https://www.habitatyvivienda.gob.ec/programa-de-vivienda-rural/

11———Politécnico di Torino – Decolonial Urbanism, course by Antonio di Campli and Camillo Boano

Narrative as a design tool in fragile contexts

Marianna Frangipane, Politecnico di Milano

Initial doctoral stage

Supervisor: Andrea Di Franco, Politecnico di Milano

#

Narrative, Tentative design, Fragile contexts

Abstract

The topic of the research is the effectiveness of possible architectural design methods and tools when related to fragile contexts.

How can design face fragile contexts complexity without reducing it?

How does contemporary design face these contexts?

What are the effective design knowledge traces that instruct the modification process?

What uses, forms and effects of narrative in the architectural project?

What potentialities and limits of narrative in the architectural project today?

The research approach relates to negotiating and understanding spatial design by means of process-oriented narratives. The aim is to define a design methodological perspective to face the fragile context regeneration.

Extended abstract

"It matters what stories we tell to tell other stories with; [...] It matters what stories make worlds, what worlds make stories"

– Haraway D. J., *Staying with the trouble*

The research follows the idea of exploring new approaches for spatial modifications in fragile contexts, by developing narrative as a possible design tool.

Architecture nowadays needs to transcend the reductionism paradigm and to work on real substance and complexity. How architectural design can face complexity without reducing it? The key text in challenging a different spatial understanding is "The production of space" by Lefebvre. His analysis of space, summarized

by "(social) space is (social) product"[1], places the production of space in a broader social, dynamic and political context. Lefebvre's idea of space needs to be even expanded by other factors dictated by global, ecological, and virtual networks[2]. From these multiple interactions and feedback stems the impossibility to make a certain prediction: each design's spatial intention escapes the promoted one, and often goes beyond the purpose. Hence, from a design perspective, we need to start from the consideration that "the territory is how you use it"[3]. At the core of this conception emerges the critique about the way design reduces society to social demand and the invitation to consider design (and the related research) as a tentative practice, by experiencing the possibilities.[4]

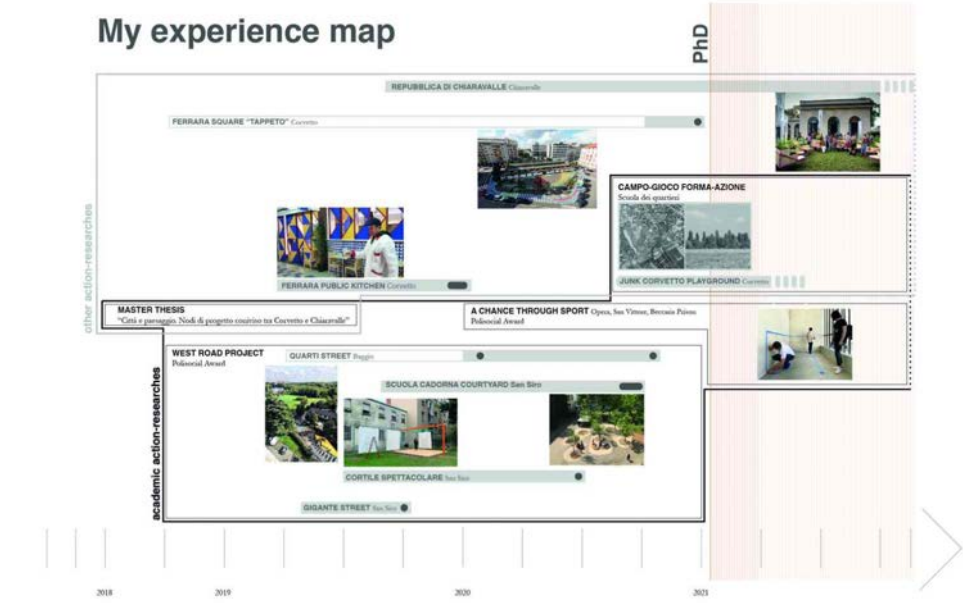


Figure 1

In those territories where uncertainty meets multi-problematic, such as spatial, social, and economic issues, an additional layer of complexity hampers the design effectiveness. These are "exclusion territories"[5], where the overlapping of a series of heterogeneous problems and the concentration of unresolved issues exacerbate the difficulties in interpreting context complexity. Here design slips into crisis, due to the lack of a sharable

language, the impossibility to define a straightforward space modification demand, a sharable design form, as well as a social form related to different practices implied in the space modification. These contexts reveal social inequalities and gaps among the territories, as described by architects, urban planners, anthropologists, sociologists, and economists. To face and contribute to effective actions in these contexts architectural design may embrace Morin's thought that closely relates the inequalities challenging to the complexity[6]. Here the complexity and related fragility open the opportunity to rethink and regenerate our cities, to experiment how spatial design could co-operate to shape possibilities related to "how will we live together"[7].

This research topic relates to the effectiveness of possible design tools and methods when related to fragile contexts. The design field research stems from my personal experiences and its feed by the observation of these contemporary practical experiences, that "shift the focus of spatial attention away from the static objects of display that constitute the foreground of so much architectural production, and moves it onto the continuous cycle of spatial production, and to all the people and processes that go into it."[8] The parameters that direct the research focus are the following design features: First is the project process related to existing and transforming reality. This is related to a research process that does not have the aim to define models, but rather to identify a methodological approach to feed an interaction process that proceeds over time by embracing the unexpected conditions. Second is the relationship between the plurality of players that operate in the space modification process. Assuming both the cooperation (transdisciplinary) and the conflicts as "mutual knowledge"[9] sensors. Third is the design unfolding through tentative forms, by considering the design forms in an exploratory terms, as a tool through which possibilities of living are revealed: "tool and not

the aim of a relational process, such as that which is fed by personal poetics, corresponds to the authorial model still widespread"[10]. The experiences of that *tentative design* have visible short-term effects: building temporary local relationships, revealing some existing conditions, triggering some new uses of the space, opening some modification possibilities.

Nevertheless, citing Palermo "This idea of a weak and uncertain architecture is suggestive, but at risk, because it could easily become elusive, ephemeral, irrelevant and therefore conservative, due to an excess of disengagement"[11].

The outcome of tentative design process cannot be described through general explanations, neither with the conventional design tool as the plans. During the design exploration process each unique experience is not directly identified with the architectural static achievement, neither only with the definition of a future configuration, which is not predictable. The design outcome relates with the project path: how the new situation came about. In this vision the design process oscillates between the action and its observation in an autoreflexive practice to nourish both the pertinent (local) and disciplinary knowledge. The inquiry issue to investigate concerns the effective design knowledge traces (tacit knowledge) to render explicit for instructing the modification process over time, in a long-term vision. The central mechanism by which design knowledge is conveyed, by providing a bridge between tacit and explicit, is narrative. Thus, the relationship between design and narrative is the field of observation where the research focuses.

The research approach relates to negotiating and understanding spatial design by means of process-oriented narratives. What narrative forms, uses and effects in the modification process? At this stage of my Phd the concepts of "narrative" is linked to a signification tool that operates in the design research process. This

assumes operative and procedural implications by revealing the existing and conflicting conditions in a transformation process, by promoting provisional synthesis and mediating between different parts and people[12]. Second as a tool favouring interactions and allowing mutual knowledge exchange. To build up correspondences[13] among the plurality of players that are involved in the production of space and "to make kin in lines as a practice of learning how to live [...] with each other in a thick present"[14]. Third as a tool to organize the experience. The process of social and thus spatial construction of reality is interwoven with communicative practices. Within them, narrative practices play a role, whose specific performance is to provide, disseminate and preserve ways of selecting and connecting the elements of our reality. Narrative as a design tool has not to be considered as an innocent field of the agreement but a tool for "staying with the trouble" by relating with the spatial modification possibilities. What potentialities and limits of narrative in the architectural project?

The research structure includes different sections: the first the *Theoretical framework* based on selected readings and relevant scientific literature by defining a possible state of the art and a historical glance, in order to explore the relation

between narrative and design and how it changed from the premodernity to the contemporaneity. The second *Experiences Repository* based on redraws, interviews, and direct observations of relevant case studies (both my and others experiences) to structure storytelling that makes them comparable. The experiences are considered as exempla, not as best practices. The task is to define a toolbox to improve the project effectiveness in complex contexts and build a shared knowledge in the field. Redrawing projects process by mapping their narrative form/relational devices/documents/material and immaterial traces. The last section relates with the

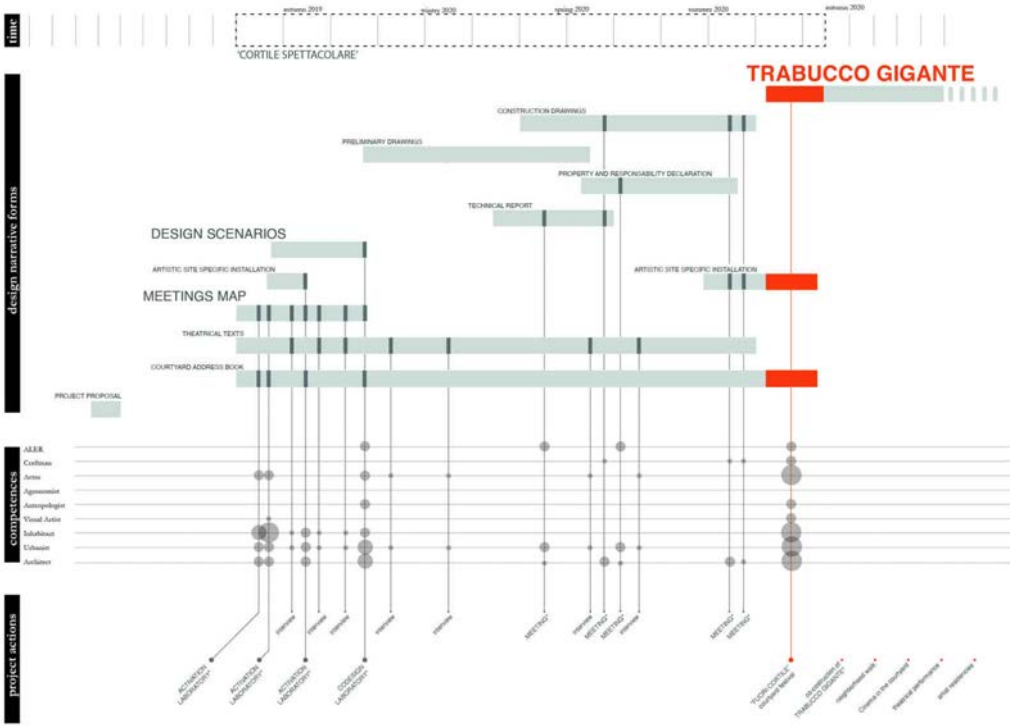


Figure 2

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University Campus between Urban Resilience and Typological Innovations

Research by Design on “Ciudad Universitaria” of the Universidad Nacional de Colombia in Bogotá

Pablo Gamboa, Politecnico di Milano

Intermediate doctoral stage

Supervisor: Andrea Gritti, Politecnico di Milano

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university campus, urban and architectural design, resilience

Abstract

The aim of this Research by Design is to explore how a project that is interlinked both at urban and architectural scales can understand and delve into innovative solutions to the contemporary programmatic and environmental challenges the university campus model faces today in the American Continent.

The project uses drawings as its primary research tool, with the intention of comparing 30 case study campuses in terms of form, scale, settlement elements and the use of compositional devices like grids and modules applied simultaneously to their urban and architectural scales. A typological study of spatial and organizational aspects of the university's buildings will also be carried out. The research is, additionally, complemented by a contextual study that inquires in the demands and challenges of Urban Resilience and further explores the recent typological innovations made to university buildings in relation with the campus.

The Research by Design case study project is the *Ciudad Universitaria* of the Universidad Nacional in Bogota, Colombia, a campus of noteworthy modern patrimonial and environmental worth.

Extended abstract

The topic of this research by design thesis is the university campus model and the different versions that have been built in the Americas, following the definition of a campus as a settlement type of Anglo-Saxon origins with its own distinct characteristics [1]. The layout of an American university campus is built upon the correlation of a few elements: a continuous and unitary green plane of urban scale that serves as a container, a defined border that delimits, contains and protects it, and, finally, an ensemble of university buildings separated from each other, which may or may not have formal

similarities in scale or style and that are placed within the base plane in an orderly manner. A campus could be enclosed in its own limits as is the case of most Latin American campuses, or open to the surrounding city, like the campus of Yale or Harvard University in the United States [2]. The original aim of this specific distribution was to create an orderly disposition of knowledge in space, as well as an academic organization based on faculties that would highlight the value of nature and green landscapes to encourage studying and teaching in places located far from the city [3] (fig. 1).

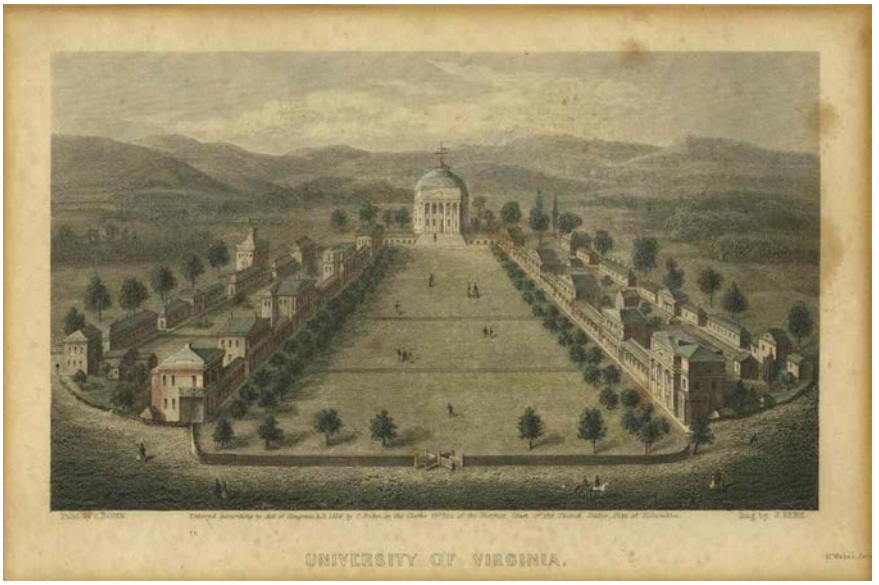

Figure 1: Virginia Academical village of the University of Virginia, 1856, J. Serz. Credit: alumni.virginia.edu

But today, the planet and society have changed and therefore, so have the cities and universities [4]. This fact raises big questions both from an urban and architectural scale regarding the design and planning of future university campuses, as well as the never-ending modification of the campuses that already exist.

Based on these concerns, this research by design thesis attempts to give an answer to the following research questions: What innovative forms can we explore to better respond to the spatial and organizational changes that come with advances in teaching, studying and research? How could we adapt university

campuses to better work within the current trend of delocalizing knowledge, research, experts, and most recently (due to COVID), students and professors considering all of them are now placed in different local, regional, and global networks? [5] How can we manage these alterations which pose threat to the concentration of people and knowledge; the reason itself behind the creation of university campuses? How could these changes in the urban form, and in the shape of university buildings, be addressed using an adaptive mitigation design approach that also takes environmental challenges such as Urban Heat Island Effect and Climate Change into account? [6]

Figure 2: Washington University at Seattle Master Plan. 2018. Sasaky Associates, Inc.

In attempts to face these challenges, universities have been forced to design new master plans and buildings which have led in the last decades, and that are now leading, to significant changes in campuses (fig. 2). Previous studies on the subject have mainly focused on technical data, in specific architectural or master plans projects, or in general aspects and design recommendations for such changes. There is, however, a lack of research centred around the formal and spatial aspects that characterize the architectural and urban design of campuses.

Assuming the notion of "Urban Resilience" as one of the paradigms surrounding contemporary debates,

research, and the design of strategies to counter Climate Change or, to a fewer extent, Urban Heat Island Effect; this research wants to study, reflect, and explore using a research by design methodology, the adaptive changes and possible "transformations to create a new equilibrium" which could address those problems from university campuses themselves [7]. With this aim in mind, concepts that belong to the New Urbanism such as "Transit Supportive Design", "Pedestrianization", "Multifunctionality", "Urban Resilient Hub", "Place Making", and "Compactness" -as well as other concepts related to the design of university campuses such as "Student Life", "Inner City Campus", and the importance of green spaces and "In between Spaces"- will be used as input for this research with the objective to address the urban and architectural dimensions of this project.

Because the design of a campus is always the result of the interaction of urban design and architectural design, this research aims at investigating other aspects which have led to recent typological innovations [8] at an architectural scale as well, including concepts such as "vertical campus", "interior public space", "interlink of internal and external spaces", "informal study" and "meeting spaces".

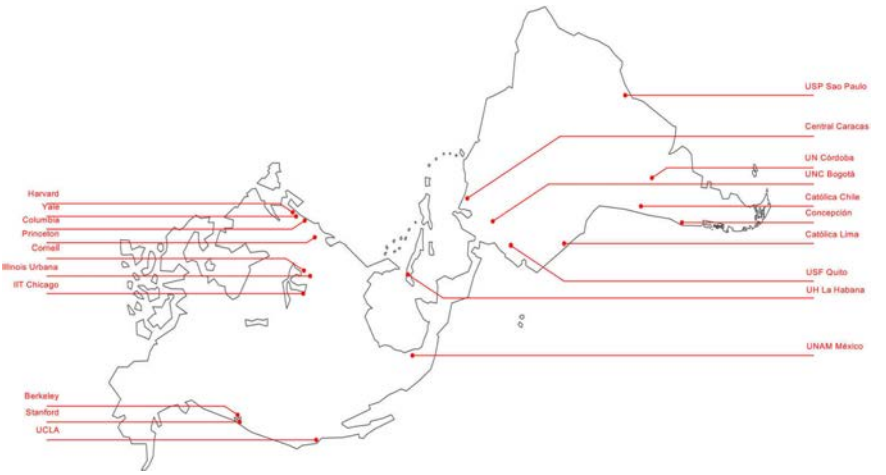

Figure 3: Map of the initial campus study cases in the Americas. Drawing: Pablo Gamboa

The objective of this thesis is to survey, study, reflect and explore using a project as research method. The

project experimentation is divided in three phases:

1. Using the drawing of the campus as a research tool in hopes to better understand what it is by making a comparative analysis of 30 case study campuses from North and Latin America (fig. 3). This comparison will be based on the redrawing of plans and 3D models, as well as the production of analytical diagrams and mapping (fig. 4). The combination of these methods will allow for a multiscale approach that focuses on a comparison both in form and in scale to retain the formal elements and characteristics of this settlement type (fig. 5, 6). It will also include the study of the use of the grid, the module and other compositional devices that link the building's scale with the scale of the campus and that, we can hypothetically assume, make the university campus a strong model that is present in all the American Continent. Finally, it will focus on the analytical study of the programmatical aspects of the university's buildings, especially regarding the academic, administrative, service, representative and wellness spaces drawing from the study of some paradigmatic historic and contemporary projects by using an analytical analogy with the structural organization of the molecules. This, in order to transcend the traditional typological point of view in this research.

2. Studying and defining different interrelated design aspects and inputs that the research by design project will be focusing on, all mainly linked with topics such as the formal rules of the campus, its new possible relations with the city, as well as the theme of urban resilience and other typological innovations. These inputs will be the starting point for the project research to propose new possible and innovative ways to adapt and change the campus model, as well as its green spaces and buildings, by producing prototypes that will be tested, adjusted, and reshaped.

3. The prototypes selected will then be tested in the design and adaptation of a specific case study campus,

using external parameters related with the specific characteristics of the site, the climate, the particular needs of the university, the city, and the landscape.

The place where the project exploration will be applied to is the campus of the Universidad Nacional of Bogotá, located in Colombia. This campus was chosen for multiple historical, architectural, and environmental reasons [9]. Along with the contemporary campus of the Universidad de Concepción in Chile built in the 1930's, this campus represents the introduction of the campus settlement type in Latin American universities. "La Nacional", also served as inspiration for other noteworthy campuses such as the UNAM university campus in Mexico City and the Universidad Central Campus in Caracas, Venezuela (Arango) and holds a special place due to its patrimonial value for the Modern Architecture movement in Latin America. Finally, this educational space is also in need of a type of expansion model that is in accordance with the social changes that take place in developing countries, both urban and environmental, especially as this expansion could take place in a large area inside of its 122 hectares of land, considered an important green lung of the city of Bogotá [10].

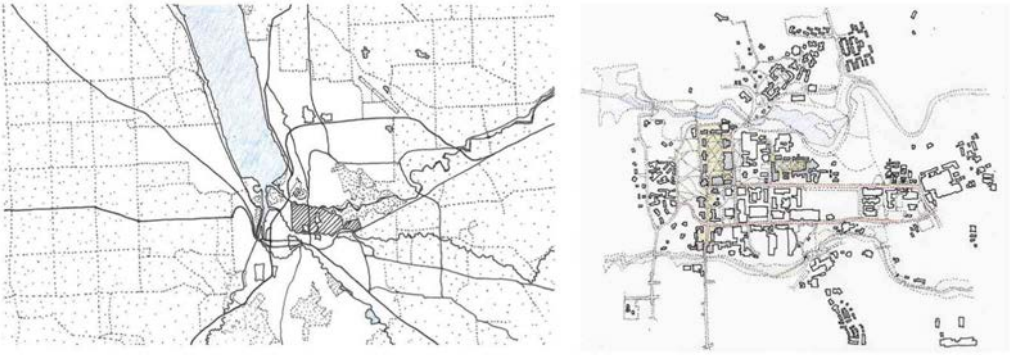

Figure 4: Cornell University: its relationship with the landscape and its structural form. Drawing: Pablo Gamboa

Figure 5: Comparison in for and scale of the campuses of Virginia University, Columbia University and Illinois Institute of Technology. Drawing: Pablo Gamboa

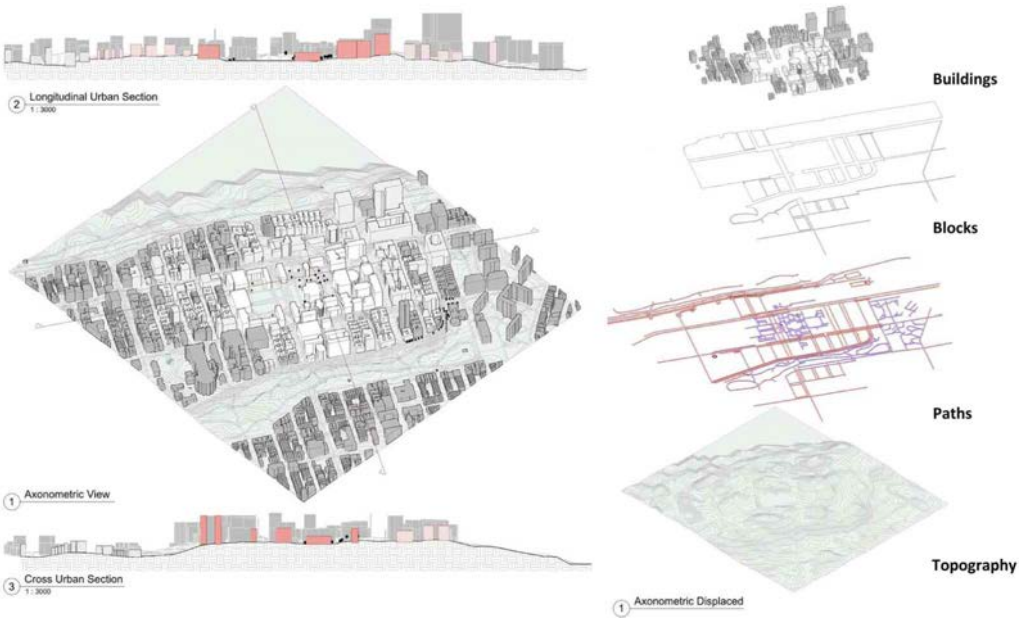

Figure 6: Urban form and structural elements, Columbia University, New York. Drawing: Pablo Gamboa

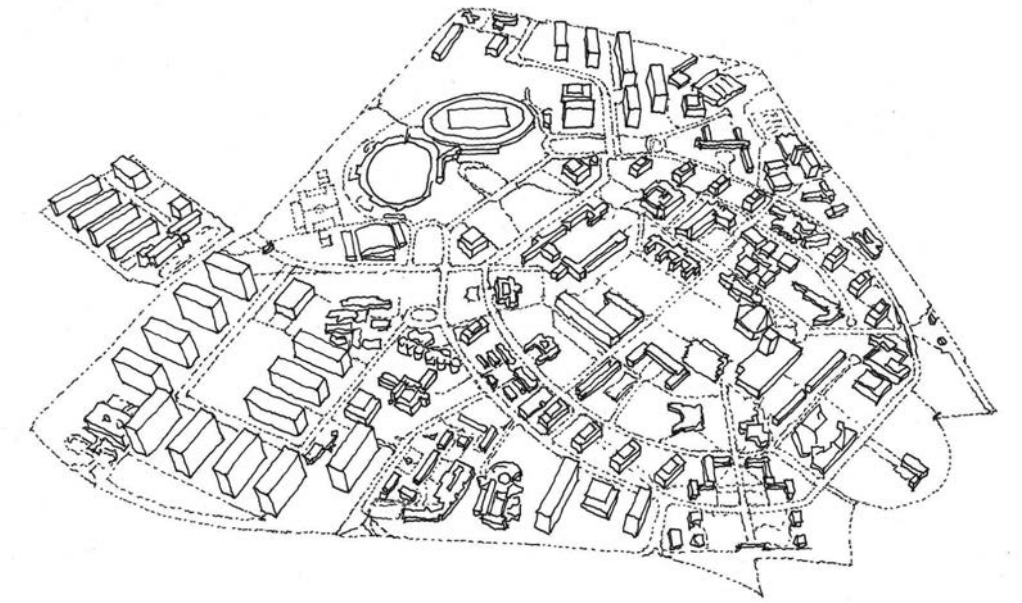

Figure 7: Axonometric view of the Universidad Nacional de Colombia Campus in Bogotá. Drawing: Pablo Gamboa

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Learning from Dementia Villages Examining End-of-life Care Spaces as XXI Century Collective Living Types

Alberto Geuna, Politecnico di Milano

Intermediate doctoral stage

Supervisor: Pierre-Alain Croset, Politecnico di Milano

Assisted living facilities, end-of-life care, dwelling forms and practices

Abstract

Various trends have reignited a broad interest in community living in recent years, particularly in the developed world. One of the main aspects of this current is that an aging population increases the demand for assisted living facilities in most nations. The emerging importance of assisted living facilities corresponds with healthcare architecture in academic and professional sectors. This Ph. D. research project focuses on end-of-life facilities as emerging collective living types in the West, focusing specifically on Dementia Villages, a recently developed end-of-life care facility type. Concentrating on the questions regarding the generation and transmission of architectural knowledge, the subject of the research consists of an ensemble of architects, developers, nurses, and physicians involved in their construction. This work will provide insights regarding the logic underpinning these spaces and the skills architects and developers acquired during construction, allowing for examining these building types' influence on the broader field of collective living architecture.

Paper

1 / STRUCTURE

The Ph.D. research illustrated here began in November 2019 and will be completed by 2023. A partial representation of the status of the study at this stage, this paper extends and revises my contribution on the same subject to the November 2020 CA2RE Milan conference and the 2021 CA2RE Hamburg conference.

The structure of the research develops in three interlinked phases. The first phase focuses on studying selected historical test cases and provides the necessary context for the approach to a recent case study. The second phase consists of the in-depth investigation

of the current case study: the Dementia Village, a recently developed end-of-life care facility type. The third phase consists of producing a qualitative handbook for dementia-driven architecture. The research develops gradually from a reflective to a projective moment through each step of the study. With the first and second stages primarily completed, the research is now entering the third phase.

The research aims at critically evaluating and examining the controversial phenomenon of dementia villages. For this reason, the study borrows the "learning from" approach developed by Venturi, Scott Brown, and Izenour in the contexts of Levittown and Las Vegas.

A set of distinct investigation methods characterizes each phase. Each determines a set of interlocking tools. Descriptive writing and compiling illustrate the first and second phases, while interpretive drawing and argumentative essays mark the second and third phases. Physical model making becomes a tool leading to the third and last phase.

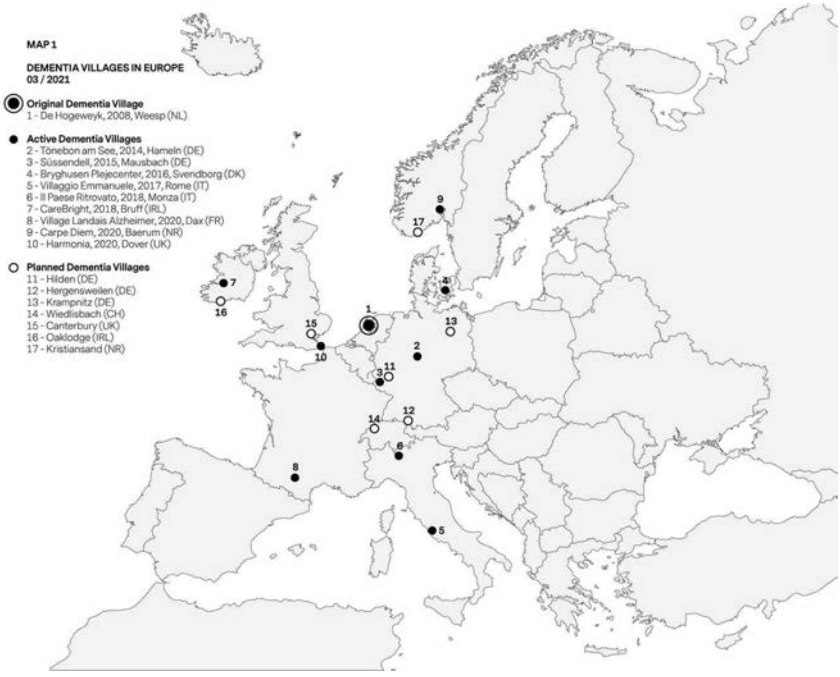

Figure 1: Dementia Villages in Europe, March 2021. Alberto Geuna

2 / CONTEXT

A recurring aspect of recent architectural literature is attention to the body — human or other — and its relations with the space surrounding it. In the introduction to Warped Space, published in 2000, Anthony Vidler writes: "ever more often space has been defined as the product of subjective projection and introjection, thus the opposite of a stable container for objects and bodies."[1]

As expressed here by Vidler, the relationship between architectural space and the human body has become progressively more central in the disciplinary debate. Architectural theory progressively interprets the human body as a malleable entity that can deform and be deformed by architectural space. If "design always represents itself as serving the human, but its real ambition is to redesign the human,"[2] the creation of end-of-life care facilities puts architecture in a situation of extreme stress that allows for a reconsideration of its effectiveness in this domain.

As reported by Beatriz Colomina in her 2019 book X-Ray Architecture, Robert Musil wrote in The Man Without Qualities that "Modern Man is born in a hospital and dies in hospital — hence he should also live in a place like a hospital."[3] Colomina sees this sentence as a representative statement of how healthcare architecture contributed to developing the modernist imagination. In the same way, recent developments in healthcare architecture, set in an interdisciplinary realm, can drive the architectural discipline in new directions.

Yet, as Fabiola Lopez-Duran exposed, medical discourse is often materialized in architecture imperfectly, distorted through an ideological lens.[4] Thus, this research is not limited to detecting medical influence on architectural spaces but instead considers end-of-life facilities as examples of collective living. Following the categorization illustrated by ETH Wohnforum in

their History of Collective Living[5], end-of-life facilities are, in fact, cases of sharing based on social intentions.

Locating these facilities within this realm also allows for the contextualization of end-of-life facilities as intentional communities, or "self-contained, planned communities that attempt to pursue a peaceful ideal instead of a community created and run without an organizing principle."[6] This notion positions this work within the disciplinary platform of architectural literature on the subject, particularly of publications such as Kommunen in der Neuen Welt by Liselotte and Oswald Mathias Ungers and, more recently, Young-Old: Urban Utopias for an Ageing Society by Diane Simpson.

Looking at this topic through this lens enables a genealogy that links a series of reform movements with the development of assisted living facilities, materializing therapeutic practices into distinctive architectural types. Assisted living facilities often stem from religious or otherwise spiritual or idealistic organizations dedicated to philanthropic work and the care of vulnerable population strata.

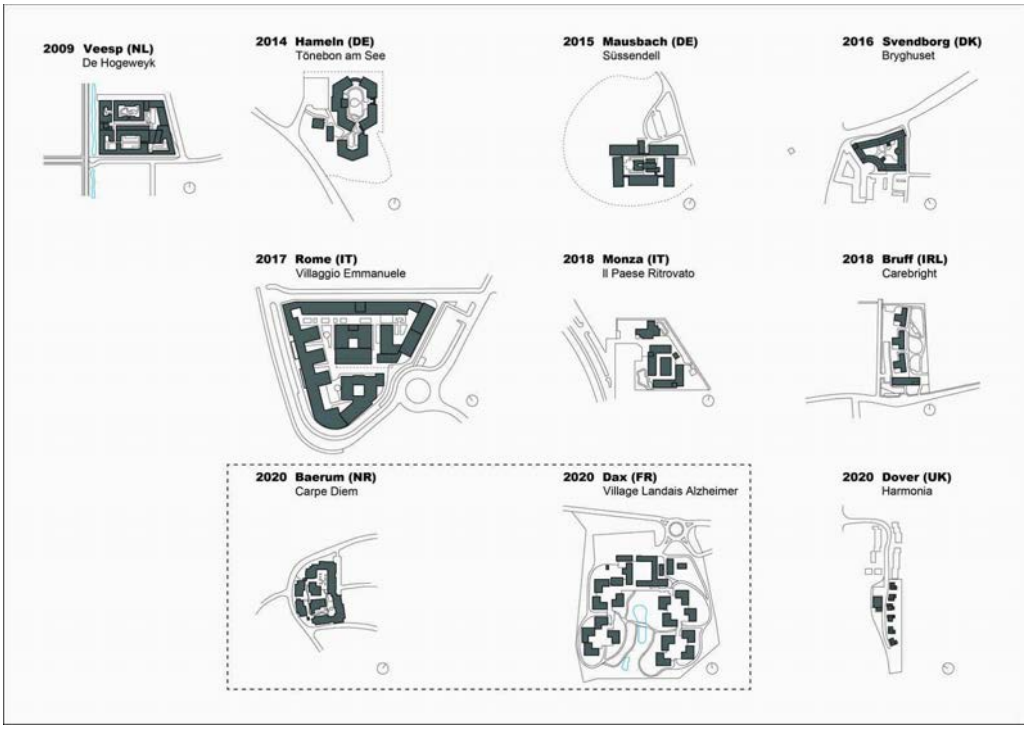

Figure 2: Typological study of European Dementia Villages.
Alberto Geuna

3 / TEST CASE: DESIGNING FOR LATER LIFE FROM THE 1960s

An article titled "The Elderly" appears in the May 1967 issue of Progressive Architecture. It consists of an atlas of architecture for the elderly, which was an emerging subject in the architectural debate of the 1960s. Its incipit states:

Until fairly recently, the average urban American devoted himself so mercilessly to work, and spent the larger part of his life-span so frenetically engaged in the pursuit of his livelihood, that the problem of retirement and growing old were always farthest from his mind. Today, however, the problem has become a national one. The elderly population has increased significantly. As statisticians are fond of reminding us, one out of eleven persons in the U.S. is 65 or older: the projected total for the year 2000 is 28,500,000. Until the 50's the problem of housing the elderly remained largely untouched.[7]

The emerging issue of an aging population in the 1960s spurred the development of new public policies and therapeutic concepts. These materialized into new housing types that replaced facilities such as almshouses and sanatoria. Contemporary assisted living facilities for the elderly emerged in the 1960s, a defined architectural typology underpinned by dedicated regulations.[8]

The issue of housing the elderly generated an important disciplinary debate, which mirrored advancements in gerontology, as described by Deane Simpson in his article Gerotopias[9]. Most iconically, this discussion was employed by Robert Venturi to illustrate his position towards modernism in Learning from Las Vegas, where he pitted his own Guild House against Paul Rudolph's Crawford Manor. Both buildings are examples of independent living facilities for the elderly appearing in the Progressive Architecture issue mentioned earlier.

Here Venturi elevates the use of "the ugly and the ordinary" in the Guild House design as a whole design theory. While he does not make the connection between the use of the building and the design strategy explicit, it is clear that such a position represents a particular sensibility towards the building's specific user. Referencing the windows of the Guild House, Venturi writes:

The windows look familiar; they look like, as well as they are, windows, and in this respect, their use is explicitly symbolic. But like all effective symbolic images, they are intended to look familiar and unfamiliar. They are the conventional element used slightly unconventionally.[10]

Aiming to promote a deliberately contradictory and complex architecture Venturi consciously expressed the will of creating "inclusion, inconsistency, compromise, accommodation, adaptation, super adjacency."[11] As housing for the elderly, the Guild house constituted the ideal testing ground.

The disciplinary discussion on elderly housing in this era constitutes a benchmark for studying comparable current phenomena. The use of vernacular, ordinariness, mundanity, and inclusivity remains a crucial aspect of the discussion. Yet, for this research, the central recurring element in the debate on the subject remains the attempt at creating quasi-urban conditions within assisted living facilities, aiming to support community life. This tendency, originating in the 1960s[12], has evolved over the decades and has been translated recently in creating so-called "villages"[13] dedicated to elderly residents in various age brackets and physical conditions.

Figure 3: Meeting space in the Dementia Village in Dax, France, designed by Nord Architects. Alberto Geuna

4 / DEMENTIA VILLAGES, A CASE STUDY FOR CONTEMPORARY END-OF-LIFE CARE FACILITIES

The research focuses on contemporary manifestations of the previously discussed debate, focusing on emerging assisted living facilities and dementia treatment centers known as "Dementia Villages."

As discussed in the following paragraph, these facilities are selected for their instrumental use of architecture in

a therapeutic environment and consequent spatial layout and construction innovations. These aspects, this thesis argues, qualify Dementia Villages as an emerging architectural collective living type.

Dementia Villages are nursing homes dedicated to the specific treatment of dementia. Despite their high specialization, Dementia Villages are end-of-life facilities as they primarily host patients affected by an advanced and often terminal disease.[14]

Dementia Villages replicate community life in a controlled setting. Their nature as simulated environments leads some to define them as Truman Show-Esque.[15] The dementia village model appeared in the Netherlands in 2008, the first example being De Hogeweyk in Amsterdam's suburbs. Since then, the model has spread all over the world.

Today there are numerous active Dementia Villages in Europe. They are located in Germany, Italy, France, Netherlands, Denmark, Ireland, and Norway, while similar facilities exist in Singapore, India, Canada, and the U.S.A. Their number is growing as more villages are to initiate construction in Switzerland, and U.K. Dementia Villages take the shape of gated communities, most often located in the outskirts of cities or the countryside. Architecturally, Dementia Villages consist of low-rise buildings organized around one or more open spaces. These open spaces define neighborhoods within the village, each composed of a series of houses containing 6 to 8 individual rooms, in line with recent guidelines and practices regarding assisted living facilities.[16] Yet, in addition to the housing units, specific village sections have shared services that include restaurants, barbershops, and other amenities situated in open spaces that mimic urban environments. The thesis argues that this specific innovative aspect qualifies Dementia Villages as an emerging collective living type.

A crucial aspect of the Dementia Village is the instrumental use of the architectural language in fostering

patients' well-being. Developed by nurses and architects, Dementia Villages are designed to promote a sense of comfort in people affected by neurodegenerative diseases.

From an architectural perspective, this intention materializes through the extensive use of the vernacular register. Despite being entirely newly built due to technological and economic concerns, Dementia Villages often mimic a simplified version of traditional architectural languages, which provides their distinctive "fake"[17] quality.

In the case of the Hogeweyk (the first dementia village, built in the Netherlands), a strategy of comprehensive design is employed to provide specifically crafted interior environments:

Unique interior decoration is intended to make residents feel at home in familiar surroundings. The residential areas are divided into different lifestyles allocated to the elderly based on their past preferences. An opinion research institute analyzed the seven most common environments in the Netherlands for this purpose, resulting in the following categories: traditional, city, wealthy, cultural, Christian, Indian and homely.[18]

This architectural agenda advances under the auspices of empirical observations by the nursing personnel. Part of this work is aimed at critically understanding and evaluating this transdisciplinary influence. While numerous sources have critically analyzed dementia Villages, most of the existing literature focuses on the case study's efficacy as a treatment center, thus focusing on the patient. This thesis aims to examine the potential relevance of the Dementia Village for the architectural discipline, therefore concentrating specifically on the learning process that architects and developers undergo in the design and construction of these facilities.

Figure 4: General plans of the case studies. Alberto Geuna

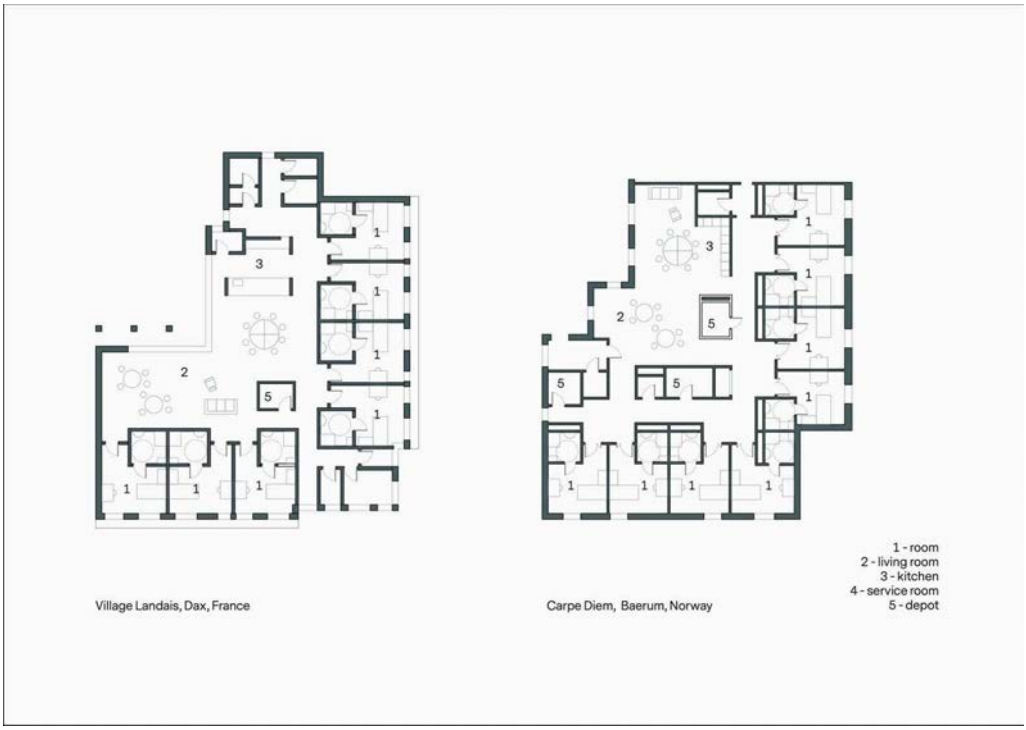

Figure 5: Comparative plan of the residential units. Alberto Geuna

5 / A QUALITATIVE HANDBOOK

Since architects have realized that the perception of space isn't objective, immutable, or universal. As described by Antony Vidler, architecture can now be seen as a phenomenon imbricated with the instruments that allow humans to perceive it. As clearly pictured by Peter Zumthor in his book Thinking Architecture, inhabiting is a sensory experience in which space relates to the brain through the senses and, crucially, through memory. The process of reminiscence, in particular, is described here by Zumthor as unconscious:

There was a time when I experienced architecture without thinking about it. Sometimes I can almost feel a particular door handle in my hand, a piece of metal shaped like the back of a spoon.[19]

The act of reminiscing is an uncanny sensorial journey that leads Zumthor back to a familiar place: in this case, a doorway in his aunt's house. The design of facilities dedicated to dementia care puts the architectural project under extreme stress that forces it to reconsider a series of established disciplinary practices. Paraphrasing Colomina and Wigley: dementia's real ambition is to redesign human space. At the core lies a debate around the therapeutic role of reminiscence that pushes architects to produce familiar, reassuring spaces tailored to the needs of people with impaired intellectual capacities. It constitutes an architecture no longer founded on the quantitative ratios of ergonomics but qualitative assessments of perception and memory in a state of dementia. Phenomenologist Dylan Trigg writes in his book "The Memory of place":

Over time, those places define and structure our sense of self, such that being displaced can have a dramatic consequence on our experience of who we are and even leave us with a feeling of being homeless in the world. Equally, the memories we acquire of the places we inhabit assume a value that is both immeasurable and vital. Without the memory of places, memory itself

would no longer have a role to play in our conscious lives.[20]

The proposed design approach aims to structure instances from the phenomenology of memory into the architectural project, mainly through the graphical tool. The thesis's outcome will consist of a qualitative handbook synthesizing models regarding the connection between memory, place, and the creation of a therapeutic architecture. Following the steps of Venturi, Scott Brown, and Izenour, the final chapter will consist of an ironically intended addendum to the Neufert: Architect's Data manual, which will focus on the vocabulary of familiarity that constitutes the architectural atmosphere of dementia villages.

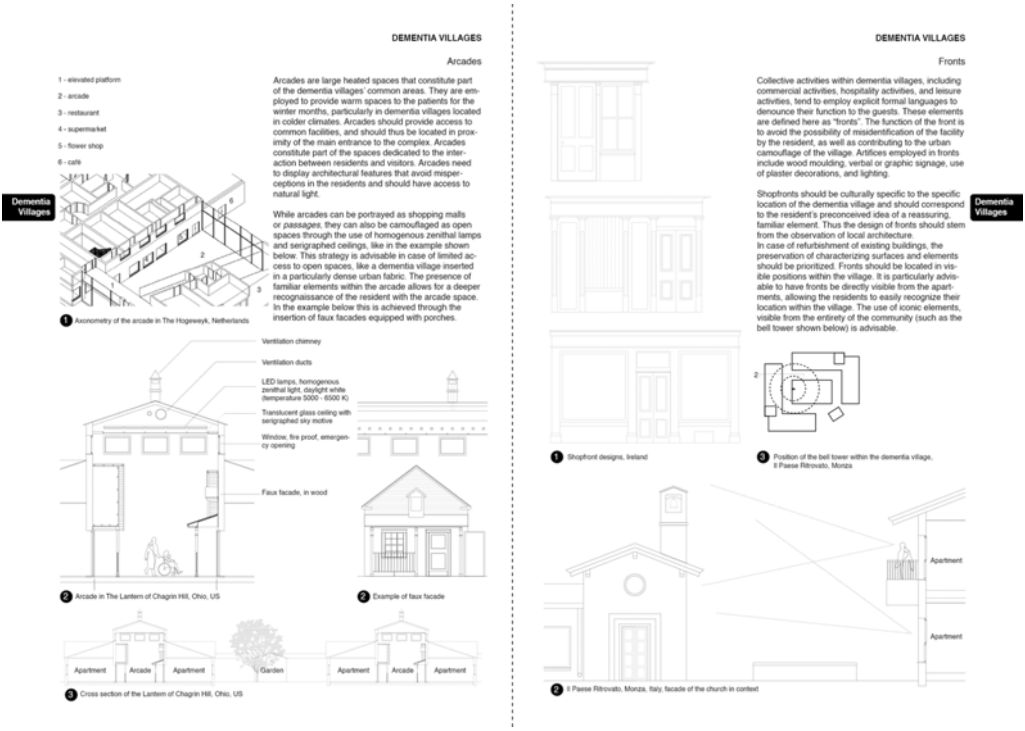

Figure 6: Example of spread from the thesis final chapter

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The Ecology of Coexistence in Groundscapes

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Initial Doctoral Stage

Supervisors: Gennaro Postiglione, Politecnico di Milano; Paola Briata, Politecnico di Milano

#

groundscapes, ecosystem, architectural ethnography

Abstract

Which disciplines should be called into question to validate the quality of groundscapes design, from the point of view of inclusivity and circularity? Which aspects of the design process can support successful developments of groundscapes and how?

The research aims at exploring the role of design for groundscapes with a closer look at its implications in terms of inclusivity and circularity, across time and transformations, looking at the way different disciplines address this topic. The definition of groundscapes is developed through the production of architectural interpretations with a strong typo-morphological focus. In parallel, the "relationship between construction and occupation" is particularly investigated adopting an architectural ethnographic approach. These two approaches aim at revealing the effective contribution design can give in promoting the potential of groundscapes as spaces for co-existence and as pools of resources for alternative urban systems.

Extended abstract

In the design and redesign of the urban ground, a lot happens around and in-between intentional architectural actions: informal practices of spatial appropriation reconfigure constantly the public landscape, explicating unplanned uses and developing unexpected configurations. In the contemporary condition of overlapping urban crises (migratory, environmental, economic, social), planning and design cannot always offer a complete response to all kind of needs and all communities, while informality and alternative configurations represent effective solutions to everyday life situations.

The relationship between planned spaces and informal interventions represents a great potential for the development of more accessible cities, it suggests latent possibilities for marginal users to produce space

autonomously within the official system.[1] It is about improvised sleeping units built between infrastructures, temporary collective structures for activities carried out in squares and parks, movable facilities for selling and health arranged along the streets. The question is what the implications between use and form are, what can the role of design be in this relationship, and wether and how designers can contribute to the expression of this latent potential.[2]

According to Colin Ward, direct experience and observation of urban phenomena is what can best put us in contact with these formal-informal dynamics, what can make us conscious about spontaneous urban transformations as vivid material of the everyday and as seed of the future.[3] If the ground of cities is the scenario where these transformations can be experienced at their finest manifestation, the delicate matter is to find the best way to decipher them and to develop design tactics to support their expression.

The scale of investigation is therefore that of the body, of actions on the micro-scale of architecture, of the physical performance on materials and space. In this sense, a relevant approach is offered by the realm of Architectural Ethnography: with this term, Atelier Bow-Wow refers to the application of the approach of ethnography to architecture research, to the intersection between immersive investigation and design tools.[4] Quoting Atelier Bow-Wow, Architectural Ethnography guides into an insightful understanding of the "relation between construction and occupation", of the interdependence between users and resources in a certain context, and seek to unveil understated implications from the point of view of spatial actors. To work with Architectural Ethnography requires to develop a toolkit of investigation, starting by identifying the limits represented by time and tools available: ethnographic researches are developed over several years, if not decades, defining time as a necessary working parameter; tools of investigation can be in addition of various

nature (writing, sensing, recording, performing…) determining very diverse processes and outcomes.[5] A PhD research needs to confront immediately with these challenges, and consequently detect existing researches and active professionals that can represent the starting material and interlocutors of the first step of the investigation.

The toolkit should develop on three levels: a theoretical research level (on the topic itself of how architecture meets ethnography, what are implications and limits); a background research level (on the historical, economic and social context of the main topic and of the case studies); and an on-site research level (the physical dimension of the investigation, to collect, confront and test the site-specific micro situations on which the investigation is based). The three levels are not intended as consequential, but they rather intersect and alternate, in a process of continuous and cyclic annotation, dialogue and verification, from literature, through interviews, to case studies and back to literature.

The method that Atelier Bow-Wow has been using in Japan in their works with rural communities — and at a University level at the ETH in Zurich — could be diffused and implemented to the study of informal transformations happening in the public grounds in Europe, similarly to what the team of "The Drawing & The Space" has been doing at KU Leuven[6]. These two referential research works highlight the role of drawing in the construction of a methodology of investigation, a tool that would be interesting to further explore and compare with other more sensorial and performative applications — as the members of the Centre for Imaginative Ethnography have been widely studying.

This approach doesn't aim at formalising informal practice through design, but rather at offering design as an infrastructure for informal practices to flourish: it questions the possibility of developing design interventions that can support further informal transformations, that

can enhance spontaneous actions of appropriation (as a response to urgencies), before they can eventually go through an actual resolutive (and formal) process.

The topic of informal appropriation is investigated more widely for what concerns squatting and anarchist adaptation of buildings for housing[7], while fewer systemic research projects — from an ethno-architectural perspective — can be found with respect to public grounds (within the European territory), so to say the translation of Colin Ward works in the contemporary context. An example from the Asian sphere can be found in the work of Borio and Wüthrich at the Hong Kong University, accessible through their publication "Hong Kong in-between", where they explore the appropriation practices and informal architectures developing on the ground of the city.[8]

The night shelters built in Milan in Centrale Railway's underpasses and under the arcades of office buildings, the temporary infrastructures developing around the Placa des Glòries and Mercat Els Encants in Barcelona (studied by Association Lemur and by a team at the KU Leuven), the first-aid services assembled in Navarinou Park in Athens: these (and more) cases could be possibly studied and compared looking at the relationship established between practice and space, body and space, at the modalities used by people to appropriate architecture; on the whole, they could be read as part of the same informal system, suggesting implicit (and necessary) development and pushing for effective interventions that maybe only design can support.

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Enabling Systems for Open Transformations within the Existing Built Context

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Intermediate doctoral stage

Supervisors: Ignacio Borrego Gómez-Pallete, TU Berlin; Ralf Pasel, TU Berlin

Existing Built Context, Enabling Systems, Open Design

Abstract

The rise of the active user has prompted new imaginaries in architecture- and design culture. Although there are several examples in architectural history attempting to integrate unskilled workers within the design and execution process, some of them conditioned by times of economic hardship, this tendency doesn't find a systematic approach in today's architectural design. By implementing this research within a series of both, past and running projects within my architectural design practise, this proposal is aiming to gain new perspectives for working within the existing built context through establishing a system, which enables the user for future changes and adaptations through its components. These concerns are explored through a consideration of the whole spectrum of a building's life to address issues such as durability, flexibility, demountability, and actual use and to create an organism-like architecture, rather than an object that will be completed after its practical completion. The project argues that the interference the blending of existing built context and the enabling system gives rise to, can unlock new possibilities for architectural production today.

Extended abstract

Introduction

While the 20th century in architectural culture was mostly characterized by the rise of professionals, whose professionalism was considered as guarantor for high standards, value and quality, a change towards a new generation of active consumers has taken place within the last few decades with the capacity of blurring the line between consumer and producer in an increasingly growing open-source narrative. [1] In contrast to industry professionals, their focus lies no longer on generating profit but on the limitation of consumed resources, the

idea of adaptability for the changeability of designs over time, and the use of the existing built context. Participants belong to a new culture in which open and constructive collaboration between colleagues and other specialists is based on their personal engagement and experimentation. [2] Within this shift from the passive consumer to the active user, who has decided to produce for him- or herself, a change has taken place. Although there are several examples in architectural history attempting to integrate unskilled workers within the design and execution processes, some of them conditioned by times of economic hardship, this tendency doesn't find a systematic approach in today's architectural design- and planning culture.

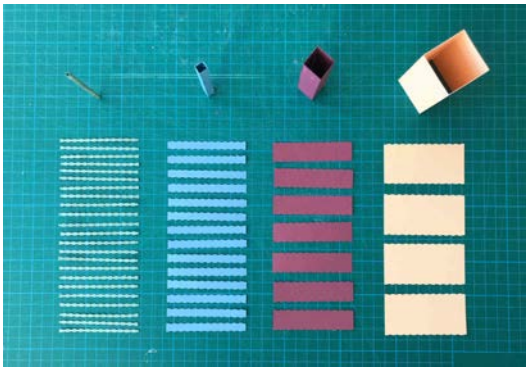

Figure 1: Example in a 1:33 paper model for a schematic 2-dimensional system made of cnc-cut spruce plywood.

Figure 2: A possible floorpan outcome of 2-dimensional system in existing context model for a community built conversion of a barn building.

By implementing this research within a series of both, past and running projects within my architectural design practise, this proposal is aiming to gain new perspectives on the production of architecture today. While

all practical projects are located within a specific existing built context, designs are aimed to become the main driver of this work. By reflecting on the specific nature of the projects, this research aims to develop a universal set of outcomes, as this could provide useful knowledge to enable non-specialists to transform, use and adapt existing contexts.

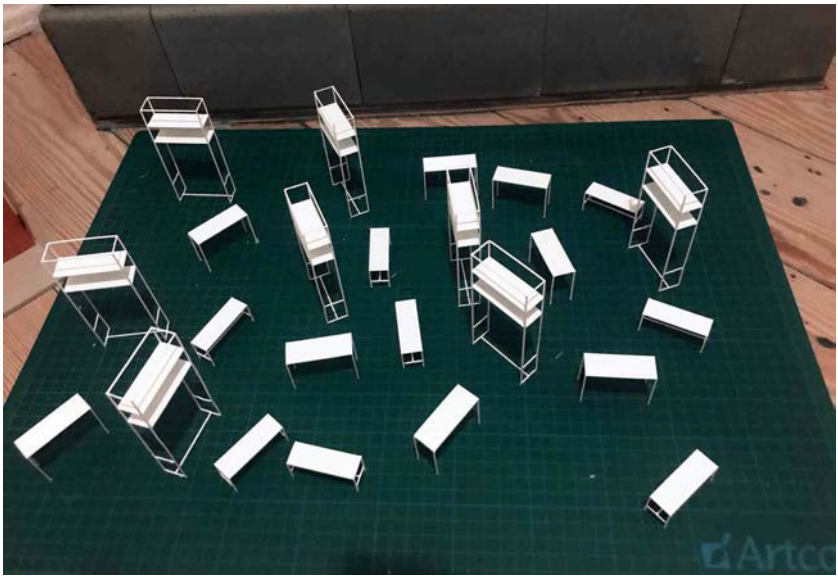

Figure 3: Initial explorations in 1:20 model. 3-dimensional enabling furniture system adapting to existing floor plans.

Figure 4: 1:1 testing in workshop, production of 3-dimensional elements for a community-radios office transformation.

Background

While in the decades immediately before and after the 2nd World War architects increasingly became empowered to influence every aspect of human condition, today's situation and context presents itself differently. Under the general sentiment that European culture had been destroyed by wars or had become so cluttered with nostalgic detritus as to be uninhabitable, the image of the modern architect has emerged during the past decades [3]. Fueled by the political economy of the 20th century and the rise of the welfare state, this tendency culminated in the emergence of today's global architect who "wanted to be free from the everyday environment and its traditions, constraints, and limitations, whose focus from now on was on innovation and a new way of building." [4] After an ascension of the architect to near-mystic status and the emergence of the star-architect, there was no reason for them to be fettered. Consequently this culminated in the underlying idea of most of today's commercially developed architecture, which as a result on a grand scale, too often prevents future adaptation and consequently, limiting the opportunity for change and adaptability and forces people to move instead of evolving with it over time. In the aftermath of this ongoing process, the market was then left to determine the spatial conditions alone, [5] the creativity of many professional architects was absorbed by capital, the professional architect became an employee in the accumulation of capital where as a result the idea of the newbuilt was favoured over the use of working under the use of the existing and so he was interwoven within increasing constraints in the logic of value creation. [6] Facing a situation today where, as the sociologist Bruno Latour puts it, the challenge for designers ahead lies in finding solutions how the "reaction of the system to human actions"[7] [8] can be coped with, this image of the architect seems obsolete. If following the idea of planetary boundaries and the concept of Anthropocene, it seems to be evident that the question

of value requires a redefinition for the coming decades. Value today and in the future will presumably also mean: enjoy what we have and to make use of the existing.

Figure 5: Example for a linear kit, printed elements in scale 1:33.

Figure 6: Linear system in contextual model, connecting with existing floor plan and developing within 2 apartments.

What, Why, How?

Concerned within this moment of time, this dissertation is aiming to investigate a specific potential emerging from working with the existing built context. While deepening specific investigations regarding the potential of existing structures, this research is aiming to establish a system, which enables the user for future changes and adaptations through its components. The work is imagined to investigate this by considering the whole spectrum of a building's life. For this purpose it's aiming to address how accessibility and openness can be translated into a design and issues such as durability, flexibility, demountability, and actual use can create an organism-like architecture, rather than an object that will be completed after its practical completion. What would happen, for example, if buildings and objects could be adapted according to changing life situations? Why not "have the courage, where practical, to let people shape their environment"?[9] Imagine, for example, "Ikea was to work with this sort of grid and when the child's bed you bought from them was outgrown, you could use this open system of components to turn the bed into a bicycle, into an extra piece for your modular kitchen, or even a coffee machine."[10] If, following the position outlined by architect John Habraken, "intentional architectural intervention should be grounded in a diagnosis based on investigating and analyzing the existing built environment to create frameworks that cultivate user-generated design."[11]

The main Idea for this research initially emerged from a design-project for a conversion of a space located in a former existing bunker-building into an editors office for a local independent radio station in northern Germany. While at first the existing building with its mass and dominance seemed to set the rules for the design, a series of differently assembled 3^d elements, became an integral part in creating an expandable space, with the capacity to enable its users to grow and

change the space over time. Further investigations within practical design projects continued last year, when Covid-restrictions started to set new rules and added an experimental atmosphere to some of the projects. A currently running community-driven living- and working-experiment in the countryside of Berlin will implement another investigation to this research, where questions of community-led transformation of an existing built context will be developed over time, continuing the line of this reseach with the aim of 1D and 2D elements fabricated on site as well as prefabricated 3^{d} elements that can be assembled for different scenarios within the existing context.

Starting from the fact that "design tools don't really allow us to engage with the underlying social relations within which design is conducted and the fact that design is often conducted through a series of technologies -mainly drawing and its derivatives- that have created an elitist professional and expert discourse"[12] this dissertation aims to further re-examine and develop adequate design tools. Other methods and formats such as speculative design workshops and a futurescope and the open-source platform will also be explored for their potential to open up new ways of communicating design and creating accessible solutions. New tools could be considered neither to "mask specific social, political or environmental issues"[13] but to enable people to overcome their sense of lack of influence and recognize and ultimately use their resources and opportunities.

All images by the author.

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How to Use a Monument Reformulating the Role of Monuments in Today's Cities

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#

monuments; public art; urban phenomenology

Abstract

This research is concerned with the shifting meaning and role of monuments in the social context of cities nowadays. Monuments play a significant role in shaping a collective memory of people, cultures, and places. Yet, the architectural proclaim of a situated ideology reveals the controversial nature of the monument's meaning due to its inability to achieve and retain unanimity through time. In order to think differently of a monument, one that would challenge the power order that promotes a specific idea of history, the study argues that the collective meaning of the urban monuments must be investigated in relation to the practice of everyday life. Can the notion of use be applied to a monument? What defines a useful monument? The research follows a design-driven methodology, initiating an investigation through a performative art-based architectural project called *How to Use a Monument*, which took place in February 2020 at Saint-Denis victory gate in Paris.

Extended abstract

1. Introduction

For us, it was built in the past. For them, it was built for the future. Now, we want to build a monument of the present, for the presents.

There is a wide variety of monuments, ones that accompanied our cities for hundreds of years, along with new ones that appear with ongoing events shaping our current culture. However, for initiating research that discusses the monument and its experiential aspects in the city, one should clarify what a monument is. The dictionary definition by HarperCollins [1] explains that a monument is a large-scale built form created to remind a particular event or a personality from the past. The term itself comes from the Latin *monumentum*,

which in turn derives from the verb *monere* (to remember), linked in the collective imaginary to an element characterized by precise iconography. A monument would be built with materials designed to last over time, such as marble, granite, or bronze, and similarly to a statue, it will stand on a pedestal, acting as a mediator between the earth and the sky. In 1781, Francesco Milizia defined monuments as "any work of architecture or sculpture that preserve the memory of the most illustrious men and the most venerable events" [2].

Each monument is built with the aim of passing on a memory; therefore, it is the carrier of a precise meaning and a symbolic function that makes it one of the greatest expressions of remembrance, standing as signifiers of power, order, and historical storytelling.

Monuments play a significant role in shaping a collective memory of people, culture, and places; as a visual symbol of memory, immediate or distant, it affects the temporalization of space, expressed in a specific place. They represent and eternalize a particular local history, stand as signifiers of power and order, eventually reflecting a political idea of history promoted by the state as a visible element in the urban landscape.

The monumental built form stands out for its rhetoric, solemnity, and dimensional hypertrophy. However, the architectural proclaim of a situated ideology reveals the controversial nature of the monument's meaning due to its inability to achieve and retain unanimity through time. This unveils an issue regarding its embodiment into a shared urban history, especially in the accelerated dynamics of the 20th-century urban sphere, where it is perceived as an archaic feature far from the present times. Nevertheless, we can witness this trend still taking place in cities worldwide, with instances such as the newly built Statue of Unity commemorating Sardar Vallabhbhai Patel, in the state of Gujarat, India.

As an architectural object, a monument has a deep relation to the arts. Adolf Loos writes "only a very small

part of architecture belongs to art: the tomb and the monument. All the rest that is at the service of a purpose must be excluded from the realm of art" [3]. Fifty years later, Rosalind Krauss sees this connection as well. In her *Sculpture in the Expanded Field*, she notes how the logic of sculpture is intrinsically linked to that of the monument. [4] For centuries, sculpture mainly had a commemorative and symbolic role, while in modern times new definitions and practices arose toward the medium of sculpture. Krauss's notions on sculpture relate to that of the evolution of the monument and its role. The monument, in turn, shifted into a concept that contains artistic practices and interventions no longer related only to the field of sculpture but which also includes architecture, landscape, public art, as well as performance, in their broadest sense.

It was in the 20th-century, and more precisely since the end of the Second World War, that the idea of monument underwent a radical process of reformulation which redefined its fundamental elements, both in symbolic and formal terms, leading to experimentations far from the traditional conception. As James Young writes in his *Memory and Counter-Memory*, major social shifts and revolutions have marked and modified commemorative practices and their forms. "As the intersection between public art and political memory, the monument has necessarily reflected the aesthetic and political revolutions, as well as the wider crises of representation, following all of this century's major changes. In every case, the monument reflects both its socio-historical and aesthetic context. The result has been a metamorphosis of the monument from the heroic, self-aggrandizing figurative icons of the late 19th century, which celebrated national ideals and triumphs, to the anti-heroic, often ironic, and modest conceptual installations that mark the national ambivalence and uncertainty of late 20th-century postmodernism" [5]. Starting from the second post-war period, monuments such as Eisenman's *Memorial to the Murdered Jews of Europe* in

Berlin, or Maya Lin's *Vietnam Memorial* in California, acquired complex spatiality: spaces to walk through, spaces to cross, to enter, to live in, which also have a function, albeit minimal or reduced. Spaces for meditating, spaces to reflect, spaces to remember. Ultimately, spaces for the present experience. These instances are drawing on the ideas of direct, shared, and participated experience of memory aimed at the formation of new subjectivities, as this approach questions not only the role of the monument purely as an inanimate object but also its use.

2. What is a useful monument?

In order to think differently of a monument, one that would challenge the presence of any imposing, authoritative force in public spaces, bypassing the power order that promotes a specific idea of history, this study argues that the collective meaning of the urban monuments must be investigated in relation to the *practice of everyday life* [6].

The places in cities we spend most of our time in, the day-to-day practices taking place in them, are the ones leading to the complex networks of stories and narratives each culture entails. Therefore, the question at hand here is: can the notion of *use* be applied to a monument? What defines a *useful* monument?

This observation requires a process of constant reformulation: a reconceptualization of notions of shared urban memory, through engaging with people's everyday urban rituals, sets of actions, and uses -formal and informal- understood as performative events in the urban environment. If the physical presence of monuments could be discussed and worked through everyday communal discursive and performative acts, the city could reformulate and revive its cultural collective memory, while forming and cultivating connections between people, place, and community. Public places could be thought of as monuments of the city for their

daily happenings and uses, in that they represent moments of constant reformulation of the *memory of the everyday*, a participated memory. For instance, Place de la Republique in Paris generates its monumental form and symbolism as a place of both consensus and conflict, accommodating performative and collective actions. Such public places are realms where the conversation starts, where people come together forming the *social organism* [7].

Figure 1: Monument Against Fascism, Jochen and Ester Shalev Gerz, Hamburg. [Photos: Shalev Gerz]

Another kind of monument could recall the formal model of the built form while at the same time de-sacralizing it by critically bringing it to the realm of the everyday. James Young defines those as *counter-monuments*, in that they follow "the mutation, decay, and disappearance" [8], and where the relationship between object and visitor converges into that of active participant and co-creator, stimulating a first-person reflection on the happening taking place rather than on the physical element. An excellent case is the Hamburg's *Monument Against Fascism* of 1986 by Jochen and Ester Shalev Gerz, a "monumental" twelve meters high squared column, destined to slowly disappear into the ground after seven years. A *temporarily permanent* memorial where

the inhabitants are actively called to write comments on the outer surface. The artists wrote about the performative process behind the work, “as more and more names cover the 12-meter high column, this will gradually disappear, and the site will be empty. In the end, it is only ourselves who can rise up against injustice” [9]. More than anything, these instances outline what is an approach for looking at the concept of monument nowadays.

2.1. How can we think of a useful monument? A methodology

Practice-based research and design-driven research are crucial methodologies for this study, as they cyclically transfer ideas and theories into practical actions in the urban setting. They seek transformative change through the simultaneous process of taking action and doing research, which is linked together by critical reflection. In itself, every architectural project is an act of research, yet one focussed on participatory uses, and sensorial attributes, of a place.

In order to discuss a critical approach toward the useful notions of monument, a multidisciplinary and physical site-based inquiry action need to be set as methodology. The changing relations between the built forms and social processes can be examined by constructing a practice around a framework of phases, cycles, and looping feedbacks, examining changing relations between the built forms and social processes, as well as those between the spatial discipline and performance arts, their practitioners, and people’s own performative set of actions in the urban environment. In order to generate a *cyclical process of reformulation,* we turn to the dynamic idea of the *event*, developed in the second half of the 20th-century by architects and artists such as Cedric Price, Bernard Tschumi, Allan Kaprow, among others, together with system models such as the one conceptualized by scholars like Kurt Lewin.

This process involves three steps, each composed of a cycle of mapping, action, and remapping — in this case, defined as *pre-event*, *event*, and *post-event* — and verified by constant on-and-off-site feedback loops. Within this approach, it is ultimately the body itself that is understood as the real place-in-transit where to renew a relationship with the urban space at large and stimulate a different awareness while elaborating new political and citizenship forms through participation.

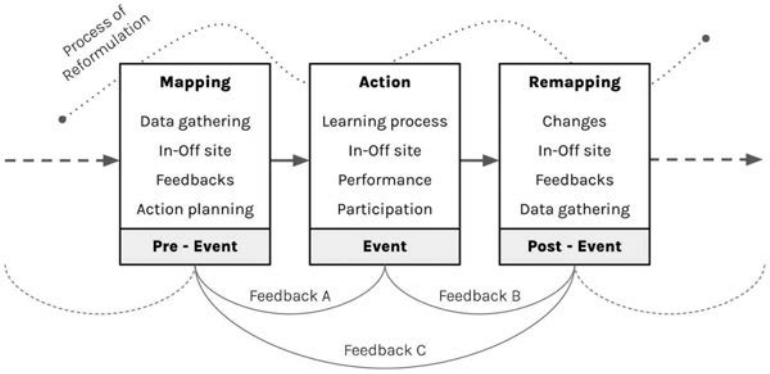

Figure 2: Process of Reformulation - methodology scheme drawing from the action-research diagram as elaborated by Kurt Lewin. [Content: Or Haklai, Enrico Chinellato]

3. A case study: Porte Saint-Denis, Paris

To understand how this methodology works, we now turn to a case study. Two years ago, as QUIZEPO we started venturing into multidisciplinary research invited by the PSA- Paris School of Architecture and the Ecole des Beaux-Arts. We focussed on Paris' Porte Saint-Denis victory gate. The result was the project "*How To Use A Monument*", which was realized in February of 2020 at the case study site.

Porte Saint-Denis is a victory arch dating 1672, located in the 10th Arrondissement at the crossroads of Boulevard Saint-Martin and Rue Saint-Denis. It is the first of four triumphal arches built in Paris in the late 17th

century, on the course of Paris' old walls. Its architecture follows the proportions of the Arch of Titus in Rome, flanked by obelisks applied to the 25 meters high facade, with allegorical figures related to the passage of the Rhine, designed to symbolize and glorify the victories of the French Armies. The gate was conceived to control and tax the incoming goods from the area surrounding Paris and form a critical part of the defensive architecture of the French capital. Today the gate is a centralized background of a vibrant and chaotic urban setting, as it happens to be an unconscious marker of Paris' nearby cultural districts. As a crossroad between the nightlife of Faubourg Saint-Denis, the theatres of Saint Martin, the touristic Grands Boulevards, a mix of new unofficial activities and gentrifying real estate are simultaneously occurring in the area, creating a fascinating mix of usages and new city life. Yet, the gate remains a silent actor in the lively everyday dialogue of this scene. This condition was already well depicted in 1833 by the painting "*The Porte Saint-Denis*" by William Turner. The work's unfinishedness helps us to quickly grasp the alienated, often violent reality of monuments against the present time. Turner sketched the gate amidst the detailed, dynamic, busy street life in the foreground, standing as a blurry blank space passed by unnoticed by everyone, yet that massively towers over the life of the district. We would argue that the painting visually summarises the issue to investigate.

Figure 3: Joseph Mallord William Turner, The Porte Saint-Denis, Paris. ca. 1833; Tate Modern.

3.1 How to Use a Monument: from statement to question

Following the methodology presented earlier, the design-driven investigation has been structured on three levels. The primary stage (A) aimed at analyzing the built and spatial means of cities and their monuments through a phenomenological analysis of the percepts and sensorial affects [10] of the monument's timeline of uses, historically and in the ongoing urban scene. This happened together with an exploration of the situated condition of the physical site and its virtual presence through the action of mapping, textually and visually. Wylie explains the notions of precepts and affects as conditions of the place that resonates with our nerves.

By describing the experience of a *trail as a site* [11], they are seen as a state that influences the subjective experience of visiting the site within its spatial relations.

Figure 4: Initial mapping: diagrams and reflections during and after site visits, and mapping of the social media presence of the Porte Saint-Denis victory gate. [Content: Or Haklai, Enrico Chinellato]

The early experience visiting the site was chaotic, a full-on street rush of a variety of people and happenings. The monument is centralized but remote, untouched, rendered nearly inaccessible by the car traffic surrounding it, and therefore almost invisible. A blank spot in the junction, just like in Turner's painting. The experience of the monument continued with the analysis of its representation in the digital media, and later, by taking part in the collection of shared digital representations, taking pictures, and representing ourselves in them [12]. We saw one's representation with the monument as part of the current experience of monuments overall, certainly a performative one. Yet, this practice is still aligned with the traditional definition of a monument, in that the use and purpose are embedded in representing the absolute, the sacred, or the secular virtues, as ultimately the "true" relevance of the monument is retained by what it represents. This was followed by formulating a textual representation of the monument. In other words, reformulating its dictionary definition and generating a fictional one that reflects a different understanding, a different narrative, was a reflective tool for the desired design action.

The second stage (B) of the research activated a design action, wishing to change the form conditions through

a physical metamorphosis. The primary goal was to make the Porte Saint-Denis victory gate a usable artifact. To do so, the spatial and sensorial features of the built structure needed alteration. We metaphorically scaled-down and dissected the existing monumental arch. This process created a new object, a 150 cm high urban furniture that resembled a closet. By breaking down the scale to a human level, we envisioned a monument serving the city's everyday actions, and that supported the interactions and relations happening in the streets. Playing with scale and materiality, the gate transfigured: the limestone turned into simple plywood, and the form and the decorated facade of the victory arch were remapped, flattened, and engraved on the wooden surface as a reminiscence of the existing stone monument, while its volume was cut into 12 pieces, suiting its new scale — a human-sized object.

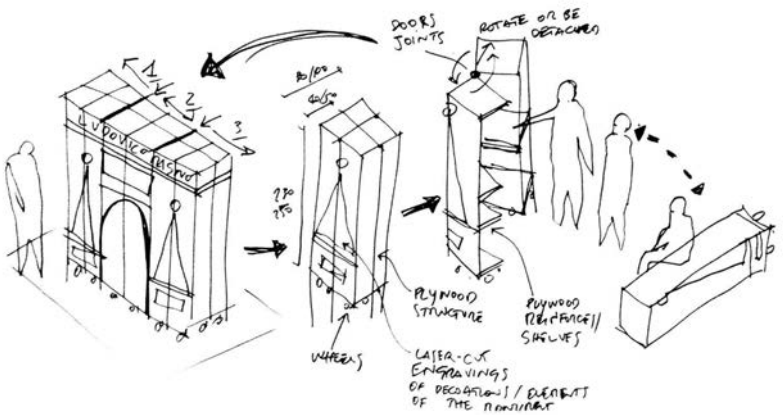

Figure 5: Preliminary sketches of the temporary structure.
[Content: Or Haklai, Enrico Chinellato]

Simultaneously, we planned an event at the site. The idea was to provokingly place this modular urban closet under the Porte Saint-Denis arch, inviting artists, performers, and the public through an open call, as well as the passersby on the day of the event, to use this urban furniture as they wish. To move it, flip it, store their belongings in it, sit on it, or play with it. We saw it as an open-ended performative and participatory action and

moved by pure curiosity we experienced a good degree of uncertainty at the on-site event. The event could have been shaped in endless forms, yet the artist's interaction with the street was crucial for achieving new relations in the street. The performance artist drew the public attention from afar, while the visual artist drawing on the furniture engaged with the people crossing the street, inviting them to participate, leave a mark on the wooden surface, or simply start a conversation. Through that, both designers and the artists moved from being the sole authors of the work, to being one of many with the community. Here we started to question what it means to participate in the urban scenery. At various times, people from different locations around the monument stopped to look at the happening, uncertain of what we were doing at this abandoned spot. They stopped, looked, got closer, as what caught their eyes was unusual to see. Towards the end of the day, the participation level increased significantly. At its core, the event enabled multiple and spontaneous actions into the city stage, bringing a deeper understanding of its spatial elements through the participatory acts, as raw and direct as it could be.

Figure 6: Photos from the day of the event. [Photos: Or Haklai, Enrico Chinellato]

The research outcome unfolds in the third stage (C). It is embedded in this paper by once again mapping and analyzing the new conditions of the place after the design-led event, operating a comparative evaluation with the first mapping and its known features. The single-day-event sensorial experiences exist within the connections made at the site, between the furniture, the artists, and the passersby. It is perceived and implemented through people's communication addressing the monument-artifact and the historical monument. This first investigation revealed the need for continuous action research that works to find, create and maintain sites of different cultural value through new city visualizations and awareness. An arts-based mechanism for urban dwellers to meet their social, cultural, and material uses at a localized scale in the city, with an accompanying interest in how places are made in the city and who is making it. With eyes toward the future, this study aims to grow and expand to different sites, including different types of monuments, while using the same tools with unexpected results.

Figure 7: A virtual representation of the monument in its three forms during the exhibition [Content: Or Haklai, Enrico Chinellato]

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Design Method of Low-tech Ecological Rural Settlement in China

Qiang Villages as an example (Early Stage of Research)

Dan Hu, Politecnico di Milano

Initial doctoral stage

Supervisor: Marco Bovati, Politecnico di Milano

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low-tech, rural settlement, China

Abstract

In 2021, the Chinese government reiterated the importance of the "rural revitalization strategy". Due to concentrated development of lands, there has been an urgent need to build settlements for a large number of farmers losing their farmlands. Nevertheless, these residential settlements, located at faraway and backward places, are usually ignored by the government, and even turn into an embodiment of low-end residences. Moreover, problems, such as cultural loss and violation of ecological principles, have emerged in the design and construction process of these settlements. This research which remains undone chooses the Traditional Qiang villages for a case study, and proposes an after-use evaluation of the settlements after the 5.12 earthquake, in terms of materials and residents' satisfaction. On that basis, a low-tech ecological rural settlement model and design method is developed to realize the combination between the wisdom of traditional folk residences and the modern residential requirements, let the regional architecture be inherited and developed sustainably, and attempt to alleviate a series of economic and social problems existing in rural settlements.

Extended abstract

1. Critical Reflection

China's rural areas take up 94.7% of China's total land area, and the rural population take up 53.4% of the total. The year 2021 witnessed (the promulgation of) the "rural revitalization strategy" by the Chinese government as a major basic national strategy. Because of the concentrated development of rural lands, construction of a large number of settlements for land-losing farmers has become an imperative. However, these settlements are usually located faraway and faced with the backward economic development. This has led to a lot of problems in these settlements. Firstly, lack of funding

has resulted in poor quality of design and architecture; secondly, the government and the design institute dominate the design plan, depriving residents of any say in architectural design, and causing the inconsistency between the use status and the residents' expectations; Thirdly, the design plan shows no respect for traditional crafts and lost regional characteristics, all villages looks the same; Fourth, the design The design ignores and even goes against the principle of ecological design. The construction destroy the environment[1].

How to combine between the wisdom of traditional architcture and the modern residential requirements, how to let the regional architecture be inherited and developed sustainably is an issue of concern. My research is carried out under this background.

2. Theory of Low-tech Ecological Architecture

Low-tech ecological architecture refers to construction of ecological architecture combining traditional techniques but using fewer or even not using modern techniques. Generally, low-tech ecological architecture can be classified into four models, including heat adaptation, wind effect, light adaptation and landscape adaption [2]. So far, scholars have explored low-tech ecological architecture from the following perspectives, including modern applications and development of traditional techniques (such as rammed earth and earth-sheltered architecture); technical improvements of traditional materials (such as improvements of bamboo materials); reuse of industrial waste (such as reuse of tires); and in-depth passive architectural research. Charles Correa proposed the "Form Follows Climate", which holds that architecture should capture climate elements from the plane and vertical perspective, and he reflected this idea in "tube house space" [3]. Hassan Fathy put forward "cooperative construction" [4]. Simon Velez studied the "Umbrella" architecture of the bamboo, and advocated

improvements of traditional materials, simplification of design charts, and participation in the construction process [5]. As a representative of the modern low-tech architecture. Philip Jones is committed to the sustainable carpet design, and has succeeded in establishing the building energy model [6]. Tyin Tegnestue Organization devotes itself to the humanistic architecture and recycling of industrial waste [7].

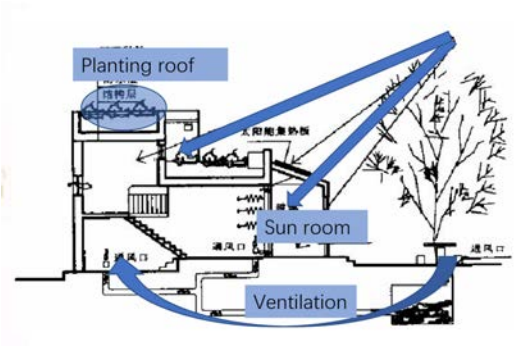


Figure 1: The Low-tech renewal of traditional sunken cave, Source: draw by author.

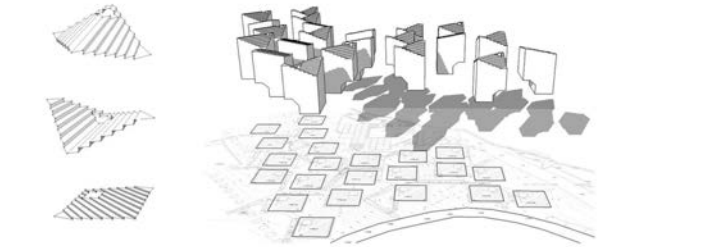
3. Applications of Low-Tech Ecological Rural Settlement in China

The traditional village patterns are great in variety and contain a great wealth of low-tech wisdom. This enables them to find applications in modern design, For example, Building raised from the groundTo avoid moisture; Nomadic buildings that can be built quickly; The sunken cave dwellings embedded in mountains of Northern Shaanxi are capable of air-conditioning, they are warm in winter and cool in summer.

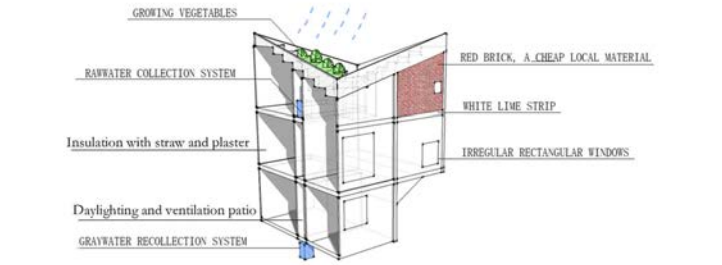
The transformation in ventilation, lighting and insulation is used in the Low-tech renewal of traditional sunken cave [1].

In the design case of Jintai Village, Sichuan Province, the designer made one important breakthrough. The designer decreased the earthwork by increasing the number of terraces. The planted roof terrace has not only inherited the planting habits of the farming society,

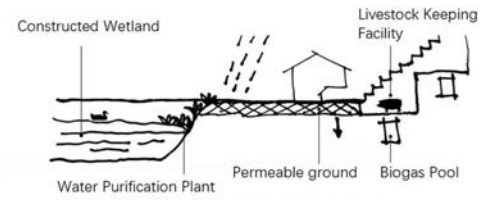
but also ensured the heat insulation of the roof. The raw-water collection systems and greywater recollection systems also combined livestock keeping facilities and biofuel pool to make full of biological energies [9]. This design also integrated the concept of "low impact development". The permeable floor was adopted for the village, and "wetland" was constructed for storing and recycling of water resources [10] [2].



Roof and Terrain are Interrelated (three types) Architectural Layout of the Village



Analysis of Residential Buildings



Environmental Analysis

Figure 2: Post-earthquake reconstruction of Jintai village, Sichuan Province, Source: draw by author.

4. Locality – Traditional Qiang villages

The traditional Qiang villages located in Sichuan, China is chosen for a case study. Traditional Qiang

architecture demonstrates unique regional characteristics, including use of stones and watchtower as a symbolic element. Being one of the 55 ethnic groups in China, the Qiang people are mainly distributed in the riverbed of the high mountain which is 3,000m above the sea level in Southwest China, and whose topographic slope ranges from 20°to 50°[11]. The climate is dry and cold, and the temperature is 3 – 24 degrees Celsius. The first floor of architecture is used for keeping and cultivation of livestock. The second floor is for residents to live in. The semi-open third floor can receive adequate sunlight For Drying Crops. The materials used are mainly local rubble, loess and wood [3].

Figure 3: Traditional Qiang Villages, Source

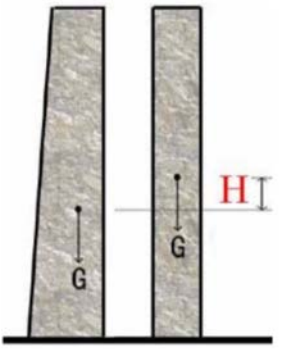


Figure 4: The exterior wall, Source: Research on Modern Pattern of Qiang Vernacular Dwellings in Region of Sichuan Province. Xi'an University of architecture and technology.

Figure 5: The corner block stones, Source: Research on Modern Pattern of Qiang Vernacular Dwellings in Region of Sichuan Province. Xi'an University of architecture and technology.

Architecture of the Qiang People represents a crystallization of wisdom of the folk residence over the past thousands of years, which can well adapt to the environment. For example, the wall that is thin by the upper part and thick by the latter part can increase its stability [4]. The alternating masonry of corner block stones can play an anti-seismic role [5]. A movable ladder can get rid of pursuers， which is a defense technique in war [6]. The thick exterior wall and small window can well guarantee thermal insulation. From the 48 hour indoor and outdoor temperature curve， we can see that the indoor temperature changes little compared with the external temperature [7]. The external wooden rooms can collect heat [8] [12]. The area is known for the frequent outbreak of earthquakes and other natural disasters. In the aftermath of "Wenchuan Earthquake" happening on May 12, 2008, the traditional Qiang village suffered a serious blow. Over the years, reconstruction has been carried out due to continuous aftershocks. But the reconstruction effects of most villages were not satisfactory. In spite of that, all these cases have been laying the foundation for our post-use evaluation. Investigation and solution of the existing defects can facilitate the follow-up research.

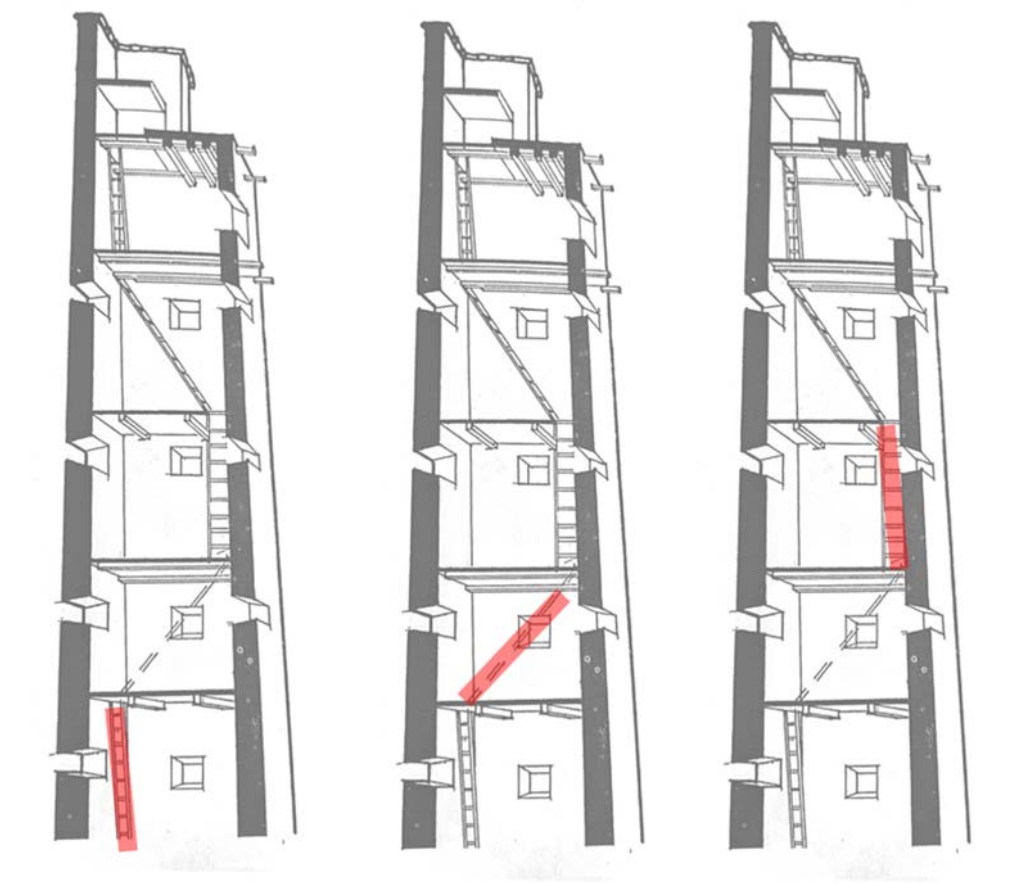


Figure 6: The movable ladder, Source: draw by author.

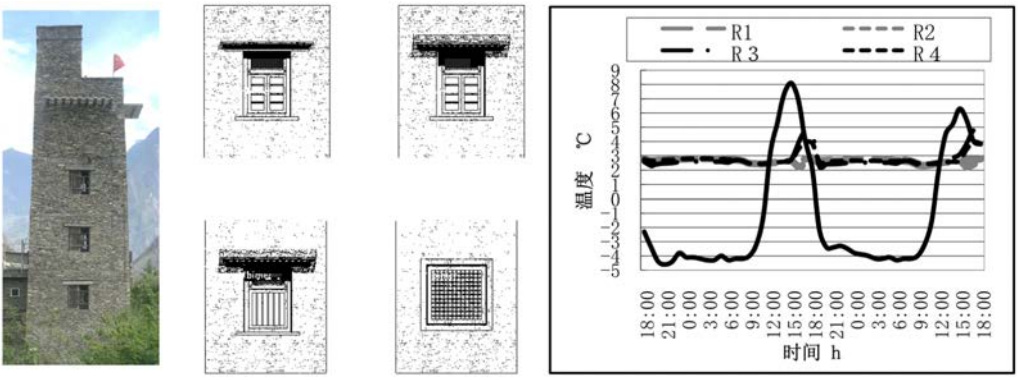


Figure 7: Small window and 48 hour indoor and outdoor temperature curve

Figure 8: The external wooden room, Source: Research on Modern Pattern of Qiang Vernacular Dwellings in Region of Sichuan Province. Xi'an University of architecture and technology.

5. Research Procedures

I hope I can come to scientific conclusions through the following research procedures:

1. Collaborative design and cyclic feedback: I will seek collaborative design with villagers, consider the residence as a whole, and use demonstrate research results via drawing, physical models, 3D models, animations, etc. Additionally, I will make adjustments and cyclic design in accordance with feedback;
2. Literature research: study theories and cases of low-tech ecological architecture, and explore how to apply these achievements to local residences, and study the social and historical background, natural conditions, regional architectural patterns, traditional low-tech techniques and existing research findings of local residences;
3. Field survey: I will choose representative rural settlements to record the status of village planning, architecture, infrastructures, landscapes and so on. I will take a look into which low techniques are used and what are the problems. Meanwhile, I will use instruments to put down various indexes of the architecture and the environment;

4. Post-use evaluation: I will conduct a post-evaluation of existing villages to gain feedback from villagers. The feedback covers villagers' satisfaction of residential spaces, low-tech needs, and adaptability towards changes of lifestyles and socializing styles;

5. At last, based on the existing experience and knowledge, scientific evidences are provided for low-tech planning and design of rural settlements, aiming to design a low-tech ecological settlement model that is consistent with the local conditions on the basis of post-use evaluation, inherit the traditional architecture while accommodate to the modern residential needs, and help alleviate the aforesaid problems and improve villagers' residence quality.

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Autotrophic Economy An example economy echoed by the sun

Pepa Ivanova, KU Leuven

Intermediate doctoral stage

Supervisors: Esther Venrooij, KU Leuven; Stefaan Poedts, KU Leuven

Ecocentrism, interconnection, sun-earth

Abstract

Autotrophic Economy is a speculative concept and an art project about biosphere processes on the earth, powered by solar radiation. In this later stage of my Ph.D. research, I look into the light-fueled evolution processes. How to redraw ecology through biomass, oxygen production, and pollution in a society of sleep-deprived consumers. This is a sensible deviation from the initial data modeling looking into the interspecies dependencies and how diversity is a key factor in ecological survival. Instead of modeling an estimation, volume, or scale of the visual light using techno-centric data collections, this reformulation of the research focuses on light-harvesting mechanisms in living organisms.

How the sun and the earth are cohabitants in a constant transformation through interdependent ecosystems intertwined in electromagnetic frequencies?

How do plants provide an example for the human economy and survival?

This seeming deviation from the main research topic I find close to the thematic of the DDr framework, where researchers can reflect and add new reformulations to their research framework. The Autotrophic economyI presented during CA2RE+, Ljubljana is a draft of my future post-doc research project.

Artefact

When we were little, we played grown-ups and shop mud with money — leaves of shrubs and trees, as if we realized their true value. (P.I.)

Money grows on trees. (folk wisdom)

Background

This project relates to larger research on picturing the earth's light and the autopoietic of observational data of the sun juxtaposed with observations of the earth. Those comparisons lie at the core of my Ph.D. “An echo of the Sun” at KU Leuven/LUCA, School of Arts, Ghent. While working on the data archives and tools for mapping the light on the earth, I acknowledge how technocentric my data sources are. The project maps how light emittance and distribution affect the earth’s ecosystems using a summarized model of all the light data on the earth.

The project I submit for CA2RE+Ljubljana instead of linking astrophysics to biology through light factors rethinks the economy in the living ecosystems. One of the first steps of the “Autotrophic Economy” was to establish the

“Bank of Plants', which was presented in a group bio-art exhibition in Sofia, Bulgaria in March 2021. Here is an excerpt of the bank description and policy:

The Sun is the ultimate currency. Bank of Plants is the furthermost central bank on Earth because its capital consists of the worldwide available resources. Plants are the primal energy producers capable of transforming nonorganic matters into sugars: sunlight, air, water, and minerals are transformed through photosynthesis in organic matter. The anthropocene is entirely fed and dependent on plants and bacteria. Dr Natasha Myers called this intertwined coexistence between plants and humans, a Planthroposcene. Currently, The Bank promotes planthropocentric policy.

Figure 1: "Picturing Earth's Light" at Scopitone festival, Nantes, September 2021

For example, plants benefit from humans' excess production of CO_2 and humans exist thanks to plants byproduct production of oxygen. Plants are the major food source, a fundamental ingredient in pharmaceuticals, care, and beauty products. They produce biomass to fuel ecosystems and human industries. The stability of the world's economy thrives on the plants' flourishing and dispersion.

In self-organized ecosystems, we care for, enrich and recover all elements involved in order to support a stable economy, not based on excess production and growth but on energy flow and sustainability.

Autotrophic Economy speculative draft

This project is a sort of speculative documentary about the largest and most important energy producers on the planet — the autotrophs. Unlike many other energy sources, autotrophs are essential for planetary processeses and ecological survival. Those living organisms are primary producers of organic matter and oxygen and are the most numerous living organisms on the earth. They feed the heterotrophic organisms who on other hand can't absorb food from inorganic substances and

rely on devouring others. Human survival is largely dependent on autotrophic organic energy producers.

Habitat

Solar light feeds the earth, where a huge number of tiny creatures shape symbiotic ecosystems to produce organic matter. They see with proteins and grow in different shapes, sizes, and colours, reflecting light as they appear to other beings in many hues and shades. Those creatures are so numerous, that they can be found everywhere. They float in the water, rise from the soil, climb the rocks, and rest in our lunch boxes.

Light as currency

The light exchange happens in a subconscious territory, where everyone dances. It is a living place where biochemical processes facilitate the feast. In fact, it's a party of autotrophic beings intertwined and stretched towards the nourishing light or circling around the thermal vents at the bottom of the ocean. The most healthy economy of autotrophs on earth contains the most diverse populations than those with homogeneous populations. The danger in the collapse of this economy are factors like the earth's climate, geological processes, and human activities.

The ultimate currency of the autotroph economy is the sun’s continues energy flux. Therefore this light currency fluctuate depending on the earths climate, albedo, anthropocentric activities and energy production and distribution.

Figure 2: *Bank of Plants, installation view during Occurrences of Abundance bio-art exhibition at Sofia Arsenal-Museum of contemporary Art (SAMCA), Sofia 4-28 March, 2021*

Objectives in the process

Several objectives aim to translate this economic result in the process.

— A speculative text on the autotrophic economy as an example for human-driven economies and how to learn from other superior ecosystems about the importance of diversity in our survival.

— An installation with a video essay, dimensional objects in various materials, growing plants, light and sound

Figure 3: Authotropic economy at "Tools for Things and Ideas" exhibition organized by Jerry Galle and Elias Heuninck iMAL – Center for digital culture and technology, Jan/Feb 2022 image@Paulius Sliaupa

Feedback and during CA2RE+, Ljubljana

The aim of my presentation during the conference was to receive a critique on the subject and test its value in the current urgencies. How do fellow researchers and proprofessionals consider the general concept and proposed objectives? It was a great experience because my peers and audience were very generous in the comments. Most agree that the presentation of such a speculative narrative must be of performative character, where the audience must be involved as well since the autotrophic economy presents equal importance to all the agents involved. In that sense — how to shape knowledge with inclusivity? And how to choreograph future presentations and stages of the project?

Being precise and more personal echoed in feedback as well. I personally aimed for a humble status, as an agent in this economy and not an inventor. To construct a precise structure of the economy might be crucial for understanding and translating the concept. Maybe as

an artist, I don't share the same pressure of full responsibility and control embodied in the architectural realm.

An interesting point during the discussion was how I communicate with plants and how plants talk to me? What interface do we use to communicate? How do plants pay me for my service of presenting their bank and economy? Artist Marcus Coates was mentioned as an example of how to present an interspecies interface, in his case, with animals. I feel my project is closer to Slovenian artist Špela Petrič, who is an adviser and trustee in developing of this economy, and Sasa Spacial and her work on fungi and interspiecies relations. Philosophers Natasha Mayers and Donna Haraway, and sci-fi writers like Octavia Butler and Ursula Le Guin witht heir work in interdependence and the importance of interspiecies understanding in ecological survival..

Thank you for the caring and the generous feedback and the trust.

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The Interpretation of “Interiority” through Research in Design Context of Public Space

Reformulation of Hypothesis

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#

Interiority; Public space; Continuity; Research in design context; Reformulation

Abstract

The term “interiority” means inner character or subjectivity and adhere to the vocabulary of confinement, enclosure, privacy, shelter, etc. In the architectural discourse, the notion of interiority has been frequently used to refer to conscious awareness, individuality, subjectivity, along with the inherent characteristic of the interior, besides the description of the nature of certain urban or exterior spaces. As a prospect to retort to various design questions of public space, this paper attempts to interpret interiority where it is formed by many conditions such as psychological, environmental, spatial, formal, programmatic, or a combination of all. With an assumption that interiority is a shared underlying aspect contributing towards the effective public qualities, some key instances of urban public space have been discussed and synthesized to illustrate the potential paradigm of the design practice. For further research, the paradigm will be “reversed”, in the realm of interior public spaces, as complex settings with a continuous flow of space, surfaces, forms, and voids, beyond architectural façade, through a blurred threshold between interior and urban (or exterior).

Paper

Introduction

The term “interiority” denotes inner character or subjectivity and conjectures a state of inwardness and individual contemplation. Its generic interpretation follows the lexicon of containment, confinement, enclosure, privacy, security, shelter, etc. [1]. The notion of interiority has been traditionally used in disciplines outside of design, such as psychology, philosophy, literature, abstract art, and film, frequently referring to inner psychological life, or the inner voice forming the narrative, or a retreat into self-awareness and reflection. Interiority recognises that there exists a relative continuity with its dialect

"exteriority" through the imaginative tension of inside and outside; between one's house and the world outside [2], vis-à-vis private thoughts, self-reflection, and the subjectivity of others. Self-reflection is not a process of leaving the world and considering one's isolated subjectivity, as Merleau-Ponty states, "Reflection does not withdraw from the world towards a unity of consciousness as the world's basis…; it slackens the intentional threads which attach us to the world and thus brings them to our notice" [3].

This paper responds to the contemporary instances of public space practices while considering multiple interpretations of interiority. This holistic approach explores the notion of interiority in the design context of urban (or exterior) public spaces which incites further exploration for its diversity and complexity, in the "reversed" paradigm of interior public spaces.

Interiority in the Design Context of Public Space

Over the past few decades, many researchers in architecture and related design fields have addressed interiority and expanded its interpretation in terms of inhabitation in space. Originally entwined with the moral notion of "truth", the notion of interiority changed to more explicit spatial meaning, following an ecological and complex approach, such as conscious awareness, individuality, subjectivity, along with the inherent characteristic of the interior, besides the description of nature of certain urban or exterior spaces. It established the anthropological idea of the historical and spatial contextualization of human beings, signifying the spatial, tangible, and intangible aspects of human life, particularly of the inhabitable space.

In contemporary architectural discourse, this development founded the notion of spatial interiority, which is not bounded to the internality of architectural space and is not limited to the physical enclosure of the

environment [1]. Although the term interiority is every so often used to characterize the inherent quality of the interior; as feeling immersed or contained, it is different from the interior, as it implies subjectivity and self-reflection. Stepping out of the confinement of interior space, the notion of interiority repositions into the urban context, emerging as urban interiority beyond the fixed boundaries of interior and urban (or exterior). Various gradations of interiority appear in urban spatial settings, occurring at various levels of porosity of the boundaries between spaces and various forms of traversing boundaries [4]. Though this idea concedes subjectivity, it can be explained and experienced through the sensorial encounter, personal engagement, and social interaction [5]. In public spaces, interiority can be formed by many conditions such as psychological, environmental, spatial, formal, programmatic, or a combination of all [6]. Given the unlimited possibilities, this paper attempts to interpret different typologies of interiority that can be uncovered within some of the key instances of public space, with an assumption that interiority is a shared underlying aspect contributing towards their effective public qualities.

Spatial Interiority

Spatial interiority is material, corporeal and perhaps most straightforward interpretation; primarily an experience of being confined and enclosed in a space. As Michael Benedict observes, "This feeling of being immersed, surrounded, and enclosed – transcends the experience of indoor enclosures and extends to the out-of-doors in gardens, squares and parks bounded by trees or low walls" [7]. The sheltered place under the great roof of the Stadshal market hall in Ghent, designed by Robbrecht & Daem / Marie-José Van Hee (2012), gathers people in one big room, one that is open to the city all around them **[1]**. It is an open porch that protects pedestrians from rain and sun and is often used as a shelter for concerts, gatherings, and weekly

markets [8]. It is a place where one can be oneself, and concerns relations between people rather than power, a place that permits reflection and interiority. It exemplifies the possibility to experience inside while being physically outside, here interiority is created in exteriority, intended to represent freedom with a sense of being in confinement **[2]**. One of the key considerations here, is the relationship between the architectural shell and the inhabited interior, making spaces that flow and question the traditional dualities of inside and out, approached with the techniques and tactics of what Suzie Attiwill called an "interiorizt" approach [9].

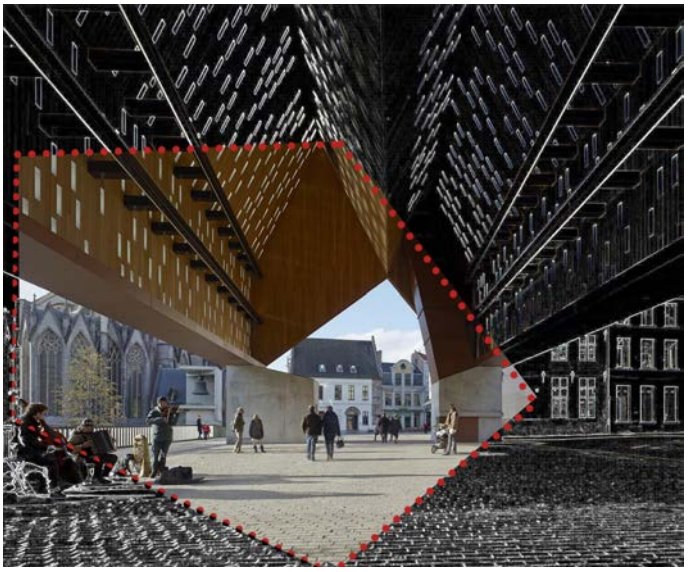

Figure 1: Formation of Interiority in Exteriority of Stadhsal (market hall), Ghent (2012)
Bravo, David (2018): "Stadshal": Market Hall and Central Squares. Public Space, https://www.publicspace.org/works/-/project/h031-stadshal-market-hall-and-central-squares from June 16, 2021.

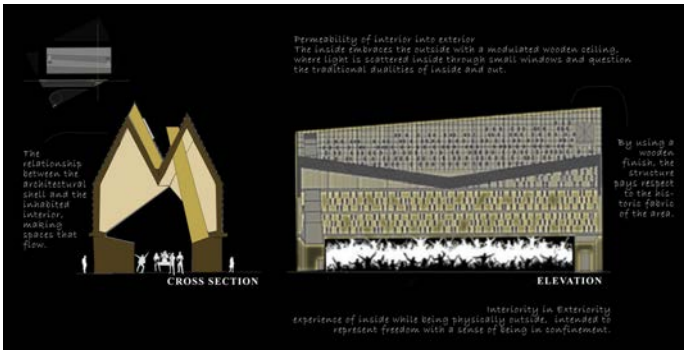

Figure 2: Questioning the Duality of Inside and Outside, Stadhsal (market hall), Ghent (2012)
Drawings by the author (Sarah Javed Shah)

Interiority as Psychological Reflection

Furthermore, in this context of public space, a distinctive approach to interiority as a psychological condition was presented by Richard Sennett, as he proposed that interiority is not necessarily linked to merely a private interior space, but rather allocated to an exterior public space. Interiority is not detachment from the world, it is a particular kind of relationship with the world, which is reflexive, observational and most importantly, "work of memory". These conditions produced an environment, in Sennett's words of "openness, frankness and sharing", constituting interiority [10]. Sennett described interiority through the thoughts of Georg Simmel, who suggested that it was the street rather than the home that produced subjectivity within the individual. The street and exposure to others thus produced feelings and thoughts, creating subjectivity, individuality, and interiority.

The interpretation of interiority as psychological reflection has been the centre of the philosophy of Maurice Merleau-Ponty. He emphasised "... the body as the primary site of knowing the world", and the continuity of inner and psychological life, which he called interiority, and the material world or exteriority [11]. The discourse eventually reaches the question of the ability to unfold the experience of interiority in the design context of public spaces, with a continuous interplay between individuals and society. Russell Rodrigo [12] accounted for the contradiction in the imagined and inhabited interiority of Peter Eisenman's Memorial to the Murdered Jews of Europe in Berlin (2005) **[3]**. He stressed the affective potential of memorial space focusing on memory-making, or it can be expressed in Sennet's words as "work of memory" [10], as an embodied expression of interiority through physical and emotional engagement. The spaces within the field and along the peripheries have a strong contrast of individual and collective reflection **[4]**. However, the memorial's imagined

interiority of reflection as a place of remembrance is somewhat negated due to lack of signification within its design; the absence of "linking objects" as denoted in Karl Ochsner's theory [13]. While the inhabited interiority of the memorial beyond the traditional comprehension is predominantly experiential or performative. In architectural discourse, the term "performative" is associated with the concepts of open-form and flexibility, which enables a space to anticipate, and host predicted and unpredicted occurrences and to adjust to future changes. It also gives architecture the character of unfolding an event in time and space [14].

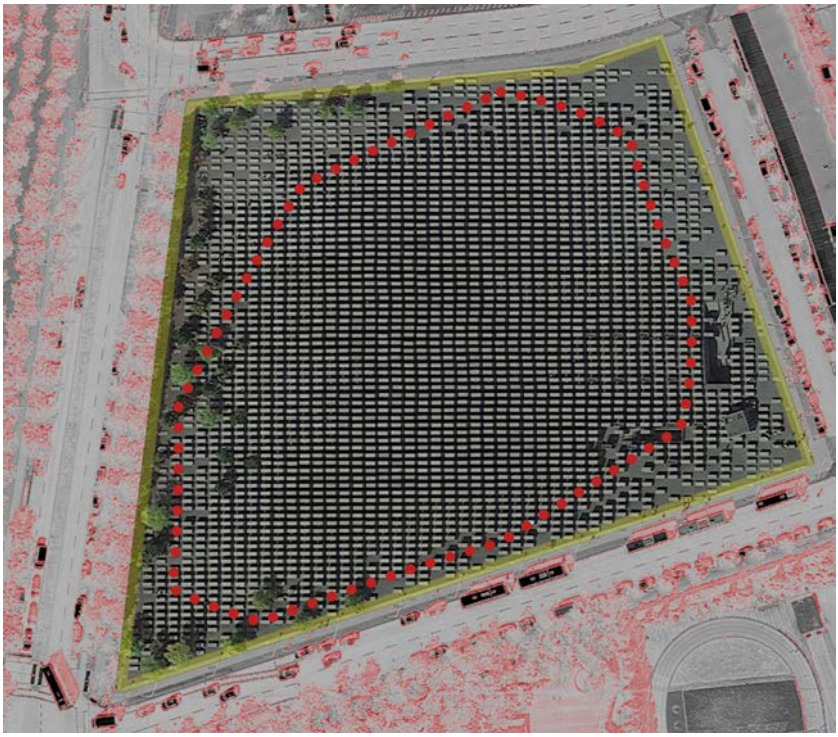

Figure 3: Individual and Collective "work of memory" in the Memorial to Murdered Jews of Europe (2005)
Map of the Memorial to murdered Jews of Europe, Berlin. *Google Earth*, 2009. https://earth.google.com/web/search/memorial+of+murdered+jews/ from June 14, 2021.

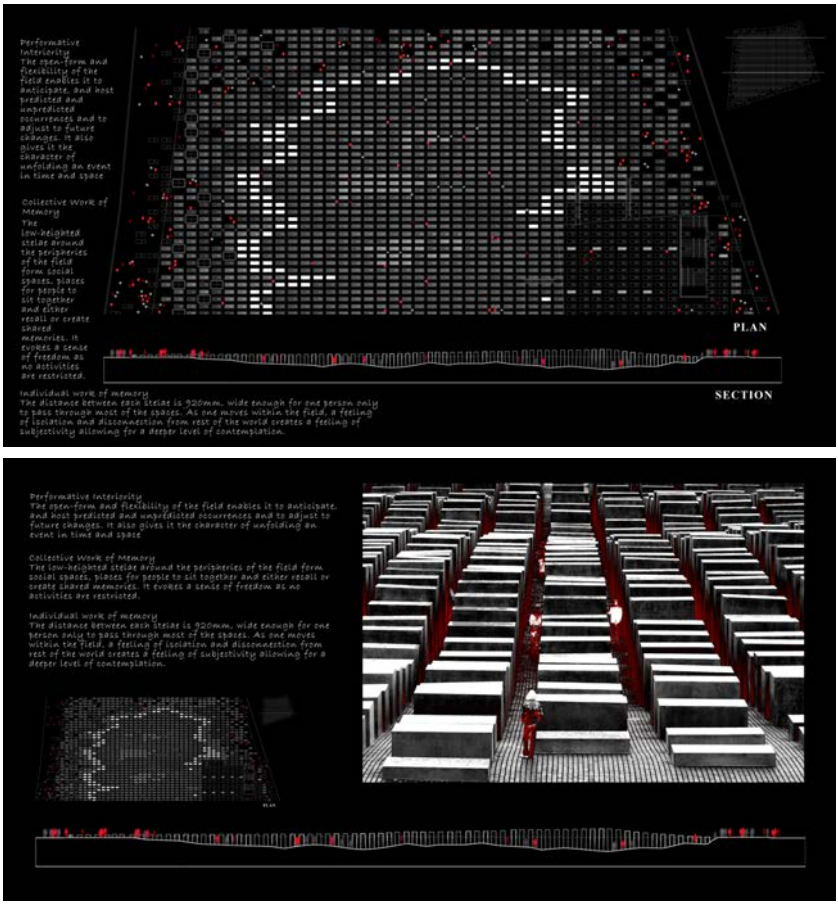

Figure 4: Imagined and Inhabited Interiority Formation in the Memorial to Murdered Jews of Europe (2005)
Drawings by the author (Sarah Javed Shah)

Interiority as an Expression of Qualities of a Space

Interiority is about perception, or a state of mind, the character of a place, and not a particular space; and it must be understood in connection to its surroundings [15]. Aside from the apparent similarities, an important refinement is made by Jacqueline Power, as she conceptualized interiority as an expression of the qualities of urban space, freed from the constraints of architectural forms [16]. It can also be interpreted as "public interiority", which is a perceived condition that grounds the built environment in phenomenology, varied human experiences, and everyday conditions within exterior (or urban) public spaces. While we frequently experience

interiority inside structures, public interiority is also a perceived condition found in the public sphere, without structure. [15]

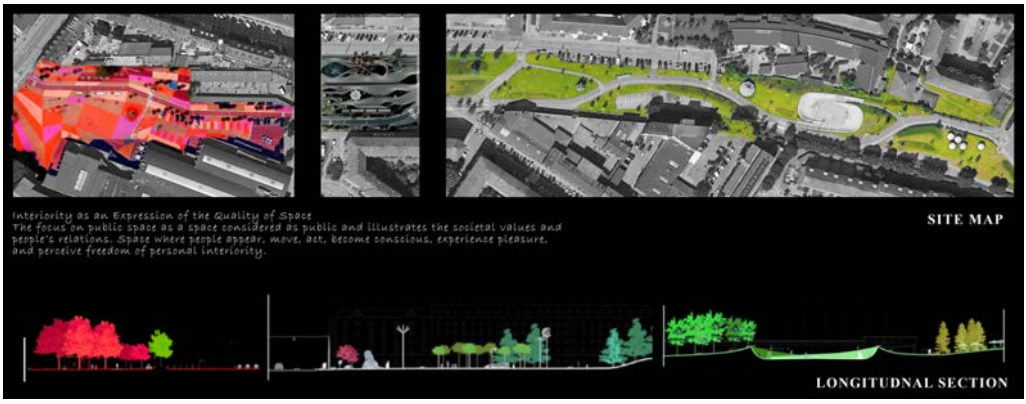

Figure 5: Interiority as an expression of the qualities of urban space of Superkilen Park (2012) a. Original file source (site map): Map of Superkilen Park, Copenhagen. *Google Earth*, 2016. https://earth.google.com/web/search/Superkilen+Park,+N%c3%b8rrebrogade,+Copenhagen+Municipality,+Denmark/ from June 12, 2021. b. Original file source (sections): Aga Khan Trust for Culture (2016): Superkilen, Copenhagen, Denmark https://archnet.org/sites/15124/media_contents/112972 from June 23, 2021.

The implication of this kind of interiority is the focus on public space as a space considered as public and illustrates the societal values and people's relations; space where people appear, move, act, become conscious, experience pleasure, and perceive freedom of personal interiority. This expression can be read through the urban revitalization project, Superkilen Park, Copenhagen (2012), a creative collaboration of the team BIG architects, Superflex, and Topotek 1 **[5]**. The project exhibits ethnic diversity and multi-culturalism through a collection of global found objects of the 60 different nationalities inhabiting the area [17]. It embraces all age groups with a variety of activities in three unique environments, colour coded as red, black, and green. The red square, conceived as an urban extension of the sports and cultural activities of the Norrebrohall, integrated the same colours and materials. Its surface merges inside at the foyer of the new main entrance of the Norrebrohall, thus traversing or blurring the boundaries between interior and exterior. The free wide-open space with ample sunshine falling on the bright colour pallet of surfaces and objects, together with extensive

night lights creates a sense of safety and in turn produces luminous interiority. The black square, Mimers Plads, also known as the "urban living room", is a place where the locals meet [17]. The straight white lines on the black asphalt surface curves around the furniture and objects, highlighting it, creating an explicit spatial interiority. The green park features sculpted grass hills and a convex basketball court and is a preferred space for picnics and sunbathing. The Superkilen Park has become popular for social interaction and public encounters, creating psychological interiority, partly formal and partly subjective, as stated by Liz Teston, the interaction between a person and the built environment shapes the perception of inside-feeling places [15]. Besides performing activities and sports, abundant sitting spaces allow people to develop an interior insight not through interaction but through freedom of being able to observe without interacting. It creates the opportunity of observational cruising, as it is not about engaging the outside but observing it [10].

Programmatic Interiority

Suzie Attiwill's idea of research through the design of the "urban room" design studio addressed the process of interior-making shaped by spatial and temporal conditions within the urban environment [9]. Her idea is stimulated by Lois Kahn's triad concept, "the room, the street, and the city", as he denoted the street as a room of the city. The primary idea of urban interiority emerged through the belief that urban space was not only enclosed but also defined by the difference of its actual use, emerging from the practice of open-air rooms to the effort of placemaking for the community [18]. This innovation of public spaces in the form of urban (outdoor) rooms through introducing programs and functions that are primarily associated with interior environments can be appreciated as the programmatic interiority. The open-air street libraries, outdoor cafes, and al-fresco office spaces are the instances where

people perform activities that are considered functions of the interior. This interpretation of interiority can also be found in the surrealist techniques of Le Corbusier, as he put together the familiar elements of the domestic interior in the exterior in the Beistegui apartment roof garden (1933). He manifests the relationship between the spatial sequence of interior and exterior and writes "... a plan proceeds from within to without,.. " [19] and illustrated it through eliminating the external walls in some of his projects and often considered exterior as a framed interior.

Interiority in the Environmental Realm

Interiority can also be explored and conceptualized in the environmental or ecological realm, such as the natural flow of light and air within a space. It can be explained as the landscape interiority, formed by the alignment and juxtaposition of natural elements, or as sensory interiority within the natural environments. The design of Paley Park by Architect Robert Zion (1967) is focused on providing a quiet escape from the noise of the city, every detail of the park was crafted to mitigate city noise and create a peaceful space [20] **[6]**. The entire park is slightly elevated from the street level by several steps, the dense ivy on the walls and the low tree canopy work as a sound barrier beside the waterfall feature on the back wall produces white noise which at up to 90 decibels sound masks the noise of the busy city **[7]**. This may be recognized as auditory or acoustic interiority. Seasonal changes in the tree canopy moderates the temperature and sun exposure, as well as the evaporative cooling effect of the water feature, providing thermal comfort to the people, thus generating thermodynamic interiority. Limited visual access into space from the street, inward-facing movable seating, and an informal arrangement of trees create a feeling of safety, seclusion, and privacy, which are the fundamental aspects of the spatial interiority.

Figure 6: Formation of Interiority in Paley Park NYC (1967)
Sikiö, Sampo. (2006). "Paley Park @ 53rd St." Online Image. *Flickr*. https://www.flickr.com/photos/sampos/203024733/ from June 12, 2021.

Conclusion: Reformulation of Hypothesis

The comprehension of interiority is regarded as a prospect to retort to various design questions of public space intended for an improved individual and collective experience. Through multiple interpretations of interiority, this paper discussed and synthesized some iconic cases and illustrated the potential paradigm of the design practice of urban (or exterior) public space. In the broader context of my PhD research, I will analyse whether this paradigm of interiorized public spaces can be reversed through research in design context and explore how these interpretations of interiority can be "exteriorised" to explore the paradigm of interior public space **[8]**. As Mc Carthy suggested that inside and outside are architectural elucidations of the boundaries, whereas interiority and exteriority interlace within and without the built constraints of architecture

[1], the reversed paradigm will focus on the continuity of outside to inside. The hypothesis does not encompass the dialectic correlation between urban (or exterior) and interior, rather it envisages the continuity of the public realm beyond the architectural façade with the permeability of boundaries; a blurred threshold between interiority and exteriority. This continuity can be interpreted through the continuous flow of surfaces, forms, voids, or as described as the "continuous interior" of Mark Pimlott [21], or, as the case of "conditioned space" [22] and would seek commonalities and potential compatibilities.

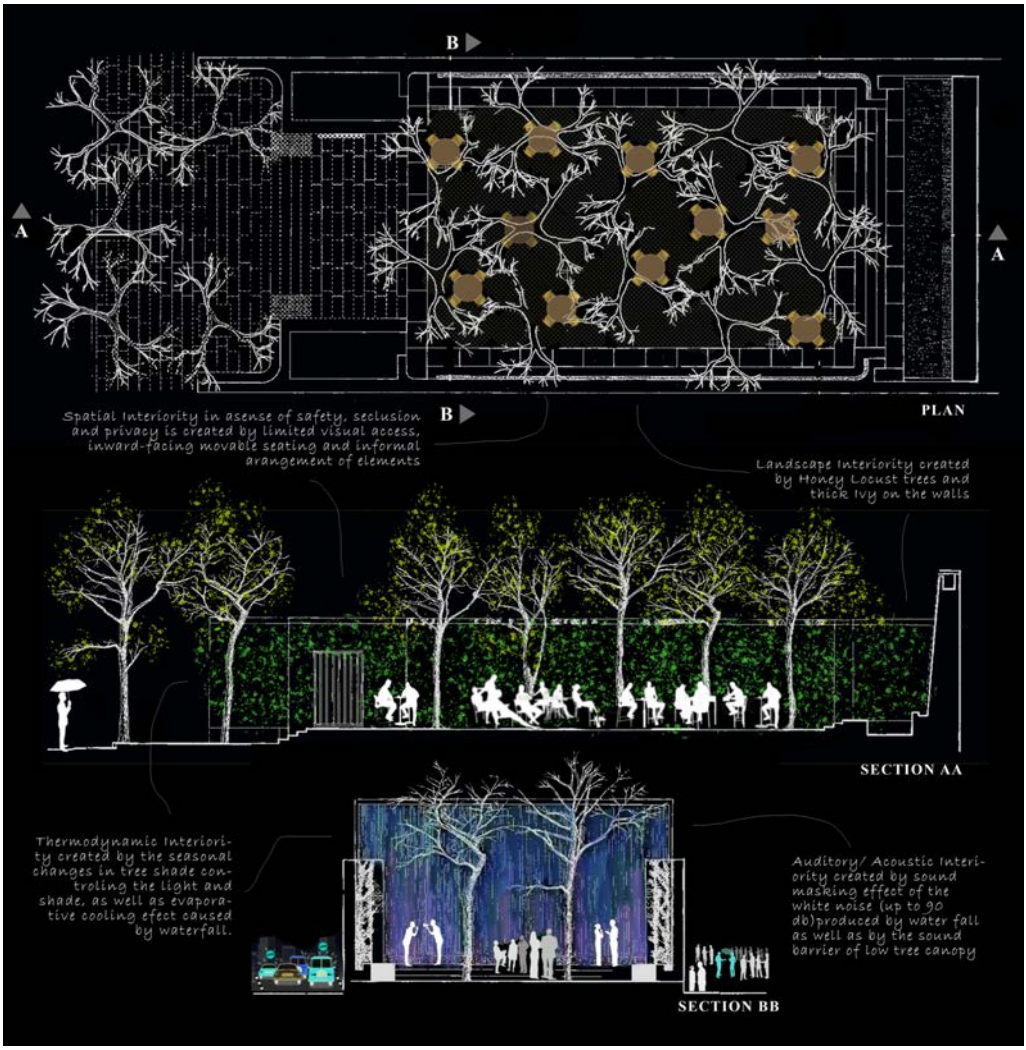

Figure 7: Interiority in the Ecological Realm of Paley Park, NYC (1967)
Drawings by the author (Sarah Javed Shah)

My PhD research on interior public spaces, as complex settings with a continuous flow of space, would contest the notion of the (public) interior as literally being bound or enclosed. It will explore the qualities of interior public space, such as places for gathering and interaction promoting freedoms of movement, association and action, and advocating consciousness of the self and others [23], while considering the experience of interiority beyond the traditional understanding, in terms of transition, movement, and ephemerality [24]. Here, interiority is perceived as an engagement and not a spatial condition, that can be experienced when the outside is brought in or the inside out.

Hence, I would like to complete with the statement posed by Gaston Bachelard "... outside and inside are both intimate – they are always ready to be reversed" [2].

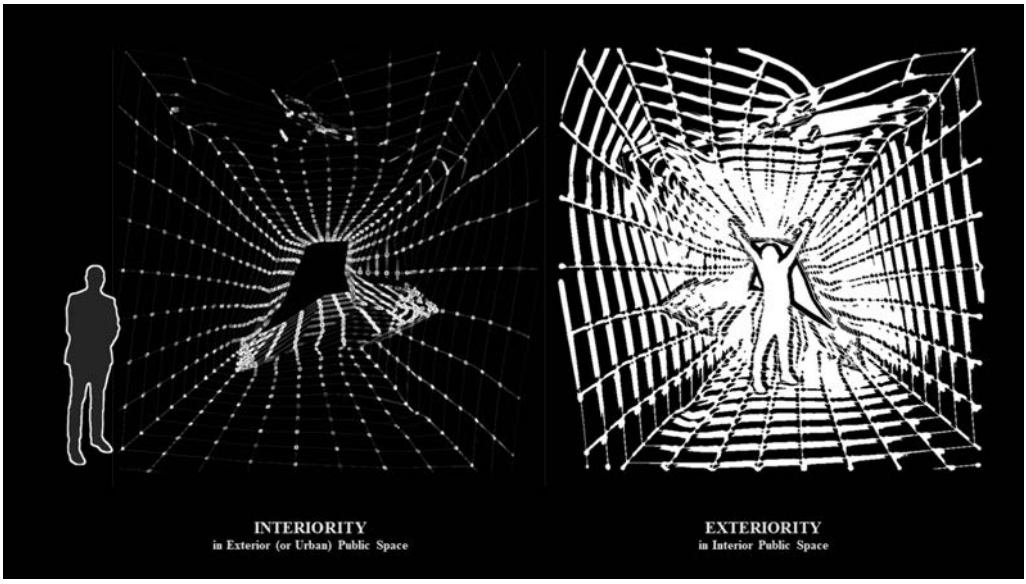

Figure 8: Reformulation of Hypothesis
Concept diagram by the author (Sarah Javed Shah)

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Development of a Handover Approach in Design for Dementia

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Initial doctoral stage

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people living with dementia, dementia, design for dementia, handover tools

Abstract

In design practice it's often challenging for designers to meet PLWD – People Living with Dementia referring to people with dementia and their (in)formal caregiver network (Brankaert, 2016). In these cases there's a need for handover approaches to transfer unique experiences with PLWD from one designer who had experiences with PLWD to members of the design team who are unable to meet PLWD.

This paper describes 3 concerns in the development of handover approaches, that emerged from a literature review combined with ethnographic research. These concerns provide a framework for the creation of a video as a tool to handover unique experiences with PLWD. This video was presented at the CA²RE / CA²RE+ Ljubljana conference and provided valuable insights for future research.

Extended abstract

The need for a handover in design for dementia

To design products for PLWD [1], designers have to foster an understanding for the PLWDs experiences [2]. The involvement of PLWD in the design process enables designers to establish a deep designer-user relation resulting in a more successful outcome [3], [4]. However there are limitations to their involvement; the vulnerability of PLWD, impairments of dementia, the lack of empathy of the designer... [5], [6]. These limitations can result in an unbalanced designer-user relation that can burden PLWD [7], [8], [9]. In addition, literature suggests that including PLWD in the design process requires an additional investment in time and resources [10], [11], [12]

Although the inclusion of PLWD should always be considered, handover approaches are needed when it's hard to include PLWD in the design process, or in times

when contact with PLWD is denied (e.g. Covid-19). There are existing means (e.g. marketing data, quantitative reports, stereotype interpretations about PLWD) to communicate about PLWD to designers, but giving them little understanding into the lives of PLWD [13], [14]. The aim of the doctoral research is to develop accessible handover approaches to transfer the experiences from PLWD, to members of the design team who are unable to meet PLWD.

Ethnographic research and literature review

The doctoral research started with ethnographic research and a literature study to provide a framework for the creation of handover approaches. PLWD were visited on a weekly basis within different contexts (e.g. at home, a day care center, a care home; from early diagnosis to more advanced stages; elderly and people with young onset dementia). Through these interactions, observations and interviews, insights were gained into multiple aspects of the everyday life of PLWD. These lived experiences were visualized with illustrations providing moments of auto-ethnographic reflection.

Figure 1

Simultaneously literature was reviewed, focusing on relevant topics to the doctoral study (e.g. dementia, empathy in design, handover tools). Commonalities were identified with the insights from the ethnographic research. Both addressed several points of concern in the design of handover approaches mainly due to the diversity and complexity inherent to dementia. These concerns were categorised and three main challenges emerged;

1. The first identified challenge revolved around the influence of the designer on the transferred experience

The principal designer (i.e. the designer with experience with PLWD) has the task to develop a relation with PLWD and transfer these experiences to other members of the design team. The principal designer has to understand the structure of the design team in order to tailor the handover approach and represent PLWD at design-team meetings [15], [16]. Since not all designers possess these skills, a challenge is deciding who will perform this task.

2. The uniqueness of each experience with PLWD

A successful transfer of experiences is difficult to achieve [21], but transferring experiences with PLWD makes it even more challenging [22]. During the weekly visits with PLWD an 'uniqueness' with each PLWD was perceived. The differences (e.g. personality, context, stage of dementia) between PLWD, turns every designer-user relation into an unique experience [23], [24], [25]. The second concern deals with the uniqueness of each PLWD, opposite to the design of products for a wide user-group of PLWD. Should the handover approach transfer this uniqueness? Or would it be beneficial to generalize experiences with PLWD?

3. The search for approaches that are able to transfer these experiences

Which approaches support the transfer of experiences with PLWD from the principal designer to other designers? Future research will experiment with different media (e.g. literature, documentaries, video, storyboards, personas), and existing handovers; experience prototyping [26], handover meetings [27], ideation workshops [28], and the use of an external specialist [29]. These existing approaches lack testing in the context of dementia. The only tool known to handover insights from PLWD to designers is the empathic handover approach [30], but further research is needed for this approach to be used in the design process of products with PLWD as the main user [31].

A framework for handover approaches

The initial research provides a framework that supports the design of ways to handover experiences with PLWD. In this paper the focus lies on the creation of a 10 min video, as a handover tool. This choice will be explained using the framework of the three challenges;

1. The influence of the designer on the transferred experience

A video format was chosen to transfer the experiences from the principal designer during the ethnographic research. To stay as close to the original experience of the PLWD as possible, first an empathic understanding between the designer and PLWD was established by regular visits. Secondly, video footage without heavy alterations shows the original experience, opposite to illustrations visualizing an interpretation of an experience. And thirdly, a video can show the multiple sides of dementia instead of focusing on the stereotype interpretations often seen in the media. Instead of

contributing to the stigma surrounding dementia [32], the aim of the video is to transfer insights into the lives of PLWD.

2. The uniqueness of each experience with PLWD

Literature suggests that when empathy is built towards one representative, this can lead to an empathic attitude towards the entire group [33]. Designing for one results in an individual outcome, but often this outcome can be scaled to a wider group of PLWD [34], or the empathic attitude provides inspiration for more general products [35], [36], [37]). On the other hand the video can generalize some similar aspects of the larger group of PLWD (e.g. user and care requirements) [38].
The video became a combination of the two; portraying the general aspects of dementia (e.g. stages, contexts, requirements), while recognising the personhood of each PLWD (e.g. personality, interests, aesthetics). Additionally by showing multiple PLWD in the video, the risk of confronting the viewer with one person that might evoke specific feelings, is avoided [40].

3. The search for approaches that are able to transfer these experiences

A video leaves room for flexibility to be used in many professional design contexts (i.e. number of designers, company atmosphere, product category) [41]. The format can be easily integrated into the already existing design practice [42] or as part of existing handover approaches. Taking Covid-19 restriction into consideration, a video installation is suitable for both physical and online purposes.

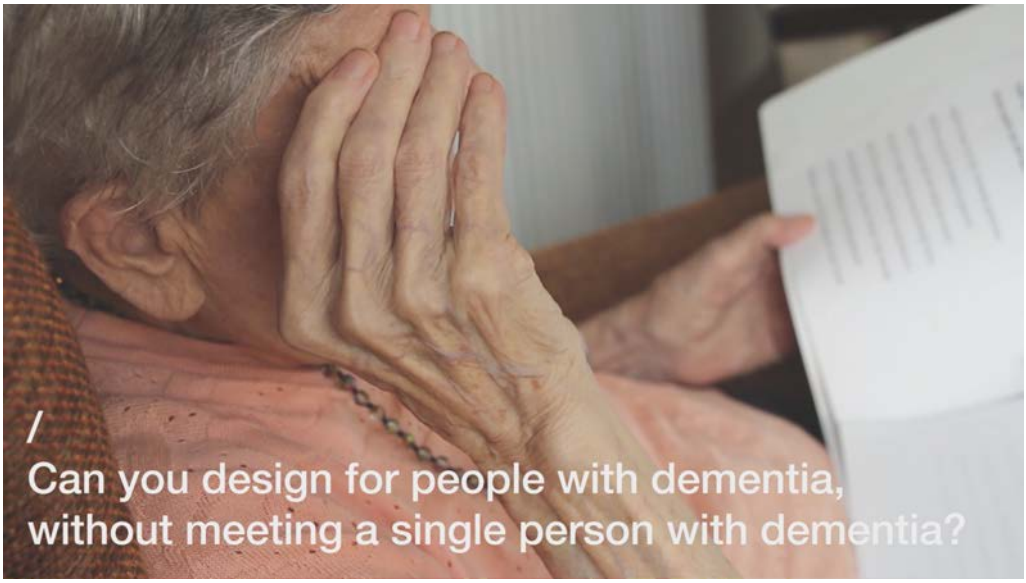

Figure 2

CONCLUSION

In this paper a framework of three challenges was presented for the creation of handover approaches.
A 10 min video[43] was made as a concrete example to tackle the three concerns raised in the framework. The panel members from the CA²RE / CA²RE+ Ljubljana conference watched the video as a materialisation of a handover approach to start a larger discussion on the topic at the conference. The panel members agreed that the video transferred an overall respect and dignity for PLWD, while showing the uniqueness of each case of dementia (i.e. 2nd concern). By not showing the faces of the PLWD in the video, a viewer establishes an empathic band with the PLWD portrayed and automatically fills in the gaps with their own relatable experiences. However the video was influenced by the designer; use of framing, color, background sounds, pace of talking… (i.e. 1st concern). The main feedback from the panel members was to analyse the PhD students' own way of communicating about PLWD and transferring her experiences with PLWD. This analysis will provide a better understanding into the abilities of approaches to transfer experiences (3rd concern).

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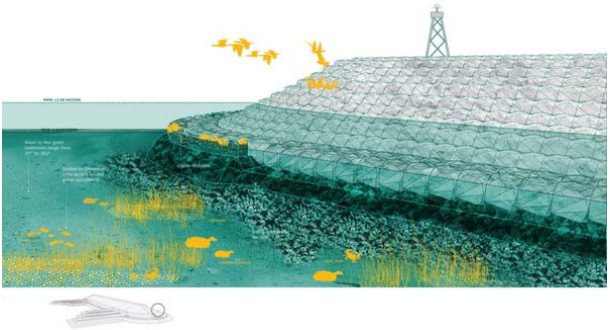
Adaption through Design Coastal Ecological Corridor as a Nature-based Defense to Tackle Rising Sea Level

Jiaxi Li, Politecnico di Milano



Initial doctoral stage

Supervisors: Matteo Umberto Poli, Politecnico di Milano; Andrea Oldani, Politecnico di Milano

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sea-level rise, ecological corridor, Chongming Island

Abstract

Due to the lack of concentrate on ecology, land subsidence caused by rampant urbanization, and therefore the consequences of absolute lowland rise pose a direct threat to cities. This research aims to explore the design of coastal ecological corridors combining recreation and tourism in order to let it absorb the impact of sea-level rise and, at the same time, curtail the speed of land subsidence. This research is Design-driven research based on the Chongming Island, located at the mouth of the Yangtze in China. This research seeks to provide designers with design references for this type of project. The paper briefly introduces nature-based ecological corridors and integrated solutions in the construction of coastal resilience and analyzes changes in land use and landscape pattern on Chongming Island. The outcome will be applied to coastal wetlands, coastal ecological network construction, etc., to reduce the threat of land subsidence and slow lowland rise.

Extended abstract

Due to the lack of concentrate on ecology, land subsidence caused by rampant urbanization, and therefore the consequences of absolute lowland rise pose a direct threat to cities [1]. This research aims to explore the design of coastal ecological corridors combining recreation and tourism in order to let it absorb the impact of sea-level rise and, at the same time, curtail the speed of land subsidence. This research is Design-driven research based on the world's largest estuary sediment island, Chongming Island, located at the mouth of the Yangtze in China. This research seeks to provide designers with design references for this type of project. The paper briefly introduces nature-based ecological corridors and integrated solutions in the construction of coastal resilience and analyzes changes in land use and landscape pattern on Chongming Island.

This research will focus on coastal ecological corridors' connectivity, width, and composition. The outcome will be applied to coastal wetlands, coastal ecological network construction, etc., to reduce the threat of land subsidence and slow lowland rise, particularly the impact of coastal disasters, whereas improving citizens' psychological perception.

Figure 1: Chongming Island Ecological Network Planning Map(Within Shanghai) 2017-2035

Introduction

Globally, the sea level has been rising for more than 100 years, and it is expected to rise faster in the foreseeable future [1]. As the center of the Yangtze River Delta, Shanghai faces the problem of rising water levels and the problem of gradual sinking [2]. As a significant ecological barrier for Shanghai's future development, Chongming Island has been increasing year by year through reclamation under the demand of rapid urbanization and land expansion. However, the area of arable land and water bodies has continued to decrease. In particular, the water body has the largest decline, which

has intensified land subsidence on Chongming Island, increasing pressure on biodiversity protection and increasing pressure in the face of rising sea levels [3]. The gray infrastructure built to "control" floods, especially in extreme weather conditions, has become increasingly ineffective. [4]

Policy”Eco-Chongming”: Nature-based solutions in coastal protection

Studies have shown that solutions based on coastal nature can reduce the damage of floods and storms more effectively than gray infrastructure alone and are more resilient. Traditional, concrete-based coastal defence structures are not able to adapt to and compensate for sea-level rise and, therefore, need to be regularly maintained and reinforced. In addition, this structure often leads to unnecessary erosion of other sites. Ecological corridor is an attractive option for coastal protection:they reduce wave strength and protect the coast from erosion, thereby stabilizing the rising coastline. In contrast to concrete-based solutions, Ecological corridor can grow as sea-level rise or, if necessary, can be easily adapted(4). Broadly speaking, the coastal ecological corridor is composed of green, blue, and gray infrastructure. It will involve green roofs, rain gardens, sunken green spaces, permeable pavement design, and the transformation of buildings to natural environments. Therefore, with the "ecological Chongming" policy proposed, compared with the construction of hard dams, the construction of landscape ecological corridors has become a meaningful way to slow down the speed of land subsidence and absorb the impact of sea-level rise.

Broken landscape and tourism

Chongming Island has a flat terrain and fertile land. It is suitable for urban construction and farmland development. Frequent development and utilization activities

result in the fragmentation of natural landscapes, diversification of artificial landscapes, and fragmentation of landscapes. This landscape made of fragments dispersed in the territory has proved to be an inefficient model [5]. However, the tourist ecological corridor can make the system work properly as a whole by connecting the natural, social, and cultural areas by connecting different habitat patches in series Coasts.(Fig.2)

On the other hand, the coast is vital for tourism and entertainment. There is evidence that the development of natural assets, biodiversity protection, and disasters management can improve the competitiveness of tourist destinations, thereby promoting the positive correlation between tourism growth and economic expansion. Therefore, the splicing of landscape fragments for the purpose of tourism development enhances the coastal resilience of nature-based solutions [6].

Figure 2: Change rate of different land use types

Changes in the occupation and uses of the land

With the support of GIS, aerial photos in 2000 and 2020 were used to analyze the land-use changes in

Chongming Island. In the past 20 years, the total area of the study area has increased year by year. The area of construction land, forest land, tidal flats, and unused land increased by 5.47%, 18.39%, 42.30%, and 203.74%, respectively; the area of cultivated land and water bodies decreased by -3.82% and -39.81%, respectively.

The changes between land-use types are mainly from tidal flats to agricultural land, breeding farms, green spaces, water bodies; agricultural land to aquaculture farms, residential land, green spaces; and water bodies to agricultural land, and aquaculture farms, and tidal flats(3).

In summary, Chongming Island is facing problems such as land subsidence and frequent floods and droughts due to the sharp decrease of the water body area, natural woodland and other natural areas, the increase of construction land area which occurred in the urban development process in the past two decades. Nature-based coastal protection and sustainable coastal landscape design pills need to be applied in ecological corridors.

Methodology

The methodology to approach this research proposal is a mixture of methods used to corroborate and validate the research.

1. Literature review:The selection of studies to be included in our review and the studying
2. Graphical analysis: redraw and remodel cases
3. Critical survey: investigation of qualitative aspects that define the identity of the place
4. Elaborate a replicable methodology to apply the study to other coastal area.

Good practice examples:

I would like to mention some projects that have developed these ideas. I have chosen threetypes of projects related to the topic:

— Landscape recovery projects installed “Sustainable Urban Drainage System(SuDS): The Ekostaden Augustenborg initiative, Sweden

— Spatial plans related with tourism or recreation : The case of Menorca, The living breakwaters(Fig.3)

— Design of ecological corridor:Tomar Cultural Greenway(Portugal)

Most of them have been recognised with national and international awards which show the interest of their methodologies and proposals.

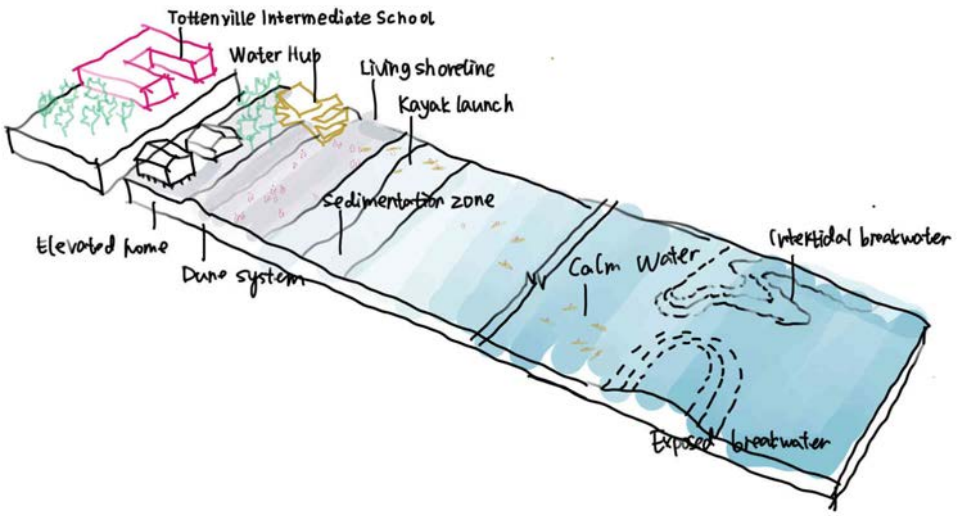

Figure 3: Revive recreational economics The living breakwaters

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The Housing Issue in Global South Countries

A methodological Approach to Define Innovative Housing Solutions and Policies in Informal Urban Settlements in Sub-Saharan Africa

Alessia Macchiavello, Politecnico di Milano

Initial doctoral stage

Supervisor: Laura Montedoro, Politecnico di Milano

#

Sub-Saharan Africa, African cities, Housing, Slum-Upgrading

Abstract

The extended abstract is a reflection on the methodological approach I'm using in my doctoral research which aims to use the projects as a research tool declined in two ways: on the one hand, the project will be a tool for the analysis of reality through the observation of existing situations. On the other hand, the project wants to be an empirical instrument of knowledge: through the investigation of some projects, I aim to bring out the problems of social housing in the countries of the South of the world. In fact, the working methods that will be privileged consists of two types: the analytical one, to describe, interpret, contextualise and deepen specific concepts or phenomena; the empirical one, used in the field with regard to the identification of implemented projects, instrumental in deepening problems and ways of using housing in Sub-Saharan Africa, necessary to understand possible strategies to guide a process of housing development.

Extended abstract

The research project aims to analyse the housing issue in the countries of the Global South. In addition to investigating the phenomenon, it will focus on strategies to guide a process of developing affordable, low environmental impact housing, maximising social acceptability, architectural and urban quality.

Being at an early stage of my PhD research, I based my presentation for the Ljubljana CA2RE conference by reflecting on the methodological approach to the research topic since the working methods that will be privileged consists of two types: the *analytical* one, to describe, interpret, contextualise and deepen specific concepts or phenomena, based on the reading, interpretation and constant verification of information and data; the *empirical* one, used in the field with regard to the identification of implemented projects, instrumental

in deepening problems and ways of using housing in Sub-Saharan Africa, and through the design probes necessary to understand possible strategies to guide a process of housing development aimed at improving the comfort, sustainability and affordability of buildings.

It is only in recent decades that the theme of the social habitat has taken on a role of great relevance within critical disciplinary reflection. The 15th Architecture Biennale, *"Reporting from the front"*, curated by Alejandro Aravena, can be taken as a synthesis and as one of the highest moments in which these themes have been put at the centre of the debate, as the curator himself underlines: "[...] The concept of quality of life extends from basic physical needs to the most abstract dimensions of the human condition. It follows that improving the quality of the built environment is a challenge to be met on many fronts, from ensuring practical and concrete standards of living to interpreting and realising human desires, from respecting the individual to caring for the common good, from accommodating the performance of everyday activities to encouraging the expansion of the frontiers of civilisation."

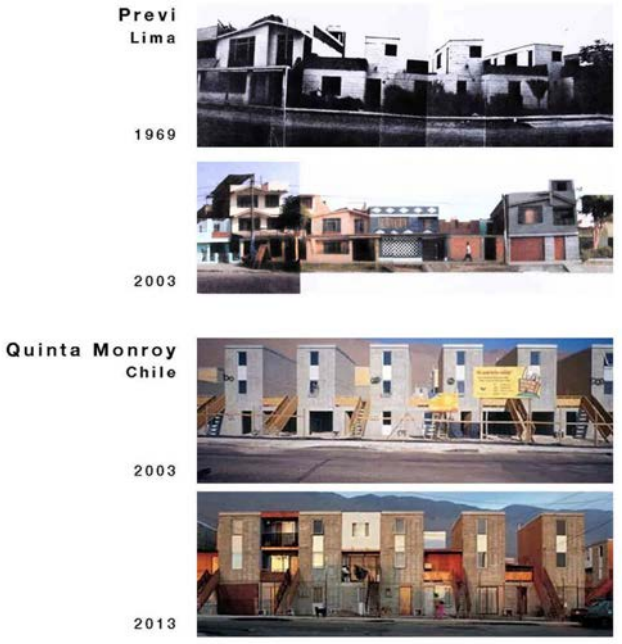

Figure 1

If we go deep into the disciplinary tradition and reconstruct the timeline of the debate of low-cost housing in Global South contexts through some critical texts (D'Auria V. et. al., 2010), we go back to the roots of the debate on the social housing project: the CIAM IX of 1953. It was on this occasion that the term habitat was born, when, especially the members of Team Ten, undertook to reinterpret the tradition of the Modern Movement, bringing the inhabitant to the forefront and assigning him a fundamental role in the project. The main characteristics of the habitats were typological indeterminacy, flexibility and non-enclosure, i.e. the undefined a priori possibility to evolve, grow and change almost spontaneously, like the villages, especially the African and Maghreb villages and the suburban squatters of the Global South. This example shows how reflection on housing issues in the African continent has ancient roots and was a field of experimentation that allowed the protagonists of those researches to redefine the coordinates of "another modernity", which consisted in the assimilation of modern

architecture through the search for a point of mediation with places and cultures.

In spite of the relevance of the topic and a wealth of research in different contexts in the global south, the research on social housing in Sub-Saharan African countries has not yet consolidated a critical mass of experiences that could spread new, more virtuous practices. While sociological, economic and urban planning phenomena have been well described in the literature, an accurate look from a project perspective seems to be lacking.

Therefore, the research aims to use the project as a research tool to understand how it behaves in contexts of poverty, inequality and the effects of climate change, declined in two ways: on the one hand the project will be an *analytical* tool of reality through which to observe the existing (comparison of case studies significant to the understanding and description of the phenomenon) and, on the other hand, the project wants to be an *empirical* tool of knowledge, through which to deepen some project probes to bring out more clearly the problems related to the social housing issue of the countries of Global South. My doctoral research seeks to engage in the debate on low-cost housing in the Global South contexts without, however, falling into trivialization by confusing the formal, and the control it implicitly entails, with a kind of racial restriction, resulting in the worst cases in an idealized replacement of the formal with a naive and picturesque celebration of informality as the only alternative to government control over the production of city space. In the face of such generalization, it is necessary to refer to models that have been consolidated in their process through agreements between policies designed and directed from above and citizen participation from below, and it is in the furrow of these studies that my research proposes to be inserted.

Within the just outlined framework, to look to projects thought *analytical* and *empirical* approach, I compared two case studies: PREVI Lima (1965) and Elemental Chile (2002) in order to start from the diagnosis of the current situation and the best of the international experience in this field. Both projects are in South America in fact, until the beginning of the 21st century, it was Latin America that led the field of research on experimentation and housing policies in informal settlements.

PREVI is a paradigmatic consolidated case that addresses how to strike a balance between these extremes. Its evolution and subsequent changes were essentially anticipated in the original design, but four decades of informal mutation gives evidence that the formal definition and consolidation of its urban voids has proved the need for formal control as a means to incorporate the degrees of flexibility and change that any community needs. ELEMENTAL is still a "young project", perhaps is still too early to draw conclusions about the process, which is still ongoing, but precisely because of this it is interesting to understand how it is evolving. In both cases, PREVI and Elemental, the communities were involved in the decisions to be taken and possibilities were left open for future expansion, modification and customisation, according to changing needs, growth in the number of members or improvements in the economic conditions of the families to whom the accommodation is allocated. In order to compare the two projects and learn, both from their successes and failures, I propose to group the parameters to evaluate the quality of the living space into sub-variables: the functionality, spatiality and flexibility of the housing solution, the technical construction aspects and finally, the economic aspects that are connected and related to the two previous ones and the relationship of the housing with the city, its link with the urban context.

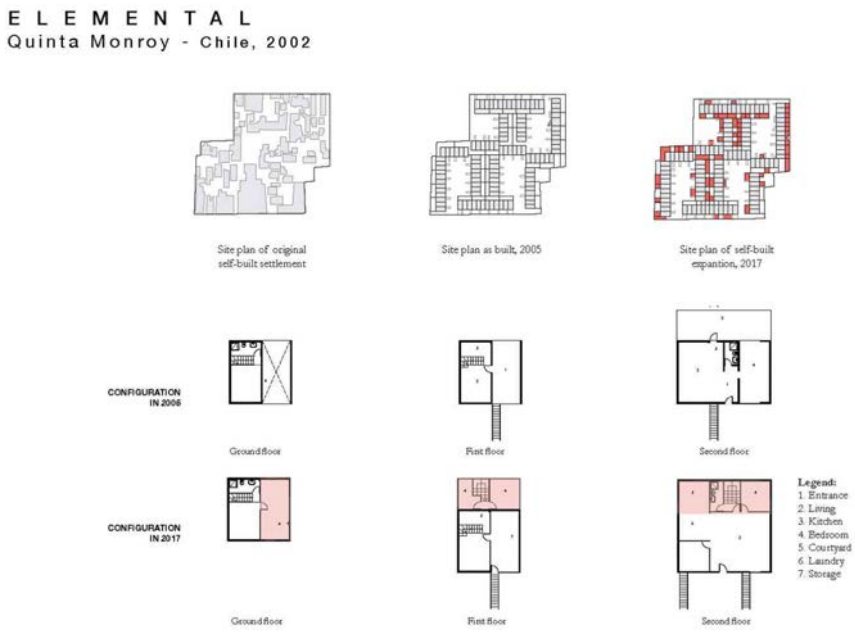

Figure 2

The aim for which I decided to approach the debate using these two case studies is to try to identify positive and negative aspects of the processes and results in order to make considerations to improve the design quality of the social housing in Sub-Saharian Africa and to set the methodological scheme in order to replicate it on a larger number of case studies which are going to organise my *analytical* and *empirical* working method. One of the first outcome of this analysis has been the recognition of common denominator of these projects, namely the principles of flexibility and adaptability, addressed and developed by each designer according to different criteria and expedients. Usually, researchers and architects use "flexible" for physical changes and "adaptable" for non-physical changes. Steven Groák proposed a distinction between these two terms; he defined "adaptability as capable of different social uses and flexibility as capable of different physical arrangements". So, in general, we can say that a house is not a solid building; it is a system of activity. Any changes in the house users, their needs and the physical and

cultural environment require a flexible system to adapt itself according to the changes.

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Bolhão Market Rehabilitation project: architectural and political strategies 1990-2020

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Initial doctoral stage

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#

Bolhão market, rehabilitation project, political decision, tangible heritage, non-tangible heritage

Abstract

Rehabilitating historical public markets in city centres has been a political, human, and architectural challenge.

The goal of this paper, considering the case study of the Bolhão Market, is to contribute to further reflection on a much needed market *aggiornamento* and the modernisation of markets in historical buildings to meet current legal requirements - always bearing in mind material, non-material values, as well as the architecture and purpose of each building.

In the last thirty years the Bolhão Market had several rehabilitation proposals. Therefore, and by way of a comparative analysis to all proposed programmes and respective answers given by the authors of each project, this paper seeks to cross these four visions and models, enabling further reflection on different political and architectural strategies. This interpretative approach also allows for an understanding of the hierarchy of identified values - tangible and non-tangible - and of the way architectural knowledge and culture have intertwined with the process of political decision.

Paper

1. Four programs – four projects

The Bolhão Market is a double listed building: for its architecture and for its cultural value, intrinsic to its function. The soul of the building, or l'esprit de lieu, depends on the conservation of the life experiences it has always provided, as well as of the established form of trade. While the conjugation with modern demands of any commercial activity is necessary, the place's tradition and history must be respected. There is a specific space and dimension to this relationship, which

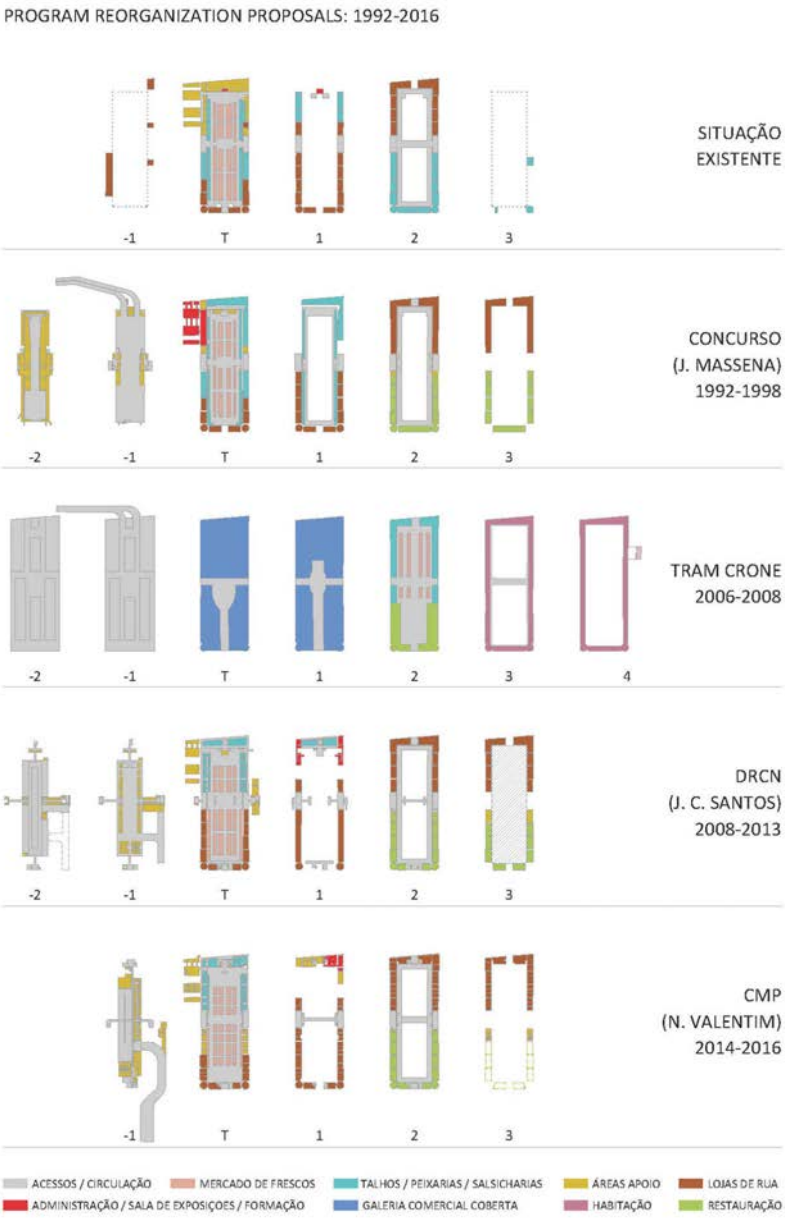
requires the preservation of the strong cultural identity of this market [1 – 2]. [12]

Figure 1

With distinct programmes, all proposals seek an improvement in comfort, accessibility, hygiene, health, and safety. We will thus make a thorough analysis herein of how the four rehabilitations for the Bolhão Market play out.

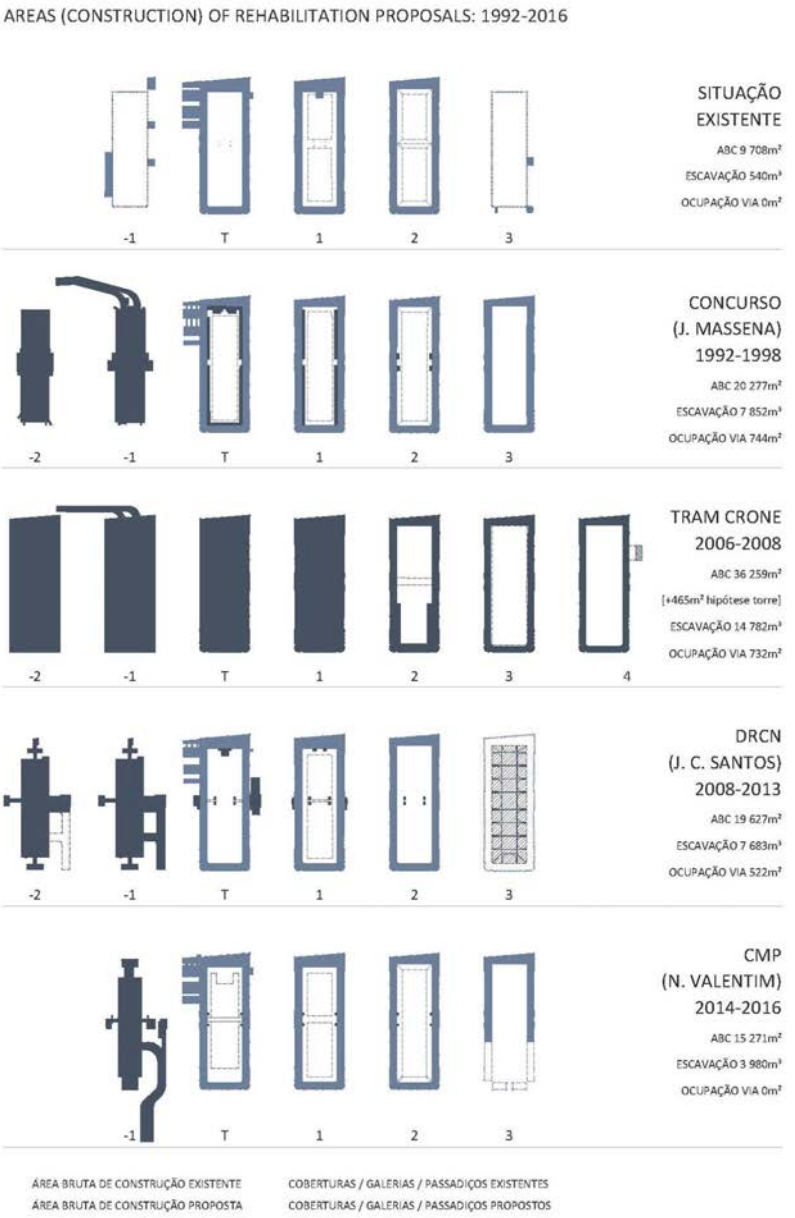
Figure 2: Bolhão Market – tangible and intangible heritage, protected and listed at national level (Decree no. 613/2013 do 20 September, Listing of the Bolhão Market as a monument of public interest)

The paper pursues this analysis by using architectural tools that compare the several proposals with respect to their programmes (functional distribution) and to the construction areas. The elaboration of colour schemes to compare the architectural design programmes of each proposal (floor plans and cuts) enables an accurate, conclusive analysis, which demonstrates the contrast between the existent building and what each programme adds in all the rehabilitation projects [3 – 5].



Picture 3. Existing situation and proposed program organization between 1992-2016 projects. Esc. drawings 1/5000.

Figure 3



Picture 4. Areas of the existing situation and rehabilitation proposals 1992-2016. Architectural drawing 1/5000.

Figure 4

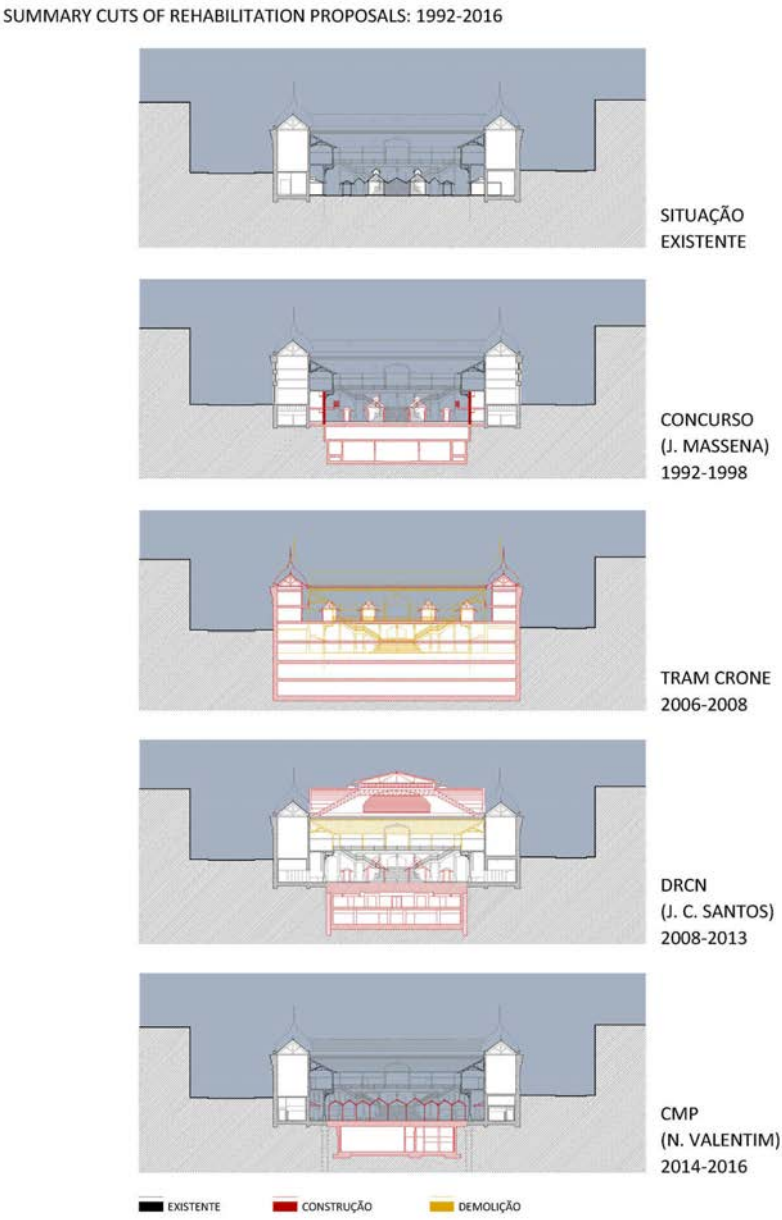

SUMMARY CUTS OF REHABILITATION PROPOSALS: 1992-2016
SITUAÇÃO
EXISTENTE
CONCURSO
(J. MASSENA)
1992-1998
TRAM CRONE
2006-2008
DRCN
(J. C. SANTOS)
2008-2013
CMP
(N. VALENTIM)
2014-2016
EXISTENTE
CONSTRUÇÃO
DEMOLIÇÃO
Picture 5. Cross section by the market: existing situation and rehabilitation proposals 1992-2016. Esc. drawings 1/1000.

Figure 5

1.1) 1992 – 1998, Architect Joaquim Massena

In 1992, with Fernando Gomes as Mayor of the Porto City Council (CMP), an International Public Contest was launched. The winning project belonged to architect Joaquim Massena and was developed from 1994 to 1998 up to the Execution Project stage.

That project keeps the market uncovered and proposes the demolition of the central passage, redefining the original form of the block [6]. On the terrace, the user's comfort issue was not addressed, leaving the circulation paths exposed to the elements. In this way, the tents with frames are closed, which would bring unavoidable consequences to the seller-buyer relationship [7].

At an intermediate level between Terrado and the pre-existing gallery, a new floor/gallery is created with the same extension as the pre-existing gallery, interrupting the vertical reading of the colonnade of iron cast pillars. This new floor is accessed by two pairs of escalators that flank the main entrance to the Market [8]. Along all the walls of the terrace, on two levels (Terrado and new intermediate floor) new stores are created, closed with frames, for which the integration of an air conditioning system was foreseen [9 – 10]. In the buried areas under Sá da Bandeira Street (cryptoportico) large rooms for exhibitions or events were envisaged [11].

Two basement floors for support areas, parking and loading and unloading areas, which accessed to would be made from the city's highest level (entrance in a two-way ramp from the square on street Fernandes Tomás) [12]. The excavation would take place inside the block, the peripheral face of this basement coincides with the alignment of the iron cast pillars which inevitably would jeopardize the preservation of the gallery floor [8 – 9, 13].

Despite concluded and ready to carry out the rehabilitation, works never began.

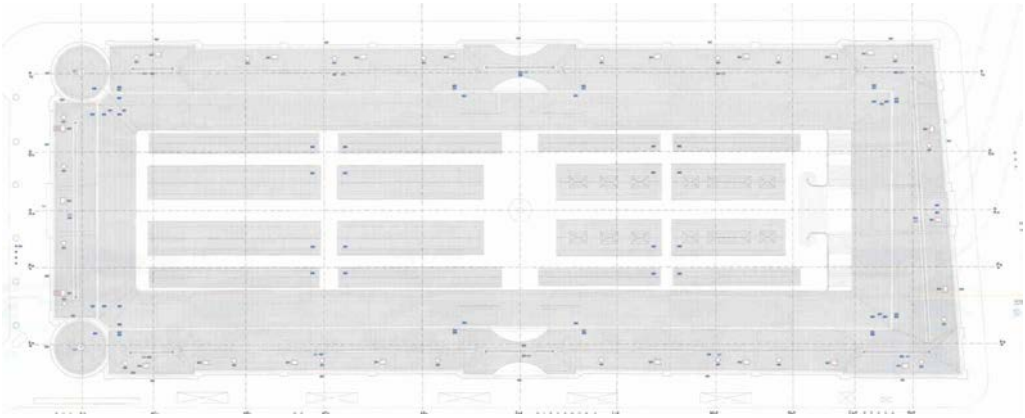


Figure 6: Roof Plan – International Public Competition

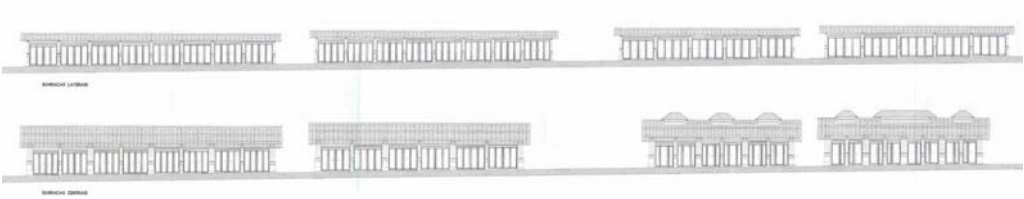


Figure 7: Tents closed with frames

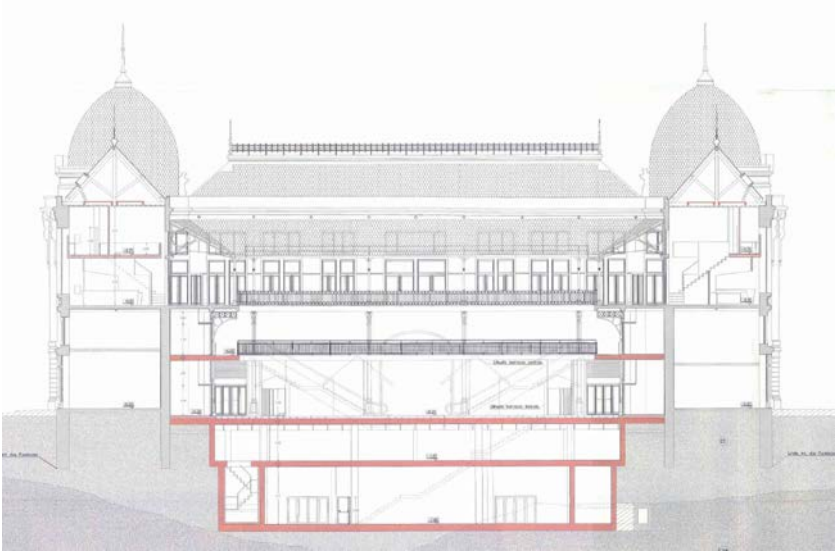


Figure 8: Cross section through terrado, showing the new intermediate floor

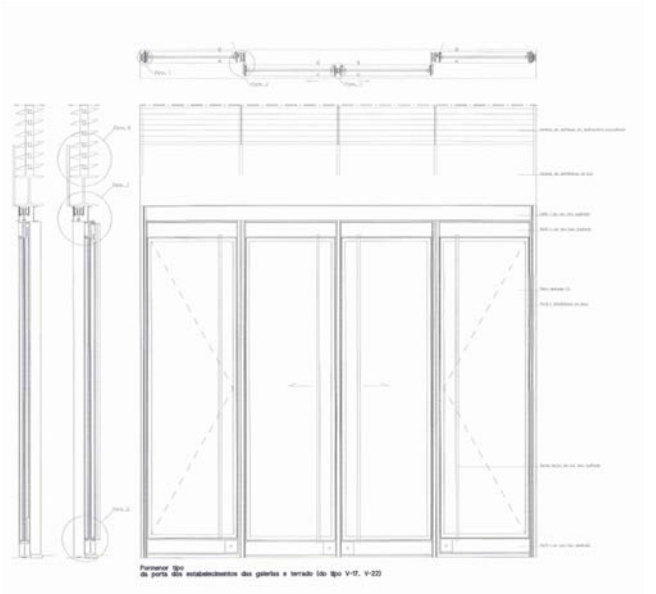


Figure 9: New store detail (Terrado)

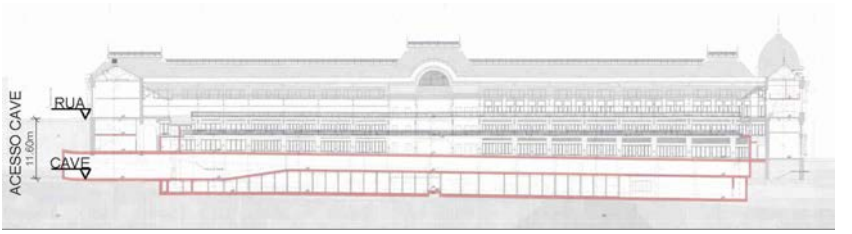


Figure 10: Longitudinal Section

Figure 11: Plan – Level 0 (large rooms for exhibitions or events under Rua Sá da Bandeira)

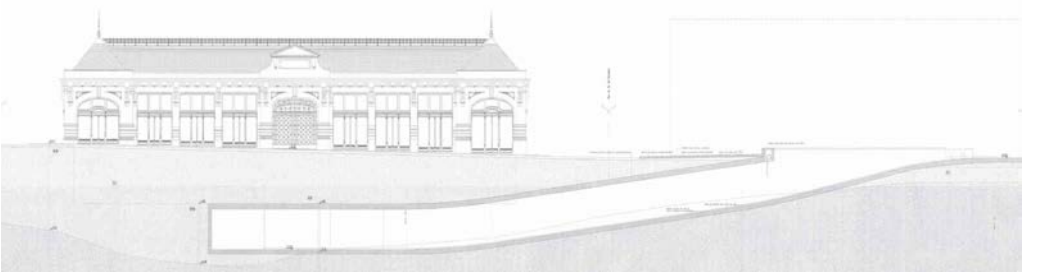


Figure 12: Parking Access

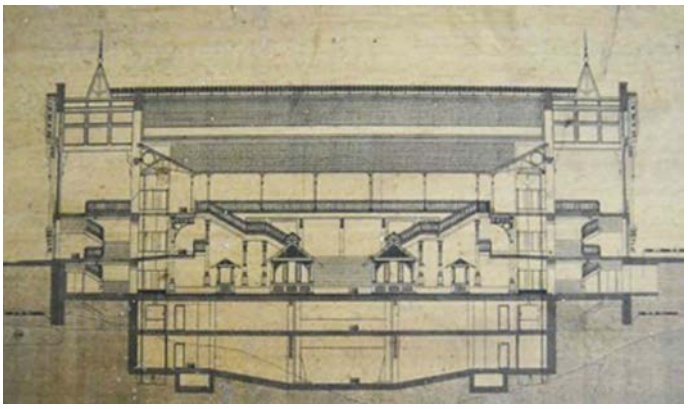


Figure 13: Cross sectionc

1.2) 2006 – 2008, Tram Crone

During Mayor Nuno Cardoso's mandate at CMP (from 1999 to 2002) there were no developments. It would only be in 2006, during the second mandate of Rui Rio, that urban politics refocused on rehabilitating this facility, under Councillor for Urbanism Lino Ferreira. A new International Public Contest was then launched. The winner was Dutch real estate project company Tram Crone.

The reading of the program of the Contest, the records from the 13th Executive meeting (21 February 2006) and the proposal approved by the Executive City Council and Parliament City Council, it can be noticed that the basic premises for the rehabilitation of this building were profoundly changed, transforming irremediably the spirit of the intervention sought by the CMP. For example, it is suggested that the usable floor space increases as well as that the traditional market should be confined to the Terrado area or "equivalent". The integration of other areas is also requested which functional typology should be justified on the management model and economic viability research. In this way, the winning proposal represented a massive change of the pre-existing building, with a very expressive expansion of the gross building area, a total of 7 floors in a volume like the original plan and also adding a five-floor housing tower on the roof of the Market [14 – 15].

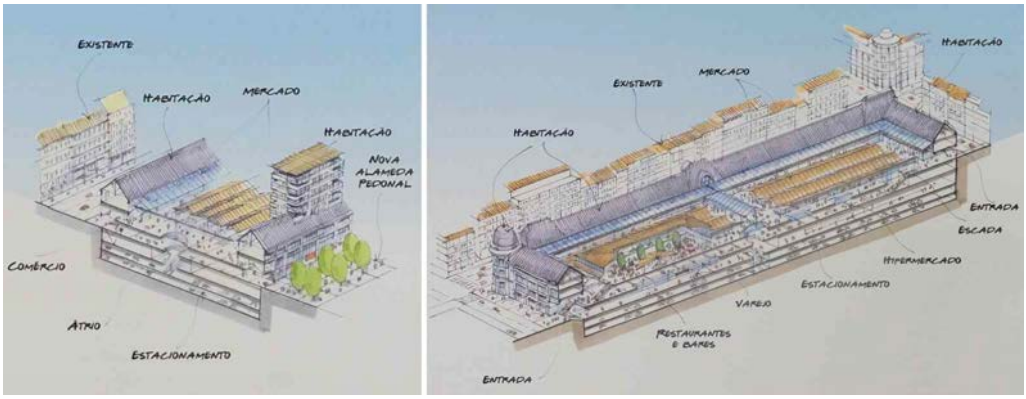
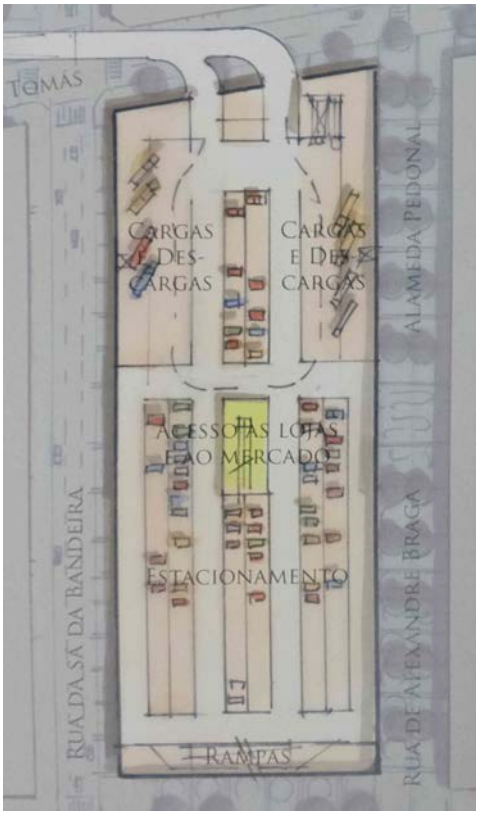


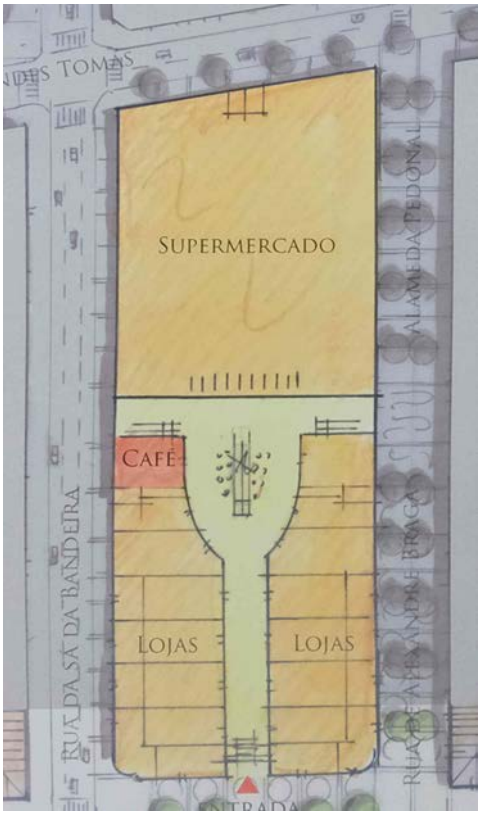
Figure 14: Axonometries of the Tram Crone proposal. The cross-section presents option B - build a housing tower on the market wing facing Alexandre Braga Street (five floors).

Two basement floors were recommended for parking and loading and unloading, which would occupy the entire width of the block, compromising inevitably the building preservation. The access would be made from the same square, at the highest level of the city, and the access ramp having only one circulation lane. On the basement floors, it was envisaged the construction of two complete interior floors of a covered shopping centre, with a passageway to access convenience stores. On top of this volumetry, there would be the open-air "traditional market" (level with entry from street Fernandes Tomás), with a possible integration of a removable cover to enable the use of the market throughout the year. Finally, two new upper floors were advanced – to be located on the outer edge of the block/quarter — with a housing program [16 – 18].

Following the above, it is clear that that project for Bolhão would call for an important demolition action of the pre-existing building.

Despite winning, this proposal received massive and consensual public criticism from the majority of the population and was also rejected by the former Institute for the Management of Architectural and Archaeological Heritage (IGESPAR). This led to the cancellation of the tendering procedure in September 2008.


TOMÁS
CARGAS E DES-CARGAS
CARGAS E DES-CARGAS
ACESSO ÀS LOJAS DO MERCADO
ESTACIONAMENTO
RAMPAS
RUA DA SÁ DA BANDEIRA
ALAMEDA PEDONAL
RUA DE ALEXANDRE BRAGA


TOMÁS
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LOJAS
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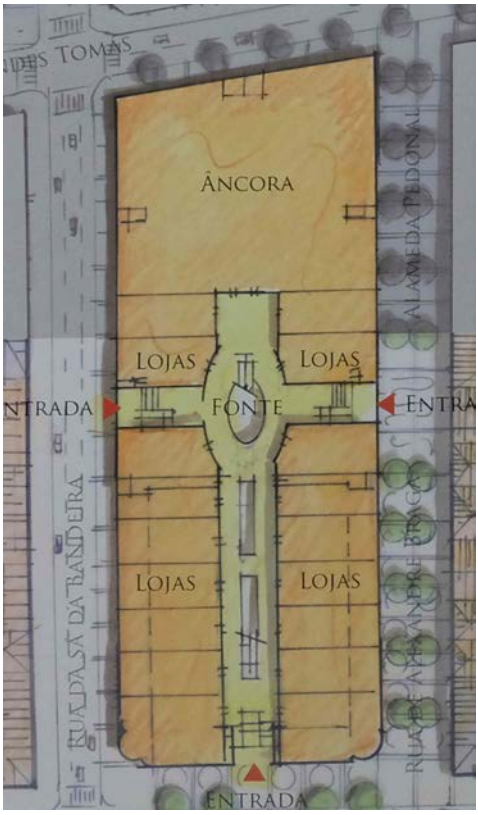
RUA DA SÁ DA BANDEIRA
ALAMEDA PEDONAL
RUA DE ALEXANDRE BRAGA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LOJAS
FONTE
ENTRADA
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LOJAS
LOJAS
ENTRADA
RUA DA SÁ DA BANDEIRA
ALAMEDA PEDONAL
RUA DE ALEXANDRE BRAGA

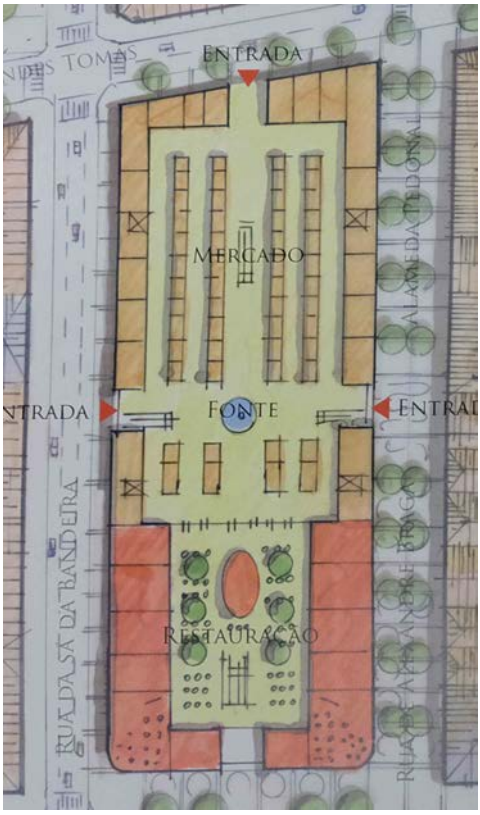
TOMÁS
ENTRADA
MERCADO
ENTRADA
FONTE
ENTRA
RESTAURAÇÃO
RUA DA SÁ DA BANDEIRA
ALAMEDA PEDONAL
RUA DE ALEXANDRE BRAGA

Figure 15: Tram Crone plans by level

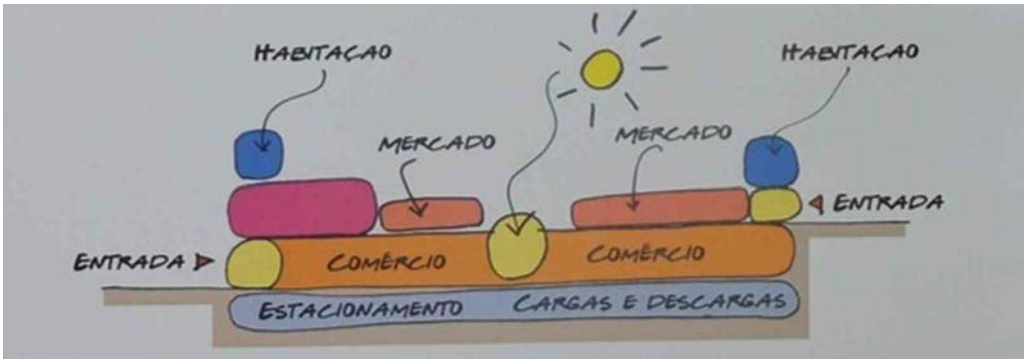

Figure 16: Conceptual cross section – project strategy

Figure 17

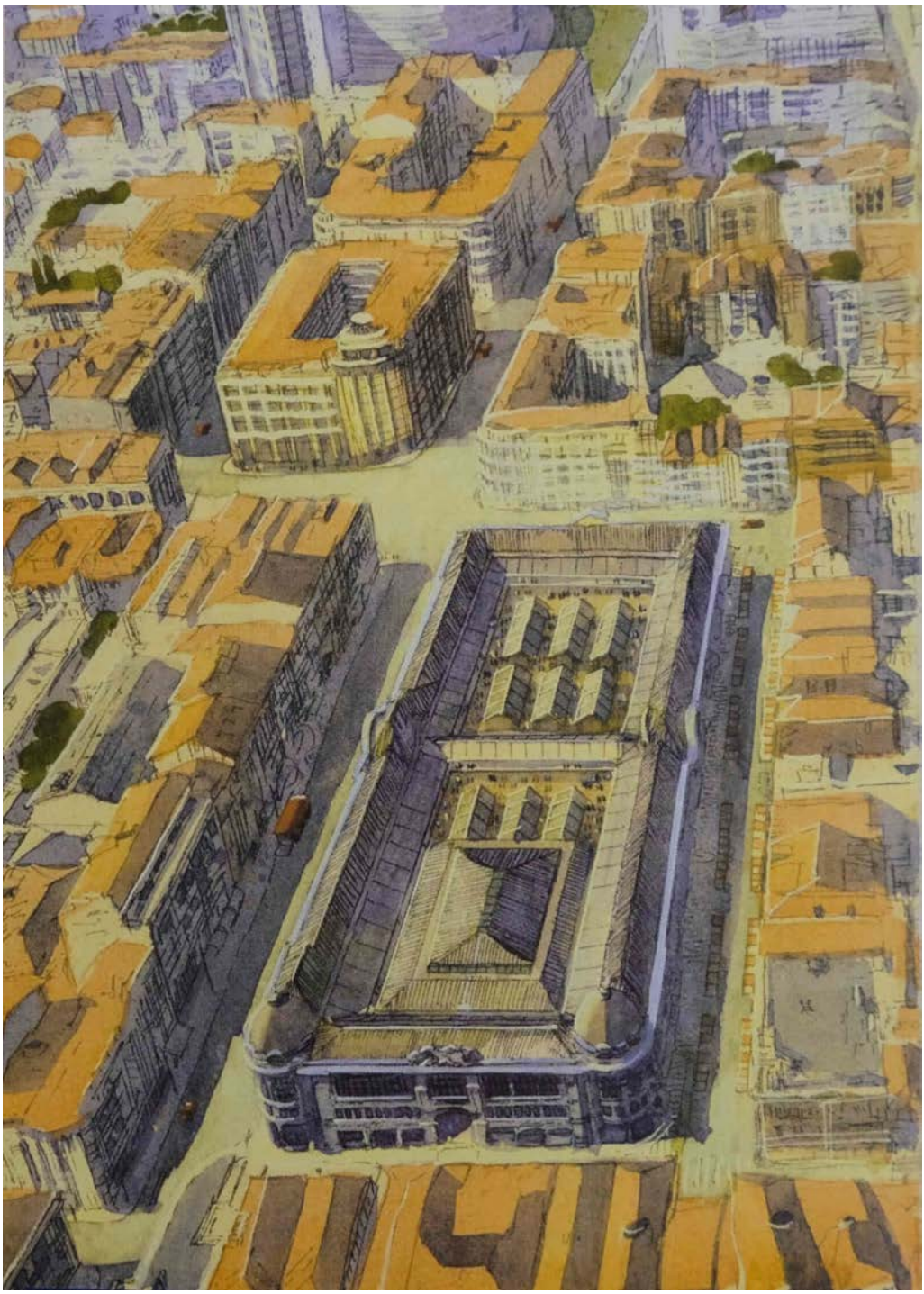

Figure 18: Sketch of the final project image

Figure 19: 3D image of the DRCN project, aerial view

1.3) 2008 – 2013, DRCN (Architect João Carlos Santos)

In December of the same year, the Mayor celebrated a cooperation project between Porto's City Council, IGESPAR and Northern Portugal's Regional Directorate of Culture (DRCN) in order to quickly carry out a new rehabilitation project for the Bolhão Market. The project was to be elaborated by the DRCN under the supervision and authorship of Architect João Carlos Santos.

This new program for the Market refocuses the goal for the market a local and a community market. In this program, the needs of providing coverage for "the open area defined by the built-up interior limit", an area for loading and unloading, and parking area were defined. From the analysis of the program presented by the DRCN is highlighted the importance of respecting the characteristics of the building and its classification and the fact that the program now determined is contained and flexible, allowing for its confinement to the existing area in the original construction.

This third proposal for the rehabilitation of the Bolhão Market was prepared and it was developed up until the

Execution Project stage. In this proposal, the construction of a metallic roof [19] over the entire central square was considered (reinterpretation of the roof of the original project by Arch. António Correia da Silva — a roof that was not executed) and that necessarily changes the perception of the space experienced in the Bolhão Market: on the one hand, erases the gallery's coverage (completely changing the scale of this place), and, on the other hand, transforms the Market into an interior space, with controlled light and demanding air conditioning [20 – 23].

Figure 20

Figure 21: Comparison between the existent project and 3D image of gallery

The proposal pictured the execution of two basement floors for technical support, parking and loading and unloading. This basement would be in the alignment of

the iron cast colonnade pillars, in collision with the preservation of the gallery [24]. The access to the basement was by a two-way ramp from Alexandre Braga Street, constraining severely the traffic (which consequently would have only one carriageway), and disturbing one of the most relevant streets in the city [25 – 26]. In the proposal the ground floor was levelled forcing **the execution of cuts and/or the addition of prostheses** in all iron cast pillars, and the also the building of new stairs and/or ramps in the transition to the entrance at Formosa Street and the north staircase [27]. The central walkway would be demolished and a new one, much narrower, was proposed to which four glass lifts are attached to provide access to the different levels [28 – 29].

Figure 22

Figure 23: Comparison between the existent project and 3D image of the main entrance

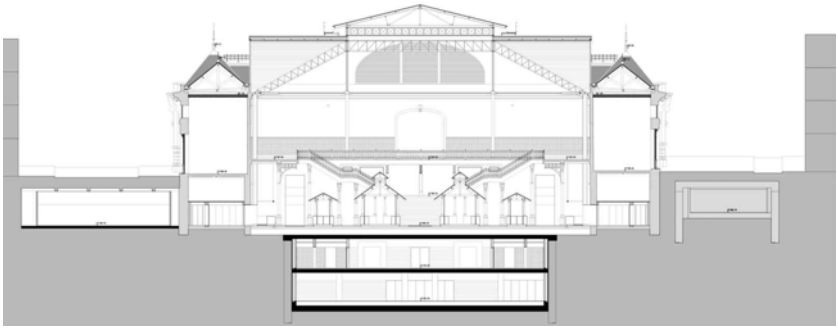

Figure 24: Cross Section

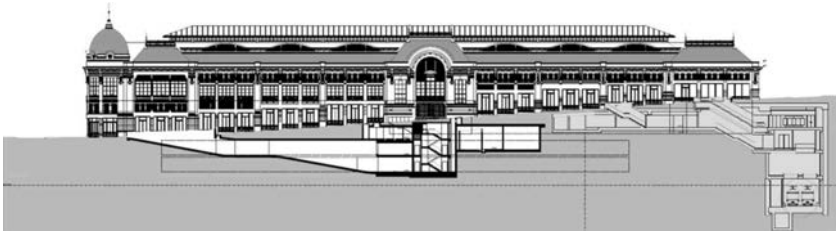

Figure 25: Longitudinal Section – Parking Access

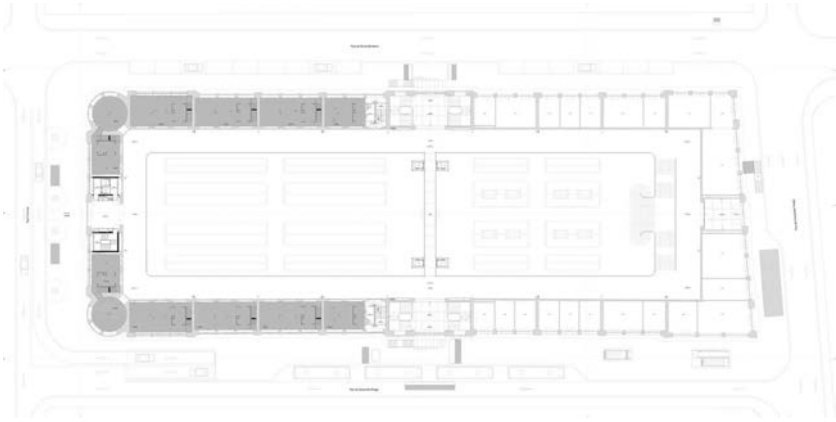

Figure 26: General Plan

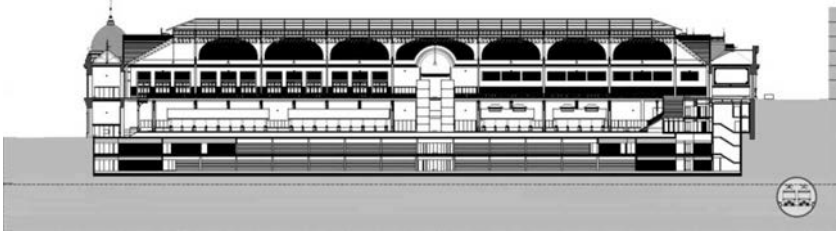

Figure 27: Longitudinal Section

Figure 28

Figure 29: Comparison between the existent project and 3D image of walkway

1.4) 2014 – 2016, CMP (Arq. Nuno Valentim)

By the end of 2013, new Mayor Rui Moreira takes office and names architects Manel Correia Fernandes and Pedro Baganha to be Councillors for Urbanism, as well as Paulo Cunha e Silva to be in charge of Culture. Mayor Rui Moreira sought the revision of the entire project, more specifically the deletion of the proposed underground park and the covering over the open central patio so as to significantly reduce the intervention areas. After soliciting the DRCN a project revision, which was denied, the Mayor opted for a new rehabilitation project by architect Nuno Valentim, under CMP supervision. This proposal was developed between

2014 and 2016 up to the Execution Project stage and ongoing works began in May 2018.

The Preliminary Program announced by the City Council for Bolhão Market reinforces its role as a municipal and local fresh market.

Figure 30: 3D image – Aerial view

The fourth rehabilitation proposal for Bolhão returns to an uncovered market [30], preserving the reading of the open market square, and returning to the gallery's roof rehabilitation proposal. Thus, with this project it is maintained the current scale and its unique functioning [31 – 34].

At the terrace level some changes were introduced to maintain the original scale and geometry: the existing slope is maintained and the reinterpretation of the roof tents and lightened structures to protect the traffic [35 – 36]. This new coverage is intended to respond to some problems detected by the observation in loco. The old tents were not adequate for a contemporary fresh market, and they often ended up as rubbish deposit as a result of the great inadequacy of the old tents to the requirements of a contemporary fresh market, as their geometry/dimension, materials and the very location often led to their improper use, namely as a deposit [37].

Figure 31

Figure 32: Picture 31 and 32. Comparison between the existent project and 3D image of gallery

At the basement level, the proposal foresees the integration of a small loading and unloading dock and supporting areas [38]. The outer perimeter of this floor is 2.5m away from the perimeter defined by the iron cast pillars colonnade, enabling its construction without interfering with the existing building [39]. The access to this basement will be made through a tunnel, at Ateneu Comercial street, freeing the surrounding streets and public space [40].

The walkway is replaced by a new one in iron, which copies the language of the building, reproducing the metrics of the coffers on the gallery's slab. This walkway creates a new level at the lower level, directly connecting Alexandre Braga and Sá da Bandeira streets [41 – 42]. At the upper level, the market will have no roof, avoiding interruptions between the skyline and the Beaux Arts profile, allowing the possibility of reading this profile in the building's crowning, evident in the movement of the plat band, roofs, and slate domes [43 – 44].

Figure 33

Figure 34: Comparison between the existent project and 3D image of gallery

Figure 35

Figure 36: Comparison between the existent project and 3D image of Rua Formosa entrance

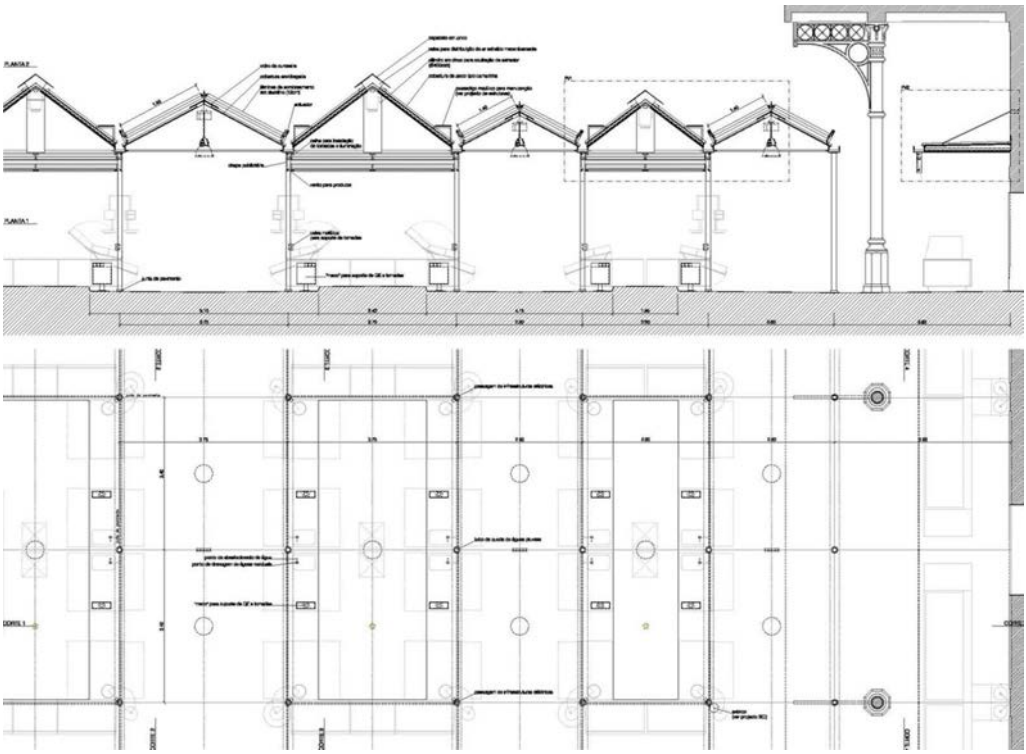

Figure 37: New terrado structures

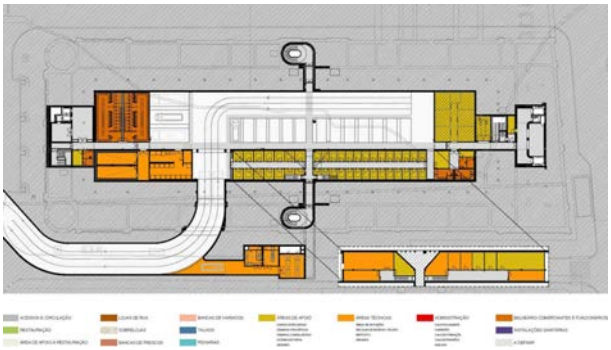

Figure 38: Loading and unloading dock and support areas

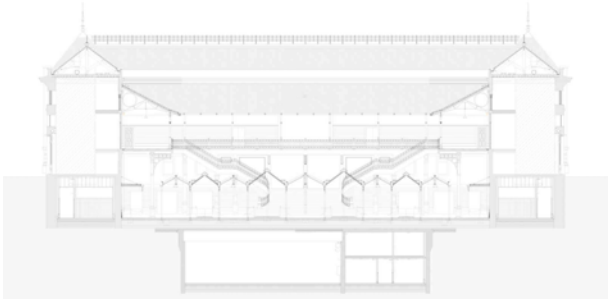

Figure 39: Cross section

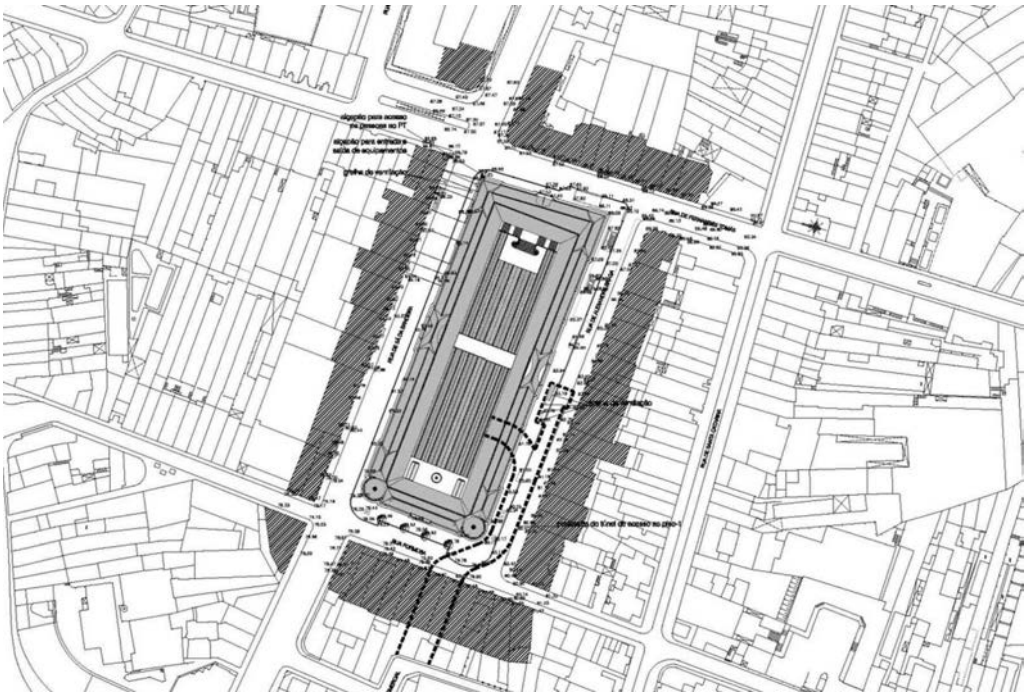

Figure 40: Roof Plan - Access to basement made through a tunnel, from Ateneu Comercial street

Figure 41

Figure 42: Comparison between the existent project and 3D image of walkway

Figure 43

Figure 44: Comparison between the existent project and 3D image of Rua Fernandes Tomás entrance

2) CONCLUSIONS

The need for rehabilitation of the city's central historic markets is a political, human, and architectural challenge — which today is at the centre of policy decisions both nationally and internationally.

The Bolhão market is a unique case study as it has been the subject of four political and architectural different perspectives in the last 30 years.

The work that currently is being made corresponds to the project that proposes less construction, integrating more of existing materials. It is also the project that less diverges from the original Fresh Market program which design, and development was closely monitored by an important survey of the sellers' sociocultural conditions, prepared by the Bolhão Market Office, created by the CMP for that end. It should also be mentioned that the new logistic basement is the least intrusive (excavated

only in the centre of Terrado) and does not occupy public space above ground for road access.

This proposal is naturally the result of a circumstance rooted in three fundamental considerations:

1. It comes as a result of several proposals for the rehabilitation of the Market, benefiting from previous suggestions.
2. The political decision was taken in an informed way — architecturally and culturally — and with the courage to reduce the scale of intervention and to believe in a cultural change in the pattern of consumption which implies creating conditions for a return to the markets.
3. This project team makes a hierarchy of values different from the previous ones, understanding that the first value is the activity of market itself, together with the maintenance of the uncovered square, respecting the originalities of the building.

1——————Decree no. 613/2013 of 20 September, Listing of the Bolhão Market as a monument of public interest

2——————VALENTIM, Nuno - "Memória Descritiva e Justificativa do Projecto Geral de Arquitectura", in Anteprojecto do Projecto de Restauro e Modernização do Mercado do Bolhão, Porto's City Council, August 2015

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

Tim Simon Meyer, HCU Hamburg

Intermediate doctoral stage

Supervisors: Matthias Ballestrem, HCU Hamburg; Ignacio Borrego Gómez-Pallete, TU Berlin

Tectonics, DesingBuild, Architectural Experience

Abstract

The research project is investigating the relation between the tectonics - understood as the poetics of the construction - and experiential qualities of architecture. This focus resulted from the observation of several DesignBuild projects I have realized within my architectural practice. The comparative study of those showed a high degree of affordance, which became obvious through the willingness of their users to appropriate and interact with the architecture. These interactions as part of an architectural experience are considered as results of a dialogue between the perceiving subject and the architectural object respectively

its tectonic expression. Thus Tectonics within the research wants to address not the structural elements in itself but rather their expressive potential in creating a tangible experience of the architecture.

Along a series of several DesignBuild Projects, I am researching the question, how through designing and building yourself, tectonic qualities can be created and how these can generate specific experiential qualities.

Artefact

Topic

The research project is investigating the relation between the tectonics — understood as the poetics of the construction[1] — and experiential qualities of architecture. This focus resulted from the observation of several DesignBuild projects I have realized within my architectural practice. The comparative study of those showed a high degree of affordance, which became obvious through the willingness of their users to appropriate the architecture. This became particularly clear in the observation of performers reacting to the physical nature of the architecture and interacting with it.

But how can the architecture express an “invitation to action”[2], as Juhani Pallasmaa describes it? Or as the Swiss historian Heinrich Wölfflin asks: „How can tectonic forms be expressive?”[3]. His investigation on empathy proposes an explanation in analogy to bodily experiences we are making as humans. The concept of tectonics as it is defined here pays attention to those experiences as it´s giving visual expression to processes of loads and load-bearing and makes them perceptible. Eduard Sekler talks in this context about “...*the noble gesture which makes visible the play of forces, of load and support in column and entablature, calling forth our own emphatic participation in the experience.”*[4] In that sense Tectonics within this research is not addressing the structural elements in itself but rather their expressive potential in creating a tangible experience of the architecture.

The origin of these tectonic qualities within the mentioned projects is considered in a specific design process that starts with a defined stock of materials and is characterized by a “conversation” between the architect and the material in order to excavate the materials expressive potential both structural and sensual.

Figure 1: POVERA Pavilion, 2015, Almada, Portugal, Atelier JQTS and Students from Lisbon, Photos by Diana Quintela

Research question and goal

Along a series of three DesignBuild Projects, I am researching the question, how through designing and building yourself, tectonic qualities are entering the architecture and why these can generate specific experiential qualities. The goal is to be able to define and characterize a working method that can generate those tectonic qualities.

Contextualization

By making use of common materials and comprehensible principles of construction the artists of the Minimal Art intended to create a public art, which is accessible physically and not intellectually – without any need of specific knowledge: *"Such work that has the feel and look of openness, extendibility, accessibility, publicness, repeatability, equanimity, directness, and immediacy..."* [5] This intention of addressing a common knowledge forms also one of the key aspects of the given research.

The mentioned characteristics in the context of the Minimal Art can also be applied to an architecture that

is open for interpretation and appropriation. In contemporary architecture we can find several approaches that allow the structure to simultaneously define the spatial qualities as well as the architectural expression. For instance in the work of BRUTHER a comprehensible structure forms an initial point of creating possibilities for coincidences both within the process as well as in the experience of the architecture. [6]

My research is located within the context of DesignBuild Projects but in difference to current investigations on different themes (including production methods, construction potentials, ecological and economic sustainability, local construction methods, social activation), it pays special attention to creative qualities. Those seem to play an important role in the outcome of the DesignBuild projects like the Studio of Tom Emerson at the ETH for example, which are often defined by a given material and result in a coherence of the construction, the spatial structure and the architectural expression.

However, there seems to be a lack of comprehensive studies of experiential qualities in the context of DesignBuild projects and the working methods underlying certain effects, to which I would like to respond.

Figure 2: VERTIGO Pavilion, 2014, Lisbon, Portugal, Atelier JQTS, Photos by Diana Quintela

Methodology and findings

Three DesignBuild Projects serve as case studies and should provide findings on the research questions. The initial point of the research is marked by the reflection on the DesignBuild projects realized within my practice throughout the last years, for instance, the KAIROS Pavilion built with prefabricated concrete pieces, the POVERA Pavilion assembled with modules made of filigree wooden slats or the VERTIGO Pavilion which is stacked from red-painted wooden blocks on top of a base of prefabricated concrete pieces. All these projects started from a given material and they all have created situations of bodily interactions. [1 — 3]

Within the PhD the ALBERTO Pavilion (fig. cover) was realized in 2019 and gave me the possibility of observing and documenting each step and decision of the process, from the first sketch to the architectural experience with the final project. The analysis offered an insight into the meanings of each step for the architectural expression and accordingly for the architectural experience.

The following sequence of five steps roughly described here is an approach to define the specific working method – the tectonic approach — behind the mentioned qualities and resulted from the reflection.

1. Universe of Instruments. Materials are limited by an economy of means. Their examination forms the starting point to get clarity about specific properties both physical and sensual.
2. Art of Joining. The Joint connects the parts and puts them in a context, it considers the materials inherent properties and answers to structural needs but moreover it fulfills creative intentions to give the act of joining a meaningful expression.
3. Structure as Space. Through repetition elements and details are merged into a spatial structure that exposes its inner logic, variations and exceptions can highlight specific moments or create tensions.
4. The Generic becomes specific. The context comes into play and excerpts its influence on the architectural expression. By taking final decisions in order to react to contextual and functional circumstances the generic structure becomes its specific Gestalt!
5. Building as an Act of Design. Self-building allows us to make decisions during construction, following primarily intuition and seeking a strengthening of the architectural expression. In the process of building, ideas can be tested directly on the object at a scale of 1:1. The specification of a generic design approach finds its continuation.

It will be verified and refined throughout the research with the help of further DesignBuild Projects. The experiential qualities of the ALBERTO Pavilion could be evaluated by making use of different strategies (such as observations, surveys or performances) to document people's perception of the built architecture. Reflecting on the two lives of the architecture, the process on the one hand and the interactions on the other, tectonics

seems to take a mediating role, the role of communication. [7]

Figure 3: KAIROS Pavilion, 2012, Lisbon Portugal, Atelier JQTS

State of research

The Tectonic Approach has been tested within design studios with students (due to Corona without the realization) and found a preliminary description. At the moment I'm investigating the capacity of the Tectonic Approach in the context of reuse and Bricolage[8]. "A defined stock of materials that is not selected by the architect neither it´s connected to a certain project"[9] create the origin of two case studies in progress, one will be a garage open for diverse uses, one a small Biogas Plant within an Urban Context as a place of community. Those projects are questioning the ability of the Tectonic Approach to reveal tectonic qualities by using discarded materials. This investigation researches the potential of a Tectonic Approach as an ecological approach.[10]

Figure 4: ALBERTO Pavilion, 2019, Minde, Portugal, Atelier JQTS with Matthias Ballestrem and Students of HCU Hamburg and UAL Lisboa, Photos by Joao Barata

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

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

3———Wölfflin, Heinrich (1886): Prolegomena zu einer Psychologie der Architektur. München: Gebrüder Mann Verlag

4———Sekler, Eduard F. (1965): Structure, Construction, Tectonics.

5———Morris, Robert (1995): Notes on Sculpture, in: Continuous Project Altered Daily. The Writings of Robert Morris. US: The MIT Press

6———ARCH+ (2020): Neuer Realismus in der französischen Architektur. Berlin: ARCH+ Verlag GmbH

7———Frascari, Marco (1983): The Tell-the-Tale Detail, in: Deely J.N., Lenhart M.D. (eds) Semiotics. Springer, Boston, MA.

8———Lévi-Strauss, Claude (1962): The savage mind. France: Librairie Plon

9———Lévi-Strauss, Claude (1962): The savage mind. France: Librairie Plon

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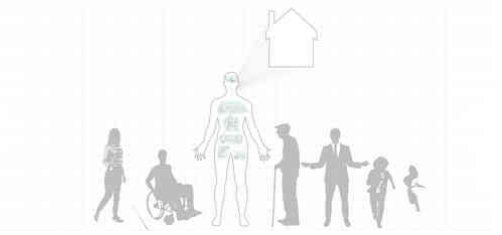
Healing Homes A Search for a Future Home that Fosters Holistic Wellbeing

Rose-Ann Mishio, Politecnico di Milano



Initial doctoral stage

Supervisor: Alessandro Rocca, Politecnico di Milano

Homes, Wellbeing, Architecture Design

Abstract

The housing of today has been confronted with concurrent design challenges of not being ageing friendly and associated with poor wellbeing. With Europe's population ageing faster than the average global population on one hand, and the growing societal need to focus on wellbeing on the other, it has become expedient that the home design is reconsidered. Since Europeans are approaching ageing and disability as a collective crisis in an era where the home design is not child-friendly or promoting wellbeing, what kind of homes should we design and build?

Although, housing typologies like care homes, retirement homes, co-housing and intergenerational housing are being explored, and other strategies like design health maps and guidelines have been introduced, these approaches either focus on aspects of wellbeing or do not include all people in design considerations, thus is incomplete. Therefore, the research hypothesis is that for a resilient future, home designs must be rethought to cater for everyone; irrespective of age or health status and promote wellbeing at the same time - what the research refers to as a healing home.

The position taken is that the architectural design of the homes of tomorrow must strive to go beyond building codes and preventing ill-health into one that is deliberate in considering all ages and abilities, and nudges towards wellbeing on the whole. The aim of the research is therefore to search for 'how' to design for holistic wellbeing for all, in a way that fosters ageing in place, inclusivity and healthy living.

As an exploratory research, it is structured into six phases. It starts off with posing *this* question to scientific literature where it focuses on wellbeing and inclusivity in spatial terms (Phase I), analysing case

studies from the discipline of architecture and design (PhaseII), Reformulation and manipulation of the design characteristics deduced from literature(Phase III), posing the question to architects and designers through interviews and surveys (PhaseIV), a design workshop (Phase V) and an architectural project of designing a home in the European context using knowledge drawn out from phases one to four as a testbed in three possible areas; adaptation to an existing housing design, a new typology or a hybrid building (Phase VI).

Healing Homes

The home of today is faced with concurrent problems like not being ageing friendly [1] [2] [3] [4] [5], associated with poor wellbeing [6] [7] [8], pollution [13], poor effects of the environment [9], poor accessibility and safety **[1]**, and the design of our homes are a major contributing factor. For an elderly who spends about 72% or more of his time at home [11], with declining physical abilities and frailties, the negative impacts of the home are even more important. On the other hand, Europe's population is ageing rapidly [12], and even though some solutions are underway, such as multi-generational housing, retirement facilities and care homes, they have already proven not to be enough in quantity to support an exponentially increasing ageing population [3] and some of these solutions present the idea of segregating the older population with purpose-built facilities which do not go hand in hand with the ageing in place concept. Another option is the pragmatic solutions for adapting existing homes which address mostly physical wellbeing like enlarging corridors to accommodate stretchers and wheelchairs, placing accessible handrails or adding ramps to accommodate the ageing which although imminent, does not present an outright solution. The role of architecture and design of our homes not only

lies in what we design (the product) but also how we design it (the process) because in the end, it determines how we live, play, work, rest and ultimately our wellbeing. Perhaps, instead of designing different homes for different ages/abilities, we could design and plan to host everyone, in a way that combats issues like ageing, stress, isolation, solitude, pollution etc? As Emily Chmielewski and David Hoglund discuss in Healthy places and healing environments, when designing for ageing we should consider broader systems to embrace the concurrent challenges because 'everything is connected to everything else' [1].

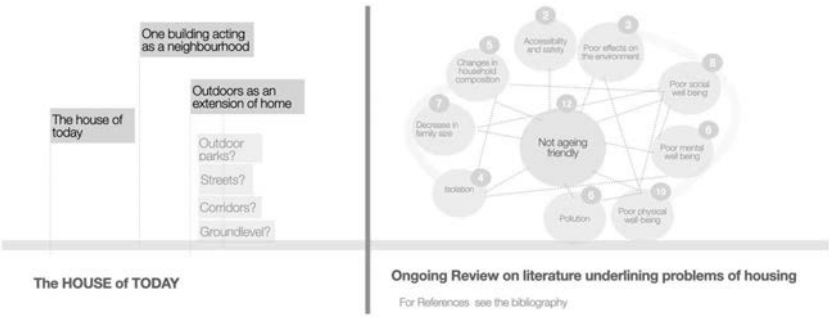


Figure 1: Mapping the concurrent problems of housing design

So then how do we design our homes in a way that tackles the multi-faceted nature of challenges to be suitable for all inhabitants? What should the future home be like, and how can design help? The position taken in the development of the research is that we should design future homes centred on an **all-round wellbeing** ; one that is suitable for ageing in place and healthy living, so that it takes into consideration the suitability for everyone irrespective of health status and age , exactly what the research refers to as — **A healing home**. The focus is on merging all three aspects of well-being: physical, mental, and social instead on focusing on singular or dual aspects because designing for aspects has proven to be incomplete and retranslates

into poor wellbeing overall. In searching for possible solutions, It poses these dire questions;

"How do we design buildings that foster holistic wellbeing?"

"How can these be replicated in the design of the future home?"

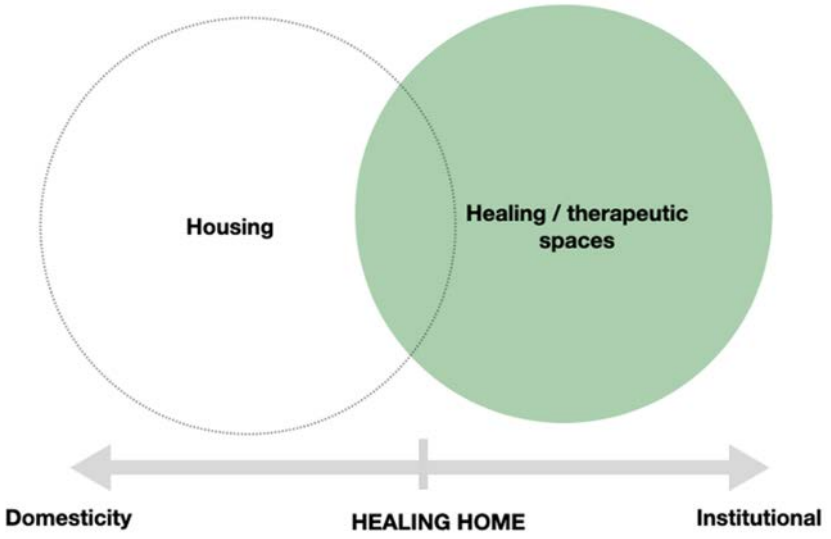


Figure 2: Hypothesis diagram of how to design a healing home

The theory of Healing and therapeutic Architecture

Healing and therapeutic architecture is an **integrated approach** of designing that uses theoretical concept of **evidence based design** to evoke senses of cohesion of mind, body and spirit, promote physical , mental and social wellbeing and support the health of the planet [15] [16] [17] [18] [19]. Although the architecture itself does not heal, the design of these spaces creates ambiences that influences the behaviour of the occupant such that he is able to have an interrelationship with his built environment, nature and people. It appears to be the very definition of what Terri Peters refers to as *"super architecture"* - one that offers positive benefits for both human

wellbeing and his environment [20]. However, they have a trend of being designed for the frail, the sick and the 'unhealthy.' It is almost as though these designs are deliberately considered when health fails, just as Charles Jencks mentions in an interview,*"... The lower down the scale you feel ... If you are deprived.. in a hospital...then the more architecture really matters"* [21]. Although the very connotation of the word 'healing' or 'therapeutic' coincides with the imagination of a healthcare facility or something of its sort, for designers and architects instead, it leaves in its wake the possibility of a building to be super: To be able to integrate all aspects of wellbeing: physical, mental and social and be sustainable at the same time. This kind of architecture in itself becomes evidence that indeed the built environment could aim higher to be better for all people — irrespective of health status, age or gender.

Therefore, in answering to a kind of architecture that could encompass all aspects of wellbeing, the hypothesis of the research is introduced as healing architecture.

Case studies

Even though the history of healing spaces can be traced to Epidaurus in Ancient Greece, Ancient Roman baths and Florence Nightingale's influence in hospital design, the research turns to relatively recent cases from 20th -21st century. It analyses the design approaches and characteristics of how architects have designed healing architecture and how they presumably addressed holistic wellbeing while protecting the environment [2]. Other case studies cited from literature as being 'healing architecture' are analysed to draw out the healing characteristics [table 2].

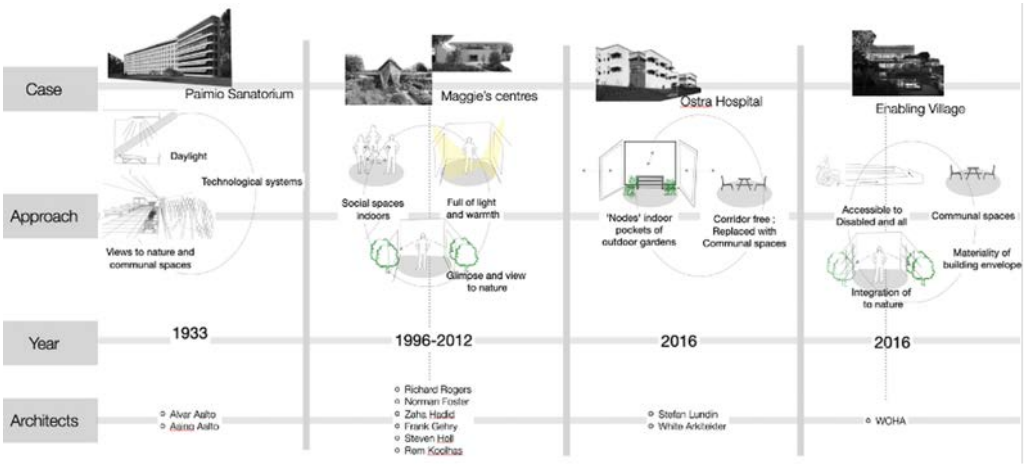


Figure 3: Analysing Case studies of healing architecture

Case	Year	Architect	Location	Design Characteristics
Espoo Hospital	2014	K2S Architects	Espoo, Helsinki - Finland	Common spaces free flowing form of plan (nature inspired)
Jacobs University Surgery pavilion	2003	Richard Keating Architecture	Seattle, United States	Natural landscape and built landscape fuse Form emulating nature
Jupiter Medical Center	2019	Stephen Boruff	Florida, United States	spaces of human-to-human interaction, variety of green space, attractive walking paths
Reversible Destiny House	2005	Madeline Gins and Arakawa	Tokyo, Japan	Stimulation of senses
Bamboo Playhouse	2015	Eleena Jamil Architects	Kuala Lampur, Malaysia	spaces of social interaction Nature and culture ("wakaf " construction linking tradition)
Saint Pierre Inst. Palavas les flots	1999	Brunet Saunier Architects	France	Building materials, natural light, streets in the building
Open House	2020	Framlab	Unbuilt, Prototype	Sustainable, green spaces, social spaces
Sky House	2019	MIA design Studio	Vietnam	Human interaction, nature, daylight
Ogimachi House	2019	Tomoaki Uno	Japan	Building material (cedar and cypress), link to culture (method of construction)
The Naturally House - Mado	n.d	Rebecca Cartwright	Atlanta, United States	Building materials, Daylight, nature
Casa Biblioteca	2016	Atelier Branco Arquitetura	Brazil	Nature, daylight, social spaces, building materials
Lovell Health House	1929	Richard Neutra	Los Angeles	Daylight, Nature, building material
Cite Napoleon	1851	M.H Veugny	France	Social spaces
De Drie Hoven	1974	Hermann Hertzberger	Netherlands	Social spaces

Table 1: Analysing design characteristics of Healing architecture referenced from literature

Defining a design concept

The key themes of what should constitute a healing home are deduced from the design characteristics of healing and therapeutic architecture, thus forming the design concept. [3]

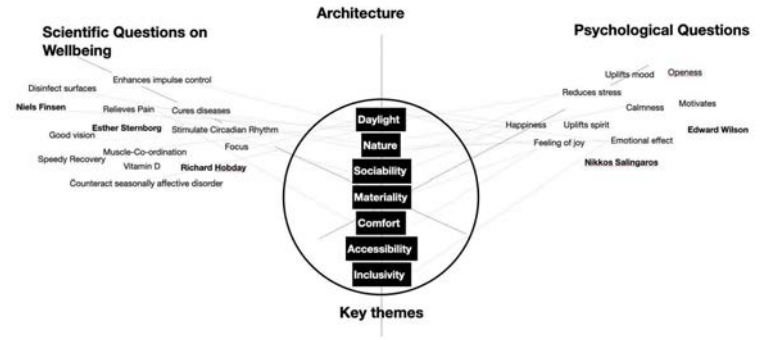


Figure 4: Defining the Key themes

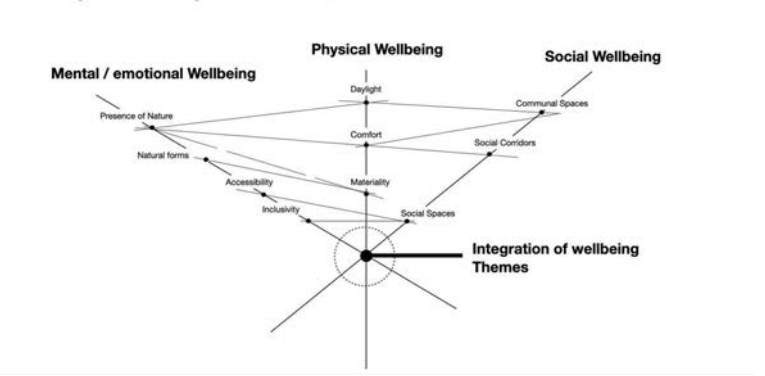


Figure 5: Reformulating key themes to define a design concept - integration

As the main strategy for healing architecture is integration [4] of the key themes, the research continues by analyzing case studies of residential buildings in Europe by pioneering architects that integrate the seven defined key themes of wellbeing for the research: daylight, comfort, nature, materiality, sociability, accessibility, and inclusivity.

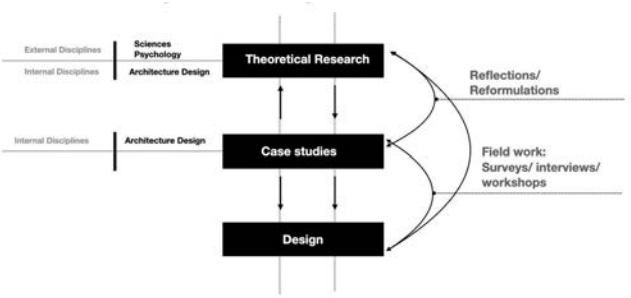


Figure 6: Research methodology

Methodology:

The main focus of the research is in two main parts; the reflective phase and the design phase. The reflective phase is based on the hypotheses of the research and will be used as a guide in the design phase. The reflective phase entails the study of theories, design principles and characteristics of healing and therapeutic spaces which would be assembled, articulated, and analysed to give a framework to the second part- the design phase. The deduced results would be tested in possible test beds to make design proposals based on knowledge developed in the first phase.

Thus the research started with a careful examination of the ensemble of ideas, concepts and design characteristics from literature; books, articles and reports on the theme from both internal and external disciplines, which have resulted in the key themes of the research. The reformulation of the key themes results in defining the design concept – the integration of key themes. This projects a criteria for the selection, analysis and reformulation of case studies of residential buildings in the 21st century by some pioneering architects in Europe.

1——————Chmielewski E., Hoglund D. (2018): »Design for ageing«, in: Healthy environments, healing spaces, Charlottesville and London: University of Viginia press, pp. 186 -200

2——————Healthy ageing project (2006): Healthy ageing: A challenge for Europe: The Swedish National Institute of Public Health

3——————Byles J., Mckenzie L. et al (2012): »Supporting housing and neighbourhoods for healthy ageing: Findings from the Housing and Independent Living Study (HAIL) «,in: Australasian journal on Ageing 33(1), pp. 29-35

4——————Forsyth A., Molinsky J, Har Y., (2019): »Improving housing and neighbourhoods for the vulnerable: older people, small households, urban design, and planning« in: Urban Design International 24, pp.171-186

5——————World Health Organization (2015): World report on ageing and health: Geneva Switzerland

6——————Rainer F., Capolongo S. (2016): »Healing environment and urban health« in: Epidemiologia e Prevenzione 40(3), pp. 151-152

7——————Amelio A., Brambilla A. et al (2020) : »COVID-19 Lockdown: Housing Built Environment's Effects on Mental Health« in: International Journal of Environmental Research and Public Health 17(16), pp.5973

8——————Jackson, R. J., 2003. »The impact of the built environment on health: An Emerging field. « in: American Journal of Public Health 93 (9), pp. 1382-1384

9———Von Der Leyen U.(2020): A New European Bauhaus: op-ed article by Ursula von der Leyen, President of the European Commission, European Commission https://ec.europa.eu/commission/presscorner/detail/en/AC_20_1916 from October 2020

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11———Spalt E. Et al, (2017) : »Time-Location Patterns of a Diverse Population of Older Adults: The Multi-Ethnic Study of Atherosclerosis and Air Pollution (MESA Air) « in: Journal of exposure science and environmental epidemiology 26(4) pp.436

12———United Nations (2017): World Population prospects: 2017 revision

13———Borasi G., Zardini M: (2012) Imperfect health: The medicalisation of architecture. Canadian Centre for Architecture

14———Lawson B.(2010): »Healing Architecture« in: Arts and Health 2(2), pp. 95-108

15———D.Sabar, Michael Djimantoro I. (2020) »The application of healing space concept in holistic care facilities: a brief guideline for design. « in: IOP Conference Series: Earth and Environmental Science 426

16———Sakallaris B. , Macallister L et al.(2015) »Optimal healing environments « in: Global Advances in health and medicine 4(3), pp. 40-45

17———Zakaria M. Hassan A. Et al (2018) »Architecture for healing: Phenomenology of spatial awareness to evoke healing environment in urban realm« in: International Transaction Journal of Engineering, Management, & Applied Sciences & Technologies 9(3) pp.141-153

18———Schaller B. (2012): Architectural Healing Environments: Thesis- Syracuse University

19———Lundin Stefan (2015) : Healing Architecture: Evidence, Intuition, Dialogue. Thesis : Chalmers University.

20———Terri P. , (2015): » Super Architecture« in Architectural Design: pp.24-31

21———Charles Jencks (2015), interview - Cate St. Hill, “pile of hope-20 years of Maggie's centres”

An Investigation of the Significance of Wilderness in Western Culture through Garden Design

Silvia Maria Mundula, Politecnico di Milano

Initial doctoral stage

Supervisor: Alessandro Rocca, Politecnico di Milano

#

Wilderness, Garden, Perception

Abstract

Wilderness is a theoretical notion based on cultural values and therefore always open to re-evaluation. My thesis investigates the links between contemporary aesthetics in wild gardens and the questions arising from the Anthropocene crisis, such as the blurring between nature and artifice and man's culpability, and concentrates on those gardens, which, for instance, allowed Elizabeth Meyer to talk about "a strange beauty." The Anthropocene crisis needs design solutions at a planetary level.("Any such planetary level design should be contextualized in a wider realization about the political economic stakes of the environmental disaster and its possible solutions that involve an entanglement of politics, nature and design" Parikka, Jussi (2018): «Anthropocene» in Rosi Braidotti and Maria Hlavajova (Eds.), *Posthuman Glossary*, London: Bloomsbury Publishing Plc, p. 52.)

Landscape design cannot change society, but it can alter an individual's consciousness, restructuring one's priorities and values. (Meyer, Elizabeth K. (2008): «Sustaining beauty. The performance of appearance. A manifesto in three parts» *Journal of Landscape Architecture* 5 (spring), p. 6-23.) In the case of the wild garden, this idea seems particularly apt for its clear link to ecological themes; however, since the concept of *wilderness* is in itself ambiguous, such idea is still open to question. Therefore, the aim of this thesis is to explore this issue in depth by studying the diversity of approaches to the project of the wild garden in western countries, to highlight areas of conflict and to pinpoint areas where more research is needed.

Paper

Introduction

The idea that wilderness, by which I mean untamed nature, is becoming extinct[1] has its roots in the Romantic period,[2] and constitutes a starting point for

the interest in wilderness in many fields,[3] from the realms of science to those of mass culture.[4] This idea, however, exists in parallel with the concern engendered by the new kind of wilderness that is entering our cities.[5] Wilderness, in fact, is an abstract term which is based on cultural values and therefore is always open to re-evaluation.[6] The aim of this paper is to explore the diversity and resilience of different approaches to the project of the wild garden in western countries, highlighting areas of conflict and pinpointing areas where more research is needed. The first part of the paper details the reasons for the renewed interest in the topic of wilderness, by exploring contemporary philosophical and ecological theories. The second part examines the theories of some authors writing in the field of landscape design between the 1980s and the 1990s, who questioned the relevance of aesthetics in discourses on sustainability and the role of ecology in landscape architecture. The final part provides some insights into contemporary approaches to wilderness in garden design, identifying practical theories and opening up a reflection on future perspectives in the wild garden.

1. Wilderness and Gardening

Contemporary philosophical theorists argue that nature must be rethought as something which is neither in opposition to the ideas of human beings and their culture,[7] nor in opposition to the idea of artifice.[8] Timothy Morton (2006) asserts that ecological thinking should be developed with no reference to the concept of nature at all. The traditional philosophical dichotomies between nature and culture and between the wild and the domestic are being rethought, and the idea of wilderness as untamed nature has become obsolete.

Figure 1: Anthropocene Observatory: #4 The Dark Abyss of Time, Exhibition at Haus der Kulturen der Welt, Berlin (2014), @ 2014 Anthropocene Observatory

The starting point is the Anthropocene crisis theory proposed by Rosi Braidotti, which has been turned into tangible projects, such as the *Anthropocene Observatory* [1] by Territorial Agency, Armin Linke and Anselm Franke (from 2013 onwards) or *The Anthropocene Project* by Nicholas de Pencier, Edward Burtynsky, and Jennifer Baichwal (2018). These projects, indeed, document more expansive ideas of nature and wild nature, recalling the concept of *Fourth Nature* introduced in the 1990s, which was transformed into an aesthetic reference for architects by the work of some photographers.[9] This change in the perception of landscape has been explored from the 1990s onwards by different authors: from ecologists such as Ingo Kowarik to architects such as Pierluigi Nicolin and Ignasi de Solà-Morale, who contributed to the definition of this concept by the use of terms such as *terra incolta*[10] and *terrain vague*[11] [2]. This variation in the perception of spaces such as the abandoned post-industrial sites, which went from being considered as 'wasteland,'[12] to becoming objects of fascination, certainly played a role in the history of the wild garden. But one could argue that the history of the wild garden itself played a role in this change of perception, as the interest in what is

marginal in gardens is a theme which originated towards the end of the nineteenth century,[13] and perhaps earlier. How do these themes, which are some of the issues brought to light by the Anthropocene crisis, influence contemporary garden design?

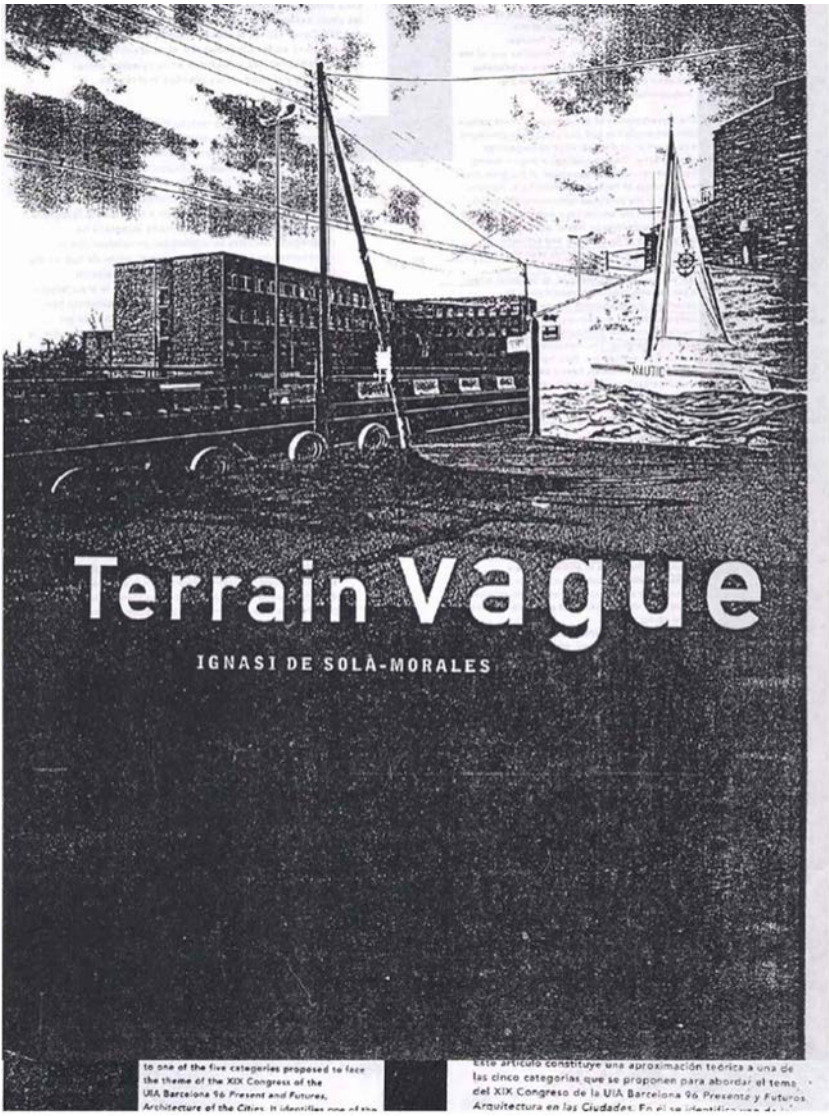

Figure 2: *Quaderns* 212 (1996), containing the article "Terrain vague" by Ignasi Solà-Morales, Cover book

And do contemporary wild gardens themselves contribute to changing the perception of these issues by users and designers? The idea of the garden as an investigative tool and as a reference for a post-human design method has its origins in the ideas discussed by Marc Treib in *Meaning in Landscape Architecture*

and Gardens (2011) and by Julian Raxworthy in *Overgrown: Practice between Landscape Architecture and Gardening* (2018). Starting from Charles Jencks's book *Meaning in Architecture* (1969), Marc Treib explores the subject of *meaning*, which, unlike in the field of architecture, was of little interest in landscape architecture and gardens until the 1980s. Treib argues that the meaning of gardens, as interpreted by critics, is also significant because it can place a garden within the field of practice, rather than theory. This concept provides a link to Julian Raxworthy's argument. Raxworthy re-evaluates the practice of gardening within the context of landscape architecture, proposing a new model for landscape architecture based on gardening techniques, which he calls "the viridic." The term "viridis" is the Latin word for green, verdant and growing, so "viridesco," according to Raxworthy, is to landscape architecture what "tectonic" is to architecture. The wild garden pushes this concept to its limit, as the form of this garden emerges not only through gardening techniques, but, in particular, through gardening techniques, which are mainly concerned with the process of growth.[14]

2. The Authority of Ecology in Landscape Architecture

Most landscape architects regard ecological science as an important source of principles in landscape design. According to Anne Whiston Spirn, in the last few decades "the authority of science" has been cited to augment "the authority of nature," overturning the traditional role of nature.[15] In the 1960s, landscape design started to appropriate concepts from ecology, and this made a clear contribution to the discipline. However, what professor Spirn and other theorists talk about, is the fact that some designers used "ecology as the primary authority for determining the *natural* — and therefore *correct* — way to design landscapes."[16] A number

of authors writing between the 1980s and the 1990s, such as Catherine Howett,[17] Anne Whiston Spirn,[18] Laurie Olin[19] and Mark Francis,[20] questioned the relevance of aesthetics in landscape design discourses on sustainability and the role of ecology in landscape architecture. I have based this piece of research on the work of these authors as they reflect on form, meaning and perception in gardens and landscape architecture. For instance, Whiston Spirn's review of The Fens and the Riverway by Olmsted in Boston also underlines the importance of aesthetics in ecological design.[21] This new kind of water marsh, designed by Olmsted, not only functioned as a flood control reservoir but also contributed to the definition of a new environment, which appeared to be a natural site but was clearly a human construct.[22] This project, furthermore, seems to foreshadow the idea of urban nature. In *The Granite Garden*,[23] Spirn makes a comparison between the Fens and Riverway designed by Olmsted in Boston (1880s) and Columbus Park designed by Jens Jensen in Chicago (1916). These two projects were similar in appearance, as they both brought urban dwellers into contact with wild nature, but they were very different in meaning.[24] Jensen's wild nature, indeed, just evoked his home landscape: "Every region should display the beauty of its local landscape: this encourages each race, each country, each state, and each county to bring out the best within its borders."[25] Jensen's vision recalls Willy Lange's theory at the beginning of the twentieth century about the use of native plants and the defence of the landscape.[26] On the contrary, Olmsted's wild nature was revolutionary: its wild aspect was totally in contrast with the prevailing formal and pastoral styles: the Fens and the Riverway, in fact, was conceived by Olmsted as a new type of urban space. Rather than a park, it was a landscape system. Whiston Spirn's article, apart from remarking on Olmsted's innovation in landscape design, sheds some light on the confusion around the use of nature as a model for landscape

design. This topic is still an contentious issue in the field of landscape architecture. The same themes are explored through the texts of more contemporary authors, such as Elizabeth Meyer and Danielle Dagenais. In *Sustaining beauty. The performance of appearance* (2008), Meyer highlights how landscape design practitioners and theorists deal with the ecological aspects of sustainability but without including the concept of beauty. When they mention beauty, it is usually as a superficial concern. Traditionally, indeed, there are three disciplines upon which sustainability is based: ecology, social equity and economy, but not aesthetics. "Can landscape form and space indirectly, but more effectively, increase the sustainability of the bio-physical environment through the experiences it affords?" She believes, indeed, that "the experience of certain kinds of beauty – granted new forms of strange beauty- is a necessary component of fostering a sustainable community, and that beauty is a key component in developing an environmental ethic."[27]

Figure 3: Forest garden of the BNF, Dominique Perrault (1995), Photo by Chiara Pradel

3. Wild Gardens

An increasing number of contemporary gardens evoke wilderness in different ways; some in an idealistic way, as in the case of the courtyard of the BNF in Paris designed by Dominique Perrault in the 90s [3], other are planned according to certain processes which allow the plants to interact with each other.[28] Piet Oudolf, for instance, as an unofficial spokesperson for the planting design movement, admits that he prefers to speak about gardens which are inspired by nature and which aim to reproduce nature's outward forms as naturalistic [4]. It is, in fact, misleading to speak of natural gardens because this contributes to creating confusion between the terms natural and organic.

Figure 4: Piet Oudolf Field, Durslade Farm, Bruton, Somerset, Photo by Jason Ingram, @ 2021 Jason Ingram

A first question arises: when the term aesthetics is taken to mean only the visual,[29] does this lead us towards a superficial interpretation of the idea of the wild and wilderness?[30] However, Nigel Dunnett, another key figure in the planting design movement, remarks on the relevance of visual effects in planting [5]. According to Dunnett, his work is about evoking nature. To evoke nature, one can be literal, using the techniques of

taxonomic ecology,' or one can think in terms of 'visual ecology,' as is the case with his work:

For me, it's not about trying to re-create something that I might have seen in the wild. Instead, it's about using the forms, textures, colours and aesthetics that reflect the way plants arrange themselves in natural plant communities.

– Dunnett, 2019, 15 – 16

Figure 5: The Barbican plantings, Nigel Dunnett (2015 – ongoing), @ 2021 Nigel Dunnett

Despite the fact that Dunnett's intentions are not purely ecological, his gardens are rich in biodiversity and wildlife, and only require the input of a few resources such as water, fertilisers and time. These gardens, indeed, require only simple maintenance techniques such as coppicing, which are more common in nature conservation than in gardening, and make nature very appealing to the public, through visual effects, which include the use of colourful flowers and plants. Dunnett mentions the concept of "ecological sensibility" to refer to the choice of vegetation which fits into the site in a coherent way.[31] According to Danielle Dagenais, Gilles Clément himself, despite being considered as the father of the trend in ecological landscape design, based his work predominantly on ethical and aesthetic themes, drawn from the history of garden art rather than from the discipline of ecology. She argues that

Clément, in his work, applied ecological theory in a second phase, after the practice. 'Sensibility,' indeed, seems to be a key concept in the design of wild gardens.
A particular kind of sensibility was expressed in Vita Sackville West's book about English country houses, whose architecture is fundamental in understanding the evolution of the English wild garden [6]. "There is nothing quite like the English country house anywhere else in the world." English houses are not only situated in the country, they are part of it, being in harmony with the landscape to which they belong.

Figure 6: Vita Sackville-West at Sissinghurst Castle, Photo by Kurt Hutton (Kurt Hubschman) (1961), © National Portrait Gallery

A similar theme was expressed in the diary of Geoffrey Dutton, whose garden is described through the seasons in relation to the principle of marginal gardening, where a marginal garden is one which is "minimally differentiated from its surroundings, and so requiring minimal effort to make and keep up."[32] The concept of marginality, however, has a different meaning in other types of gardens, which are outside the mainstream, physically or metaphorically, such as the *Dungeness Garden* [7] by Derek Jarman (1988–1994), or the *Le Jardin des Joyeux* [8] realised by Wagon Landscaping in 2015 at

Maladrerie, Aubervilliers. Furthermore, the word marginal evokes the idea of abandoned places. This was mentioned by William Robinson and became central to the work of Gilles Clément, however, with some differences: Robinson spoke about the under-utilised spaces of the pleasure ground, but without explicitly mentioning the idea of abandoned land, which is a central theme in Clément's theory.

Figure 7: Derek Jarman at Prospect Cottage-Dungeness, Photo by Geraint Lewis, © The Geraint Lewis Photography Archive

Finally, the theme of marginality poses a question about the margins, that is, the borders, of the wild garden. The garden, in fact, in its etymological sense, is an enclosed area. But how do the idea of wilderness, and that of enclosure, coexist? What is the contemporary meaning of this enclosure in light of the current re-evaluation of the relationship between nature and culture (which has eroded the distinction between nature and culture)?[33] There are various options with regard to the form of the wild garden. However, Clément says that in order to counter formality, he combines a formal style with an informal biological order. He declared, in an interview, that, even if curved lines (typical of the English style) predominate in gardens, he is fundamentally French. Behind the form of the "garden in motion" there is also a long history of garden design and culture. In Dagenais' interpretation, in Clément's garden in motion,

wilderness is neither linked to an informal design, nor to the choice of wild plants. The aspect that makes this garden wild is the way the materials and plants are used.[34] Clément's interpretation of "the wild," when he talks about wild plants, recalls "the wild" defined by William Robinson in *The Wild Garden*. However, also here there are some fundamental differences: firstly, Robinson wrote about the proliferation of wild plants, but with no reference to their apparent movement after their naturalisation in a certain place; secondly, "Robinson did not mention any intervention apart from the initial planting, while Clément talks about the sophisticated management the garden requires." Dagenais' article provides an innovative view of Clément's work. This might be controversial, however it gives voice to the debate about the place of ecology in contemporary garden and landscape design.

Figure 8: Jardin des Joyeux, La Maladrerie, Aubervilliers (2015), @ Wagon Landscaping

Conclusion

To plan a wild garden is not just to design an art form attuned to nature, nor merely to create a system of plant communities, but primarily to communicate a particular feeling about of wilderness. The fact that certain gardens are able to communicate this feeling might

contribute indirectly to the improvement of people's relationship with their environment.

Figure 9: Parasteatoda lunata web, Neapolis, Siracusa (2021),
© Olimpia Cavriani

Comme si la domestication des plantes devenait un acte de sauvagerie de la part de l'homme, qui contrôle non seulement leur développement mais également leur devenir et leurs possibilités d'évolution, en les soumettant à une sélection dirigée par la seule volonté humaine.[35]

This paper opens us up a to further reflections on the complexity of planning the wild garden and on its role in discourses about sustainability. The design of this kind of garden, for instance, can call various ecological principles into question. The idea of using exclusively native plants, indeed, is a very purist ecological principle in the theory proposed by the native plant movement. However, the maintenance of a garden wholly created from native plants is not really sustainable in terms of resources. The determination of what is native inevitably suggests a broader reflection on the concepts that resonate politically. An effective representation of the diversity and complexity of the approaches to the wild garden would be a web, where conceptual issues, technical issues and case studies intersect [9].

1——"We define our era as the Anthropocene, by which we understand the geological time when humans are having a lasting and negative effect upon the planet's systems" Braidotti, Rosi and Maria Hlavajova (2018): Posthuman Glossary, London: Bloomsbury Publishing Plc.

2——"The thing we call nature becomes, in the Romantic period and afterward, a way of healing what modern society has damaged" Morton, Timothy (2007): Ecology without Nature, Cambridge: Harvard University, p. 22.

3——Brevini, Franco (2013): L'invenzione della natura selvaggia, Torino: Bollati Boringhieri.

4——"La fascinazione per il selvatico va oltre i limiti plausibili dell'architettura del paesaggio, trovandosi nelle manifestazioni più diverse della cultura contemporanea." Metta, Annalisa (2019): «Verso la città selvatica» in Annalisa Metta and Maria Livia Olivetti (Eds.), La città selvatica. Paesaggi urbani contemporanei, Melfi: Casa Editrice Libri, p. 22.

5——Di Carlo, Fabio (2019) «Complessità e contraddizioni del selvaggio urbano» in Annalisa Metta e Maria Livia Olivetti (Eds.) La città Selvatica. Paesaggi urbani contemporanei, Melfi: Casa Editrice Libri, pp. 90-101.

6——A reflection about wilderness must be framed through a specific cultural background because. As argued by Danielle Dagenais: "The words 'natural' and 'wild' are not scientific terms; they are part of everyday usage." Dagenais, Danielle (2004): «The garden of movement: ecological rhetoric in support of gardening practice» in Studies in the History of Gardens & Designed Landscapes 24 (4), p. 318.

7——For contemporary philosophical theories about the idea of nature and the wild, contrary to common sense, see: Descola, Philippe (2004): «Le sauvage et le domestique» in Communications, 76 (Nouvelles figures du sauvage) pp. 17-39; Descola, Philippe (2005): Par-delà nature et culture, Paris: Gallimard; Berque, Augustine (2010): «Le sauvage construit» Ethnologie française 40 (4), pp. 589-596.

8——Burkhardt, Lucius (2019): Il falso è l'autentico. Politica, paesaggio, design, architettura, pianificazione, pedagogia, edited by Gaetano Licata e Martin Schmitz, Macerata: Quodlibet.

9——Nicolin, Pierluigi (1995): «La terra incolta» Lotus 87, p. 32.

10——Nicolin, Pierluigi (1995): «La terra incolta» Lotus 87, p. 32.

11——Solà-Morales, Ignasi, "Terrain vague" in Quaderns 212 (1996) pp. 35-42.

12——Di Palma (2014) explored the relation between wilderness and wasteland: "At the turn of the nineteenth century, dichotomous ideas of wilderness as pristine nature and wasteland as ruined or defiled nature became fully codified in Western philosophy, literature, and art" Di Palma, Vittoria (2014): Wasteland. A History, New Haven: Yale University Press, p. 2.

13——In 1870, William Robinson was one of the first gardener to point the attention on marginal spaces. Helmreich noted that Robinson situated his wild garden in the "underutilised spaces of the pleasure ground: along walls, stream banks, boggy areas, woods, etc." see Dagenais, Danielle (2004): «The garden of movement: ecological rhetoric to support of gardening practice» Studies in the History of Gardens & Designed Landscapes 24 (4), p 318.

14——"Ideas of growth and change are now in the Zeitgeist of both architecture and landscape architecture in what I call 'the process discourse.' The process discourse refers to designers and theorists who see natural and cultural processes, described in scientific terms, as the source of dynamic design suited to a world that is different from the past because of flows of information, for example. The models of process they use generally come from nature. In architecture, morphogenesis and biomimicry seek to use parametric systems derived from nature to animate the inorganic. In landscape architecture, subfields like landscape urbanism look to ecology to develop instrumental ways of working with natural processes, such as hydrology, in the city" Raxworthy, Julian (2018): Overgrown: Practice between Landscape Architecture and Gardening, Cambridge MA: MIT Press. p. 3.

15——"Frank Lloyd Wright defined nature as the physical manifestation of God, and therefore he used nature as a model to augment the authority of his design choices." Whiston Spirn, Anne (1997): «The Authority of Nature: Conflict and Confusion in Landscape Architecture» in Joachim Wolschke-Bulmahn (Ed.), Nature and Ideology Natural Garden Design in the Twentieth Century, Washington: Dumbarton Oaks, p. 250.

16———Whiston Spirn, Anne (1997) «The Authority of Nature: Conflict and Confusion in Landscape Architecture» in Joachim Wolschke-Bulmahn (Ed.), Nature and Ideology Natural Garden Design in the Twentieth Century, Washington: Dumbarton Oaks, p. 250.

17———Howett, Catherine (1987): «Systems, Signs, Sensibilities: Sources for a new Landscape Aesthetic» Landscape Journal 6 (1) Spring, pp. 1-12.

18———Whiston Spirn, Anne (1988): «The Poetics of City and Nature: Towards a New Aesthetic for Urban Design» Landscape Journal 7 (2) Fall, pp. 108-126.

19———Olin, Laurie (1988): «Form, Meaning, and Expression in Landscape Architecture» Landscape Journal, 7, (2) pp. 149–168. https.//www.jstor.org/stable/43322829/ from June 23, 2021.

20———Francis, Mark and Randolph T. Hester (1990): The meaning of gardens: idea, place and action, Cambridge Mass: MIT press.

21———"As originally conceived and constructed, the Fens and Riverway were innovative models for public open space serving a variety of human needs and for the integration of engineering, economics, and aesthetics" Whiston Spirn, Anne (1988): «The Poetics of City and Nature: Towards a New Aesthetic for Urban Design» Landscape Journal 7 (2) Fall, p. 118.

22———Olmsted's imitation of "wild" nature represented a divergence from the prevailing pastoral and formal styles, both of which were domesticated landscapes and abstractions of nature […] In this approach, Olmsted heeded the admonition of his contemporary, George Perkins Marsh (1864, p. 35) who advocated that "the task […] is to become the co-worker with nature in the reconstruction of the damaged fabric." Whiston Spirn, Anne (1988): «The Poetics of City and Nature: Towards a New Aesthetic for Urban Design» Landscape Journal 7 (2) Fall, pp. 118.-119.

23———Whiston Spirn, Anne (1984) The Granite Garden. Urban Nature and Human Design. New York: Basic Books.

24———"The Fens and Riverway in Boston and Columbus Park in Chicago, for example, were built to resemble what the designers describe as the 'natural' scenery of their region, but the motivations that underlie them were quite different in important respects." Whiston Spirn, Anne (2006): «Urban Nature and Human Design» Bulletin of the German Historical Institute Washington, D.C. 39 (Fall), p. 49.

25———"Jens Jensen designed Columbus Park in Chicago to "symbolize" a prairie landscape. He made a large meadow, excavated a meandering lagoon, and planted groves of trees as a representation of the Illinois landscape: prairie, prairie river, and forest edge. All the plants used in the park were native to Illinois; they "belonged," as Jensen put it." Whiston Spirn, Anne (2006): «Urban Nature and Human Design» Bulletin of the German Historical Institute Washington, D.C. 39 (Fall), p. 50.

26———Lange, Willy (1909): Gartengestaltung der Neuzeit, Leipzig: J. J. Weber.

27———Meyer, Elizabeth K. (2008): «Sustaining beauty. The performance of appearance. A manifesto in three parts» Journal of Landscape Architecture 5 (spring), pp. 6-23.

28———In this paper, projects are selected by the theme they reflect and not by historical criteria, however, they are all set in Europe and North America during the last two centuries, so that they share a similar cultural background. See Mundula, Silvia M. (2019): «The Fair of Nature. Wild as a Norm of Beauty in Gardens» in Madalina Ghibusi, Maryam Khatibi and Chiara Pradel, Scales of Interiors. Parks, gardens, objects, Santarcangelo di Romagna: Maggioli.

29———"at a recent end-of-semester studio review at Harvard's Graduate School of design, I felt compelled to correct a younger colleague's dismissive use of the terms beauty and aesthetics. Like many landscape architects, he equated beauty and aesthetics with the visual and the formal, and in doing so rendered them inconsequential. His fascination for the performative blinded him to the distinctions between beauty and beautification or ornamentation. He did not think that beauty mattered, or realize that appearance could perform […] I have come to believe that the experience of certain kinds of beauty – granted new forms of strange beauty- is a necessary component of fostering a sustainable community, and that beauty is a key component in developing an environmental ethic." Meyer, Elizabeth K. (2008): «Sustaining beauty. The performance of appearance. A manifesto in three parts» Journal of Landscape Architecture 5 (spring), pp. 6-23.

30———"Horticulturalists and ecological landscape designers James Hitchmough and Nigel Dunnett have demonstrated how designs with Fourth Nature landscapes can create places that bring together natural, cultural and social aspects. They can look wild and abandoned, but do not have to. To be valued by the public at large, they say, such vegetation 'must be strongly informed by aesthetic principles', and 'preferences can change through experience and learning.' In Germany, too, there are still challenges to the acceptance of Fourth Nature among the general public. This is evident in the case of the renaturalization of the Isar River [...] they wanted 'naturalistic' curving riverbanks, and the design was revised." Bakshi, Anita and Frank Gallagher (2020): «Design with Fourth Nature» Journal of Landscape Architecture 15 (2), pp. 24-35.

31———"It can be the case of an intuitive sense of rightness and compatibility – a sort of inbuilt ecological wisdom. Choosing plants from similar habitats often results in them having similar adaptations, and this in turn leads to a visual coherence across a planting. And it's at this level also that the essence of 'naturalness' comes in: the overall character of the planting and the arrangement of the elements to achieve the lack of rigid formality" Dunnett, Nigel (2019): Naturalistic Planting Design: The Essential Guide. Bath: Filbert Pr, p. 31.

32———Dutton, Geoffrey (1997): Some Branch against the Sky: The Practice and Principles of Marginal Gardening, Devon: David & Charles, p. 10.

33———"Giardino: Sfugge alle divisioni culturali. Il giardino, ovunque nel mondo, significa al contempo il recinto e il paradiso [...] Il recinto protegge. Dentro il recinto si trova il «meglio»: ciò che si ritiene più prezioso, più bello, più utile e più equilibrante. L'idea di «meglio» cambia nel corso della storia. Conseguentemente, cambia l'architettura del giardino con la quale si traduce questa idea. Non si tratta soltanto di organizzare la natura secondo una scenografia rassicurante, ma anche di esprimere in essa un pensiero concluso dell'epoca in cui si vive, un rapporto con il mondo, una visione politica [...] Non si intende dire che fuori dal recinto si trovi il peggio (in opposizione al meglio), ma che vi si trova ciò che è selvatico e ignoto, dunque l'inquietudine, la città a un tempo oppressiva e confortevole, il territorio degli incontri inattesi e degli scambi necessari, la mescolanza di doveri e divieti, la lunga serie di regole, obblighi e rapporti [...] Fuori dal giardino si chiede alla società umana di sospendere un sogno per difendere una posizione sociale, o semplicemente per esistere. Dentro il giardino il logoramento esistenziale svanisce" Clément, Gilles (2013): Giardini, paesaggio e genio naturale, Macerata: Quodlibet, pp. 15-16.

34———"It is in fact the garden where [...] the evidence of work is least obvious. Nature seems to be composed of 'that in the world which is produced spontaneously, without the intervention of man." Dagenais, Danielle (2004): «The garden of movement: ecological rhetoric in support of gardening practice» Studies in the History of Gardens & Designed Landscapes 24 (4), p. 318.

35———Allain, Yves-Marie (2020): «Jardins naturel, jardins sauvages: une apercu historique» Jardins 9, (Le Sauvage), pp. 15-20

Makerlabs Makerspaces in libraries as modern spaces of urban belonging

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Initial doctoral stage

Supervisors: Roberto Cavallo, TU Delft; Maurice Harteveld, TU Delft

#

public buildings, makerspaces, threshold

Abstract

In the context of changing reference points that characterizes contemporary late modernity, public buildings are demanded to adapt to transforming cultural values. Buildings, static long-lasting structures, must satisfy changing purposes, programs, and users. One example of this shift are libraries which are undergoing transformations both as an institution and as a built object. Since digital resources are broadly accessible through digital means, libraries are shifting from *knowledge consumption* to *knowledge creation* spaces. The concept of "making" appears as one upcoming approach to explore contemporary literacy in libraries.

The project *Makerlabs: Makerspaces in libraries* shows how designing public buildings as unfinished *publicity thresholds* makes space for cultural values' creation and transformation. In this study, theories on public buildings, liquidity, thresholds, and values ground the framework informing design propositions tested with spatial interventions. Design Driven Methodologies are used as a discursive communication medium between theory and practice, concepts, and approaches, as a generative and reflective tool.

Extended abstract

Public Thresholds

Public Buildings are public space condensations traditionally conceptualized in binary perspectives: public-private, indoor-outdoor, accessible-restricted. Nevertheless, the complexity of social, political and economic structures deems such definition dated. Public Buildings are dynamic thresholds that change with the flow of publicity where a threshold is "a point [...] above which something is true or will take place and below which it is not or will not" 1. Therefore public buildings are thresholds defined by the point – or *limen*– at which individuals enter *public life* to undertake

collective action in a momentary *foam* that later disintegrates again into individual bubbles 2 [1].

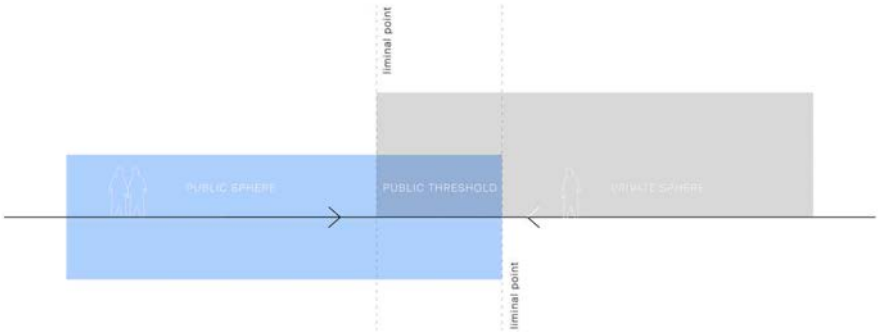

Figure 1: Public Thresholds: liminality and changing transitions

Since public space is produced socially by a class and power conflict, public buildings also embody the *self-augmentation* tension of engaging in a collective [3] [2]. This tension is not static but changes according to the *public condition*. Individuals of different backgrounds come together to collectively act, whether watching a theatre play or debating the future of their neighbourhood. During that time-period, they re-define their shared cultural values of beauty, identity, belonging or democracy. If designed considering their role in the public sphere, public buildings can be a powerful tool to strengthen cultural values by providing a *common space* for civic connections and social interaction.

Cultural public buildings –those related to collective and common human practices such as libraries, museums or cultural centres– are the paradigm of cultural value creation. They exist to host the birth and proliferation of cultural practices that through interaction and

conflict eventually become cultural values. Buildings last decades while cultural values transform at the speed of society. Therefore, conceiving public building as *unfinishedthresholds* could make room for the creation and transformation of cultural values.

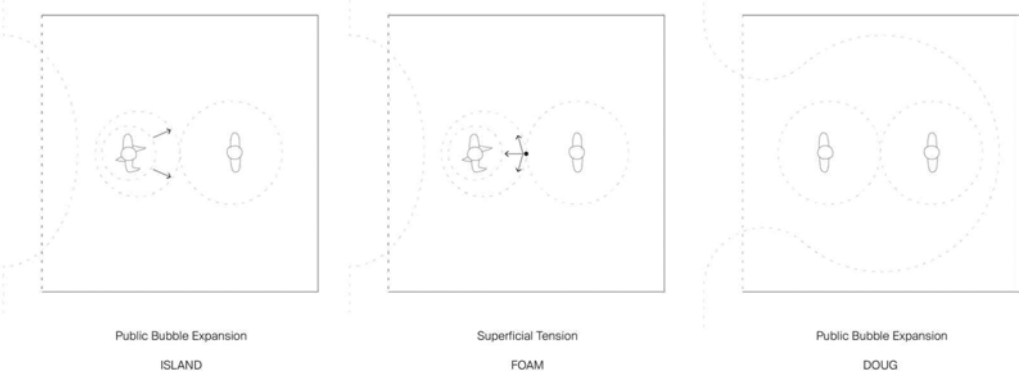

Figure 2: Engaging in public life in public buildings

In recent *late modernity*, architectural practice's success was defined by the amount and impact of its cultural building's designs. Buildings were designed as global and interchangeable representations of modernity: Museums in China that could have been libraries in the US or Theatres in Switzerland that could become Casinos in Thailand. Cultural buildings became consumer products shaping local, national, and global identities. Nevertheless, the lack of connection with their immediate visible and invisible agents and ecologies limited their effect on the public sphere to eminently economic value (regeneration, gentrification, touristification). To avoid undesired effects and ensure positive impact on the public sphere, public buildings must incorporate *collective knowledge* into a building that is an *open-ended process* instead of a *finished object.* Public buildings as agents of the public sphere keep the purpose of facilitating through technical solutions the union of individuals to form a collective through a common activity while embracing their conflictive nature as spatial agents of a *complex urban ecology* [3]. Cultural public buildings combine collective interest into affordances and possibilities that host civic relationships.

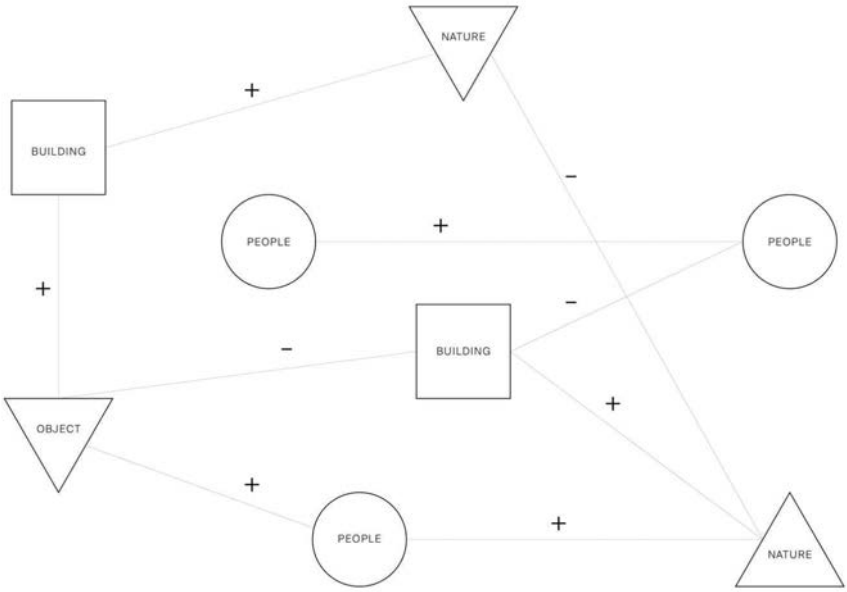

Figure 3: Ecology mapping: public buildings as agents in a complex urban ecology

As cultural public buildings, libraries are a representation of a specific civilization and demonstrate the values and aspirations of their immediate and extensive community. In late modernity, not only are external reference points fluid but there is also a continuous process of "self-actualization" or "life politics" as Anthony Giddens articulates it. Individuals "who using their own resources try to change the course of their own life" [4]. From a time when our life was defined by solid references (religion, profession, family) we shifted towards a situation where the definition of the self is completely dependent on the individual's capability to continuously improve oneself. In this context of liquifying institutions and reflexive exploration of the self is where Makerspaces as community spaces emerge as a space for belonging to counteract alienating modern existence.

Figure 4: MAKERLAB: Proposal for a spatial intervention

Makerlabs: experimenting with makerspaces in libraries

Democratization of knowledge has turned citizens into *prosumers*: producers and consumers. These terms not only refer to an economic exchange but also to a change of roles in cultural institutions. *Prosumerism* has turned cultural institutions –from which also libraries– into *performative spaces* [5]. In these spaces, users are expected to engage with the available tools in co-creation. Makerspaces in libraries are a great example of performative spaces because of their critical role in repurposing spaces for literacy. Whether focused on creativity or innovation, makerspaces in libraries share the goal of enlarging literacy beyond books.

The challenge of transforming libraries' civic role is one of programmatic and spatial magnitude. On the one hand, new functions demand different activities, themes and ways of doing. On the other, giving new meanings to traditional building functions requires original design

concepts and methods. The objective of the Makerlabs project is to demonstrate how a design intervention in an existing public library can activate the building's agency in the public sphere, motivate use and human interaction and therefore produce cultural value dynamics in and around the makerspace.

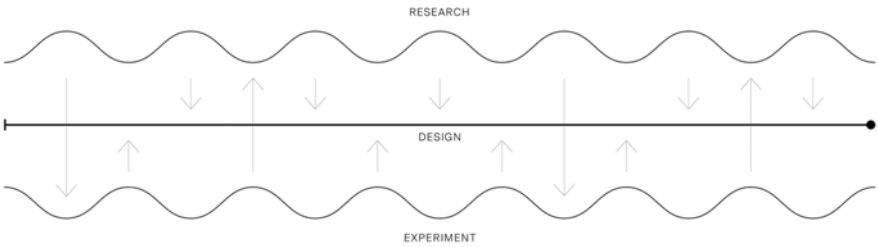

Figure 5: Research Synergy: non-linear design driven research

The Makerlab project is a two-year collaboration between the Royal Library of the Netherlands, Delft University of Technology, Hogeschool Rotterdam and 4 pilot libraries per year cycle. The project departs from a co-creation process with library representatives, users and *making* experts clarifying the themes and cultural values of each makerspace. Later the PhD candidate translates the received input into a design blueprint where the functions and spatial gestures are presented. In that phase, Industrial Design students take over the given blueprint to design products or experiences that enhance the designed value-spatial framework. The last phase of this design experiment is to integrate the transdisciplinary research findings on

makerspaces' program, space and objects into a spatial intervention to be built in the library [4].

As the first case study of this Design Driven Doctorate, the project serves to prove a discursive methodology where there is a continuous back and forth between theory and practice, thinking and doing, words and drawings. Instead of following a linear approach, the research is designed to develop literature review and design premises simultaneously to maximise their synergy [5]. For example, designing the indoor-outdoor connection of the makerspace will bring the focus to what are the conditions of spatial publicity. Inversely, reading about Spinoza's contributions to architecture leads to discovering designs such as the Fun Palace. The experiments will consist of a three-step testing process: designing, executing and reflecting on the intervention. Ultimately, the Makerlabs experiments will prove by design how the agency of a public building in the public sphere can be activated.

1————Merriam-Webster.com (2021): »Threshold« in: Merrian Webster Online Dictionary. https://www.merriam-webster.com/dictionary/threshold.

2————Palese, Emma (2013): »Zygmunt Bauman. Individual and Society in the Liquid Modernity« in: SpringerPlus 2, no. , pp- 2–5. https://doi.org/10.1186/2193-1801-2-191.

3————Lefebvre, Henri (1991): The Production of Space. Malden, MA: Blackwell. https://doi.org/10.4324/9781315565125-7.

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Belgrade on Screens Before the War / Before the Truth (Cut 1)

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Intermediate doctoral stage

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#

Belgrade, Discontinuity, Film

Abstract

The project "Belgrade on Screens: Visions of Continuous Discontinuities" explores Belgrade's urban destructions through (post-)Yugoslav moving images. Cities being self-paced to their built environment, architectural discontinuities refer to disruptions, losses, and traumas caused by wars, inner conflicts, or political decisions. However, while film cutting essentially constructs continuity, filmmakers use discontinuous editing to emphasize emotional response by atypical shot-arrangements. Affecting collective memories, films articulate and manipulate the image of a town and its inhabitants.

Therefore, how do cinematic effects and scenography manifest Belgrade's discontinuities? How do audiovisual media impact our cognitive awareness of a city? Do they produce new interpretations or generate any misconceptions?

Developed with a theoretical background, the first phase is an archival investigation within genres showing decisive historical urban "gaps" in the 20th century. Collected data will be analyzed, before being re-used for the second part of the research as immersive video-collage.

Paper

Background

The topic of the project "Belgrade on Screens", its initial structure, purpose, and relevance having been introduced during the last CA2RE conference in Hamburg (March 2021), it is perhaps more beneficial to continue the discussion based on previous remarks, including implicit further elaboration on aspects listed above.

After some first reflections on the central notion of this research — "dis/continuity" — one of the challenges is to break such a wide and complex concept into several subcategories for an easier overview. By doing so, it is

necessary to decide which types of dis/continuity will be taken into account. Moreover, valued subjective (individual) positioning and emotional commitment are acknowledged as crucial starting points. Thus, the main goal is to translate this relational-situational practice to an ideological-political (global) sphere, and move progressively away from the personal approach. Discussing deeper ethical sides of dis/continuity can, indeed, justify the project's relevance and its further application. Lastly, it seems essential to insist on the nature and the target of the outcome, because it will vary depending on whether the goal is to *show* or *change* dis/continuity. However, it is by no means a question of *resolving* it, but rather reinterpreting and recontextualizing. To avoid undesirable surprises, it is wise to start experimenting with selected material as soon as possible. "Cut 1" is the first fragment.

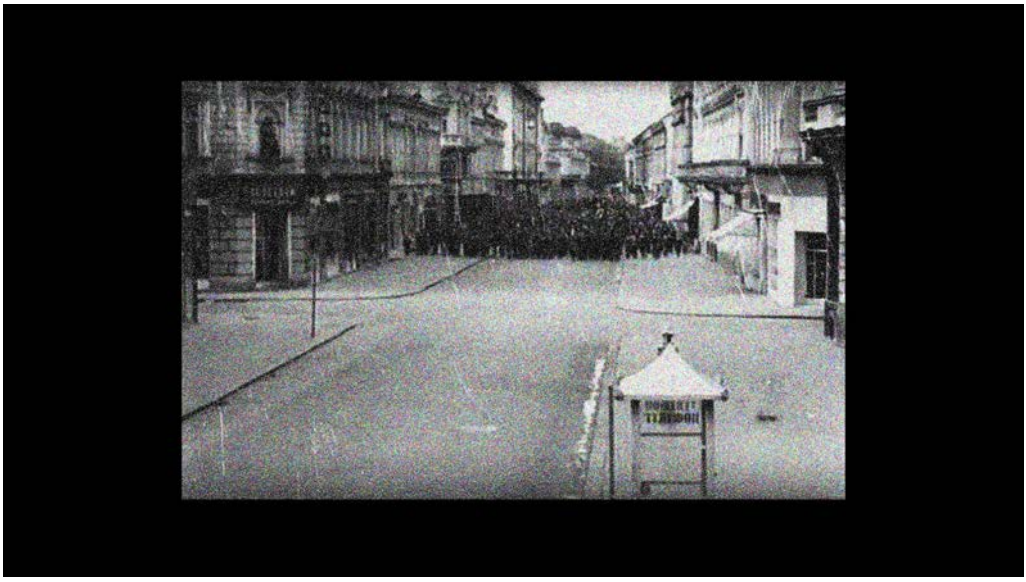

Figure 1: Film still from "Pre Rata" [Before the War] (d. Babić, Vuk. 1966)

Cut 1

Originally imagined as a multi-channel video work, "Cut 1" forms a dialogue mainly between two particularly contrasting films: "Before the War" (d. Vuk Babić, 1966) **[1]** and "Before the Truth" (d. Kokan Rakonjac,

1968) **[2]**. At first glance, the only factual elements that seem to bring these two films on a comparable level are the moment of their production and their somewhat evocative titles. For example, while the first film is a comedy set in the interbellic period, the other is a Black Wave [1] drama picturing contemporary issues. Nonetheless, protagonists narrated by Rakonjac are haunted by their respective traumas from World War II. In fact, if we take a closer look at the represented places (space) and dynamics (society), we will start noticing multiple visual correspondences as well as thematic or even verbal superpositions. Ironically, the same type of discontinuity happens by the end of "Before the War" as at the beginning of "Before the Truth". This link automatically appears as a continuous and logical course of events. Although nothing seems to unite them, both stories may melt into one and unique reinterpretation of the past, by a combination of parallel or intersected scenes that create subliminal echoes with today. The intention is to "rethink" (reformulate) the past as a form of response (or question) to current sociopolitical challenges.

Reformulations: awareness, rich language, playful lexicon

To determine any project, it is important to use precise words. But when it comes to design-driven research (DDr), the addressed topic REFORMULATION invites us to pay even more attention to the vocabulary. Each term should be considered carefully, before being introduced. For instance, there is one word that should be used with higher concern, as it is charged with heavy connotations and could be misread: urbicide. Although it means "the destruction of a city or its character", [2] it has to be considered on a larger scale. Noting how often this word appears in political discourse, it is disturbing to witness at the same time its normalization, trivialization, and even sensationalism.

Figure 2: Film still from "Pre Istine" [Before the Truth] (d. Rakonjac, Kokan. 1968)

The proposed project is, per se, a *reformulation*: of history and memory; of cinema and television; of a city and its performances. The full title — "Belgrade on Screens: Visions of Continuous Discontinuities" — and previously described processes suggest a combination of different VISIONS. In this particular context, employed and implied polysemy is worth mentioning.

Firstly, the subject's main entity being films, *visions* refer foremost to the "ability to see". Conversely, audiovisual material influences viewers' "idea or imagined mental image of something" while powerfully affecting their "experience in which [they] see things that do not exist physically". Simultaneously, although "beautiful and impressive sight" commonly applies to a person, we can associate it with the city as a cinematic aestheticized leading character. Finally, the "ability to imagine how something could develop in the future" involves filmmakers as much as architects or urban planners. [3]

By adhering to all the above-mentioned definitions, the entire discussion can be reformulated into the following questions: how does vision influence collective visions or create alternative visions, and how does it describe visions of a city or reveal upcoming visions? But instead of dealing with homonyms, the number of meanings can be both reduced and extended by replacing *visions* with *versions*. In that sense, multiple "versions of continuous discontinuities" bring additional *insights*. Considering *version* as a particular element that "varies from other forms of the same thing" or "is slightly different from its previous or later forms", it becomes clear that the quantity of design-driven results is limitless, since qualitative and intuitive. In the same way, *version* as "translation" allows enough subjectivity. [4]

Therefore, different versions — official or invented — of listed visions can also be presented in different versions. Hence, ideology and political orientations shape every individual's narrative, producing dissonant realities. Besides, consequent antagonisms tend to be more

visible in systems where democratic principles are either superficial or nonexistent. This is also why a single frame can easily manipulate two (or more) divided audiences. Similar to how music implicitly regulates perceiver's moods, verbal information sends explicit messages. For example, in his essayistic documentary "Letter from Siberia" (1957), Chris Marker offers three versions of Yakutsk with the same shots, but contradictory statements. Eric Michaud also evokes these oppositions as "*image témoin*" [witness] and "*image acteur d'histoire*" [actor of history]. [5]

Furthermore, since this project principally consists of collecting and exploiting footage for a better understanding of the past, it is interesting to highlight it as a double procedure: *collection* and *recollection*. The first activity indicates the "process of bringing information together from different places or over a period of time" [6] as well as a "group of objects or amount of material accumulated in one location, especially for some purpose or as a result of some process". [7] The second activity is the "ability to remember past events" or the "memory of something". [8] In this model of reformulation, we can wonder: how does the collection of the same kinds of items contribute to the recollection of what these items represent?

Inspirations, influences

Many examples illustrate similar concerns with comparable or totally different approaches, showing the growing enthusiasm for this topic. The most recent and imposing one is Canada's national exhibition at the ongoing Venice Biennale for Architecture, "Imposter Cities / Edifices et artifice / Inganni Urbani": "conceived as an audiovisual installation, four, 3-meter-high folded screens immerse visitors in film-famous modernist icons, (…) [and] display a four-channel video supercut that combines clips culled from over 3,000 films and television shows shot in Canada." [9] A part of the

exhibition contains interviews with Canadian architects, set designers, film directors. One of them, the filmmaker Luc Bourdon, calls Montreal a "vast patchwork of influences" with its numerous replicas. He further wonders: "How can we have a strong personality on screen when we do not look at ourselves? (...) How can we be surprised that we do not disguise our own identity to resemble that of another whose image is dominant?" [10]

Even though these questions differ from those concerning Belgrade, Bourdon's film "Memories of Angels" (2008), which "pays tribute to the city of Montreal" — as stated by the National Film Board of Canada whose 120 films appear in the movie [11] — marks different kinds of dis/continuities on a shorter time-frame of two decades (1950s to 1960s):

— in used footage (intersections between genres, styles of filming, transitions, colors, narratives, spatial linearities, sound)

— in chronological, seasonal, and functional progressions (light/dark, daily activities/nightlife; summer-winter, sun-snow; exterior-interior, public-private, institutional)

— in urban planning (construction, reparation, modernization, infrastructural changes; social classes, multiculturalism, age groups)

Although Montreal can be perceived as a discontinuous city in terms of its search of own identity, the three stated types of dis/continuities appear to be a part of a continuous process, a "calm" and stable period, "golden days" of consumerism. There is no direct consequence on the population of a past war, nor a threat or signs for an upcoming one — even in the most tragic moment of fire, because this kind of tragedy happens in every city, it is here a further proof that precisely this type of unfortunate event is the most devastating one in a quite well-organized society. In this sense, the other big missing part that proves that, is the lack of political background — except the one obvious international gap

in 1968. Therefore, can we classify these types of dis/continuities as "peaceful" or "common", or is this an impression only because — to rephrase the director's comment — this could be almost any other western city (or aspiring to adopt western values and lifestyles)?

The most exciting moments are exactly the ones where locations are overlapping, echoing to each other, "continuing" or prolonging a scene and jumping from one momentum to an other and back again; or when we find the same characters (such as the couple next to the tree and later at a concert); or recognize a European actor such as the young Charles Denner in "YUL 871" (d. Jacques Godbout, 1966).

If this type of work was a first idea — or "vision" — to be achieved for "Belgrade on Screens", it became quickly clear that the full potential of doctoral studies might be missed: an homage peace like this one, showing a status quo or "this is how it was" can be done outside the academic design-driven methods and is liberated of scientific criticism or urgent *problématiques* to address. The other reason is that this type of "exercise" has been done earlier. [12] Nevertheless, a generic approach can be continued after the series of upcoming experiments as equal entities of a larger picture or puzzle, detailed fragments, events, or divided chapters (similar to the work of the artist duo Doplgenger).

Contrary to the previous "neutral" example, "My Winnipeg" (d. Guy Maddin, 2007) is an experimental documentary on the intimate and conflicting love/hate relationship between a city and its inhabitant/director. However, the architect-filmmaker Gustav Deutsch remains a dominant figure whose films have been acclaimed worldwide for his found-footage techniques, as a re-contextualization of memory, driven by "the delight in playing games of association". [13]

Figure 3: Screenshot from the ongoing editing process

Experiment and observe

"A single shot in itself means nothing — or potentially can mean *anything*. According to Kuleshov, a film's meaning therefore comes not from the act of filming but from the act of splicing. (...) [T]he use of footage implies a radical decontextualization and redefinition. Whatever the meaning or intention originally tied to this footage, that tie has been loosened. Kuleshov's method was to supply a new context, to supply a new meaning. (...) he demonstrated his control of meaning, while [Bruce] Conner (...) liberated the image into a wide range of associations — political, sexual and anarchic. Kuleshov displayed the semantic power of editing; found-footage films in the late twentieth and early twenty-first century rerouted this power, multiplying rather than defining it." [14]

Thus, by paying attention to the current avant-garde filmmaking, it appears that there are more and more approaches to cinematic "recycling". In one of her lectures, Mila Turajlić underlines that instead of claiming historical truths, "younger" generations seek a "new political subjectivity". She comments on how the real challenge of working with audiovisual archives is in

avoiding narrations of positivist historical evidence, and transiting the material as an instrument to visual historical discourse. [15] The importance of re-appropriation is maintained by Jacques Aumont's observation that historians treat images as a document, whereas anthropologists as "vectors of thought". Lastly, Jamie Baron examines how the "archive effect" creates new, alternative, or misread histories. [16]

"Cut 1" tests these conditions through rules and predefined steps allowing various layers of juxtapositions. [3] In this case, it is by doing, that methodologies take shape. Regarding the staging of the videos, it would be suitable to see the results of the first experiment before continuing with the design of the scenographic options introduced in the last presentation.

1——————Yugoslav film movement of the 1960s and early 1970s, known for a non-traditional approach to filmmaking, dark humor and critical examination of the Yugoslav society.

2——————https://www.lexico.com/definition/urbicide [accessed June 28, 2021].

3——————https://www.dictionary.cambridge.org/ [accessed May 8, 2021].

4——————Ibid.

5——————Michaud, Eric (2001): La construction de l'image comme matrice de l'histoire. Vingtième Siècle Revue D'histoire: Image et histoire.

6——————https://dictionary.cambridge.org/ [accessed May 8, 2021].

7——————https://dictionary.com [accessed May 8, 2021].

8——————https://dictionary.cambridge.org/ [accessed May 8, 2021].

9——————https://www.impostorcities.com/fr/projet [accessed June 27, 2021].

10——————In Conversation With: Filmmaker Luc Bourdon, Impostor Cities / https://www.youtube.com/watch?v=Gx_BWHWsI3A [accessed June 27, 2021].

11——————https://www.nfb.ca/film/memories_of_angels/ [accessed June 26, 2021].

12——————In my Bachelor thesis, which is used as my main reference catalogue, I analyzed and classified 118 feature films where Belgrade appears explicitly.

13——————Kos, Wolfgang (2009): "Ethos of the Ephemeral: Gustav Deutsch's Educational Methods", in: Wilbirg Brainin-Donnenberg, Michael Loebenstein (Eds.), Gustav Deutsch, Vienna: Synema, pp. 49-62.

14——————Gunning, Tom (2009): "From Fossils of Time to a Cinematic Genesis. Gustav Deutsch's Film ist." in: Wilbirg Brainin-Donnenberg, Michael Loebenstein (Eds.), Gustav Deutsch, Vienna: Synema, pp. 163-180.

15——————Archival Storytelling — Rules of Engagement, Conference "Prime Time Nationalism", OSA archivum, Budapest. (2016).

16——————Baron, Jamie (2014): The Archive Effect: Found Footage and the Audiovisual Experience of History. London: Routledge.

Ark Architecture Space Suspension Strategies

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Intermediate doctoral stage

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#

ark, future, suspension

Abstract

The contribution aims to construct a journey towards the figure of the ark. After a brief analysis of the mythological tales where the ark originates, the reasons and the contemporary scene from which the ark emerges will be discussed followed by its strategy of action in time. Some examples from the history and theories of architecture will be used to think about some authors who have already expressed on this theme and who therefore constitute the theoretical foundation within the disciplinary boundaries; consequently, some examples of contemporary arks, whose objective is the refounding of space by crossing a time of suspension, will be considered. Finally, an attempt will be made to reflect on the conclusions of this research, that is, to deal with ark as architectures of expectation.

Extended abstract

Architectures, cities and territories are today crossed by transformations out of control. The advancement of forests, the intrusion of animals, floods, earthquakes, fires, are changing the "territory of architecture" after years of apparent stability. At the same time, as argued by the Italian philosopher Federico Campagna, we are witnessing the collapse of an old world giving way to a new one for which we are unprepared, and for which we need new design tools[1]. In the face of the loss of the notion and the condition of order, and in front of new unknown cultural and life questions, we see the need of strategies that acting in advance and working over a long period of time can save those materials that could be lost but at the same time could be useful to design new beginnings: we need a new Noah's Ark. We find ourselves, to quote a drawing by Massimo Scolari, "At the end of history", inside an "apocalypse" where "all is lost" and the city is in fragment. The modernist certainty of a bright tomorrow gives way to unpre-dictable

futures: it is therefore the time of a new refoundation cycle.

Figure 1: Entering the ark. Svalbard Global Seed Vault, Norway, 2008. Ph. Matthias Heyde

Figure 2: The ark. Svalbard Global Seed Vault, Norway, 2008. Ph. Matthias Heyde

The immersion in what Timothy Morton calls "Dark Ecology", questions architectures and tools able to anticipate the present, at the same time to review some positions of architecture from its foundations in front of contexts defined no longer by the static data but by the emergence of other entities which claim for space[2]. We are therefore witnessing today the return of a figure, in reality ancient, called the ark, understood as

architecture to accumulate necessary treasures and ferry them to other destinies by suspending their use. Hubert Damisch has the merit of having brought attention to this ancient figure by bringing it back into the architectural debate. His essay, entitled *Noah's Ark*, is a rereading of the figure of the ark from the *Encyclopédie* of Diderot and D'Alembert[3]. The first part of Damisch's essay insists on the definition of "architecture" written by the famous French architect François Blondel for the *Encyclopedie*, who speaks quickly about the history of architecture insisting on the discipline as a fact of orders, composition and proportions, making it emerge still as a classical discipline and entirely understood as geometry. Nothing is said about construction and site techniques, or about the social meaning of the profession. Paradoxically, says Damisch, architecture is better treated in another entry of the Encyclopedie, the entry "ark", referring to naval architecture. The entry is written by Abbé Edme-François Mallet and occupies three times the space occupied by the entry "architecture" for a total of four pages and offers not so much an alternative to the entry "architecture" but a compendium of it. The text does not give "etymological" definitions of the word "ark" but neither does it give a definition directly referring to the sacred scriptures: for Mallet an ark is Noah's Ark. After setting out the reasons for the design of the ark – understood by Mallet as a survival device – along with its design, dimensions, materials and internal maintenance, the author reasons for the rest of the article on the design, technical and logistical implications present in the history of the ark, through the treatises or words of Origen, St. Augustine, John Wilkins, Buteo, Kircher and Isaac Newton, who in the words of Damisch sets up a "functionalism ante litteram". From the text of Mallet, through that of Damisch, emerges an "enlightened" declination of the figure of the ark, intended therefore to the agreement with the laws of nature (this through the mathematical demonstration of its exact dimensions, enough to contain all

the animals and at the same time to float on the water without sinking) and therefore functionalist; not least the ark is loaded with a further declination, all modernist, or the naval meaning, with a salvation attempt inside the so called "flood".

The ark in fact stands as a closed but ephemeral and defenseless architecture, able to retain precious materials, to block their aging until they are released when necessary[4]. The construction of real arks such as the Svalbard Global Seed Vault in Norway[5] calls into question this ancient figure, an archetype, necessary to carry us and our treasure toward a remote distant time. So, the Vitruvian notion of *utilitas* undergoes a twist in the sense of its possible suspension, this is the main question of the research: architecture, which has always been built for the immediate, is instead designed in advance, to be put "on hold" and then "used" in a distant future. Living today becomes therefore an expectation[6], literally a "tension towards", a journey towards a destination, a look to what is yet to come, based on the future[7].

The ark's strategy involves a temporal dynamic that consists of a triad composed of anticipating reality, suspending time and pervading the existing, with the final objective of re-foundation.

Figure 3: The entrance tunnel. Svalbard Global Seed Vault, Norway, 2008. Ph. Matthias Heyde

Anticipating reality speaks of the foundation of the ark starting from a prediction of a tomorrow that is expected to be unknown. In today's world it is a question of anticipating reality, we need to ask ourselves about possible new practices of forecasting, between the realism of science and the oblique imagination of magic[8]. At the same time, the question that Mike Davis asks about "Who will build the ark"[9] with what remains of our world today is at the center of the foundation of this figure: it is a question of choosing things not to be missed for the future, and then to deprive ourselves of them today. In Davis' idea the ark is a collection of waste materials, of forgotten things, anonymous materials that we want to save; we are talking about architectures built starting from choices of what is necessary, that reveal their strength in the sense of restraint, of a wait that is a choice of time in which to act. Of course, it remains to be seen how this prediction will be realized, if it is reliable, if what is predicted will happen, but what is on question here is that the ark is planned with a possible future ahead of it, a destiny written before.

Figure 4: Frozen time. Svalbard Global Seed Vault, Norway, 2008. Ph. Matthias Heyde

The second moment of the ark is the crossing of those contexts that are changing. The seal, the total absence of an exit defines the importance of what is housed inside but of course during the "flood" the shipwreck is always possible, architecture could also fail. What is inside the arks must be "frozen" or cultivated: like an "enclaves in time"[10] the ark goes through the places while they change, remaining "suspended", sealed but defenseless, retaining its contents: the ark is not only a conservative attempt but an extreme exploration of the future.

Figure 5: The seal. Svalbard Global Seed Vault, Norway, 2008. Ph. Matthias Heyde

The third stage is finally marked by the opening of the architecture. The trauma is over, the ark is dismantled, and its content is freed to pervade and change the existing, "what has been lost", or that has remained secret for years, can return to upset the already known coordinates. It is therefore a matter of suspending "the use of the bodies"[11] to "abandon spaces" to bring in the future those treasures, if not also life, that will serve to refound future new worlds. We will call them architectures of expectation.

Figure 6: The treasure room. Svalbard Global Seed Vault, Norway, 2008. Ph. Matthias Heyde

1———See Campagna, Federico (2018): Technic and Magic. The Reconstruction of Reality, London: Bloomsbury. The philosopher argues for the return of magical techniques to design the new world to come, in reaction to the collapse of the old one.

2———See Morton, Timothy (2016): Dark Ecology. For a Logic of Future Coexistence, New York: Columbia University.

3———See Damisch, Hubert (2016): Noah's Ark. Essays in Architecture, Cambridge Mass.: The MIT Press, pp. 1-24.

4———See Slotedijk, Peter (2014): Spheres II. Globes, Cambridge Mass: The MIT Press.

5———The project, its content and its reasons are documented in Fowler, Cary: Seeds on Ice, New York: Perspecta Press

6———About the theme of expectation see for example Nancy, Jean-Luc (2017): Expectation: Philosphy, Literature, New Yorkk: Fordham University Press.

7———The Italian world "attesa" means literally "come to an end", "aspire to", "strive for". See www.etimo.it, consulted 2021.05.09.

8———About possible forecasting tools see for example the research contained in the journal "Nature" or in the journal "Future".

9———"Left to the dismal politics of the present, of course, cities of poverty will almost certainly become the coffins for hope; but all the more reason that we must start thinking like Noah. Since most of history's giant trees have already cut down, a new Ark will have to be constructed out of the materials that a desperate humanity finds at hand in insurgent communities, pirate technologies, bootlegged media, rebel science and forgotten utopias". See Davis, Mike (2010): »Who will Build the Ark?«, in New Left Review 61, p. 30.

10———See Lynch, Kevin (1972): What Time is This Place?, Cambridge Mass: The MIT Press, and the recent research book Foscari, Giulia UNLESS (edited by) (2021): Antarctic Resolution, Zurich: Lars Müller Publisher. In the seventh chapter, ice as an ark containing unmissable 'times' is mentioned with the example of the Svalbard Global Seed Vault and the United States National Ice Core Facility.

11———See Giorgio Agamben (2014): The Use of Bodies, Vicenza: Neri Pozza.

The Design of the Monumental Grounds Moved by the AlpTransit Construction Activities in the Swiss Landscapes

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#

moving ground, earthworks, infrastructural monuments

Abstract

The research focuses on the AlpTransit highspeed railway project connecting Italy and Germany through Switzerland. The construction activities of the Gotthard and the Ceneri tunnels that took place between 1999 and 2020 have produced more than 34 million tons of excavated materials. As a result, huge artificial mountains, refilled delta and altered topographies made of inert waste have powerfully reshaped a number of Swiss territories close to the infrastructural construction sites. A selection of photographs and drawings (temporal maps and topological drawings) provides an interpretative inventory of the major ground movements and inert disposals linked to the AlpTransit: the Reuss Delta, Sedrun, Cavienca, Biasca, Sigirino. The contribution aims to interrogate both their monumental character and their deep, material impact on landscapes, disengaging earthworks from exclusively technical approaches and questioning their meaning inside the landscape architecture thinking, language and design process.

Paper

Introduction

A direct, empiric observation of the construction phase of landscape architecture interventions, from private gardens to public parks planned and realized in the south part of Switzerland between 2009 and 2018, becomes an opportunity to think about ground movements linked with the construction phases of landscape and architectural projects.

This observation led to the re-consideration of some basic actions that are often totally implicit in the landscape and architectural practice _ like dredging, digging, mass grading, sloping, contour bounding, embanking and, most of all, landfilling. Indeed, if we

take into account the construction or the demolition phases of a building, a street, even a park looking at the secondary effects of the construction activities, what we might notice is a significant number of neglected earth (soil, stones or debris) movements that structurally act inside the landscape and that both provisionally and permanently deeply affect it **[1]**. In spite of their material impact [1] and of the powerful suggestion of their forms and sizes, great tumuli coming from complex building sites are treated, as per standard practice, like outcomes to be handled as secondary concerns.

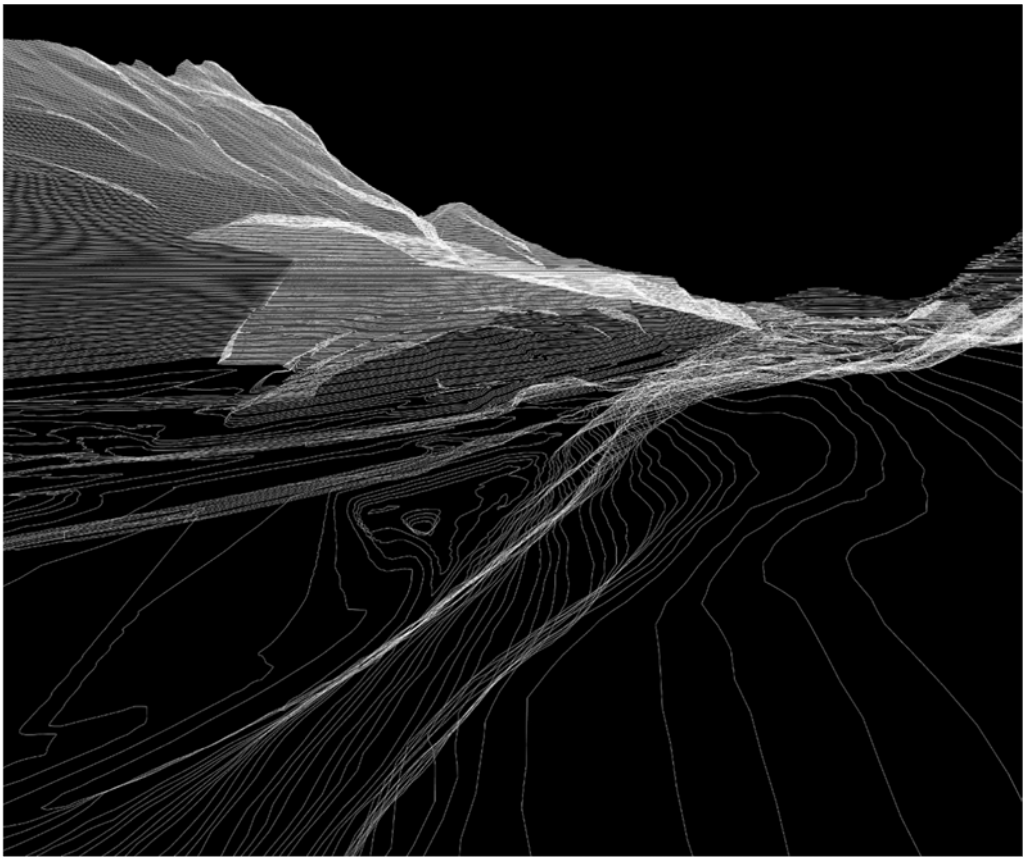


Figure 1: Sigirino artificial mountain, view from the north side (from Mezzovico), 2020. The earthwork rapidly grows and changes inside the ever-changing landscape. Moreover, it questions the real mountain "original" identity: the artificial mound seems to directly *ecto-parasite* the "natural" one and to gather its strength from it, adding a new outgrowth that, watching from afar, imitates and reproduces the forms of a real hill.

The major questions that gave rise to this research thus are: how these kinds of earthworks could enter straight into the (landscape) design thinking and process?

How is it possible to knowingly assemble and design a landscape out of landfilled construction ruins? And how these earthworks could change the present architectural (visual, technical, cultural) language?

Problem Framing

As we advance in the investigation on earthworks inside landscape, we are faced by the challenges posed by the fact that there is an increasing number of partially unexplored earth-structures _ as landfills, embankments, ground-levelling and ground-fillings _ coming from a multiplicity of complex building operations that affect a large number of territories and that are silently designing our landscapes. At the same time, these non-standardized, un-recognized objects powerfully merge the contemporary expanding field of landscape architecture [2], with outstanding, pioneer engineering activities, with a revolutionary artistic practice tradition [3], with pressing ecological questions [4] and with the memory of ancient _ Greek, Roman, Egyptian, Inkan... _ "cyclopean" architectural forms **[2]** and techniques [5]. New malleable, changeable, non-deterministic and situational architectural languages emerge right before our eyes.

Considering this first observation phase as a thought-provoking starting point for proposing a new design-based point of view, I've addressed the investigation on the moving ground actions and their current role inside landscape architecture discipline chiefly reflecting on contemporary complex construction sites and on the design solutions based on huge amounts of wasted earth deriving from the realizations of monumental infrastructural interventions.

While indeed it is difficult to find a proper and significant system of earthworks starting from small up to medium ordinary construction activities _ that fragmentarily works on relatively small excavations, fills and depots _ the study of infrastructural interventions allows the observation of great earth movements inside challenging construction processes, leading to sizeable issues [6], meaningful (public) debates, ambitious policies and, sometimes [7], to ground-breaking solutions.

Most of all, the present study is addressed to what is considered the "final" stage of earth movements inside an infrastructural construction process, namely with the spoil disposals inside landscape.

Figure 2: Rheinelbe Spiral Hill and Skystairs in Mechtenberg, Herman Prigann 1999. Photo by the author.

It is precisely in that moment, in which the exchange between the flux of unshaped matter, the human or mechanical design and the landscape that contains it takes place, that seems particularly interesting.

The landfilled deposit indeed comes to life, as a kind of living organism confronted with the (engineers) design decisions, with the earthmoving machinery actions, with the open possibilities arising from the landscape becoming and from the earthwork's own behavior.

Case Study

The selected main area of investigation is the Alpine region, where a number of major high-speed rails are today under construction to cross national borders, to facilitate mobility of goods and people, to preserve fragile and natural environments **[3]**. The contemporary landscape of the Alps, with its measureless delicacy and mystery, has been the object, among others, of a seven years research led by Armin Linke [8]. In contrast with a nostalgic, glossy image often used to represent the Alps, Linke describes them as a key European autonomous satellite, that is connected to major global, modern transformations and to their powerful illusions.

Looking at this specific framework of "contemporary avant-garde" and experimental landscape scenarios, the present investigation in particular focuses on the Swiss territory, where already one-third of the settlement and urban surface areas is taken up by the transportation system, namely by roadways, railway installations, airports and airfields [9], considering its evolution after the end of the twentieth century, when the rail and route construction activities became more intense and impactful.

In this context, the recent realization of the three NRLA base tunnels (the Lötschberg, the Gotthard, the Ceneri) helps to better connect Southern Germany to Northern Italy and avoids further land consumption, while at the

same time preserving several aboveground environments. The analysis of the key case study thus concerns the New Rail Route through the Alps (NRLA) and especially dwells on the landscapes related to the Gotthard Base Tunnel (57 km long, 1999 – 2016) and to the Ceneri Tunnel (15 km long, 2006 – 2020) with their portals, intermediate access points, disposal areas and main construction sites.

Figure 3: The Gotthard tunnel access point in Bodio and a map of the Alpine region with the high-speed railway projects that should cross the mountains through tunnels. Photo and drawing by the author.

Indeed, as the NRLA tunneling work progresses, the complex relation that occurs between the challenging construction process and the monumental ground movements it produces has become increasingly relevant. If the entire excavation of the Ceneri two single-

track tunnels gave rise to a total of about 10 million tons of inert waste, the entire construction of the Gotthard axis originated more than 24 million tons of material, of which only a portion has been reused for producing concrete and shotcrete aggregates, while a considerable surplus has been destined for “recultivation requirements” or “environmental restorations” [10].

A constellation made of huge ground movements has followed the progression of the AlpTransit construction activities.

Development

The inspiring, strong relationship between Swiss mountainous regions and streets or railways has already been the object of various investigations, that have highlighted the existing critical connection between the imaginary, mythical alpine landscape and its implications on the collective identity, as in the case of the Gotthard massif [11] or the connection between rough topographies and great technological-engineering challenges [12] or between infrastructure, territory and strong formal architectural interventions [13]. Even AlpTransit Ltd, since the beginning of the construction project in 1993, consulted a trans-disciplinary group, the “Beratungsgruppe für Gestaltung” [14], that mainly gave rise to the specific and recognizable architectural language used for portals, viaducts, ventilation funnels, retaining walls. This research aims to look at the topical relation between the highspeed infrastructures, design and landscape rather from a different perspective, in which the so called “Infrastructural Monuments” [15], are inextricably linked with their produced monumental ground movements. The focus thus shifts from the “super-structures” to the inert leftovers just dumped out from their construction process, identifying and studying the broad excavated earth’s volumes spread as spoils inside the NRLA nearest territories.

At the core part of the research, currently in progress, drawings and photographs graphically frame the physical state of the five NRLA main earthworks and illustrate the amount of earth moved and ultimately relocated inside a river delta, two wooded valleys, an alpine village and an urban periphery thanks to different disposal strategies, that urgently trigger, among others, ecological, topological and formal design questions [16].

The selected sites are the Reuss Delta, Sedrun, Cavienca, Biasca and Sigirino, **[4]** that are the greater and most impactful inert deposit solutions arising from the tunneling construction activities.

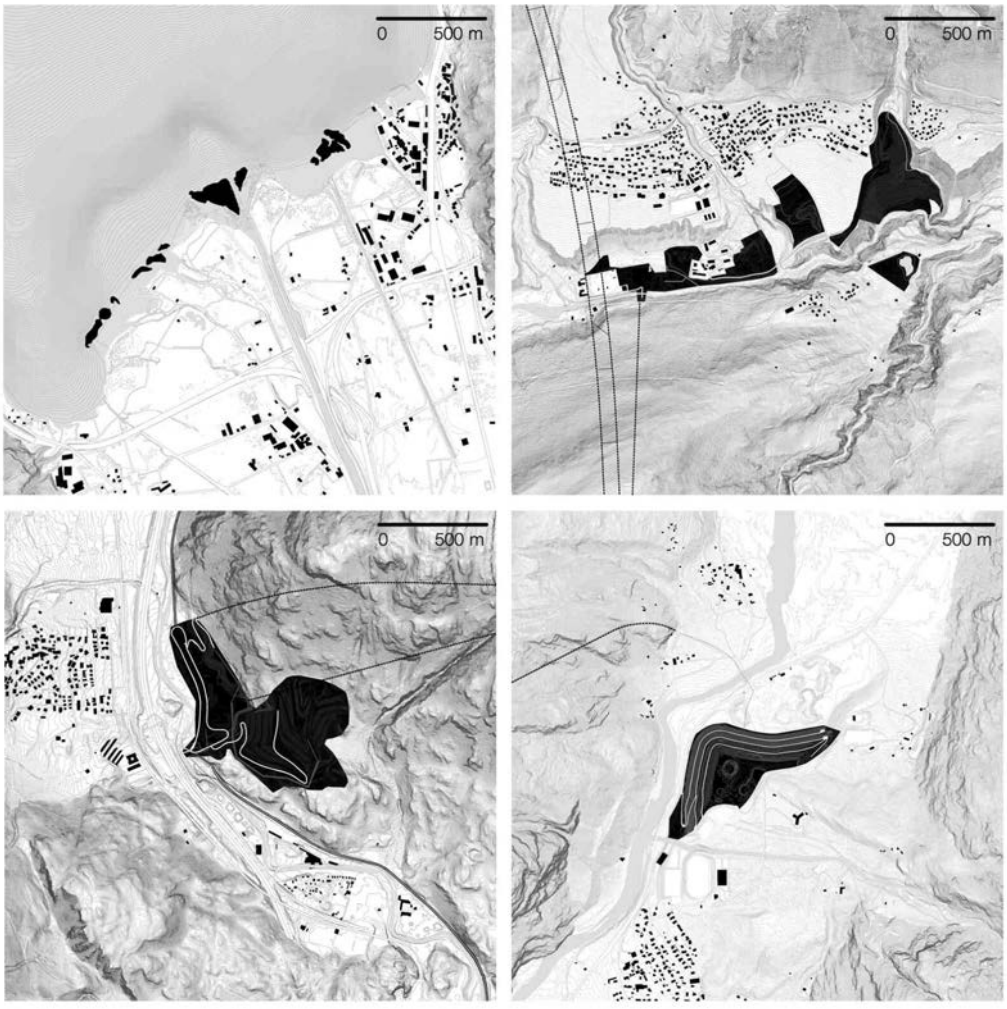


Figure 4: Maps of four of the five considered sites: in dark the disposal places of the AlpTransit inert waste. From the top left: the Delta Reuss disposal site, the Sedrun access point and disposal sites, the Biasca disposal site, the Sigirino access point and disposal site.

The proposed inventory [17] (currently work-in-progress) evidences how tons of material _ arisen from the Gotthard base tunnel and transported by train and ship to the Delta Reuss (more than 3.3 million tons) _ have been used to fill the lake and to redesign the previously eroded river mouth, or have been spread in different areas near the Sedrun NRLA access point (more than 4 million tons), or have been transported by a conveyor belt through a spoil tunnel and dumped in the Biasca disposal site (about 6,9 million tons) to recreate a talus cone. More recently, about 7 million tons of material originated from the Ceneri base tunnel excavation process have been dumped in Sigirino and assembled near the existing mountain to form a new, artificial mountain, thanks to reinforced soil walls and a series of 2:3 slopes.

Presented temporal maps, topological drawings, short descriptions and photographs interrogate the sympoietic transformation of these sites _ where ground movements could be perceived as challenging opportunities inside an endlessly changeable nature.

Moreover, the inventory might become itself a possible reservoir for future projects.

In this respect the thesis blends real earthworks states with imaginary future solutions, continuing and, somehow, extremizing the existing ground mounds shapes **[5]**. This process allows to envision how could they evolve as:

— two monumental artificial mountains (Biasca and Sigirino),

— a monumental wall (Cavienca),

— a monumental re-shaped topography (Sedrun),

— a monumental re-naturalized river delta (Reuss Delta).

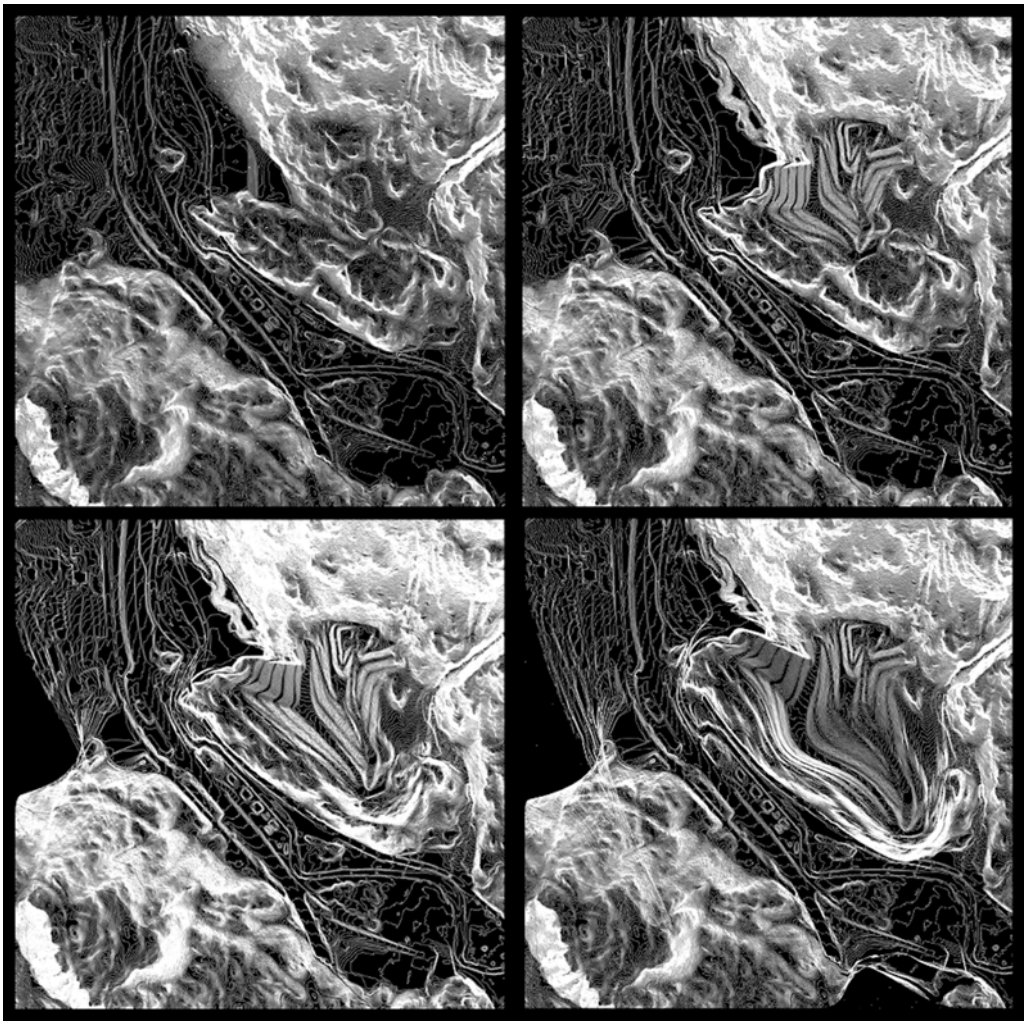


Figure 5: Sigirino: a monumental mountain, 2005- 2015- 2030- 2050. Images are combining the past and present real situations (2005-2015) with a work of fiction that envisions the artificial mountain becoming up to 2050. Drawings are made by the author on the basis of the Swiss National Cartography maps, the official AlpTransit AG technical drawings and a series of interviews with the BGG (Beratungsgruppe für Gestaltung/ AlpTransit AG) in 2018-2019.

Open Conclusion

The final step of the research (still in progress) would be the definition of the meaning of Monumental Ground and the framing of a landscape manifesto: the need to reuse earth, to revise C&D inert waste, to reduce soil consumption and to valorize, in general, new ecologies linked to the construction activities that affect human and natural environments lead to an urge to better understand the role of design and opens up to a definition of new formal structures inside landscape.

The analysis (consisting of the observation phase, the mapping of a theoretical framework, the research on the main case study) together with the investigation trough drawings lead to possible interpretations of emerging earth-based landscapes in terms of figurative inventions and topological relationships, blurring their figuration within the dialogue among ecology, technique, and form.

The possible design approach to the moving ground infrastructural sites indeed appears to be placed between:

challenging **topological site transformations**, made by traces of construction activities, efficient earth management systems (linked to the excavation system, the transportation system, the water management system, etc.) and high technological solutions linked to the infrastructures.

New **constructed ecologies** that, in a completely artificial environment, imply the creation of dynamic spaces which could extend the boundaries of infrastructural interventions to the multitude of nonhuman beings and generate the specific morphology, heterogeneity and performativity of natural environments.

New **forms** _ emerging from deep cultural strata made by strong symbolic presences and historical meanings, altered relations between underground and overground landscapes, between human present time and geological past, human scale and natural scale _ that are staging the irretrievably unpredictable, fragile and monumental aspect of earthworks.

1——————Only in Switzerland, in 2019 they have been produced about 15,5 million tons of waste from construction activities and there were more than 400 depots spread in the national territory (BAFU 2019).

2——————Meyer, Elizabeth K. (1997): »The Expanded Field of Landscape Architecture«, in George F. Thompson and Frederick R. Steiner (Eds.), Ecological Design and Planning, New York, NY: John Wiley & Sons, pp. 45–79.

3——————Krauss, Rosalind (1979): »Sculpture in the Expanded Field«, in October Vol 8 Spring, pp. 30-44.

4——————Tibbett, Mark (2017): Mining in Ecologically Sensitive Landscapes, Clayton: CSIRO Pulishing.

5——————Clifford, Brandon (2017): The Cannibal's Cookbook. Mining Myths of Cyclopean Constructions, San Francisco: ORO Editions.

6——————More than 800 million tons of material will be excavated during ongoing and planned large underground projects (tunnels, undergrounds and power plants) by 2030 in Europe.

7——————Although the reuse of inert materials in a more organized and systematic way started around the 50s, up until now the major innovative researches on this topic have been primarily addressed to findings linked to technological advancements, or to the need to reuse inert waste for high-quality concrete production and shotcrete aggregates. Among others, a recent EU-funded project has developed an automated system to analyze and sort excavated material as it is removed from the tunnel face by boring machines, providing information such as size, shape and mineral and water content in real time. An easier and quicker recycle of materials might substantially reduce the demand for primary mineral resources, and contribute to reduce environmental impacts.

8——————Linke, Armin (2011): Alpi, based on a research project of Piero Zanini, Renato Rinaldi and Armin Linke.

9——————Schubarth, Christian and Felix Weibel (2013): Land Use in Switzerland. Results of the Swiss land use statistics, Neuchâtel: Federal Statistical Office, pp. 8-9.

10——————Lanfranchi, Paolo, Emanuele Catelli and Thomas Bühler (2019): »Environmental reclamation for the Gotthard Base Tunnel, effects of spoil management on landscape«, in Daniele Peila, Giulia Viggiani and Tarcisio Celestino (Eds.), Tunnels and Underground Cities: Engineering and Innovation meet Archaeology, Architecture and Art, London: Taylor & Francis Group, pp. 404-414.

11——————Burkhalter, Marianne and Christian Sumi (2016): Der Gotthard. Landscape, Myths, Technology, Zurich: Scheidegger & Spiess.

12——————Conzett, Jürg (2010): Landschaft und Kunstbauten, Zurich: Scheidegger & Spiess.

13——————Frampton, Kenneth and Riccardo Bergossi (2008): Rino Tami: opera completa, Mendrisio: Mendrisio Academy Press.

14——————The BGG is composed by: Uli Huber, president (from 1993), Pierre Feddersen (from 1993), Rainer Klostermann (from 1993), Flora Ruchat-Roncati (from 1993 to 2012), Pascal Sigrist (from 1997), the AlpTransit AG representatives: Thomas Bhüler, Alex Regli, Walter Schneebeli, Peter Zbinden.

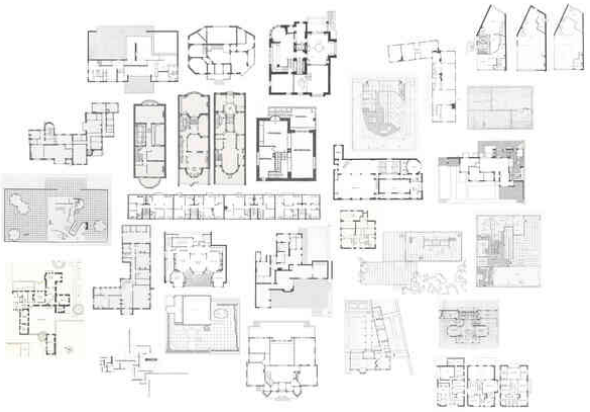
15——————MIT Center for Advanced Urbanism (2016): Infrastructural Monument, New York, NY: Princeton Architectural Press.

16——————Girot, Christophe, Annette Freytag, Albert Kirchengast and Dunja Richter (2013): Landscript 3 Topology, Topical Thoughts on the Contemporary Landscape, Berlin: Jovis.

17——————The drawings form a first "inventory" of the AlpTransit infrastructural/monumental main earthworks since these landscapes made by spoils have never been represented in their entirety, as a system of ground movements linked to the new infrastructure.

House Plans
A Society Matter

Carla Rizzo, Politecnico di Milano



Initial doctoral stage

Supervisor: Marco Biraghi, Politecnico di Milano

Domesticity, Plan, Rituals

Abstract

The domestic imaginary has always played a central role in the definition of cultures and societies, and it is easy to assume how the history of human beings has been crossed by several moments of transition regarding the way and the form of living.

For this the general aim of the research proposal is to conduct an exploration of the domestic space, considering its development and mutations throughout history, looking at the historical background as an endless source of inspiration to draw on, with intelligence and creativity, in order to comprehend the present and possibly to address the direction of a future change due to the conditions imposed by the pandemic.

To realise this kind of operation in the plan is identified the investigation tool *par excellence* throughout which to conduct the analysis.

Extended abstract

The construction of the domestic imaginary played a central role throughout the centuries in the definition of cultures and societies, an if it is true – as Viollet-le-Duc mentioned in his Dictionnaire – that *the order of the house and its distribution changes in a very long time* [1], it is easy to assume how the history of human beings has been crossed by several moments of transition regarding the way and the form of living.

The exploration of the wide field of the domestic culture through the architectural lens implies the consideration of many other aspects, from the sociological and anthropological ones to the political and economic others. Using architecture as first level of investigation means to recognise that architecture itself refelcts the translation into a physical space of all the reasons at the basis of a particular way of living, and due to this, the architectural drawing should be considered as the investigation tool *par excellence*.

In detail, this research expects to consider the floor plan as the scientific tool to illuminate the analysis, in order to claim the strength of the two-dimensional drawing, while on the contrary nowadays three-dimensional images are definitely seducing the architectural scenario.

«Yet plans are everywhere: we spend most of our life within them [...] and the plan translates many determinations — money, measures, code, gender, class, rituals, beliefs, ideologies, environmental conditions, etc. — into a specific spatial layout. With its conventions of scale, measure, and view, the plan acts — much like money — as a "general equivalent" within which a multitude of determinations coalesce into a measurable "universal" datum» [2].

These words by Pier Vittorio Aureli appear like a solid statement universally applicable, even if in the history of architecture some paradigmatic cases better express this condition.

It is the case of the English country house and its development during the half of the XIX Century, while the architects of Arts and Crafts Movement were on the verge to reformulate the most canonical principles of composition. This specific domestic model assumes a very strong value if we consider it as one of the essential moments in the historiography, exactly just like in the case of the Florentine palace or the Palladian villa, able to show how a particular kind of architecture became a reference to be emulated almost all over the world.

Furthermore, the English country house turned without any doubt into the symbol of the awareness of a new rising middle-class that aspired to take a distance from the new industrialised city of London, not just to refuse it, but also to govern it, and its domestic architecture shows how big were the potentialities of the plan in all

its virtuosity and in all its experimented surprising freedom.

The Red House in Bexleyheath, built by the young architect Philip Webb in 1859 for and with his friend William Morris, stands as the true paradigm of a new sense of modern living and it is the plan of the house which manifests a great consciousness about the personal needs of daily life, a fresh new taste for comfort and a particular regard for intimacy unknown at that time.

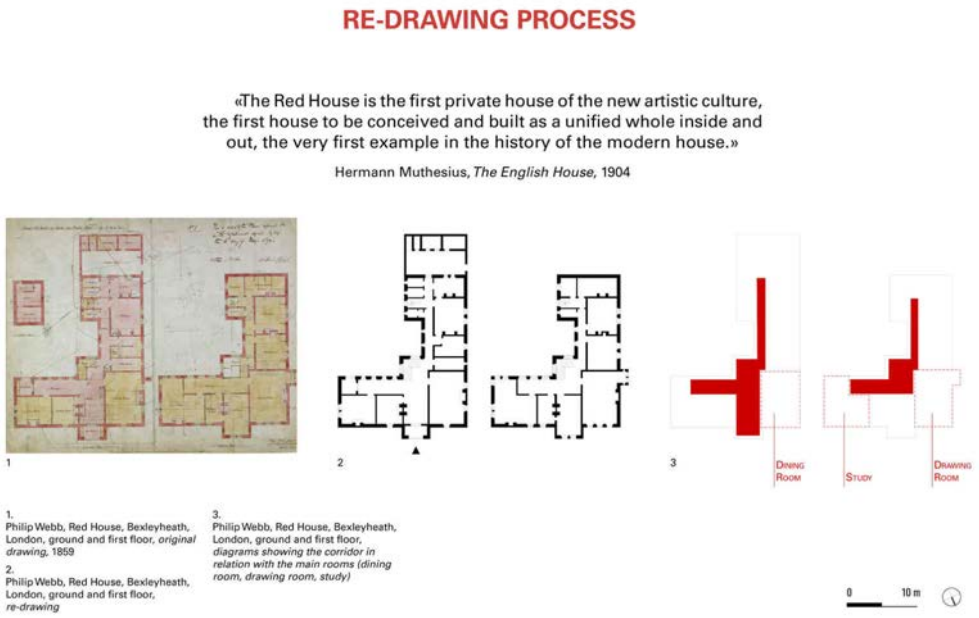


Figure 1: Table showing a synthetical sequence of drawings (from the original source to the diagram). From left to right: original drawing; re-drawings made by the candidate; diagrams made by the candidate showing the corridor in relation with the main rooms.

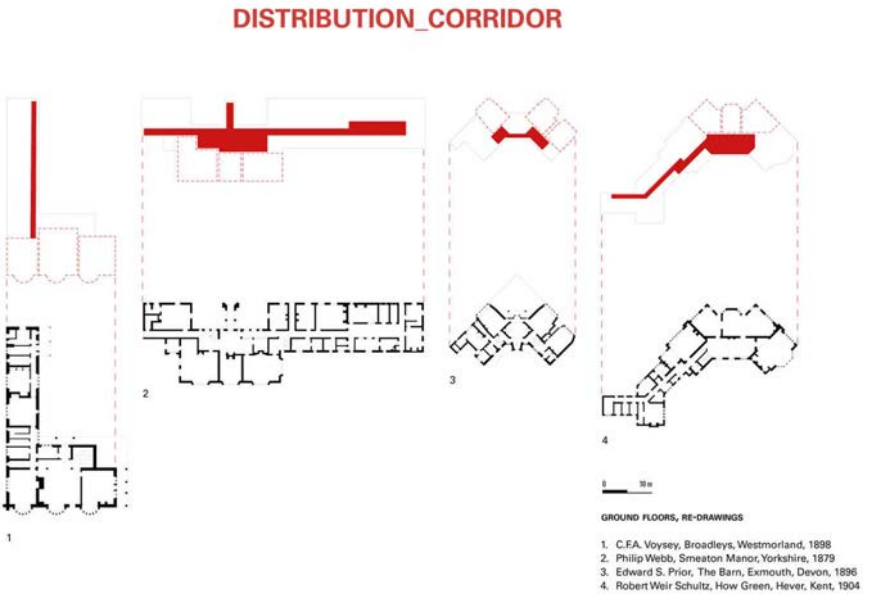


Figure 2: Comparative table - Selection of a number of Arts and Crafts plans of country houses, ground floors: re-drawings made by the candidate, diagrams made by the candidate showing the position of the corridor with respect to the general distribution of the house.

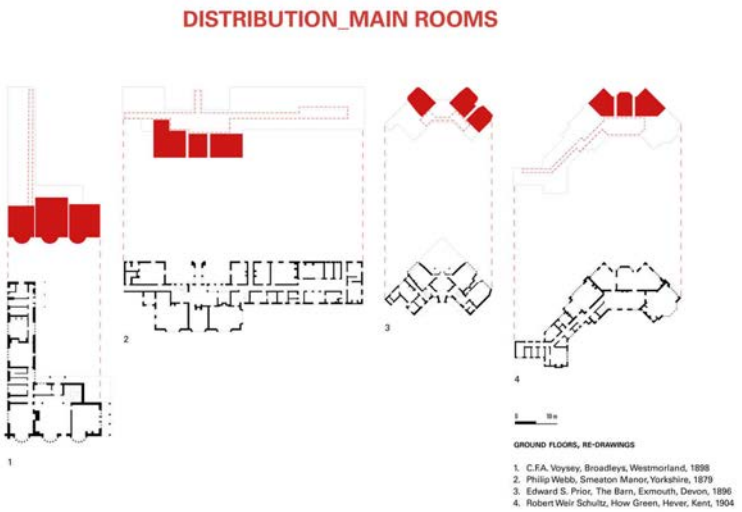


Figure 3: Comparative table - Selection of a number of Arts and Crafts plans of country houses, ground floors: re-drawings made by the candidate, diagrams made by the candidate showing the position of the main rooms (ex. dining room, living room, drawing room) with respect to the general distribution of the house.

The beloved symmetry is abandoned in favour of an L-shaped plan equipped with the new functional element of the corridor that frees the inhabitants from the uncomfortable crossing of all the rooms, further symptom of the upcoming modernity [1].

This formula will be notably experimented, changed and declined in so many different possibilities, and a compared overview of the plans of the most significant projects developed after the success of the Red House clarifies how this typical English architectural phenomenon ended up becoming a pure trend, strongly representing the will of the rising intellectual bourgeoisie [2] [3].

An even more original arrangement is codified by Edward S. Prior in the project of The Barn, a country house in the Devon cliffs, in Exmouth. Here, the goal to get a major solar lightning inside the house is reached thanks to the 45° rotation of the main axis in line with the main rooms, in order to open and maximise the view towards the Ocean and the cliffs, generating the so-called “butterfly plan” [4].

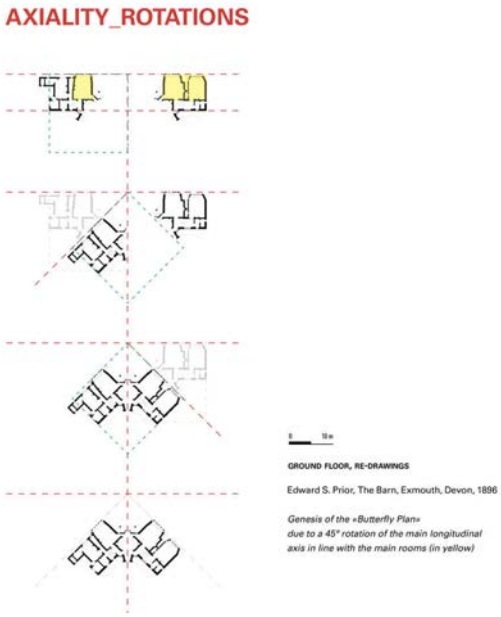


Figure 4: Re-drawing sequence showing the genesis of the «Butterfly Plan» due to a 45° rotation of the main longitudinal axis in line with the main rooms.

For the English country house becoming universal is just a short step. The effort made by Herman Muthesius while being the ambassador sent to England to observe the domestic heritage, hugely contributed to the diffusion of the English domesticity around the world, and at the same time a significant echo is traceable in the Unites States of America, overall because of the intense colonial activity carried out by England.

The compared analysis of this relevant quantity of architectural plans **[5]** on the basis of universal parameters – as could be in the case of the rules of distribution of the house, its geometry, its axial arrangements – paves the way for a possible methodology to look at the historical heritage. The will to create a system of observation which joins the historical-critical point of view with the graphical one as a tool to support and enhance the analysis, should be seen as the main intent of the research.

In the far 1802 a pioneer in the science of classifying, named Durand, was strongly convinced about the usefulness of a *comparative study of antique details and of*

the great importance to study the antique with the eyes of reason, rather than to stifle reason — as is all too often done — by an appeal to antique authority [3]. Not so far from Durand's obsessions, this research aims to build an exhaustive atlas of arts and crafts country houses, with their own plans, in order to simply make explicit what that generation of architects have done by instinct. Moreover, this research would like to be an invitation to look at history in a renewed way, as a still alive repertoire, possibly to draw from for today's design.

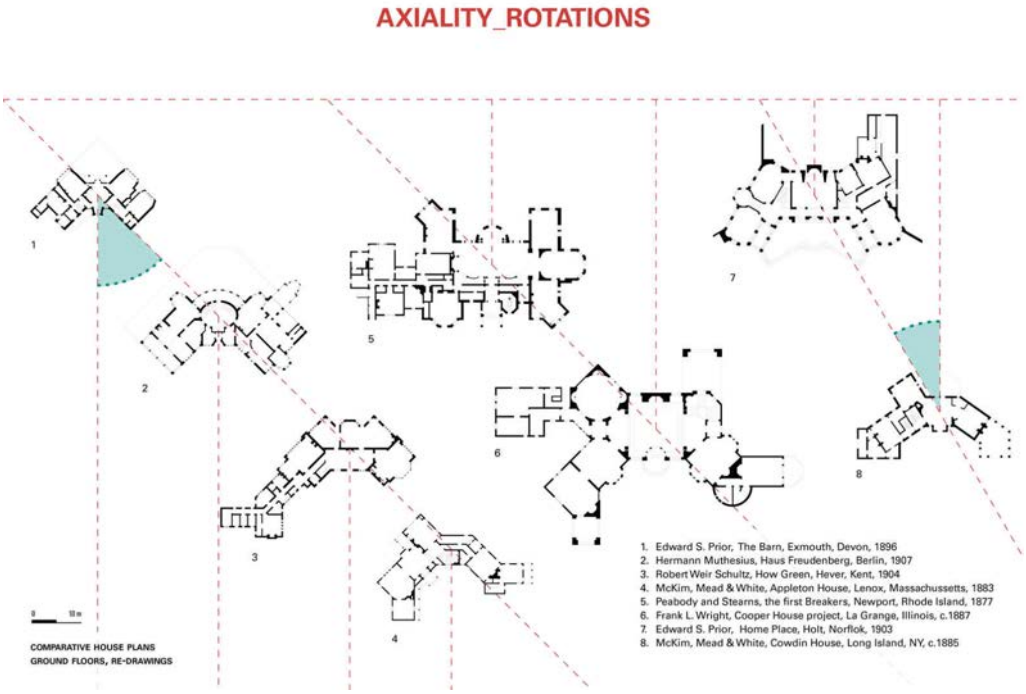


Figure 5: Comparative table - Selection of a number of Arts and Crafts plans of country houses, from England, Germany and America, ground floors: re-drawings made by the candidate, showing axial rotations.

1————Viollet-Le-Duc, Eugène Emmanuel (1854-68): Dictionnaire raisonné de l'Architecture française, Paris: Bance et Morel

2————Aureli, Pier Vittorio (2017): Life, Abstracted: Notes on the Floor Plan. e-flux, https://www.e-flux.com/architecture/representation/159199/life-abstracted-notes-on-the-floor-plan/

3————Durand, Jean-Nicolas-Louis (1802): Prècis des leçons d'architecture, Paris: by the author at the École Polytechnique

Material Driven Architecture

A Framework for Exploring the Role of Material Experiences for Integration of Soil in a Sustainable Material Culture

Ina Samdal, Norwegian University of Science and Technology

Initial doctoral stage

Supervisor: ProfessorEir Ragna Grytli, Norwegian University of Science and Technology

#

Materials Experiences; Earth Architecture; Practice-based Design

Abstract

Architectural research tends to focus on technological innovations and numerical data to prove the sustainability of a material. At the same time, this is not necessarily sufficient for the material to be accepted and incorporated into practice. How a material is perceived sensory will also affect the degree of utilization and not least how the material is treated. It does not help much that a material has good conditions for sustainable building, if sensory experiences from the material produce negative feelings, associations, and meanings and prevent architects to use it - or that consumers choose not to take care of it and in the worst case, throw it away because it gives them negative experiences. How can designing for experiences contribute to a development towards a sustainable material culture?

Paper

Introduction

This project originates from personal observations about how we consume materials and resources in Norway. While working as a practicing architect it felt like we were constructing our identity around expensive-looking materials and a need for constant updating. At the same time the world is experiencing an uncertain and challenging period with disturbing reports on climate, health and environment. As a contribute to achievement of the United Nations Sustainable Development Goals (UN SDGs), the Norwegian government reported in 2020 that the national goal is a 90% cut (from 1990 levels) in emissions by 2050. From 1990 to 2019, the decline in emissions was 2.3% [1]. The change over the next ten years will have to be radical if the goals are to be achieved. Technology alone cannot achieve the SDGs; it is how we use it in combination with resources, and last but

not least how it is acknowledged, that does. Researchers have started to consider how environmental behaviour is connected to the relationship between design and people's meanings, emotions and associations [2 3 4] and the need for research on the immaterial characteristics of materials have been stated [5 6]. At the same time, sensory aspect and experience is often bypassed in architectural research and practice in favour of technical properties, price and production efficiency [7]. Hence, no holistic material information is available to the architect or the user as guidance for sustainable design.

Natural materials such as earth and straw have a growing interest globally, with research focusing on their environmental benefits and one sees an increasing popularity of these materials in the western world [8 9 10 11]. Mobile factories and the use of robots or drones also play a critical role in this change as they open up the possibility of utilizing local materials in a more time-saving and cost-effective way. Even so, there are still challenges in incorporating these materials into contemporary architecture. How can design, construction and sensory experiences with natural building materials contribute to a development towards a green material culture? This study presents an approach showing how some of the gap in research can be potentially overcome by investigating how working with natural materials through experienced phenomena can have a positive impact on the materials cultural value.

Figure 1: Soil and wool

Problem statement

The Norwegian architectural research and education on natural materials is concentrated on wood, which is a well-established resource within industry and national building regulations. With the exception of wood, the knowledge about other natural materials in Norway is more or less limited to the professional environments within building conservation or self-builders, and so to say non-existent in contemporary architecture. One possible reason for this is that there is no particular tradition of building with earth, straw and wool in Norway. This assumption is based on two factors. Firstly, Norway has rich access to wood of good quality, the material is easy to process and works well in the current Nordic climate. Secondly, earth, straw and wool are materials that in pre-industrial times required a lot of manual processing. Today, Norwegian wool is treated as a waste product (Klepp et al., 2019), and earth is seen as a problematic material that often ends up being removed from construction sites, which contributed to mass transport accounting for 63% of all freight transport in the second quarter of 2020 in Norway [13].

One of the most fundamental issues is that despite the growing body of international research on natural materials, Norwegian architects, students and potential users have few physical examples where the materials can be experienced. Regardless the design research emphasizing the importance of material experience alongside the tangible properties in material selection processes, this integration in architecture education in Norway is observed to be deficient. Having worked in material courses on both undergraduate and graduate level at the Norwegian University of Science and Technology (NTNU) over a period of four years, I have observed a tendency to focus on the technical and economic aspects of materials. Not to mention the absence of teaching about materials that are categorized outside of conventional use, such as earth and straw. This is

a challenge when research shows that natural building materials can be of great importance for reaching the SDGs [14].

Another issue is that a one-sided focus on one natural material can lead to vulnerability to climate change. To best prepare for an uncertain future, several alternatives should be considered. How we can better understand the consequences of material selection are perhaps the biggest challenge in architecture in our time. There is a need to address the issue of the gap between the international academic research on natural materials and the use of such materials among practice and architectural education in Norway. The drive of this study is to explore whether knowledge from interaction with the materials can contribute as a bridge-builder between these two separate worlds and further contribute to the development of a greener material culture. The research develops a framework to examine the architectural experiences of the materials wool, straw and earth as an alternative to wood.

Theoretical framework

Experiencing natural materials

Natural materials represent an opportunity for sustainable architecture as these have the potential to appeal to people as being 'natural' and 'imperfect', which are aesthetic factors identified as being significant in designing for sustainability [6]. Furthermore, unfired earth and straw have a triple benefit in the life cycle, as the availability is great, the production requires little energy and the material can return to nature without damaging it [9] [15]. With this in mind, Ben-Alon investigated how earth can be integrated in contemporary architecture and indicated one barrier to be lack of knowledge and experience, especially outside academic research, which in turn leads to earth being excluded from building regulations and innovation [8].

In search of a proper approach to an understanding of the use of natural building materials, literature review on 'material design' and 'material selection' established that the sensory properties of materials together with personal experiences are of great importance when designers and architects choose materials [7] [16] [17]. The establishment of material libraries worldwide, where students and professionals can visit, indicates that sensory experiences are recognized as an important element in material selection. Nonetheless, they often lack any systematic information on the tacit knowledge of the materials [7] [18]. A shift from a product-driven design focus to a material's experience approach have led to the development of several methods. Such as 'DIY-materials', an explorative method searching for new materials [19], or 'Design-driven Material Innovation' an interdisciplinary approach searching for new applications and systems of materials for manufacturing [20]. Most relevant for this study is 'Material Driven Design', described in the next section.

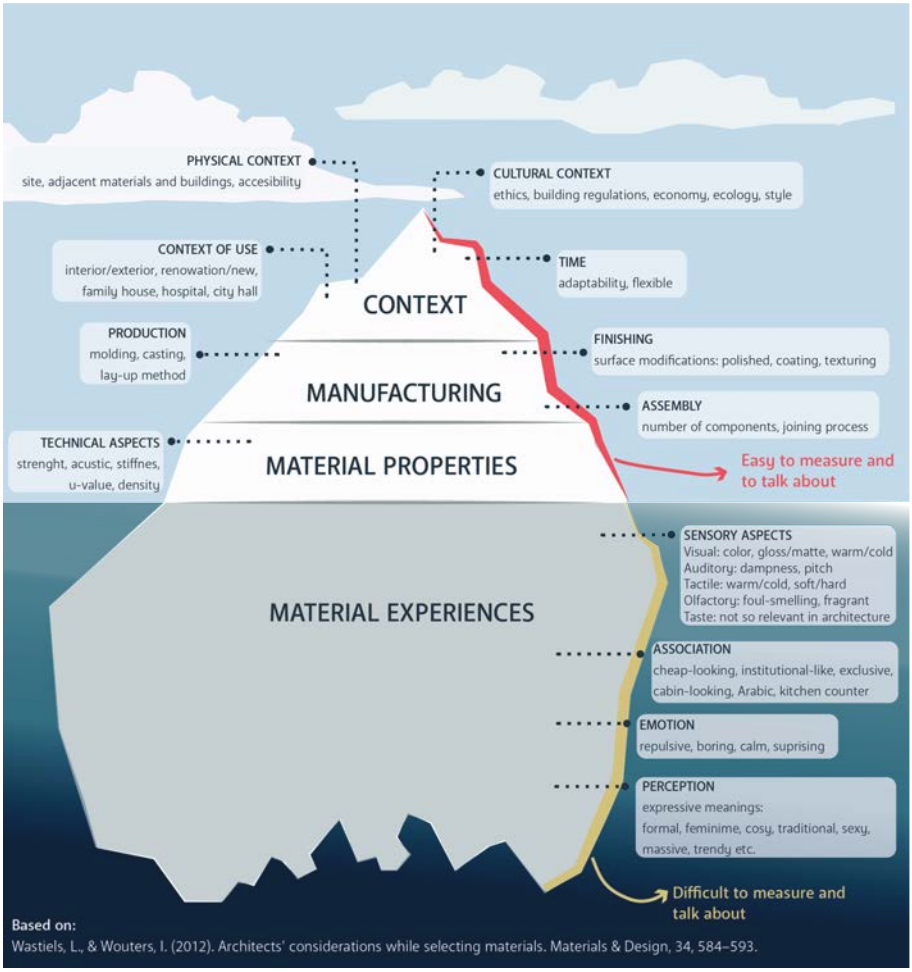


Figure 2: Choice aspects in material selection

Material Driven Design method (MDD)

The MDD method developed by Karana, Barati, Rognoli and Zeeuw van der Laan have a material as the starting point and material experience within a material or a product as the expected outcome. The method consists of four phases:

Understanding the material. Beginning with tinkering, through exploring a material in a creative and naïve way, without having a project in mind. The goal is to understand the essential qualities, limitations, and opportunities of the materials. Parallel with tinkering, user studies will be conducted to reveal the individual

experienced characteristics and benchmarking by comparing the material with others.

Creating materials experience vison in a society context.

Manifesting materials experience patterns to link a created vison from the previous phase to formal technical and sensory qualities of a product. Again, user studies are a tool to obtain insight of the meanings the materials evoke.

Creating product concepts, where previous findings are integrated into a design phase.

Since the publication of '*Material Driven Design (MDD): A Method to Design for Material Experiences*' [17], the number of research and educational courses within product design concerning the method has grown considerably. For example, universities in Sweden, UK and Italy have given contributions and reflections on the method [21] [22] [23].

Result: Material Driven Architecture framework

This project arose out of my fascination with how sensory experiences of natural materials affect our personal assessments. This interest was strengthened during the work on my master's thesis where local building materials were examined in several experiments. The material samples were presented as a traveling exhibition (Figure 2) that opened up for a dialogue about the materials. Conversations with the exhibition visitors gave the impression that the individual architectural valuation was apparently not evoked by measurable aspects, but more by vision and tactile properties of the material. For instance, architects were often more interested in talking about how the roughness or honesty of a rammed earth element appealed to them than in discussing the technical advantages and disadvantages of the material. At the same time, they found it difficult to describe in words why they found the material attractive. Given these points, there is a need for reference

projects as well as a framework to support architects in understanding how natural materials affects our experiences.

Reflection on the MDD method and experiences gained with the method give the impression that it cannot be directly incorporated into architectural design. For example, exploring meaningful material experiences from an architectural perspective implies an understanding that the materials should end up in a spatial construction element rather than an object. Different from product design, architecture is more context oriented [7]. Given that point, place is added as an aspect in the framework. Future green buildings should be more than a technical structure intended to protect humans from weather or being representatives of trends like 'powerhouse' or 'passive house'. They should also fit into the physical and cultural context of the site, along with providing feelings of safety and identity. Moreover, they should provide sensory delight and be meaningful. Figure 4 illustrates through a floating iceberg how the experience aspect is an important part of material selection for architects; however, it is also more diffuse compared to more measurable aspects such as stiffness capacity or assembly techniques.

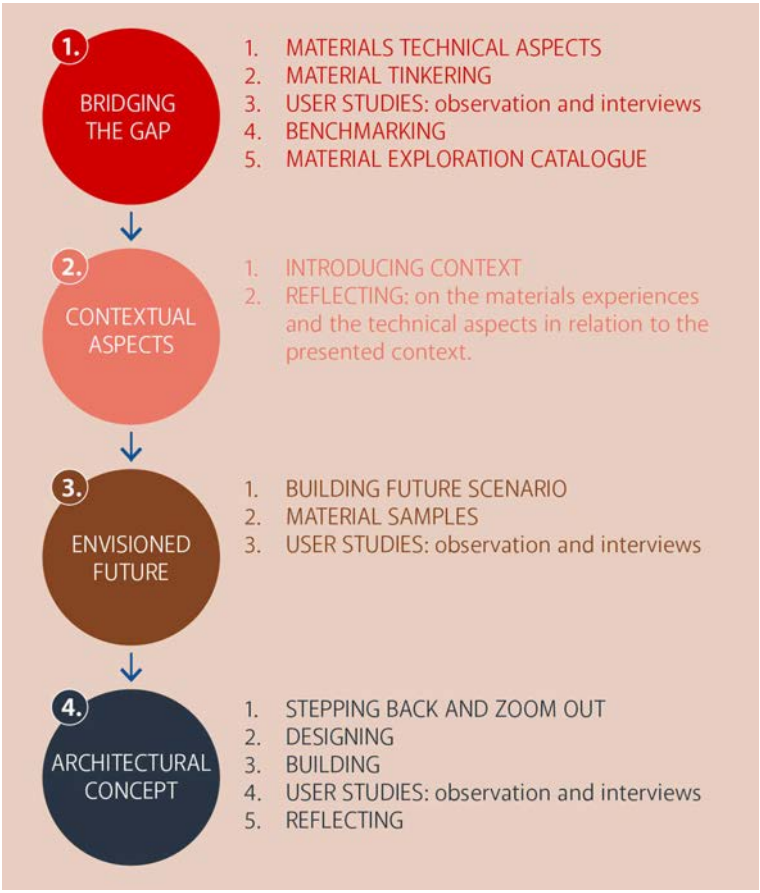


Figure 3: Material Driven Architecture framework

In search of a proper base for designing for material experience with natural building materials, this paper proposes a framework with the working title Material Driven Architecture. The framework is based on characteristics from the MDD method, as well as the selection aspects identified in Wastiels and Wouters work. A distinguishing feature of this framework compared to the MDD method is the including of *context*, where use, physical aspects and culture will influence the material's experience. Materials ability to connect people to place, where we are and who we are is a central aspect towards sustainable behaviour. This approach fits under the concept of 'sensemaking', a term used to describe the process of how to "understand connections (which can be among people, places, and events) in order to anticipate their trajectories and act effectively" [24]. Figure 5 illustrates the four phases in the

framework, as a tool for material exploration. Although the phases are intended to be implemented as a holistic design concept they could also be seen as series that can be altered depending on the graduate level of students or time available.

Figure 4: Material Experience Catalogue

1) Bridging the gap

An overall understanding about the material's technical aspects is combined with tinkering where the materials are explored in a hands-on approach to gain material experience. This phase is similar to the first phase in the MDD method, 'Understanding the Material', where the methods (tinkering, user study and benchmarking) and the goals are the same. Earth, straw and wool appear to have a poor image as building materials. From observations of the master exhibition visitors, words like dirty, poor, itchy and unstable are noticed. As well as more positive loaded words like honest, natural, warm, and friendly. Acquiring an understanding of how to make buildings where these materials generate positive user experiences is perhaps as important as access to reliable technical data for the materials to become more widespread. An addition to the MDD method is step 5, 'material exploration catalogue' that summarizes the material experiences together with the technical aspects, as a process tool for further material exploration and a narrative approach of the materials

experience. The catalogue will be supplemented with information during the exploration.

2) Contextual aspects

The second phase is aiming for a synthesis between the technical aspects, context and the material experiences. However, the material experiences should be the emphasis, as innovation in material science is not the goal of this framework. Hence, the technical data is to be seen as background information to develop material experiences that are relevant in an architectural perspective. Insight into the technical properties of a material is essential for handling a material in different climatic conditions. Context is an important and complex aspect in architecture, as there are many factors to influence how a material is experienced in a physical situation. For example, a new building placed in a wet climate in a large coastal city built on fishermen's culture will be experienced differently than a transformation of an existing building on a rural farm surrounded by agricultural land in a cold and dry climate, although both projects were built with the same materials and construction principles. In order to make the investigations verifiable, a specific context is therefore introduced to which the material experiences are adapted.

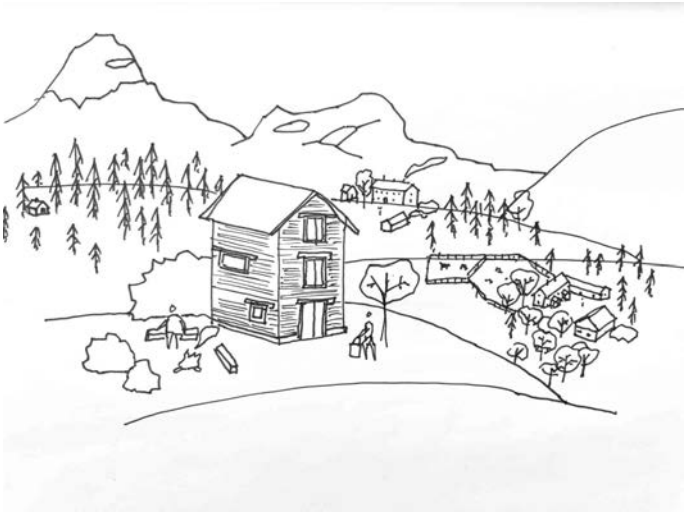


Figure 5: Rural context

Figure 6: Urban context

3) Envisioned Future

Creating a new meaning for the material will be of great importance in the process of exploring how the materials can contribute towards sustainable building, as the acceptance amongst people will be of significance for their success in a potential future Norwegian material culture. Here all the gained knowledge from the previous phases is combined in a proposed future situation for the material. Climate change, population growth and the earth's threatened resources make us ask the question; how should we live? What experiences are essential to achieve a lifestyle we can enjoy? In the MDD method 'Material Experience Vision' is the second step. Due to the importance of context in architecture, '*Envisioned Future*' should be implemented after context has been introduced as a leading element in the materials exploration.

4) Architectural Concept

In the final phase all the findings documented through pictures, material samples, videos, drawings and text from the previous phases are integrated into an architectural project intended to be built. A spatial construction consisting of the explored material can through

qualitative studies of observation and spontaneous interviews provide insight into how the materials are received by users while it also can function as a reference project presenting the materials in a Norwegian context. In this sense, it also has the potential of being the object for quantitative research on the material's technical aspects, although this is not an objective of this project.

Discussion and conclusions

This paper has proposed the framework Material Driven Architecture as a possible approach to develop understanding of how intangible characteristics related to sensory aspects, perception, emotions and association can be used on natural materials in architectural design. The challenge of measuring experiences and distributing them may be one reason why research on how building materials are experienced is not widespread. Methods for gaining a better understanding of this are therefore necessary if the knowledge is to be integrated into sustainable architecture. The framework outlined is to be regarded as a general rough draft, as every material-driven investigation is unique, and practice will most likely deviate from the framework in each research situation. As mentioned in the introduction, inquiries on building materials tends to be quantitative. Material Driven Architecture proposes a qualitative approach to material research. Still, the intention is not to highlight it as a preferred method over quantitative research. On the contrary, the aim is to create a broader perspective on knowledge about material experiences that can supplement quantitative data. The hope is that this research can contribute to further development of approaches for incorporating the previously mentioned materials in a future green material culture.

The proposal stands on the shoulders of a long and still inspiring culture of material experience investigations within product design. In the paper '*Material Driven*

Design (MDD): A Method to Design for Material Experiences' years of experience from four designers from different countries are incorporated [17]. Hence, the MDD consist of a mix of well-proven methods and is in fact still being developed further at the Material Experience Lab at Delft University and Technology. However, when comparing the Material Driven Architecture framework to those studies, it must be pointed out that this is a first draft of a method attempted adapted to architecture.

It is difficult to arrive at any conclusions with regard to the effect of the framework, as the project is in the initial phase and has just begun the process of the experimental work. The expected outcome is to develop knowledge of the materials earth, straw and wool and to achieve greater understanding on how technical, contextual and experiential aspects influent the total experience of a material or a building. A merge of these aspects can hopefully contribute to bridging the gap between the technological oriented research on natural materials and the deficiency of knowledge and use of the materials among architectural education at NTNU. Future architects will play an active role in the work of achieving the UNs SDGs, and with this in mind students will be the participants in the further research. The students need to be introduced to an open-minded material exploration process based on scientific methods to prepare them for any material challenges to come. Future research should further develop this framework in a practice-based context where the phases is further studied, developed and tested.

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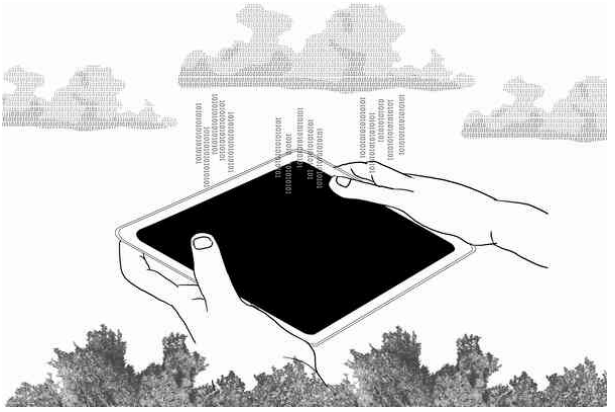
Precision wildland Designing Third Landscape within the Smart City

Sara Anna Sapone, Politecnico di Milano



Initial doctoral stage

Supervisors: Emilia Corradi, Politecnico di Milano; Michela Longo, Politecnico di Milano; Sara Protasoni, Politecnico di Milano

#

Smart city, Informal landscape, Railway yards

Abstract

In the context of a changing world and the advent of the Anthropocene, the research reflects on the dichotomy technology and nature. Trough the lens of a specific context, the Smart City, it shifts from its traditional narrative. With the idea of a “precision wildland”, it intertwines technology with nature to preserve biodiversity and manage reclamation processes.

The research goal is to formulate a process/project to test whether the informal landscape can be mapped, managed, and emphasized through design and digital technologies for its aesthetic, communicative and ecological potential.

To narrow the scope, a precise test-bed typology is at the core of the study, railway yards, due to their innate “intelligence” and the spontaneous pockets of wildland that inhabit it.

Extended abstract

Focus the lens | Core of the research

Nowadays cities experience constant and apparently contrasting pull.

On one side, the idea is to conceive a new model, informed and shaped by the ubiquitous presence of immaterial networks and technological advancement. [1]

At the same time, there is the need of a re-naturalization of cities and build environment, a will to reconnect with the environment to fulfill biophilic tendencies [2].

The keystone here is to move within this contrast to redefine how this dichotomy nature-technology could be a design tool. The research builds upon these notions to look to a specific kind of nature, the informal landscape [3], trough the means offered by the Smart City frame.

Is defined the idea of a “Precision wildland”, where similarly to precision agriculture this fragile and changeable

entity may be mapped, managed, and altered to rule the complex transformation of abandoned sites and in particular railyards.

The output would be to provide operative indication and set a methodology to rule transformation process, using the Smart city tools to consider the habitat's biology from the start and establish different degrees of intervention.

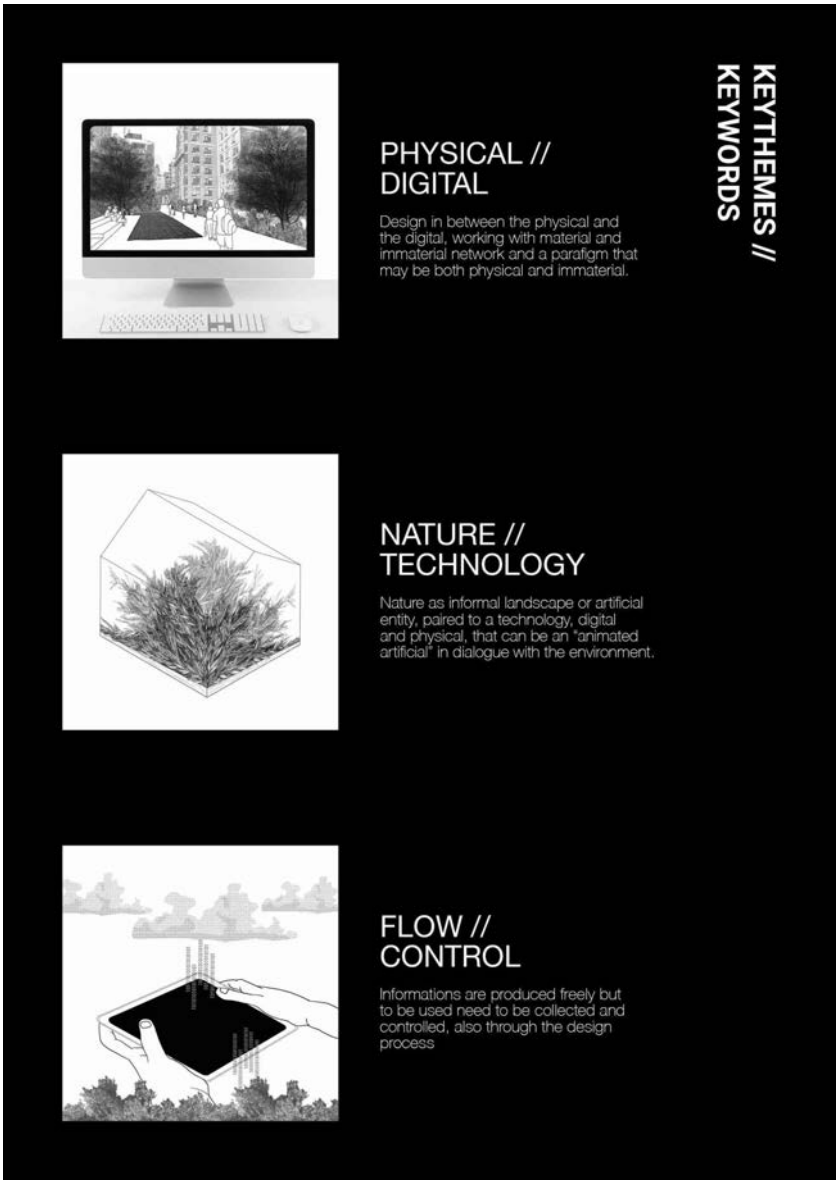


Figure 1: Keythemes-keywords

Search for meaning | State of the art and framework

The relationship between humankind and nature, although inherently interdependent, has always been characterized by the dominance of the first on the latter, frequently also in the theoretical debate. The advent of technology and the technocentric approach, although with notable exceptions, tended to indulge this view with a constantly growing domination of humankind on the biosphere, leading to the current age, the Anthropocene. [4]

An instance of this view is the Smart city approach, an urban strategy where traditional physical grids and public services are improved trough digital systems and new technologies, managing the use of resources and enhancing the processes' sustainability. [5]

The components of this network are interconnected and regulated by protocols that collect and react to flows of data, dealing with problematic conditions whereas forecasting future outcomes. [1]

In light of this, the research questions the traditional Smart city narrative [6], shaped by the politic and economic perspective, growing beyond its simplistic slogan, that advocate to the optimization of processes. To do so it reflects on a new paradigm that intertwines nature and technology. [4] [7]

To give a brief overview, we can broadly trace their understanding through time and the scientific debate.

Nature was understood both as ideal original state, a frightful force and as resource with a clear boundary, to shape and tame to fulfill humankind's needs and believes. Today we live in the "age of Natural fabrication", where nature is dealt with a scientific approach. [8] Nature and landscape have partially left their contemplative role as otherness to tackle issues like climate change, food scarcity, comfort condition, becoming a performative nature. [9]

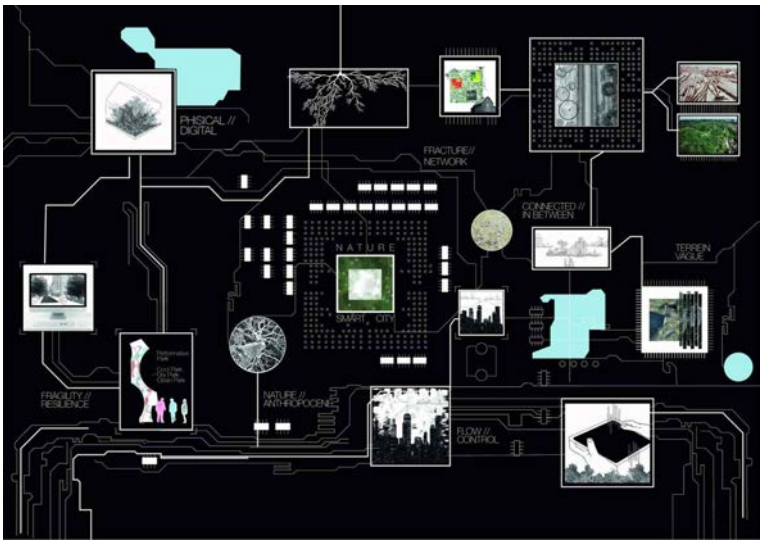


Figure 2: Research map.

At the same time, as theorized by Gilles Clement [3] in his "third landscape", it can't be contained anymore by the boundaries of the garden but constitutes an anamorphic entity, aimed at maintaining biodiversity. It can be found in the abandoned and fringe area left alone by humans, where the unexpected can happen and biodiversity can thrive.

Moreover, in the current times the understanding of the network of nature shifted: from the Darwinian idea of plants as individuals competing with one another to the idea of a network that communicates to chemical signaling to preserve the plants community. [7] [10]

At the same time, Technology has historically been a tool to fulfill humankind needs and necessity, growing in importance through time [11] representing a way for humans to separate themselves from the environment. Today it is both material and immaterial, governing the physical and virtual space, but also able to relate material (mobility) and immaterial (social) networks.

In the recent years its action has grown more pervasive, inhabiting the digital sphere as a "ubiquitous entity", [1] living inside the objects we interact with daily. It is a "constant and bidirectional extension in between the animate and inanimate beings." [12]

In this sense the technological network may start to communicate with the biological one [7] enabling us to understand and react to its needs.

On scale and impact | How to relate theory and design

From the outline of this theoretical frame, it's defined this concept of a of "Precision wildland".

In this process, similarly to what is already done with precision agriculture [13], the use of technology can collect and react to the information provided by the third landscape to serve specific needs.

The coexistence of wildland and city may imply constant and dynamic monitoring of this instable and fragile patches. [7] Thus, wildlands are seen with a design approach, looking at their biodiversity, aesthetic value, management, and ruled through the Smart City tools.

Through the definition of case studies, is explored the way different design and artistic experiences read the paradigm nature technology. Whether they relationship is more functional and design oriented or related to the communication of the aesthetic and expressive value of nature, the research may build upon these experiences to formulate a precise standpoint on this duality.

The goal is to conceive a project/process to manage the transformation of abandoned sites to include, from the initial stages, the consideration for the biological processes created by the preexistent spontaneous nature and allow the fruition of the area from the beginning.

It considers different approaches that enforce various level of intervention, depending on the design, usage, and security needs. The role of technology towards the management of the informal landscape may vary, going from a completely controlled environment to the untamed wilderness with little to no interventions.

The solution will be tested also considering the possible approaches to informal landscape in the scientific debate, in particular referring to the positions of Gilles Clement and Piet Oudolf. [14]

Likewise, the question of time is crucial: climatic, natural, and anthropic events are not always predictable, [15] so the process needs to be adaptable and variable. The goal is to react and predict to different scenarios using a system of sensor and actuators, that read and forecast the needs of a wider territorial network. [1]

The ideal set for this to happen are railway yards, as symbolic and factual possibility for the paradigm nature-technology to be implemented.

The research aims to use the innate intelligence of the railway network and the spontaneous pockets of wildland that may inhabit it. From the structure of the soil (slope, materiality, cabling underneath), the presence of spontaneous nature (unique combination of seeds transported by the trains) [16] to the dynamic of two opposite systems (linear/monodirectional line of the rail opposed to the mutable pockets of nature).

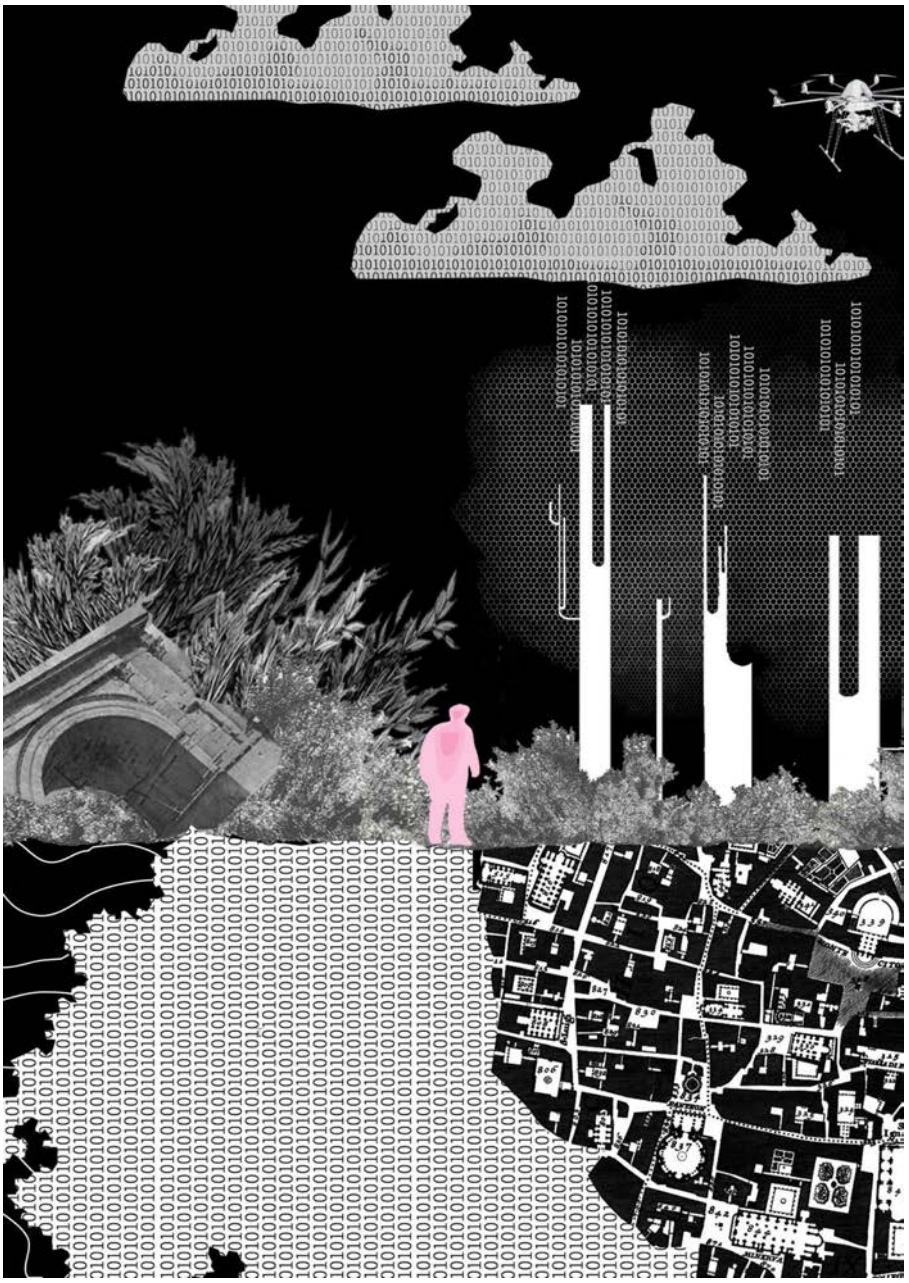


Figure 3: Atmospheric image of the paradigm nature-technology.

Due to this is possible to envision the use of technological tools (as remote sensing, agricultural drones, satellite crop monitoring etc.) to harvest the ecological and social potential of wildlands and create physical and digital networks and rule transformation processes.

The chosen context is Europe, where cities keep on rebuilding themself and there are unique instances of

reuse of urban areas. There is a natural tendency to constantly "recycle" the city, that can be amplified with the Smart city tools.

Ultimately, the goal is to provide operative indication to design "performative wildlands", setting a process to manage, control and preserve spontaneous nature according to specific needs while dealing with urban renewal processes.

Source of the images: Original drawings by the author.

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Systemising Spatial Affects In the Search of the Ontolotical Class Encompassing the Experiences of Movement and Architectural Space

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Final doctoral stage

Supervisor: Matthias Ballestrem, HCU Hamburg

Embodiment, space theory, movement analysis Final doctoral stage

Abstract

In general, the leading question of this research is how architectural environment affects the bodily movement, and how, simultaneously, this movement evokes spatial affects—the sense of space. This text deals with the problem of systemising these reciprocal phenomena. It tackles it by introducing the method of translating the space theory texts (of empathy theory and phenomenology) into movement instructions. Then, it shows how such translations, executed systematically, might lead to a comprehensive coding and categorisation of movement practices in the sampled texts. The direct, practical application of such preliminary systemisation is then briefly exemplified by an experimental design seminar. The text points then to the obstacles in the systematisation process – the unclear ontological nature of the classified phenomena. *What is actually a sense of space?* That question remains open, but leads to the assumption that the systemisation methods found in psychology (affect theory) and higher music education (aural training) might be plausible templates for spatial affect systematisation.

Extended abstract

Systemising spatial affects. In the search of the class encompassing the experiences of movement and architectural space.

In principle, the leading question of this research is how architectural environment affects the bodily movement on one hand, and the other hand, how the movement evokes spatial affects — the sense of space. And while this investigation deals with subtle, often pre-verbal experiences and aims at the opening of the design practice towards the diversity of such experiences, its methodology includes also their analysis and systematisation. This paper presents the emerged method of

creating such classification, along with the knowledge gap it closes, its relevance for the research process, the possibility of its empirical verification and contextualises it with other established classifications of affects.

What did I systemise and why? While the crucial (although implicit) role of the body in the perception and imagination of architecture is widely recognised in architecture theory (cf. Ballestrem, Mallgrave, Pallasmaa, Bachelard) often the used notions of embodiment are not pragmatic — either they are philosophical and too wide to be instructive for the architectural practice, or they are empirical and thus too narrow and reductive. This points to the gap in pragmatic knowledge, the missing links between the embodiment theory and concrete actions in architectural practice. The research on these links began with a coincidental observation, that the older texts such as Empathy Theory or Bachelard's Poetics of Space evoke in me strong spatial imaginations and evident bodily feelings — that is states, which I was used to experience rather during the movement practice than reading. The assumption arose that these spatial imaginations are, to a certain degree, physical processes, processes related to the bodily movement, rather than purely mental ones. This observation initiated the further text analysis — extracting all the passages, which describe bodily movement (or can be interpreted as such) from the texts which themselves actually theorise spatial and architectural experience. I was interested in what is the movement aspect of these spatial phenomena and whether it is possible to induce these spatial phenomena not through an elaborative literary narration but through a guided movement. Accordingly, I coded and provisionally categorised the collected passages and translated them into movement instructions. I re-interpreted the language of space theory as the language of movement instruction. (Fig. 1)

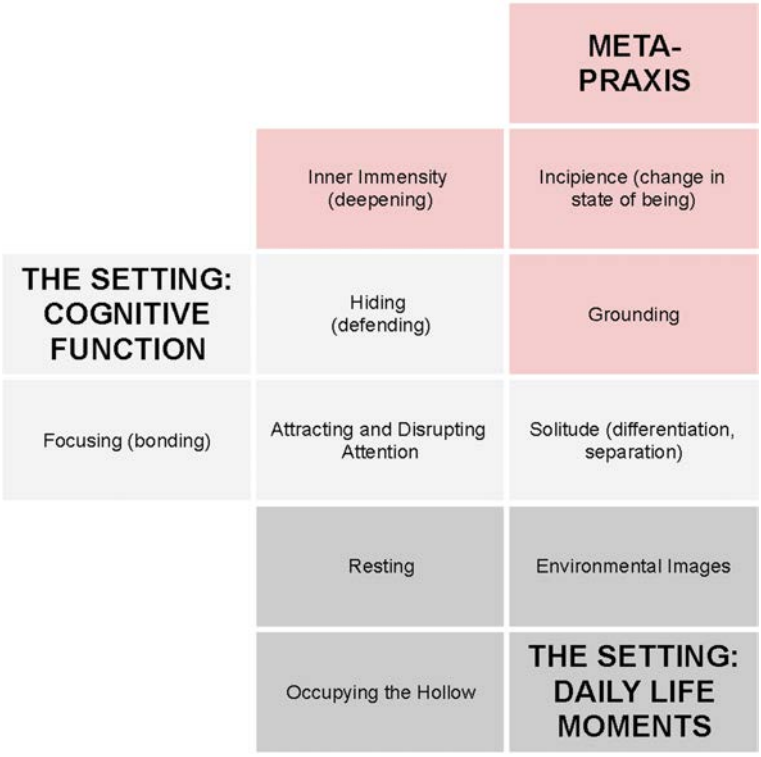

Figure 1: Preliminary coding and categorising of movement practices in empathy theory and phenomenology. From top to bottom: Analysis of G. Bachelard, R. Vischer, H. Wölfflin

How did this theoretical research become pragmatic? The conducted translation allowed the practical testing of how movement-mediated Empathy Theory affects the design processes of architecture students. For example, the translation of Bachelard revealed several essential movements, which might evoke the sense of space of a house — for instance the codes 'hiding,' 'focusing' and 'separating.' 'Separating' encompasses the movements leading to the solitude, separation from the world. The code 'hiding' seems also to have as similar spatial meaning, although with a different nuance. The code 'focusing' facilitates the movements of directing one's attention to a single point, which becomes then the centre of space. Bachelard exemplifies this spatial quality with a candle in the middle of the table, or the warm hearth in the centre of the house. Other codes seem to repeat throughout the spaces described by Bachelard — for instance, the codes 'grounding' and 'inner immensity' seem to be a kind of iterating,

underlying activities which have been categorised as 'meta practices'. The sensing or imagining of the force of gravity, the relationship with the ground persists throughout Bachelard's work, as well as the act of directing the one's own attention towards the bodily inner space — understood as the mirroring of the outer, architectural or environmental space. Further codes derived from Bachelard are 'resting' and 'occupying the hollow' which seem, however, to be a different category, preliminarily labelled as 'daily life moments'. Altogether, this initial systematisation, although rudimentary, allowed for testing of the method with students by assigning them the task of imagining and designing an intimate space for rest in a public space.

What other theoretical texts did I sample and why? In a similar manner, I analysed the works of Robert Vischer and Heinrich Wölfflin. (Fig. 2, 3) I chose these authors because the style in which they argument — oscillating between the early experimental psychology and anecdotic personal reflexions, is evocative and often draws on personal experience rather than on highly specialised laboratory observations (as it is the case in e.g. neuroscience-informed architecture theory). Thus, their argumentation style seems to be more applicable to general architectural practices, that is practices not specialised in interdisciplinary research. However, with the growing number of codes, a coherent, overarching categorisation became challenging and prompted ontological questions: What is this that I am trying to categorise? Is this a classification of movement or classification of spatial experiences? Is this a twin class of movement-and-space experience? Or, is there an appropriate single class encompassing them both? What is actually a sense of space? Is it a sensation? A feeling? An emotion? What kind of affect am I dealing with? These questions are still open.

Which established systematisations could help here and serve as templates? One recent systemisation of architectural experience is Alban Janson's and Florian

Tigges' 'Fundamental Concepts of Architecture. The Vocabulary of Spatial Situations.' [1] The work recognises such phenomena as personal spatial 'bubble' and its extension and thus seems to be close to the research object of this study, it describes the architectural experience from the perspective of the user, not the designer and thus lacks the instructive, creative and pragmatic potential. (cf. ibid 5 – 6) Being architecture theory, it lacks also precision in movement analysis, understandably. This purpose serve, in turn, the established systems of movement analysis such as those of Laban, Bartenieff, Cohen, or Stark Smith, which however do not address the architectural space and its design, at all.

Which systemisation could be the most appropriate template? Remarkably, a number of notions used by empathy theorists is similar or identical to those used by movement theorists — notions such as 'resisting the gravity', 'balancing', or 'bodily centre and periphery', etc. This suggests the possibility of embedding the Empathy Theory within the more comprehensive, contemporary movement theories and systematisations. Accordingly, in the next step I will align the codes derived from the Empathy Theory along the main themes of established movement analysis systems.

What further applications (beyond the scope of this study) of such systemisation can we speculate about? Another example of the categorisation methodology is the affect theory and the universal emotional expressions observed and systemised among others by the psychologist Paul Ekman. [2] Similarly to Ekman, who was able to systematise the diversity of human facial expressions by identifying six basic emotions, I am interested in the foundational research of systemising the diversity of spatial bodily impressions and identifying the corresponding basic spatial affects. Such systematisation might lay the foundation of propaedeutic sensory training for architects – analogous to the aural training in music pedagogy, which aims at sensitising

the ear of the music student in order to sense and analyse the corresponding musical affects. [3] The composition experiments with master students, which finalise this doctorate try to illuminate whether such training, that is the bodily sensitisation towards the basic spatial affects (such as expansion and shrinking or balance and imbalance) can help students expressing these qualities better in their architectural compositions. If this approach succeeds, it might educate future spatial sommeliers — experts in tasting and critical judgment of spatial qualities.

Sehen: Unpointirte Vordringen zum Ganzen der Erscheinung	Temperatur der Gesichtserregung	**EMPATHY**	Freiheit des Fixierens in der Vorstellung	Vorstellung der Bewegung	**AGENCY**
Schauen: Konzentriertes, abstraktes Zwecksehen	**SCHAUEN vs. SEHEN**	Zufühlung	**IMAGINATION and CREATIVITY**	Wir bewegen uns in und an den Formen.	Vermehrung meiner Macht
Tasdend sehen	Muskelbewegungen des Augapfels	Zufühlung, Nachfühlung, Einfühlung.	Nicht gegenwärtige Bildvorstellungen	Objektvorstellung und Selbstvorstellung	Selbstschwinden und Selbstverstärkung
FEELING OF THE COLOUR	Das Menschgefühl der Beleuchtungstöne	Erweiterung und Vertiefung der Empfingung.	Mitgefühl	Von Innenphantasie zu Außenphantasie	**RHYTHM**
Schrei der Farben	Vorstellung des Schwerpunktes	Aus- und Zusammenfühlung	Affektvolle Einfühlung	Individuelle Bewegungsart des Künstlers	Rhytmus der Selbstmotionen
Gefühl der Erdenschwere und des Schweifens	**UNBRIDLED vs. BOUND TO GRAVITY**	Bewegung als Angenehme oder Unangenehme Empfindung	**BODILY EMOTIONS**	Wachende Phantasie	
Bewegungsbahnen	Grundempfindung der leiblichen Statik	Grenzen der Form und die Hauthülle	Ausdruckendes Gestikulieren	Motorische Reize im Traum	Scherners antropomorphische Träume
TRACING	Bequemlichkeit der Linie	**SEPARATION**	Fluchen	**DREAM**	Vorschwebende Vollkommenheit des Alls

Figure 2: Preliminary coding and categorising of movement practices in empathy theory and phenomenology. From top to bottom: Analysis of G. Bachelard, R. Vischer, H. Wölfflin

Figure 3: Preliminary coding and categorising of movement practices in empathy theory and phenomenology. From top to bottom: Analysis of G. Bachelard, R. Vischer, H. Wölfflin

1————Janson, A., & Tigges, F. (2014). Fundamental concepts of architecture: The vocabulary of spatial situations. Basel: Birkhäuser.

2————Crawford, Kate (2021) Time to regulate AI that interprets human emotions. In: Nature, Vol 592, 8 April 2021

3————Andrianopoulou, Monika (2018) Aural Education and its Pedagogical Conceptualisation in Higher Music Education. An investigation through varied perspectives. 62

Sharing Landscape Beyond the Urban-rural Dialectic; New Productive Soils as a Form of Settlement Resilience

Isabella Spagnolo, Politecnico di Milano

Intermediate doctoral stage

Supervisors: Guya Bertelli, Politecnico di Milano; Marco Bovati, Politecnico di Milano; Andrea Oldani, Politecnico di Milano

Sharing, fragility, innovative farms

Abstract

Short abstract (150 words): The text aims to present the structure of my research thesis, which title is "*Sharing Landscape: beyond the urban-rural dialectic. The farm as a form of settlement resilience"*. The latter develops according to three macro sections: *"SHARING as a new condition of contemporaneity"*, *"SHARING as a paradigm and interpretative strategy"* and *"SHARING LANDSCAPE as an operational tool"*. The thesis intends to investigate the theme of farm as a resilient and interpretative design tool that could 'mend' the 'urban' and 'rural' on a theoretical and physical level.

Extended abstract

The research intends to investigate new possible spatial relationships between 'urban' and 'rural' areas linked to innovative agricultural production due to the progressive deterioration of the relationship that traditionally linked the two entities. It is developed according to three macro-sections: the first, "SHARING as a new condition of contemporaneity," is a theoretical framework of the city-countryside relationship. The second "SHARING as a paradigm and interpretative strategy" explains the methodological approach. The third, "SHARING LANDSCAPE as an operational tool," sees the implementation of the design methodology outlined.

Figure 1: Lorenzetti, *Allegoria ed effetti del Buono e del Cattivo Governo*, 1338

Sharing is the keyword that unites the three parts of the thesis and may represent our contemporaneity's interpretative key, characterized by an increasingly

widespread fragility in which unexpected events are regular[1].

In the first section, "SHARING as a new condition of contemporaneity," we intend to deepen the *de-formations* that characterize our contemporaneity, which originated with the advent of industrialization and led to the crisis of that dichotomous relationship that has always characterized the city and the countryside. What instead unites today the concept of urbanity and rurality is a condition of *fragility*. Acceleration and rupture of the co-evolution nexus are therefore two sides of the same coin; the first leads to the formation of areas that are too full, where development is concentrated, and environmental bad of anthropic origin are produced (e.g., air pollution); the second generates areas that are too empty, where territorial marginality takes shape, and ecological problems (e.g., hydrogeological instability) arise from neglect.

We can summarize and decline these thematic according to three categories: physical-spatial, socio-cultural, and environmental-energy.

1. *Physical-spatial fragility* regarding the progressive growth of cities (UN's 2007 announced that 50 percent of humanity already lived in cities and that this percentage would increase to 70 percent by 2050) and the fragmentation of cultivated land with consequent decentralization of large agricultural productions and abandonment of land no longer grown.

2. *Socio-economic fragility* as regards the food production of the agricultural sector, which is increasingly unsustainable economically (most countries do not have sufficient domestic agriculture and import products: FAO asserts that it is crucial to building more resilient cities by enhancing local food production and diminishing the dependency on food imports) and socially (the lower social classes, and not only, have no access to quality food).

3. *Environmental-energy fragility* linked to the unsustainability of the two previous fragilities: the growing demand for food and the transport of products, in addition to leading to a degradation of our territories linked to the waterproofing of soils, involves problems in terms of pollution (of soils and air) and logistic infrastructures (due to the current prevalence of the fourth range production).

We can then speak of sharing as a condition of contemporaneity in the sense that we are all equally exposed to the consequences of our actions: *"the mirage of globalization has led us into this New Climate Regime in which the climatic consequences know no boundaries."* [2]

If in the first section, sharing is assumed as an inevitable condition. In the second section of the research, "SHARING as a paradigm and interpretative strategy," the theme of sharing is seen as a strategic response to the fragilities listed above.

The concept of *sharing* and that of *fragility*, despite belonging to different linguistic strains, have a similar meaning. *Share* represents a part, a portion (into which something can be divided); *fragile*, from *frangere*, from which the word *fragmentum* also derives, represents the ease of something to break, to fragment. This situation of shared fragility is alternately seen with a sense of mistrust in the globalized future and nostalgia for the local dimension (*Retrotopia*[3]) and, on the contrary, with the belief that new general technologies will bring positive developments in the design of our future cities that will have a highly shared and connected character on a technological level (*Futurecraft*[4]).

Therefore, the thesis proposition sees the "strength of fragility"[5] in being able to share the fragmentation, the complication of our contemporaneity, to establish cooperative mechanisms[6]. The challenge lies in seeing the innovative forms of farms as design interpretations that give rise to both visions (Bauman's *Retrotopia* and

Ratti's *Futurecraft*): they work at the local scale thanks to the technological evolutions that the production systems of the agricultural world are developing, making an ideal mending between 'rural' and 'urban'. So, the farm could represent the concept of sharing on a physical plane, such as spatial and functional contamination and hybridization between agricultural production and other forms of living, and on a theoretical level, such as exchanging different knowledge.

For the deepening of the first aspect, we intend to study design examples of innovative farms from which to draw the paradigms, strategies, and design actions. Being a type of production that does not have particular spatial needs, it can be declined in a very flexible way. For which concerns the second aspect, instead, we intend to study innovative farms that were born thanks to innovative policies applied to agriculture and that seek a point of contact with other forms of cultural production: *Agricola Moderna* in Milan (2020) and *Sci-Tech Farm* in Tokyo (2012) are two examples.

This intermediate section represents the link between the theoretical section and the final design development section. Here we intend to systematize a series of keywords, design references, and interpretative schemes, like an ex libris in the form of a dictionary, which will serve as a methodological guide. The three sections are not intended as consequent to each other but in a continuous exchange between them, in the process of constant modification and evolution since the design strategies will certainly derive from the references and the study of the selected project areas.

The last section, "SHARING LANDSCAPE as an operational tool," intends to apply design to the strategies and principles. Innovative farms represent a new architectural typology to be investigated, trying to understand how we can formally and spatially decline these new production methods to establish connections at the

urban level and to coexist different functions that benefit from space coexistence.

The three applicative study areas (*Sagrera area* in Barcelona, *Var valley* in Nice, and *Milano Bovisa*'s gasometer) are selected for their condition of promiscuity, encounter, and confrontation between widespread urban territories and once agricultural environments.

In this sense, sharing landscape becomes the verification design tool inside the urban void (to avoid further land consumption and to redevelop abandoned or degraded urban areas), a space of missing relationship, that is by its nature found between different entities.

Figure 2: Spacely degraded countryside from urban expansion and agricultural greenhouses in Ragusa, Sicily, 2021.

Figure 3: *Agricola Moderna*, hydroponic farming company in Melzo (Milan), 2021.

1———Alessandro, Balducci; Daniele, Chiffi; Francesco, Curci (2020): Risk and Resilience. Socio-Spatial and Environmental Challenges, Digital Edition: Springer.

2———Bruno, Latour (2018): Down to Earth, Cambridge: Polity Press.

3———Zygmunt, Bauman (2017): Retrotopia, Bari: Laterza.

4———Carlo, Ratti (2014): Architettura Open Source, Torino: Einaudi Editore.

5———Brené, Brown (2016): La forza della fragilità, Milano: Vallardi A.

6———"Creativity could take two forms, the first of these, negentropy, through the physical trapping of energy [...] and further, through those cooperative mechanisms that are indispensable for greater complexity - and therefore evolution - which is the symbiosis". Ian L., McHarg (1969): Design with Nature, Wiley Series in Sustainable Design.

A Messy Autoethnographic Documentation of Making with the Environment

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Initial Doctoral Stage

Supervisors: Ida Nilstad Pettersen, Norwegian University of Science and Technology; Ferne Leigh Edwards, Norwegian University of Science and Technology; Trond Are Øritsland, Norwegian University of Science and Technology

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making with the environment, handicrafts, autoethnographic methods, other-than-humans, environment and design, materials in design, making, wool

Abstract

The start of the Anthropocene traces back to the Industrial Revolution, which implies that industrial design as a field should rethink how design leads to consequences to the world. To shift from techno and human-centrism in design and to overcome the problems started by humans (such as the climate crisis, pollution, lack of natural resources, cultural manipulations) new methods in design studies that involve other-than-humans are crucial. Designers have possibilities to look from others' perspectives, and these perspectives may be beneficial in changing worldviews. My PhD study suggests that looking from other-than-human's perspectives and studying their relations is necessary for design. I demonstrate an early-stage investigation related to a direct handcrafting experience, the relationship of human and other-than-human actors in a design/making process. The other-than-humans in the study include the environment and materials.

Artefact

This submission documents an early-stage investigation that aims to produce knowledge from experiences gathered by working with wool material. The knowledge is gathered from the relationship of human, environment, and materials in a design/making process, therefore theoretical production is influenced by the creation process of artefacts.

The PhD study looks at the intersection of emerging theories of posthumanism and traditional knowledge. Key points are:

— The inclusion of other-than-humans (nonhumans, more-than-humans) into making and design practices,

— The integration of nonhuman notions and traditional knowledge into design.

— The investigation of craft and design by making felt textiles with hands, using wool as material, by studying the associations of these notions.

In this early stage, I investigate other-than-humans and how they are related to making and design practices, through a direct experience of handcrafting, with specific attention on the explorative and processual aspects. Relationship with the environment is another aspect, intended as something that affects the process of working with wool: This stage presents a study that aims to have a better understanding of working with the material, and to study how factors other than the maker and material relate to the making practice. Having a better understanding of the making process and the relations of different environments where I initiate the felting process allows me to know how these environments are a part of the making practice as other-than-human entities. Felting is both a traditional and contemporary technique to make textiles, working with basic fibers with hands, to create surfaces, which involves compressing animal fibers by using alkaline and hot water.

The world is going through many temporary situations, including crises and climate change. The consequences of human exploitation of nature have started the geological age known as the Anthropocene. Human needs have resulted with industrialization and the exploitation of natural resources. The start of the Anthropocene is traced back to the Industrial Revolution [1], which already implies that industrial design as a field should rethink what design processes should include. To shift from this human-centrism and to overcome the problems started by humans (such as the climate crisis, pollution, lack of natural resources, losing tangible and intangible heritages) new methods in design studies that involve other-than-humans are crucial. Designers have

possibilities to look from others' perspectives, and these perspectives may be beneficial in changing worldviews. Starting with the Industrial Revolution, mass production resulting from human needs have initiated industrial design. As design has been technology-centered at first, and human-centered since 1980s [2], my PhD study suggests that looking from other-than-human's perspectives and studying their relations is necessary for design. Also, even in human-centered design, it is necessary to look at other-than-humans, as humans cannot exist with nonhuman actors.

As in traditional knowledges, human-nonhuman relationship is not binary, the PhD study suggests that looking at traditional knowledges will bring possibilities to bring out nonhumans into design. In other words, it offers ways that traditional knowledge could be applied for the ways of living today. They can also provide guidance on how to learn and integrate with the new world situations. These knowledges can be applied for many aspects, including topics such as craft and design, decolonization of design, experiencing technology in new ways, shifting design processes. Traditional knowledge from Turkey and Norway are investigated in the PhD study. At this stage, nomadic Turkish folk groups, in other words Yoruks lifestyle and felt artefacts are researched.

The study does not romanticize the past or old ways of living, nor does it take technological improvements as enemies. Instead, it points out that these technological improvements could have been made and implemented in different ways, as the world is going through many changes with technological improvements.

Research Through Making-with-Hands

Design, craft and making are related notions that refer to a creation process. Making in this sense is taken as working and producing with a material hands-on to

have a better understanding of it. Many related disciplines employ "research through making," including traditional crafts [3]. Here it is applied as a "making-with hands" approach and does not involve any machinery. The research leads to an understanding of how making practice can shift with using emerging theories in design that refer to other-than-humans. Looking at the environment from older ways of knowing could benefit today's design studies.

This process includes steps that start with obtaining the material (wool), washing and applying pressure on the wool, and making artefacts/textiles with the help of water, soap, hand pressure and additional tools such as cloths and towels. The outcomes of this stage are of explorative nature, as shown in visuals [1] [2]. The aim in this phase is not to produce final artefacts but to have ideas on how to implement the process of making, and it is believed that this will contribute to the research process that involves learning to work with several types of wool. Preliminary findings include acquiring the material, shaping the workspace, finding out about wool types, and finding inspirations from resources such as environment and ancient cultures.

Figure 1: Learning about and with the material.

Making and Environment

This attempt examines a making activity, and its relation to the environment. The tools and materials used in the making process are a part of this environment. However, their surroundings, meaning the workspace, also affects this process. With analyzing making in different environments, the emphasis is trying to learn

how to adapt to different settings and even "climates", and how the making practice relates to them. It consists of a felting practice, which has been carried out in several locations, interior and exterior spaces and geographies. Locations including workshop/studios and outdoors have been the environment of this making practice, and they will be analyzed through the theme of "making-with the environment". More specifically, the environment consists of different studios, rooms and exterior spaces and they are all taken as elements in the making process. For making, wool material and felting practice is used. I experiment with several wool types, such as unprocessed wool from local farms to have a better understanding of it not just as a resource for producing but also as an equal actor in the act of making.

Figure 2: Documenting wool and making activity.

Decentering Humans in Design

Some examples in design have shown new materialist and posthuman [4] theories as facilitators to reposition the state of humans. These approaches are exemplified as "decentering the human, non-anthropocentrism, and human/ non-human relations" [5], that expand design from human needs to others, such as trees, rocks, animals and machines. In design research, inclusion of other-than-humans can be explored with several methods. In this example autoethnography is taken on, which is the ethnographic study of "self". This method

"humanizes research by focusing on life as lived through in its complexities" [6]. As autoethnography is a human-centered approach, studying other-than-humans with this method could be seen as opposing because of the centrality of the "researcher". This opens an interesting debate on other-than-humans: In this instance, this human-centered approach allows me to experience and acknowledge my own responsibility for other-than-humans in design driven research, and how I approach my surroundings. Processes of research and design have strong parallels between each other [7]. As design process is "messy," he proposes that autoethnography as a method can capture evidence from this process of messiness, as the design process starts and goes on. Autoethnography acknowledges the researcher as central in the research process, and the tools it offers increase reflection and structure [8]. Studying making practices with this method offers relevant documentation [3] for making in varying environments.

Inclusion of Other-than-Humans in Design

Making and design are concepts that refer to a process of creation. When defining other-than-human actors, I refer to the emerging theories of posthuman and notions of nonhuman (e.g. nonhuman agency and Actor-Network Theory), more-than-human [9], other-than-human [10] that are being used in design. Although there are different approaches on these notions, I take nonhuman's meaning in the most literal sense: It is what is "not human". These concepts that include non-human are also part of indigenous knowledge, that do not distinct human-nonhuman from each other. I use these concepts as a way to include my environment and surroundings into my making process. I acknowledge that in design studies these terms are being used to define several meanings, which refer to decentering

humans, and involve themes such as environment, technology and made objects. Wool sources include unprocessed wool from local farms [4] and processed wool from handicrafts organizations [5]

Figure 3: Wool source acquired from a local farm.

Figure 4: Using processed wool for relations of traditional knowledge. The artefacts belong to a learner's process, and refer to traditional symbols, such as figures and symbols from old carpets.

These emerging approaches are being used to see how a making activity can adapt to new environments, whether it is a making studio or an outdoor setting. The focus on the location also emphasizes the effects of climate and ever-changing circumstances other than the self (the maker), around a making practice. Some examples for these circumstances are,

— Working environment: I employed the same practice in various locations and started making felt with the same idea and material types but allowed myself to be open to outer circumstances around me to explore what type of artefact would come out. Preparation and temporality of the making practice had impacts, especially for the outdoors, I limited time and tools, including water and wool usage.

— Acquiring wool and its temporality: For instance, a contact who was supposed to supply me with unprocessed wool informed me that this spring's wool was short and unclean, and suggested I wait for summer instead. Therefore, I continued working with a darker type of sheep wool I collected before.


fotografija, film, skice arhitekture in ekskurzije.
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Figure 5: Exhibition of felted artefacts in various environments in CA2RE Ljubljana 2021

Autoethnographic Documentation

I show the autoethnographic documentation to emphasize the experiential knowledge, learning with material in the practice, and how environment plays a central part in this process of making. I do this by analyzing the relationship of the environment and artefacts I created, by using the artefacts themselves, their photos, and written notes from reflective diaries. The documentation is ongoing, therefore the visual is an early attempt of a thematic analysis of making practice, and are themed according to the relationship between environment and making processes/forms.

These trials can also be defined as ideation "sketches" with material. I relate this with thinking through making and materials [11], and connect this approach to materialness of things. Drawing from Ingold's question, "Why should the material world include only either things

encountered in situ, within the landscape, or things already transformed by human activity, into artefacts? Why exclude things like the stone, which have been recovered and removed but not otherwise transformed?" [12] , the environment and other-than-humans in this research consist not only the materials or artefacts, but other things: While studying design-craft and human-material relations, the relationship between the human and material is taken into consideration. However, other elements from the environment that do not belong to human activities can be put forward in these practices as well.

I implement this by not excluding, but observing the changing environment, including the workspace, tools, materials, table, and location. Varying locations also allow surrounding elements from the landscape such as rocks and sea, or the sun to become a part of the thinking-with process. Different trials in several environments and the outcome artefacts in wool material are a part of the documentation. Examples shown as artefacts are demonstrated as a relational process with the environment.

1——————Crutzen, P.J. (2002) Geology of mankind. Nature 415(6867): 23–23.

2——————Forlano, L. (2017). Posthumanism and design. She Ji: The Journal of Design, Economics, and Innovation, 3(1), 16-29.

3——————Fitzpatrick, E., & Reilly, R. C. (2019). Making as method: Reimagining traditional and indigenous notions of 'craft' in research practice. Art/Research International: A Transdisciplinary Journal, 4(1), i–xvi.

4——————Haraway (2016). Staying with the Trouble: Making Kin in the Chthulucene. Duke UP.

5——————Forlano, L. (2017). Posthumanism and design. She Ji: The Journal of Design, Economics, and Innovation, 3(1), 16-29.

6——————Adams, T. E., Ellis, C., & Jones, S. H. (2017). Autoethnography. The international encyclopedia of communication research methods, 1-11.

7——————Munro, A. J. (2011). Autoethnography as a research method in design research at universities. 20/20 Design Vision, 156.

8——————Triantafylli, N., & Bofylatos, S. (2019). "Poke it with a Stick", Using Autoethnography in Research through Design. In Conference Proceedings of International Conference 2019 of the DRS Special Interest Group on Experiential Knowledge (EKSIG 2019) edited by N. Nimkulrat, K. Kuusk, J. Noronha, C. Groth, and O. Tomico, . Tallin, Estonia: Estonian Academy of Arts. Knowing Together: 87-102.

9——————Galloway, A. (2017). More Than Human Lab: Creative Ethnography after Human Exceptionalism. The Routledge companion to digital ethnography, 470.

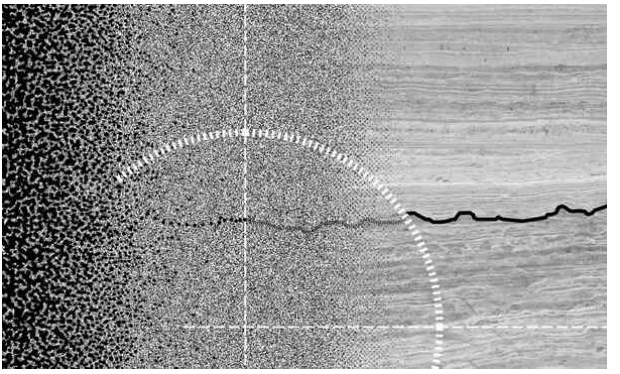
10——————Gatto, G., & McCardle, J. R. (2019). Multispecies design and ethnographic practice: Following other-than-humans as a mode of exploring environmental issues. Sustainability, 11(18), 5032.

11——————Nimkulrat, N. (2012). Hands-on intellect: Integrating craft practice into design research. International Journal of Design, 6(3), 1-14.

12——————Ingold, T. (2007). Materials against materiality. Archaeological Dialogues, 14(1), 1-16. doi: 10.1017/S1380203807002127

Geometries of Time

Taufan ter Weel, TU Delft
Mariacristina D'Oria, University of Trieste



Intermediate stage. Research project developed connecting our individual PhD research trajectories.

Supervisors: Roberto Cavallo, TU Delft; Heidi Sohn, TU Delft; Giovanni Corbellini, Politecnico di Torino

Diagrammatisation, entanglements, space-time-matterings

Abstract

In the matter of the global catastrophe we are facing today, the multimedia installation explores different scientific abstractions produced from the Enlightenment onward in connection with their social and environmental implications. More specifically, we question and contextualise the tensions between the increasingly blurring absolute representations of reality and the relative spacetime of entangled processes by means of architectural diagrammatisation and multimedia experimentation. The work aims to critically examine the concept of tabula rasa, the succession of superimpositions and erasures that constantly reshapes the formation, morphology, and very meaning of landscape, as well as the notion of void or vacuum without matter or energy.

Artefact

Introduction

To anticipate the uncertainties, the catastrophe we are facing, whether environmental, biological, or social, the multimedia installation explores different scientific abstractions of space and time produced from the Enlightenment onward in connection with the implications for how we engage with the landscape. We question and contextualise the tensions between the increasingly blurring absolute representations of reality and the relative space-time of entangled processes. By means of architectural diagrammatisation, the work cuts across deep time, traceable in geographical strata; the linear time of progress; the cyclical time of seasons, tides, and bodily rhythms; and lastly, nonlinear, relative, and relational concepts of space-time.

It aims to critically examine the concept of tabula rasa, the succession of erasures and superimpositions that constantly reshapes the formation, morphology, and

very meaning of landscape. Since time cannot be disentangled from space, and space-time not from matter-energy, we want to take this further and call into question the notion of void or vacuum without matter or energy. As Karen Barad puts it, "the vacuum is filled with the indeterminate murmurings of all possible sounds: it is a speaking silence." [1]

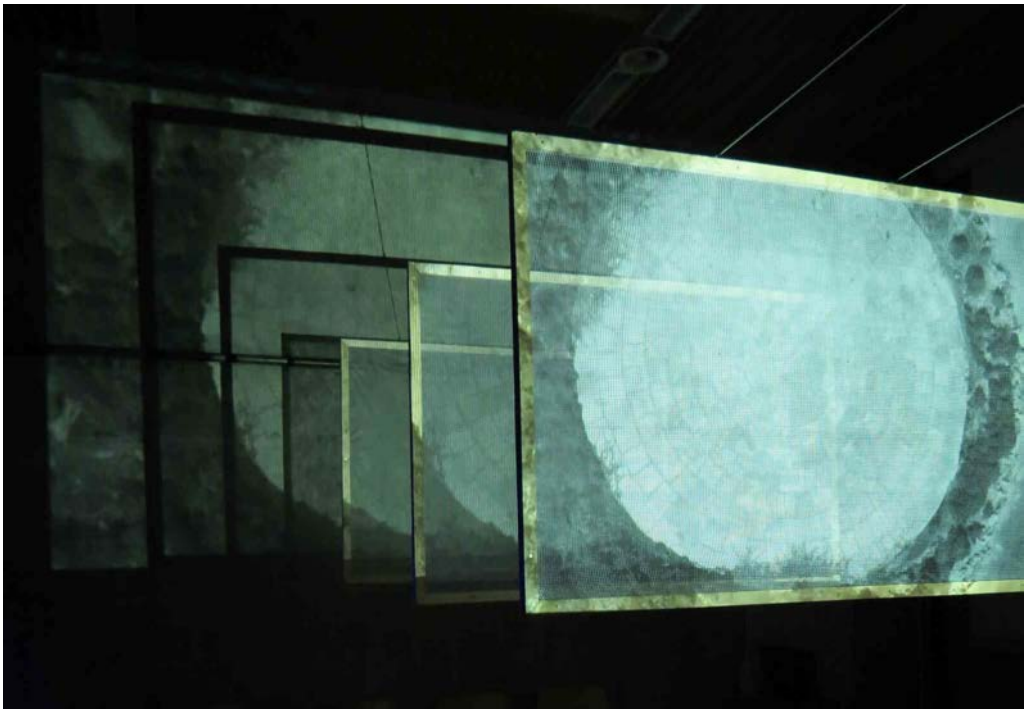


Figure 1

Entangled landscapes

In resonance with Barad's words, our installation [1] seeks to explore the complex entanglement we are confronted with today, moving beyond the absolute void, that is, space as an empty container predominant in modern geometry and physics. Instead, it experiments with the delineation of an under-construction map recovering the murmurings with which every place is potentially filled.

The point of departure is the Mojave Desert, central in the current debate about building a nuclear waste repository inside Yucca Mountain. This extreme

landscape stands in the collective imaginary as one of the archetypical loci of wilderness, a concept that has been historically instrumentalised to justify colonisation, capitalism, and exploitation. Under the formula "going West," large territories have been occupied, erasing lives, ecologies, rituals, and practices that densely inhabited these spaces. Critically arguing against the presumed emptiness of these places, rituals and everyday rhythms are retraced in the attempt to retrieve an erased conception of cyclical time from a pre-colonial past: cycles, calendars, myths, and indigenous' practices begin to emerge, amplifying what is today only a weak trace of these civilizations.

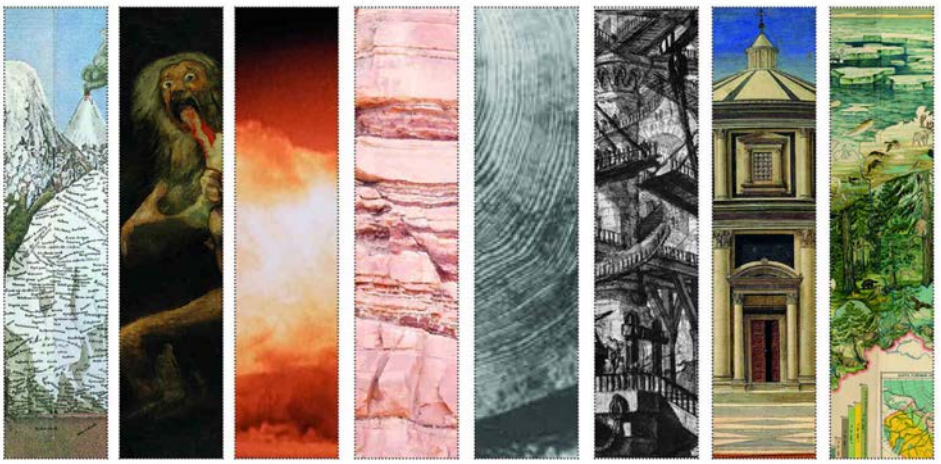


Figure 2: Humboldt, Alexander (1807): *Tableau Physique mapped vegetation*; Goya, Francisco (1819-1823): *Saturn Devouring His Son*; Manhattan Project (1945): *Trinity Test; Geological strata*; *Dendrochronology*; Piranesi, Giovanni Battista (1745- 1750): *The Prisons*; Alberti, Leon Battista (1480- 1490): *The Ideal City*; Fedorov, Nicholas (1928): *Zoogeographical map of the Soviet Union*.

Diagram as Explorative Method

We understand diagrammatisation as a material-discursive process that reconfigures our relation to the world, exploring latent potentials within an associated milieu and suggesting a broader set of relations connecting multiple environments — spaces and times. A diagram is deterritorialised, not bound to a particular territory, scale, and time frame, but allows for drawing trans-spatial and trans-temporal relations and exposes connections between abstractions of space, time, matter, and

energy. [2] [3] Moreover, it is an operational device capable of opening up new areas of sensation and intensity. Diagrammatisation entails a focus on technicity: technical processes and objects produced by supposedly enlightened and advanced humanity, enabling us to underline the frictions and discontinuities they generated.

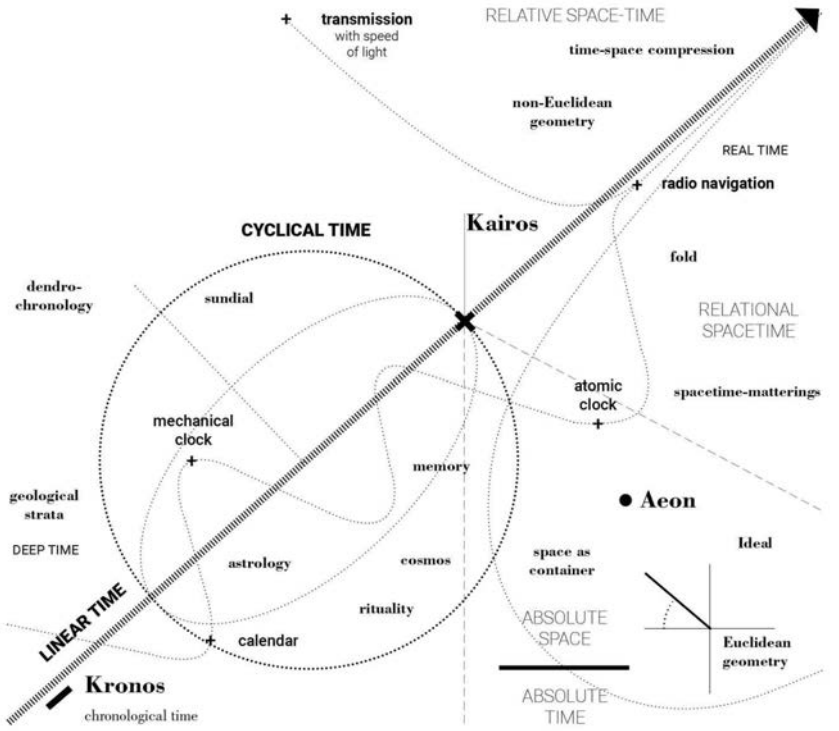


Figure 3: Ter Weel, Taufan and D'Oria, Mariacristina (2021): *Diagrammatisation as a means of theoretical investigation through the concept of space and time in order to intercept the warped section of the entanglement.*

According to the Stoics, time is cyclical: the universe is eternal and evolves following the relentless repetitions of its cycles. In an anthropomorphic fashion, they defined three mythological figures, identifying respectively: Aeon, the eternal time that embraces past, present, and future; Kronos, the linear time defined by the continuous succession of events; and Kairos, the time of crisis and opportunity responsible for the episodic universal conflagrations that open up cyclical ways to rebuild the world.

Following Henri Lefebvre [2], the notions of time and space are understood here as being socially and culturally produced rather than neutral or objective. David Harvey draws on Lefebvre's dialectics, distinguishing the tripartite division of absolute, relative, and relational ways of understanding space and time. First, there is a certain absolute notion of space and time found in classical Euclidean geometry, the modern Cartesian coordinate system, and Newton's space as a container isolated from time. Second, a relative conception of space-time can be attributed to Einstein's relativity theory, non-Euclidean geometries, and a certain shifting sense of space-time, which Harvey calls "time-space compression" [3] and can be associated with technological development or technicity. Last, he identifies a relational approach to space-time, which derives from Leibniz' monad, wherein space and time cannot exist outside the processes of their unfolding.

This concept of relational space-time opens up the possibility to move beyond a solely dialectical understanding of space and time and provides a point of intersection with Barad's understanding of practice as being material-discursive (both ontological and epistemological) and matter as an entangled process. Practice is a matter of accountability and "response-ability" rather than objectivity, as Barad, with Donna Harraway, suggests. With regard to the presented artefact, this could lead us to Félix Guattari's notion of the production of subjectivity and his ethico-aesthetic approach, emphasising the irreversibility and responsibility inherent in the creative act. [4]

The Multimedia Installation

The multimedia installation puts into operation the diagram, performing an exploration across, on the one hand, different abstractions of time and space, and on the other, the entanglements between various landscapes in formation, generating a warped cross-section

or archipelago of places and multitude of times linked by the resounding echoes of exploitation. [4]

In the beginning there is noise, white noise. According to Gauss, white noise contains all frequency components distributed throughout the entire spectrum with equal intensity and implies that every two instances in time have different values — there is no correlation in time, no repetition. Immersed in this vast sea of all possible tones, the audience is facing Aeon, eternal time, endless space. From this infinite field of possibilities, the installation renders an aerial view of the Mojave Desert and two panoramic views of the Grand Canyon, immediately questioning the temporal scale of this landscape exposed by its geological strata: the endlessness of its formation in deep time. [5]

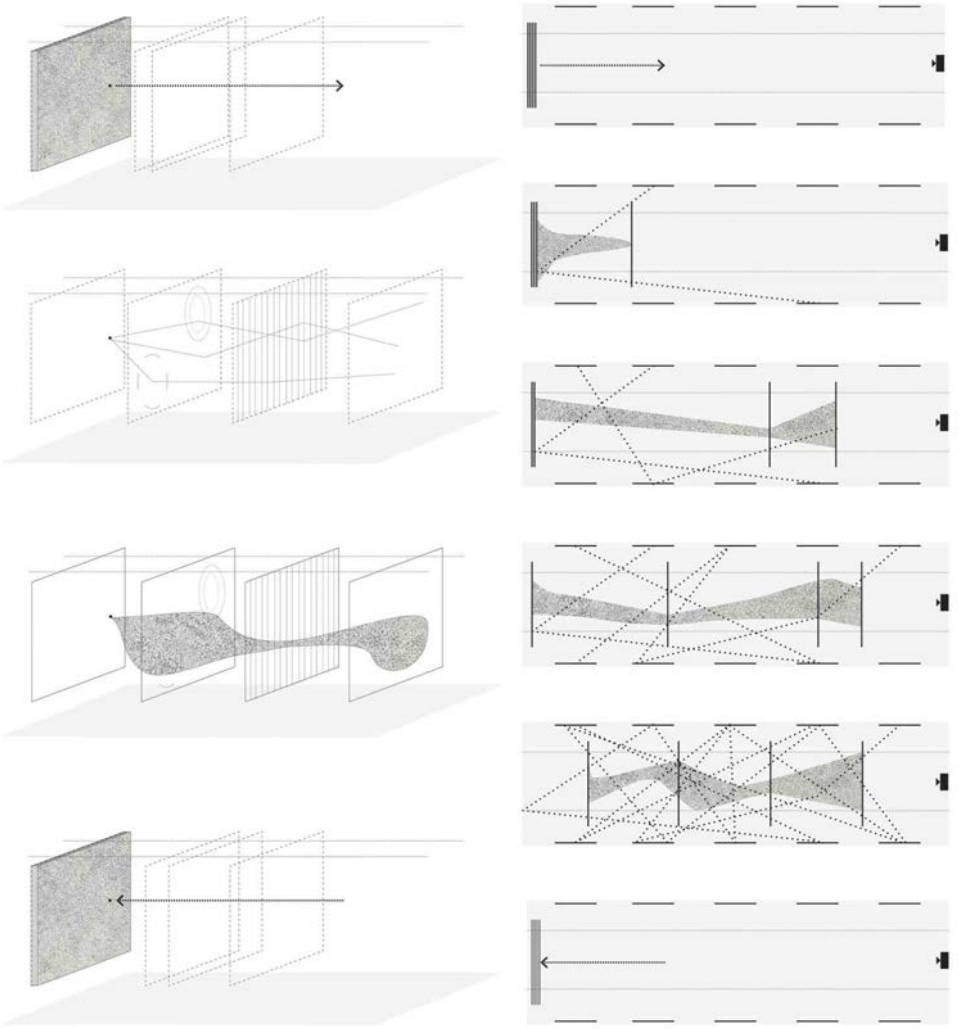


Figure 4: Diagram of the transposition from diagram to installation.

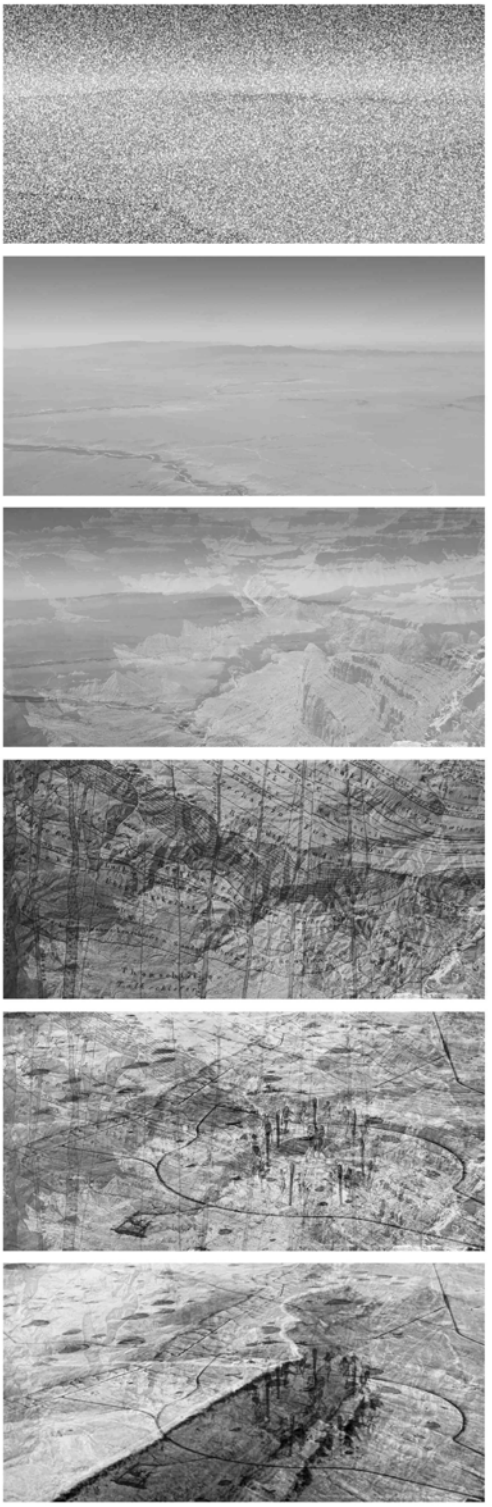


Figure 5: Ter Weel, Taufan and D'Oria, Mariacristina (2021): *The extraction process of the American Desert from the white noise field.*

This landscape is the empty surface and playing field of colonial and capitalist practice. Two sites of exploitation emerge from the desert: Yucca Mountain and Nevada National Security Site, where nuclear testing not only contaminated the native's land but erased their entire existence. They trigger the unfolding of a multiplicity of landscapes exposed to similar processes of colonisation and erasure. A collage and ten panels show different spaces and times, geographically and historically separated but nonetheless connected by being subjected to imperialist and colonial exploitation such as nuclear testing and military use justified by being supposedly deserted islands. [6 — 8]

The sonic space consists of generated sounds (through computation and synthesis) and field recordings made in different places in the world. The recorded landscapes and concrete rhythms are convolved with and modulate or trigger generated sounds and stochastic processes; fixed media are combined with self-generative processes. The sounds are distributed to four loudspeakers composing an artificial landscape. Synchronised with the sound, the moving images are projected on different surfaces and semi-transparent layers, creating an entanglement of interrelated landscapes, maps, and abstractions of space, time, matter, and energy. The environments are manipulated again: the linear time of progress and capitalist expansion cuts across the cyclical rhythms, radically disrupting and rearranging them. Isolated fragments and sites start to be connected by these processes of colonisation, moving from stochastic probability distributions (space-time-matter-densities) to interactions between linear and cyclical rhythms back to noise.

The installation becomes a continuous reciprocal rhythm and relational diagram in itself. [9 — 14]

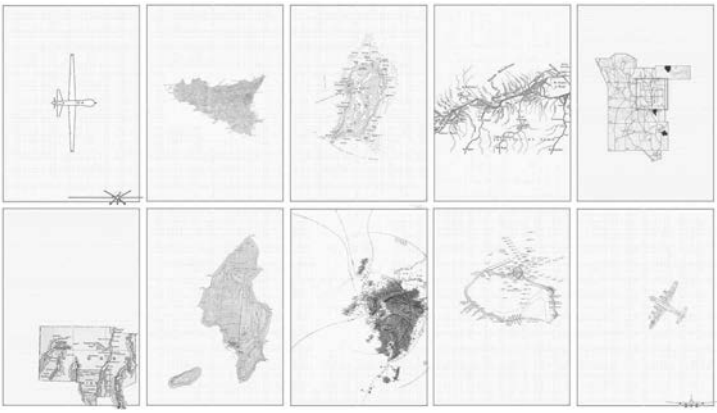


Figure 6

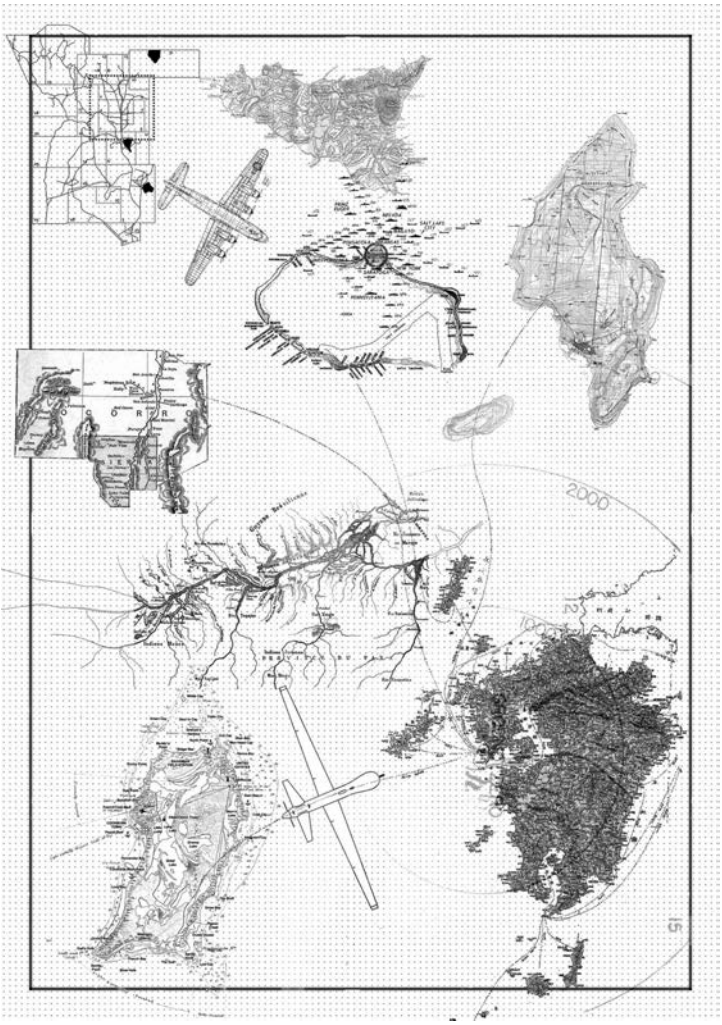


Figure 7

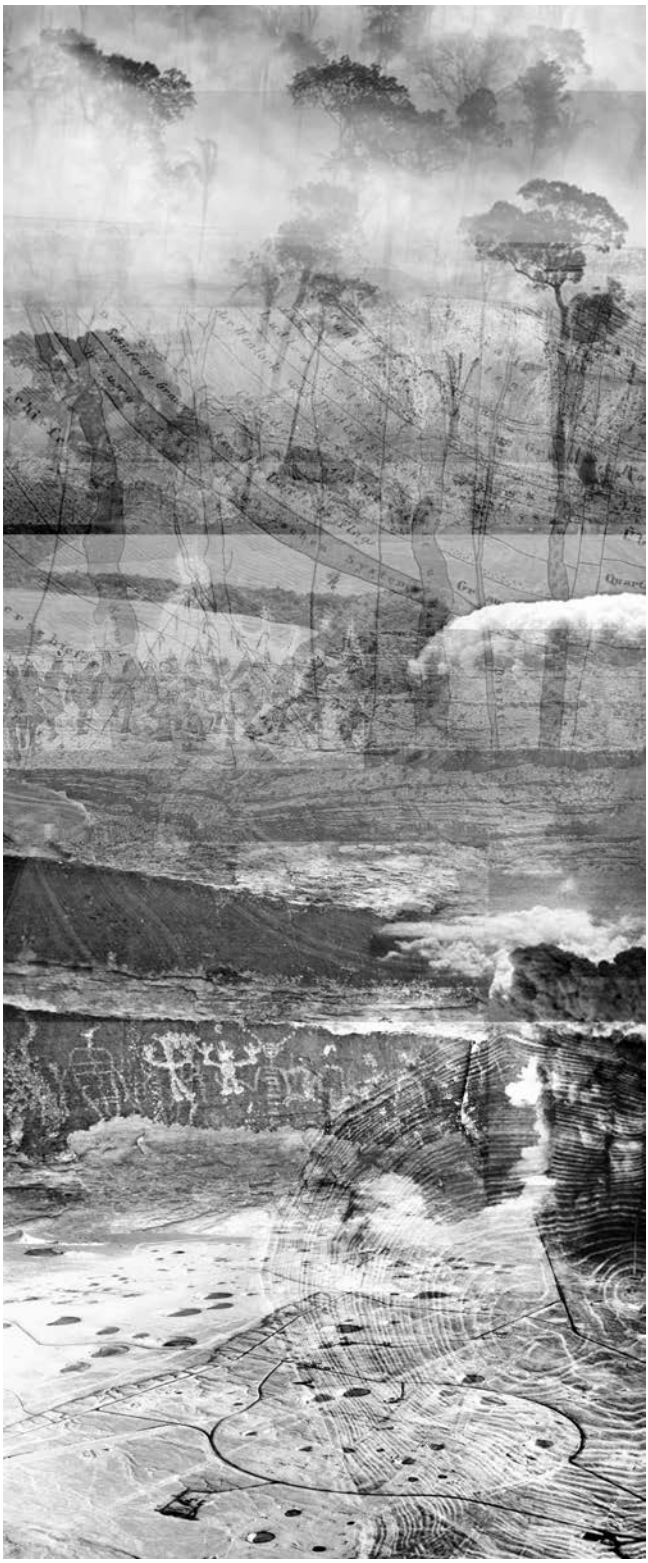


Figure 8: Ter Weel, Taufan and D'Oria, Mariacristina (2021): *Archipelago of exploited landscape. Retraicing one of the possible warped sections of the entanglements.*

Figure 9

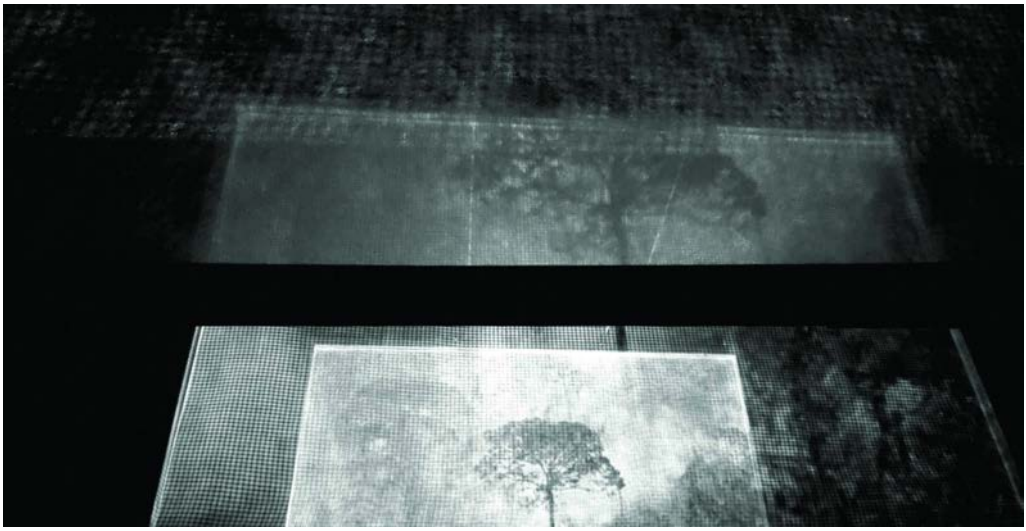


Figure 10

Figure 11

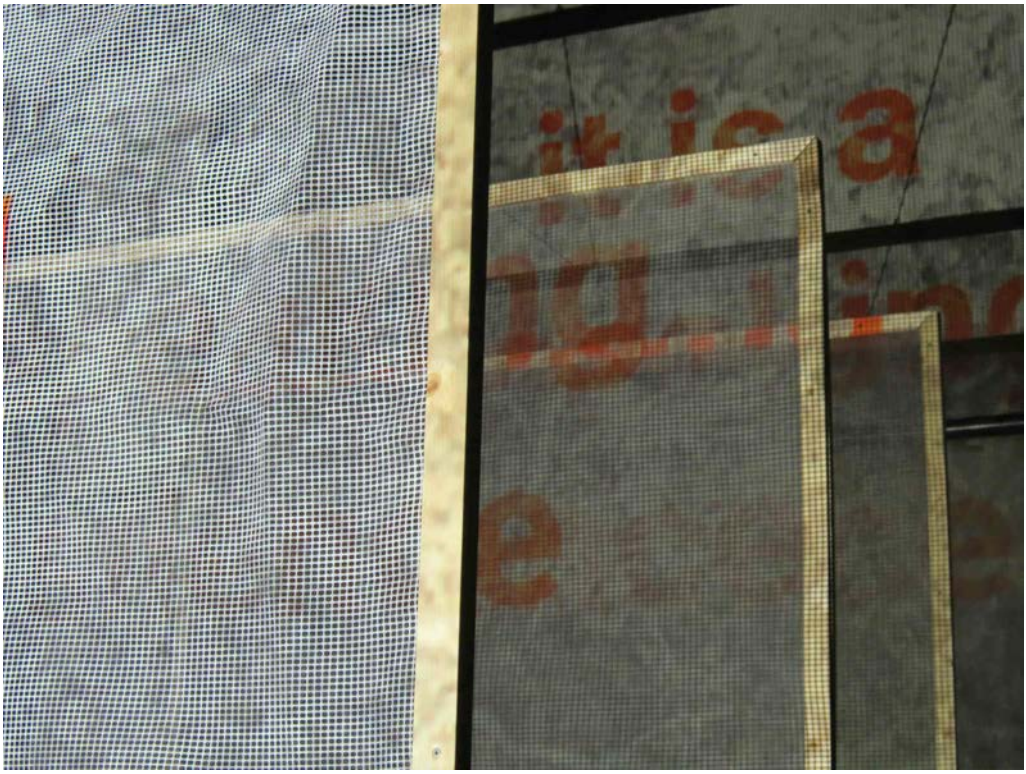


Figure 12

Figure 13

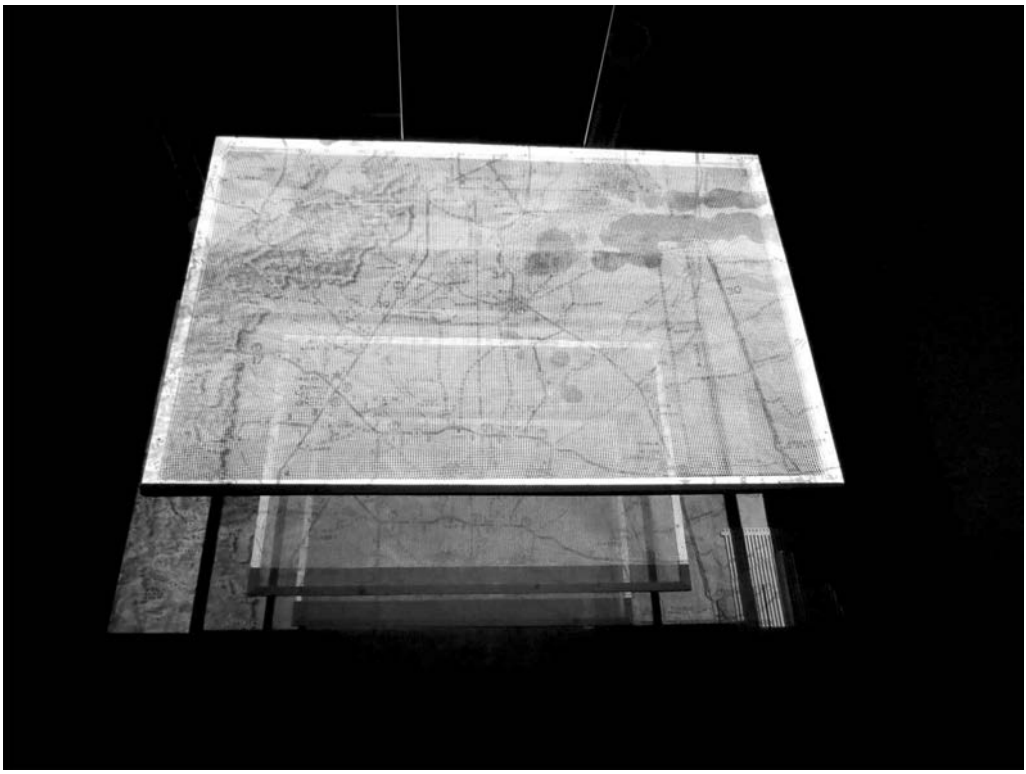


Figure 14

1————Barad, Karen (2017): »Troubling Time/s and Ecologies of Nothingness: Re-turning, Re-membering, and Facing the Incalculable«, in: New Formations 92, p.77.

2————Lefebvre, Henri (1991 [1974]) The Production of Space, trans. by Donald Nicholson-Smith, Cambridge MA, Oxford: Blackwell.

3————Harvey, David (1989): The Condition of Postmodernity, Cambridge MA, Oxford: Blackwell.

4————Guattari, Félix (1995): Chaosmosis: An Ethico-Aesthetic Paradigm, trans. by Paul Bains and Julian Pefanis, Bloomington, Indianapolis: Indiana University Press.

Approaching Industrial Ruins in a Post-communist Landscape

A design-driven transformative rethinking of industrial heritage in Romania.

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Intermediate doctoral stage

Supervisors: Ignacio Borrego Gómez-Pallete, TU Berlin; Jürgen Weidinger, TU Berlin

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industrial heritage, ruins

Abstract

This ongoing research aims to find approaches to resist the widely occurring process of cultural amnesia triggered by the systematic erasure of former industrial sites in the Transylvania Region of Romania. By engaging design-based analysis and solution proposals, the goal is to counteract the growth of urban and peri-urban decay, which in turn has catalyzed the emergence of necrotic, uncontrolled landscapes in the immediate proximity of metropolitan centers(1).

The design-driven process aims at a course of action that offers an impulse towards a softer approach to the decaying bodies of industrial ruins, framed not as "urban development assets" but as entities whose ties to a shared past have to be nurtured. This process entails the retrospective investigation of the failures (and successes) of a first, built, case study, the speculative re-design of a second and third hypothetical case study, and the framing of this recursive process within the cultural context of post-communist society, alongside its grotesque perception and reception of industrial ruins.

Paper

Large scale areas are being left permanently deserted by the continuing trend of deindustrialization. A particularly striking example of this phenomenon is observable in the states of the former Eastern Block, lasting from the 1980s to present day. The tendency towards urban and peri-urban decay has catalyzed the emergence of necrotic, idle, and uncontrolled landscapes, often in the immediate proximity of metropolitan centers,[1] as well as the systemic erasure of industrial and cultural heritage in these regions.

The Romanian state and Romania's institutional culture contribute massively to the problematic handling of its industrial heritage. "Until recently, heritage designation was mainly granted sites pertaining to faith, the

Romanian nation, and historic and prehistoric pasts. Industrial and mining heritage registered at the Ministry of Culture listed nothing production or labor-related." [2]

This paper will aim to frame the structure of a research which intends to counteract the widely occurring process of cultural amnesia and to reframe awareness of Romania's particular relationship with its communist past through a less pragmatic strategy: one that offers an impulse towards a softer approach to the decaying bodies of industrial ruins, framed not as "urban development assets" but as entities whose ties to a shared past have to be nurtured.

The use of narrative text, such as the one at hand, is decidedly not serving a descriptive means, as it is not intended to "translate" what is designed/drawn. Instead, it is meant to complement and support design-driven actions that ultimately lead to conclusions, which will be reframed in a scientific literary discourse. It is meant to illustrate a recursive process between setting the scene, surveying the territory (architecturally and culturally), proposing action (or un-action) and then critically reformulating the findings. Thus, the focus of this research falls on transformative processes in the existing reality of the sites, as well as in the realms of research and architectural design: the objective is to explore these complex yet inexact pursuits.

While maintaining and reclaiming such sites has been a focal point of architectural and urbanistic research and planning in Central Europe, the particular socio-cultural characteristics of Romania have not been closely examined, leading to maladjusted solutions in the few cases where the necessity for intervention had been identified.

The initial, ground-laying strategy for this research constituted in framing the particular cultural context that was chosen: turning a generic global architectural issue (transforming industrial ruins) into a hyper-specific, hyper-local one: transforming particular sites, in

s, in a particular region of a single country, that operates on a particular set of cultural idiosyncrasies.

These sites have flourished during and served as a backdrop for a tremendous historical trauma: the rise, and perhaps even more significantly, the abrupt fall of communism. After 1989, the consensus seemed to be a public and radical refusal to acknowledge any association with the socialist past, positive or otherwise. The current systemic ignoring of Romania's industrial heritage can be traced back to an sudden cutting of the cord that linked communities to a common heritage (forged during 42 years of aggressive and invasive socialism), perceived to be devoid of any cultural-historical merit.

"The grief and pain associated with ruination is not only triggered by their decay but also by the inability to interact with them." [3]

This approach solidified the argumentation for the relevance of the research, framing the engagement with unvalued memory as imperative and necessary for the creation of a fully fledged cultural identity, by exemplifying not only the relevance of preserving and transforming ruins but the necessity to preserve and transform these very particular ruins of a shared industrial communist past into imaginaries worth engaging with in the 21st century.

The employed research methods oscillate between traditional architectural analysis and the speculative-ludic handling of three self-authored design projects in the city of Sibiu and Hunedoara (Transylvania), henceforth referred to as "Case Studies": an initial design project which spearheaded a now successfully completed transformation project, a playful conceptual proposal for the handling of a derelict industrial site of gargantuan proportions, and an ongoing project, that harbors significant potential for a complex interweaving of intuitive design proposals as well as feasible implementation of architectural design.

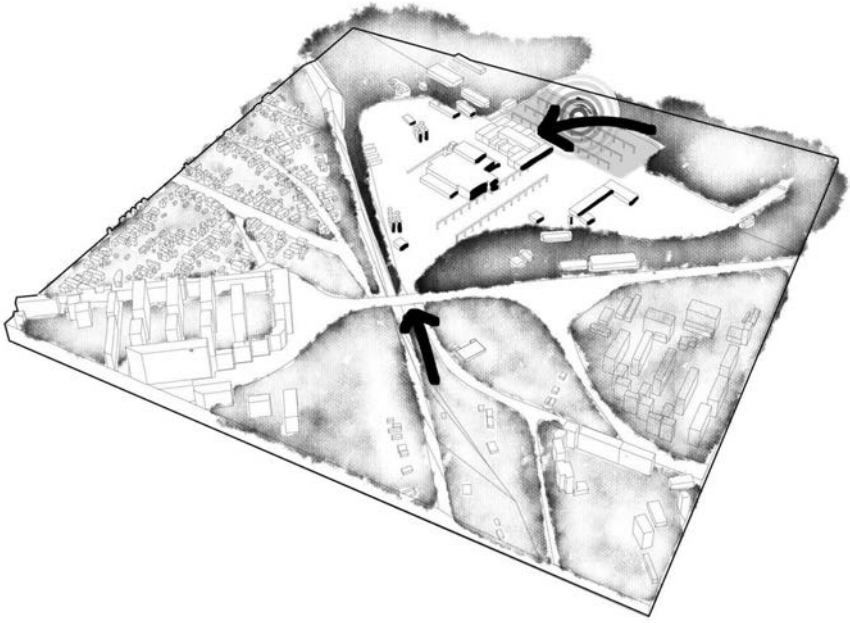

Figure 1: Case Study 1, Fabrica de Cultura Sibiu, birds' eye perspective drawing, watercolour

The process entails the retrospective investigation of the first Case Study, by reflexively analyzing the disparities between the initial design intent and the materialized form of the project, the speculative re-design of the second and third Case Study, and the narrative framing of this recursive and reflexive process.

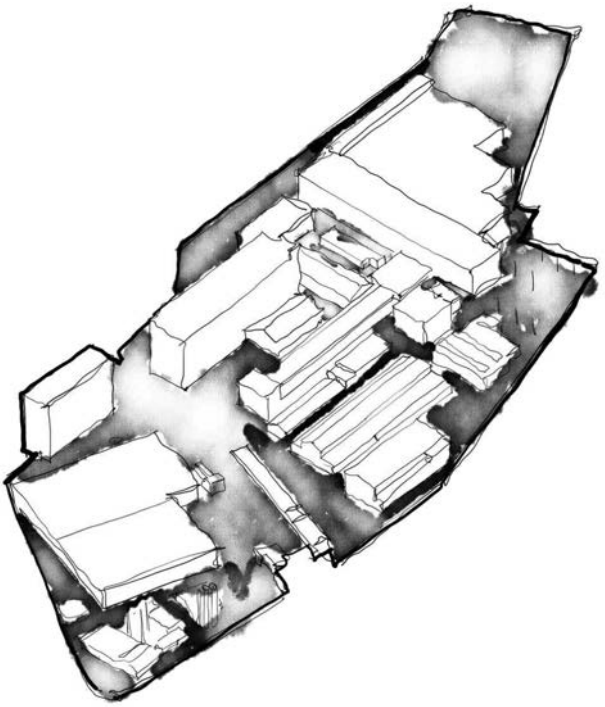

Figure 2: Case Study 2, Fabrica Independenta Sibiu, birds' eye view drawing, watercolour

Case Study 1 is representing a type of "paleoteric knowledge" [4], by which a finalized design project (employing a traditional attitude towards design) can be interrogated retrospectively versus the "neoteric knowledge" introduced by the other two Case Studies, which are forward-looking, working with designing, and intrinsically playful and speculative. The research is proving to be an ongoing conversation between the designer and the objects intervened upon, focussing on this recursive process rather than on a finished architectural product.

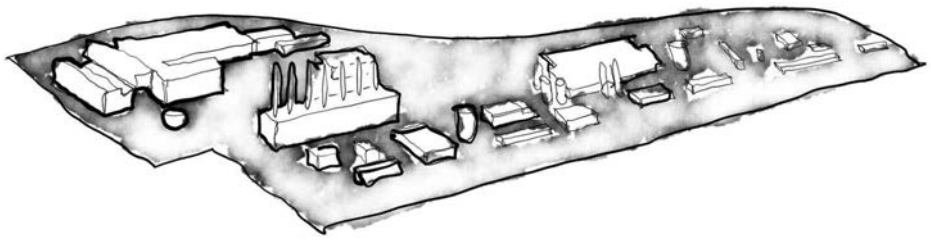

Figure 3: Case Study 3, CSH site Hunedoara, birds' eye perspective drawing, watercolour

Two immediate directions of work were mapped out this far: the (auto-) ethnographic, delivered as narrative text, and the use of hand-drawn architectural representation as creative speculation.

The predominant use of hand drawings and watercolours is linked to the exploration of the imprecise, speculative nature [5] of the surveyed objects and the subsequent design proposals. Computer aided design drawings have been consciously excluded from this process, as these will impose a level of precision which might give the impression of a finalized action upon an object that isn't in a constant state of change and decay. The other method of capturing the intricacies of the sites is filming particular scenes, as this allows a juxtaposition of aural elements, and photography during site visits.

A preliminary result (in the vein of the "conclusions" of a paleoteric learning process, mentioned a few paragraphs prior) to the finalized first Case Study was that despite architectural misuse and misapplication of the initial design tactics, the materialized project was successful and widely praised.

As a counterpart to the medieval city center, which has been sanitized and transformed into a tourist-friendly photo backdrop, Case Study 1, located in the industrial periphery of Sibiu, attracts a mostly local population. The initial design focused primarily on the reconversion of a structure that had been dubbed "the virgin ruin",

a skeletal concrete structure that had never been used. However, the strategy to reprogram this ruin proved unfeasible and another hall of similar proportions was chosen.

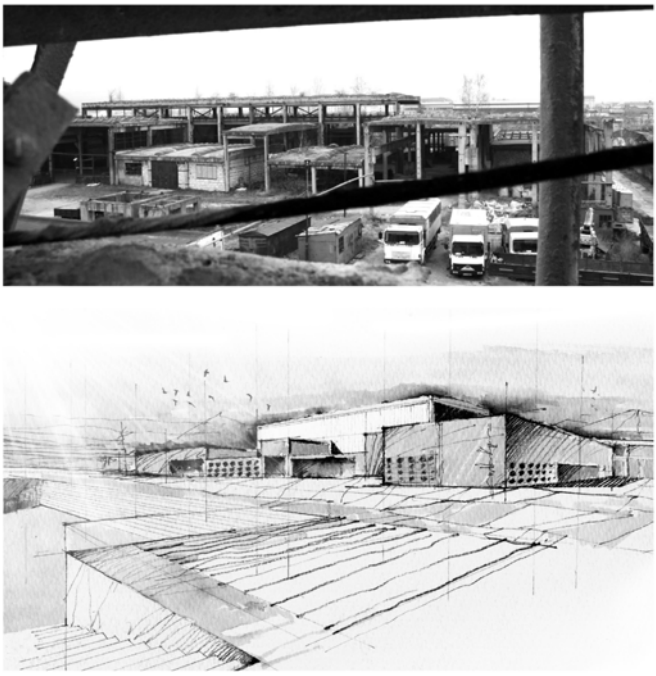

Figure 4: Case Study 1, virgin ruin, photograph and initial proposal

This host then underwent a conversion into a theatre space, designated specifically for the play "Faust" by director Silviu Purcarete for the "Radu Stanca" theatre. This intervention was based on this author's initial design for the "virgin ruin" and executed with a local tender- supervising architect and under management and technical guidance of the directing staff of the Radu Stanca theatre. [6]

Despite difficulties with site access and management, rudimentary and low cost interventions, and insufficient spaces for public assembly or waiting areas, the theatre play staged in the reanimated hall, is an ongoing production in Sibiu and sold out over its entire playtime. The site has been renamed into "Fabrica de Cultura" and now hosts numerous large scale events during the FITS.

One explanation for this success, related to the reconversion itself, could be that the disorder of the site matches a particularity of Romanian aesthetic consciousness, therefore visitors don't feel alienated by the intervention which under a different approach would be a new, unusually pristine, and foreign object that clashes with familiar cultural sensibilities. This proposed thesis ties into the initial approach to view the research through a hyper-local lens, rather than a generic one.

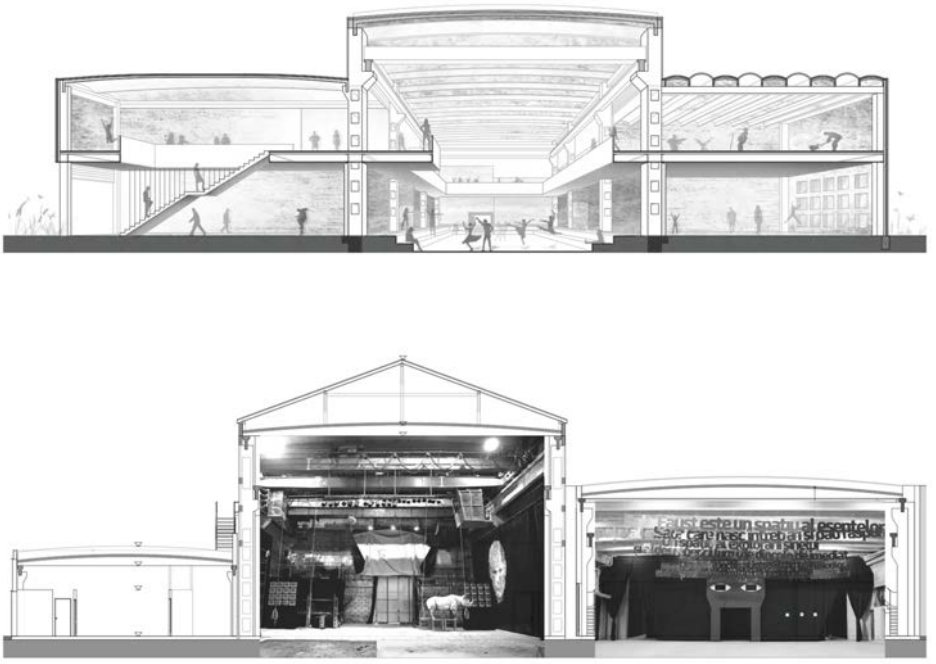

Figure 5: Case Study 1, Fabrica de Cultura, imagine collage, initial design of the "virgin ruin" juxstaposed with finished execution photography

By approaching the handling of post-communist industrial heritage through this frame of particularly post-communist Romanian disorderly aesthetic, the course of action can be reframed into something intensely locally specific, as envisioned in the initial argumentation, in order to avoid the grafting of ideas that may have worked before, elsewhere, but that would ultimately alienate the local population. For it is the local inhabitants, not the tourists, that have been forgotten

during discussions about Romanian heritage preservation.

The argument for the particularily "Romanian grotesque" can be anchored in the works of local thinkers, notably Emil Cioran (author of "A short history of decay", 1949, and a Sibiu native), or Augustin Ioan (author of "Architectura supra-realismului comunist", 2012) and several others. These discourses will, however, not be included and analyzed in further detail here, as this endeavour would reach beyond the scope of this paper.

A paranthesis: a similar approach, can be identified in the work of Rem Koolhaas' preservation tactics for the Eremitage in St. Petersburg, evidently a vastly different project topic, but where a similar idea was developed: "that perhaps dilapidation itself was part of Russia's history".[7] *This argument solidifies the initial thesis of this research's approach to post-communist preservation of heritage.*

Returning to the landscapes to be handled, Case Study 2 and 3 are now using this "impolite" approach via the aesthetic of the grotesque and uncanny, which emerged without specific intention in Case Study 1, by firstly identifying the agents within these sites that can be operated upon as "hosts" [8]. These bodies are personified and each necessitate different revitalization tactics, from doing nothing, to minimally invasive, to large scale interventions.

In both cases, the "minimally invasive" method seems to currently be the most viable strategy, but as this only works through an intimate engagement with the site, which has not been surveyed in over a year due to COVID travel restrictions, the design process thus being negatively affected.

There are other reasons for a design approach that proposes doing "barely anything", or rather more radically, "undoing" [9]. As the viability of a design proposal for

Case Studies 2 and 3 can not be verified a posteriori, after a finalized and monitored built intervention, the epistemological direction must change. Success of a hypothetical proposal could be deducted from other similar case studies, but these are few and far between in Romania.

A preceding experiment was tested on Case Study 3, in the city of Hunedoara: a minimally invasive strategy that proposes a zero-intervention approach to the buildings on site, but instead reactivates the gargantuan landscape by using the rail tracks that pass through it, to insert parasitic objects [10] of varied use, meant to act as temporary attractors for ephemeral cultural action.

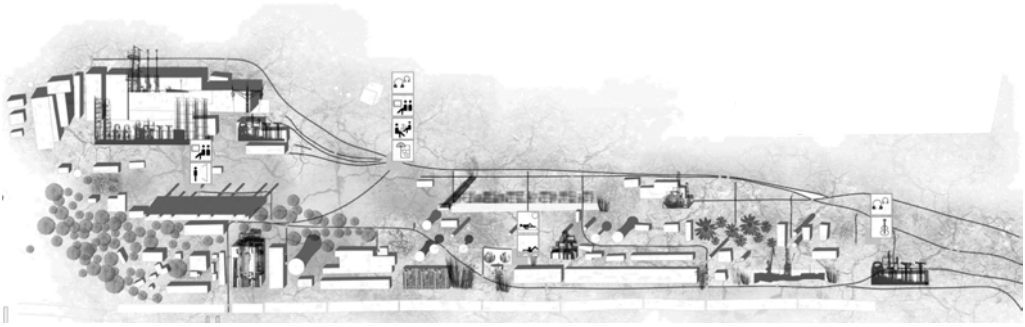

Figure 6: Case Study 3, CSH Hunedoara, site plan/pictograph general approach rail tracks

The following segment of the paper is focused on Case Study 2, arguably the most complex of the three, situated like Case Study 1 in the city of Sibiu. In the case of this site, it must be argued that the prudent approach would be two-fold: a few large scale, more invasive urbanistic interventions in order to link the site to the surrounding city and activate its perimeter, so as to create a porous landscape that can sustain different smaller interventions, and smaller, minimally invasive interventions that will enable activation and preservation, through un-doing and freeing spaces, in order to lay bare the spacial qualities of the site, and prepare the site for interventions without architectural intent, merely setting the stage for the local population to reclaim the scenery.

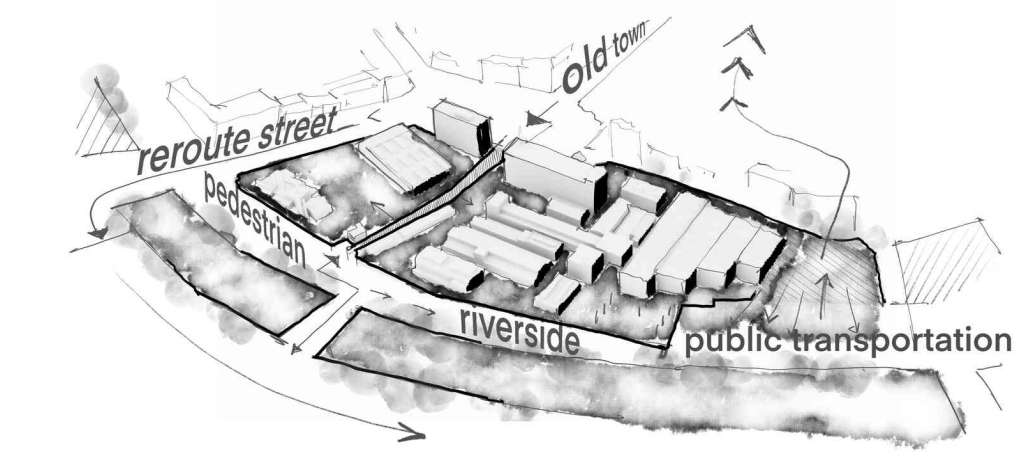

Figure 7: Case Study 2, large scale interventions to site

The main prerogative of the intervention is to clarify the structure, the organization and the circulation [7] between and within relevant building ensembles and the spaces between them. Introducing emptiness and substraction to the creative process will help clarify not only the objects themselves, but the relevance of the "pre-existencies". "No construction if a sign of respect to the place, territory or city and an ethic that assumes that economic values should not be the only to validate future actions." [9]

The goal is to reintroduce autonomy to the site, and refuse the "exaggerated form of involuntary newness" [7].The trick is, however, to stage action (or un-action) so effective, that preservation appears as having been conducted with architectural intent.

This autonomy is also linked to enabling emancipatory use of the site, so a programmatic direction will be specified: focusing on local crafts (until now only represented for instance during the yearly "Pottery fair", or temporary Roma craft workshops of brass hollowware). Other prerequisites for sustainable rehabilitation through programmatic enabling, such as the sites' connection to local utilities, a strong human resource, a surrounding landscape that holds value for tourism, and funds that could be accessed through the European Union [3], are also met. The city's cultural landscape is exceptionally vivid relative to its size and

regional character: it ranks second in Romania by "Cultural Vitality Index" (0,88 according to a study commissioned by "Centrul de Cercetare și Consultanță în Domeniul Culturii, in 2010"). [12].

These methods for emancipating the site with minimal interventions, a first draft of which i have presented in my paper following the Ca2Re+ Trondheim conference, are structured with the afore-mentioned system defined by L. Wong which was now extended to more clearly adapt to the specific aesthetic categories employed. The buildings are defined as hosts and divided into a taxonomy of: entities, grouped, semi-ruins, shells, relics and fragmented ruins. This division will help define clusters of buildings to "operate" upon, and a temporal frame for phasing the interventions on the site. Three main types of ruins were identified for this purpose: the shell (heritage protected, only minor interventions within interior spaces possible), the fragmented (not protected, interventions necessary) and the relic (to remain untouched and minimally curated as a referential element on the site).

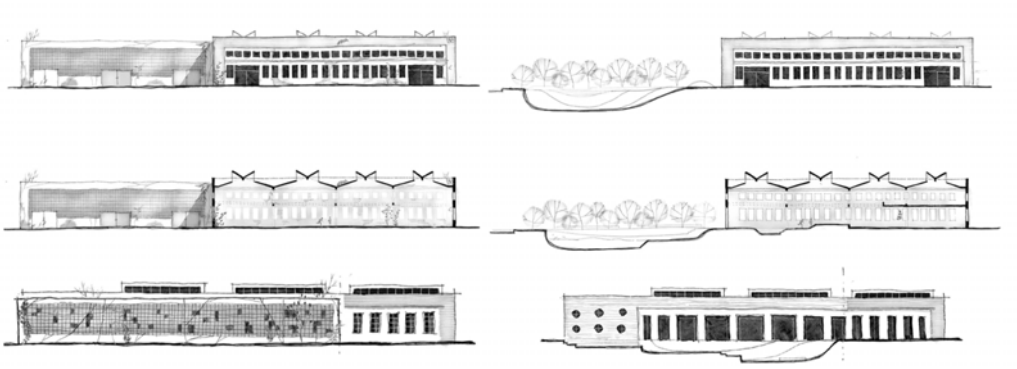

Figure 8: Case Study 2, clearing of an exemplary structure, creating the palimpsest

Facing the next steps of the research, it is imperative to continue framing the site's and the town's development without demonizing its industrial past, and by reconnecting these sites with the population's shared regional cultural identity. The aim of these strategies of analyzing, undoing, and doing within a minimally invasive frame, is to emphasize the potential of life within it, as

"ruination does not signal the absolute annihilation of building and organization but instead opens out to radically different forms of organization and organizing." [13] .

A certain conflict might arise between this proposal of a hyper-local approach and the fact that architectural design harbors certain universal qualities. The architectural language and the described tools used thus far for the three Case Studies do not differ vastly from techniques applied to other such projects. Another conflict could also emerge in a later stage, between the assumed acceptance of the local population of the rawness of the site, and the difficulties in arguing the minimal interventions through a lens that includes the sensitivities of profit-oriented city officials and invasive construction driven architects.

To employ Koolhaas' parlance: "Preservation is maddening to conservative architects, because its formless aesthetics are not based on architectural presence or absence, which seems unnatural to them." [7]

The ambition of the research is to ultimately illustrate a novel approach, as it crystallizes through speculative reasoning which then informs the design process, and, most importantly, vice versa. An argument can be made that the reproduction of the architectural design per se must not necessarily be linked to a "transfer moment", but rather that the pursuit for transferrable knowledge might prove fruitful in the interplay of design intent and cultural exploration.

Figure 9

Figure 10


Faust este un spațiu al esențelor
Un spațiu al explorării sinelui

Figure 11

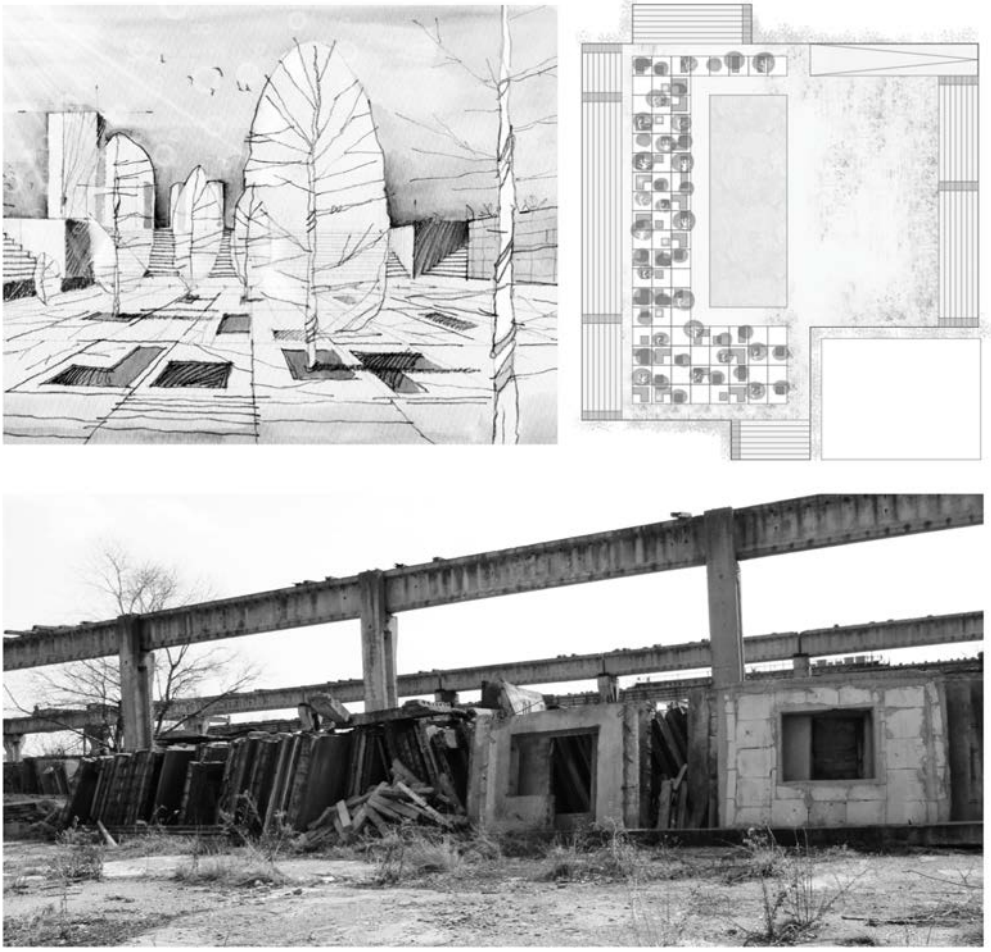

Figure 12

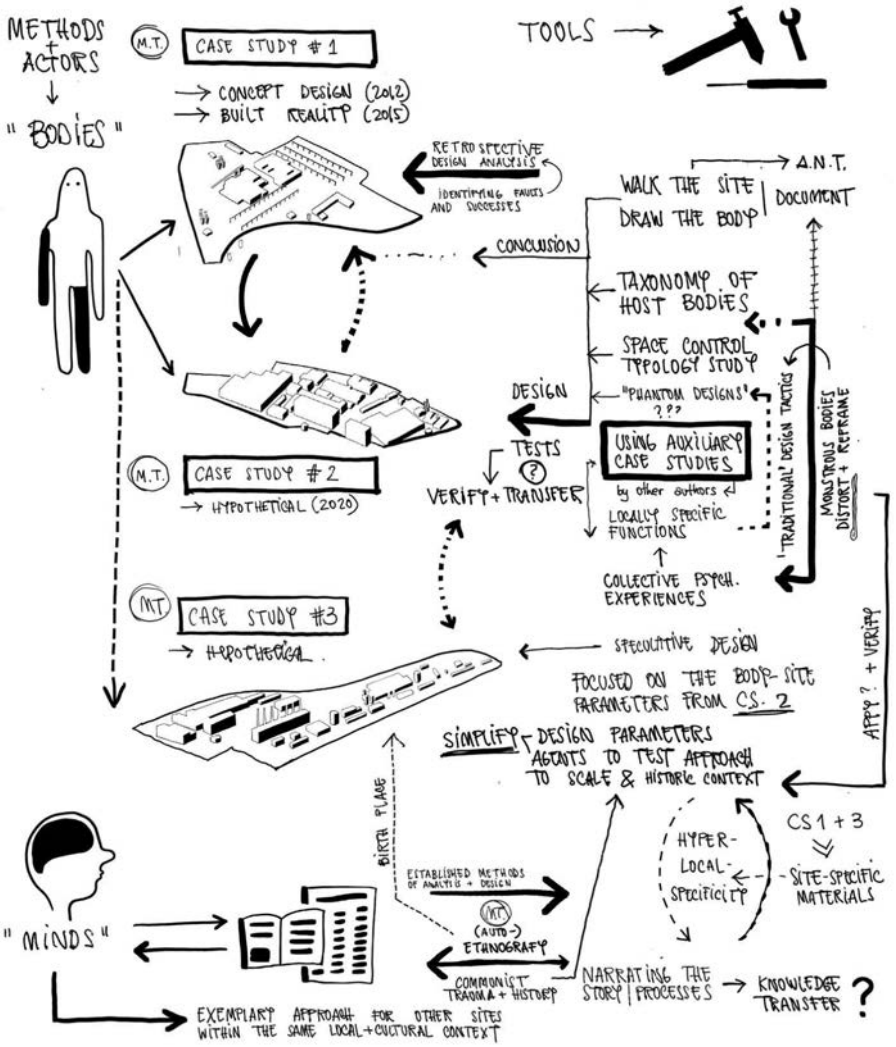
METHODS + ACTORS
" BODIES "
M.T.
CASE STUDY # 1
→ CONCEPT DESIGN (2012)
→ BUILT REALITY (2015)
TOOLS
RETROSPECTIVE DESIGN ANALYSIS
IDENTIFYING FAULTS AND SUCCESSES
A.N.T.
WALK THE SITE / DRAW THE BODY
DOCUMENT
CONCLUSION
TAXONOMY OF HOST BODIES
SPACE CONTROL TYPOLOGY STUDY
"PHANTOM DESIGNS"
???
DESIGN
TESTS
?
VERIFY + TRANSFER
USING AUXILIARY CASE STUDIES
by other authors
LOCALLY SPECIFIC FUNCTIONS
COLLECTIVE PSYCH. EXPERIENCES
'TRADITIONAL' DESIGN TACTICS
MONSTROUS BODIES DISTORT + REFRAME
M.T.
CASE STUDY #2
→ HYPOTHETICAL (2020)
M.T.
CASE STUDY #3
→ HYPOTHETICAL
SPECULATIVE DESIGN
FOCUSED ON THE BODY-SITE PARAMETERS FROM CS. 2
SIMPLIFY
DESIGN PARAMETERS AGENTS TO TEST APPROACH TO SCALE & HISTORIC CONTEXT
APPLY ? + VERIFY
CS 1 + 3
HYPER-LOCAL-SPECIFICITY
- SITE-SPECIFIC MATERIALS
BIRTH PLACE
ESTABLISHED METHODS OF ANALYSIS + DESIGN
M.T.
(AUTO-) ETHNOGRAFY
" MINDS "
COMMUNIST TRAUMA + HISTORY
NARRATING THE STORY / PROCESSES
→ KNOWLEDGE TRANSFER ?
EXEMPLARY APPROACH FOR OTHER SITES WITHIN THE SAME LOCAL + CULTURAL CONTEXT

Figure 13

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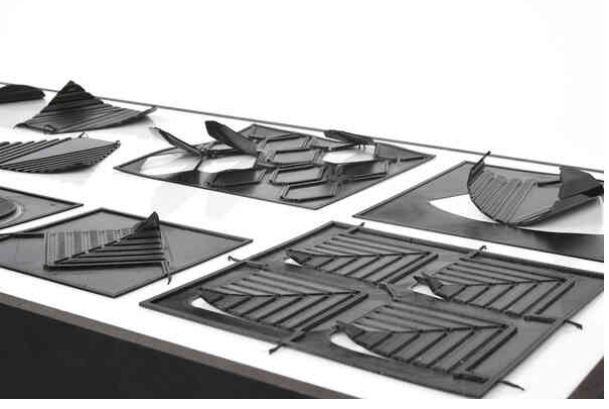
Embedded Movement Responsive Shape-changing Surfaces

Paula van Brummelen, TU Berlin - PEP Programm entwurfsbasierte Promotion & weißensee kunsthochschule Berlin



Initial doctoral stage

Supervisors: Ignacio Borrego Gómez-Pallete, TU Berlin; Ralf Pasel, TU Berlin; Christiane Sauer,

Programmable Matter, Shape-Changing Composites, Adaptive Architecture, Animate Materials

Abstract

The PhD project *Embedded Movement* deals with the development of flexible surface systems, which are capable of detecting changes in their environment and reacting to them with movement by seamlessly integrating shape-changing materials. The project investigates how the functional potential of kinetic surface structures can be increased without affecting the flexible quality of the surface and its reduced construction.

Currently, 3D printing and casting processes are used within *Embedded Movement* to precisely integrate shape memory alloys (SMA) into surfaces, so that the property of SMA to minimally shorten when heated can be used for surface movements. The thermosensitive properties of the FGL actuators, and the resulting possibility of energy-autonomous function, are extended with touch-sensitive capabilities by imprinting conductive material.

Within the CA2RE+ LJUBLJANA – REFORMULATION Event, current investigations regarding the influence of material combinations and surface structure on the type of motion, the overlay of deformation potentials and movement and behavior studies will be presented.

Artefact

By embedding responsive shape-changing materials into flexible surface structures, surfaces can be created that are no longer understood as passive envelopes, covers or carrier materials, but rather as operative systems [1]. Examples can be found in facade design [2], interior design, human-computer-interaction [3] [4] and fashion [5]. These Surfaces can act for example as adaptive shading systems, can influence room acoustics, are used as tangible interfaces or enable variable breathability in sportswear. Such current developments can be

grouped into two categories. Innovations in the field of so-called smart materials, functional materials, (flexible) microelectronics and micro-robotics enable the development of surface-systems in which mechanics, actuators, sensors and control elements are reduced to a minimum and are embedded in the surface-structure itself. Sensors are selected according to the information that is to be gathered, and the desired response mode of the actuator can be programmed [6]. These surfaces may be called operated adaptive surface systems. In addition, under the term Active Matter, flexible surfaces and membrane structures are developed which, due to the operative character of the material itself, have the ability to react autonomously to on information in their environment. Structures and mechanics inherent to materials are used and manipulated to enable adaptive responses [7]. This design strategy allows an energy-autonomous function and resource-efficient construction of kinetic surfaces. In contrast to the first-mentioned operated adaptive surface systems, the behaviors of these active surfaces are already definitively defined during manufacturing process, so they cannot be re-programmed at a later point in time.
Embedded Movement is located at the intersection of these two areas of research and development. The project aims to investigate how flexible surface systems can be given kinetic and sensory functional potentials without losing typical textile properties such as deformability, lightness and reduced composition. This involves the development of strategies for generating surface movements, the investigation of the over-layering of multiple functional potentials as well as the design and the analysis of the behavior of these adaptive Surfaces.

Figure 1: Material Experiments with kinetic functional Potentials. van Brummelen, Paula (December 2020): casted and 3d printed material experiments with kinetic functional potentials

Strategies to enable shape change abilities

Current developments in the field of kinetic-variable surfaces are based on a variety of different movement mechanisms. When it comes to designing the kinetic functions as an integral part of a surface, motion principles which are based on the interplay of two materials are of particular interest. The kinetic potential of such surface systems is created by the controlled and precise combination of two materials and their properties in to a surface structure. Thereby, at least one of these materials has the capacity to significantly change its material properties when a certain activation energy (e.g. heat, moisture or electrical voltage) is applied [8]. In the 3D printed work Programmable Wood, for example, the combination of wood filament with PLA-filament enables controlled surface deformations when the air humidity rises. The property of wood fibers to expand

when absorbing moisture is used here as the engine for the shape change. On the other hand, the locations of movement and the directions of deformation are mainly determined by the moisture-repellent parts of the surface structure [9]. Within the PhD project Embedded Movement, movement mechanisms of this kind are analyzed and material- as well as movement-experiments are realized. This allows to categorize and evaluate strategies of movement generation within active composite materials from a design perspective and to develop corresponding constructive design methods. Manufacturing techniques that enable a precise assembly of materials into surfaces, such as textile techniques, 3D printing and casting processes, are used in this process.

Within initial investigations regarding strategies for motion generation, a manufacturing process was developed that allows Shape memory alloys wires (SMA) to be seamlessly integrated into surface structures using 3D printing (fig. 2). SMAs are transformative materials which, due to their special atomic grid structure, have the property of remembering a previously programmed shape when a certain activation temperature is reached. This activation temperature can be achieved either by applying electric current or when the ambient temperature rises [10]. Within Embedded Movement SMA was used which, when activated, shortens by 5% of the total length. By 3D printing, the placement of the SMA wires can be done so precisely that the property of the wires to shorten minimally when heated can be used for spatial surface movements. The second but no less important material of this shape-changing composite is the 3D-printed thermoplastic polyurethan (TPU). Due to the degree of flexibility that this material shows depending on its material thickness and the precise arrangement of hereby flexible and less flexible areas, the transformation of the surface structure can

be designed. At the same time, the TPU provides the reset-force for the SMA through its material tension.

Figure 2: van Brummelen, Paula (November 2020): Movement of a surface structure with integrated Shape Memory alloy

Figure 3: van Brummelen, Paula (November 2020): Placement of shape memory alloy in a 3d printed structure

Figure 4: Touch sensitivity. van Brummelen, Paula (March 2021): Touch-sensitivity of a 3d printed material experiment

Multifunctionality

Looking at the kinetic properties of the surface categories mentioned at the beginning, it is recognizable that the shape-changes of both areas are often limited to one-dimensional back-and-forth movements. As a result, they can, for example in the field of adaptive building envelopes, mostly only take on one function. When incorporating appropriate sensory capabilities, surfaces with multiple deformation potentials could acquire multiple adaptive capabilities. At the same time, combinations of deformations enable complex kinetic responses. By overlaying motion-generating structures, the use of different materials with variable properties and the integration of microelectronics, Embedded Movement explores how multiple kinetic and sensory potentials can be integrated into surfaces. As a first approach to realize this, surface designs with superimposed SMA and imprinted touch-sensitive zones were developed. In this way, the surfaces can react to temperature changes and to touch with different movement patterns.

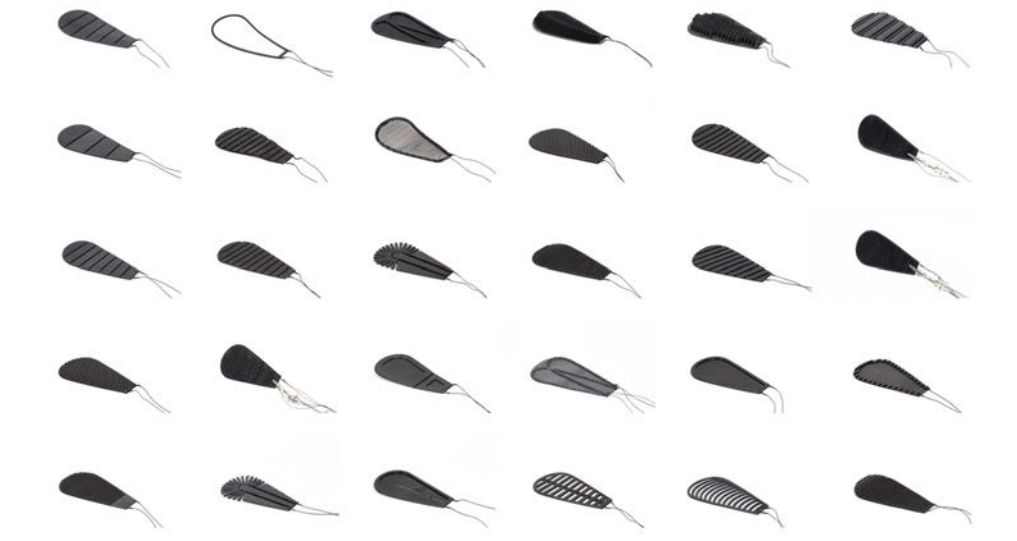


Figure 5: Motionstudies. van Brummelen, Paula (February 2021): kinetic 3d printed motion studies

Surface Behavior

The term behavior is often used in the context of active materials to refer to the functional aspects of such surfaces [11]. In addition to their adaptability to changes in their environment, it is also the performative properties that characterize the behavior of such Materials. These are given special attention within Embedded Movement. Through the careful design of the movement and reaction patterns, in which the formal aspects of the surfaces, the deformation as well as speed and acceleration play an important role, it is investigated how human perception of these surfaces can be influenced. The first motion-studies within Embedded Movement seem organic/lifelike in the way they move. But, since they are far from being natural, the question rises, which attributes of the surfaces evoke this and what potentials this increased expressiveness holds in terms of communication between human and material.

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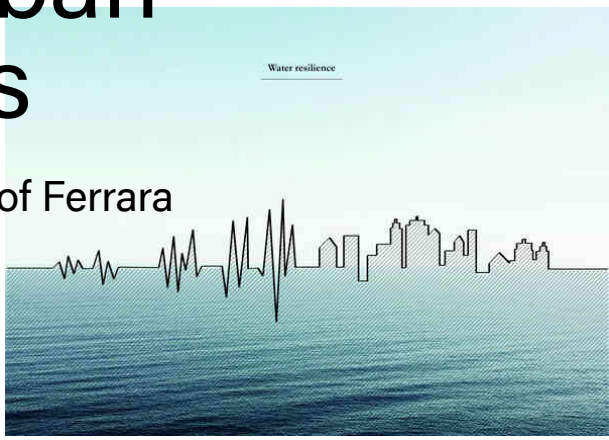
Water Resilience Operative Key Concepts for Climate-resilient Urban Waterfronts



Elena Verzella, University of Ferrara

Initial doctoral stage

Supervisor: Alessandro Massarente, University of Ferrara

#

Active border, temporal component, mapping

Abstract

Water has always been an essential social, economic and cultural component in human beings' existences. However, recent imbalances between climate changes, natural ecosystems and the anthropic world have dramatically changed the terms of this relationship, transforming the idea of "water" from a reason of development to a reason of risk. As a reflection, also urban waterfronts, from being lively and active areas, have been gradually losing their central role, more cause of dangers than opportunities. Therefore, through a renovated urban and cultural connection between water and built-up, is it still possible to define a different design methodology, based on more dynamic and adaptive operative key concepts, which converts these areas into climate-resilient places, capable not only to withstand the upcoming and always more challenging threats but also to be (again) a resource for their cities?

Paper

Introduction

The huge impacts provoked by the interaction between climate changes, ecosystem fragility and unplanned urbanization have recently stood out as one of the most relevant topics in the current European (and global) discourse. Higher temperatures, sea-level rise, intense rainfalls, and more frequent floods are constantly challenging our cities, not only representing a threat to human lives but also being a serious economic, social and urban issue [1] [2] [3]. In particular, waterfront areas have been strongly affected by this phenomenon, being constantly forced to cope with an always higher number of water-related disasters, stronger, year after year, for magnitude and frequency [4] [5]. At the same time, though, the copious and profitable economic opportunities tightly related to the water activities (industrial production, commercial, leisure, logistics, etc...) have

also put these areas under the pressure of persistent population growth and, consequentially, urban expansion even in flood-prone areas. Hence, this intrinsic contradiction has now led waterfronts to a severe state of vulnerability, risking compromising almost in an irreversible way their traditional crucial role.

However, despite this condition, an analysis on the development of waterfront contexts in the past decades has revealed how the latter, and specifically urban ones, have always been an evolving context, morphologically but also economically, culturally and urban wise. From fundamental infrastructures to exchange hubs, from productive sites to residential and recreative areas, urban waterfronts present an intrinsic capability of rearranging and shaping their character according to the necessity/opportunities arose time after time within the related cities [6]. For this reason, they have been identified as a suitable field for exploring and researching innovative and adaptive design strategies to cope with the always more unpredictable consequences of climate change and global socio-economic transformations.

In this perspective, the research focuses on the unsolved ongoing conflict between flood protection and urban planning in urban waterfronts, reflecting on the possibilities that a more integrated approach between architectural and urban solutions on one side and safety necessities on the other might bring along. In particular, the aim is to investigate which implications responsive and adaptive design principles might have, not only in the physical definition of the space, but also in the urban, social and cultural perception of it; the underlying idea is, indeed, to transform protective measures into an opportunity to increase the quality of the social and urban environment, retrieving and enhancing the traditional relationship between water and urban settlements rather than impeding it.

To achieve that, though, different theoretical fundamentals need to be established.

Water resilience: theoretical background and operative design key concepts

The concept of "resilience" is nowadays widely used in the urban field, although it actually originates from the ecological environment. In one of his most famous papers, the ecologist Crawford Stanley Holling explains the difference between two possible properties of a system: "stability" and "resilience". "Stability" is defined as "the ability of a system to return to an equilibrium state after a temporary disturbance" ([7], p. 17); on the other hand, "resilience" is described as "the measure of the ability of these systems to absorb changes of state variables, driving variables, and parameters, and still persist" ([7], p. 17). Bringing these definitions into a more "urban" framework, it could be argued that the main measures currently applied to face natural disasters in waterfront areas (dikes, floodwalls, dams, …) are conceived in order to guarantee the "stability" condition, where water is prevented, with all the means, from coming in contact with the built and human environment. However, the increase of magnitude and frequency of water-related hazards has revealed the current (economic, urban and environmental) un-sustainability of these models and all their intrinsic limits.

For this reason, the research aims to elaborate alternative design pathways, which are rather established on the more complex concept of "resilience". Yet, how can the latter be related to the waterfront areas and how can we "build up" this condition? The starting point to answer this question is to deeply rethink the relationship between water and urbanisation, replacing the common idea of living *separated* from the water with the idea of living *with* the water. Long-term previsions show that, in the coming decades, more and more

space will be needed around waterfront areas in order to protect them from water-related disasters. Therefore, only accepting a certain (inevitable) degree of flooding already into the design phase will enable to create a resilient system, able not only to effectively respond to water-related disasters, but also to trigger a wider urban regeneration process.

As a first step in order to achieve this purpose, the research has identified three different operative key concepts, which will represent the essential basis for the accomplishment of the desired design methodology. These concepts, which are deeply intertwined and whose implications strongly affect and are affected by the achievement of the others, can be summarized as following:

— *redefining the concept of waterfront as an "active border".* Urban waterfronts cannot be considered anymore as a "boundary" [8], a mono-dimensional and fixed separation between water and land, neither can they become an irrational and uncontrolled space of urbanization processes. On the contrary, they need to be read as a "border" [8], a "thick" edge that has its own identity and acts as a fluid and responsive interface between built and natural, solid and liquid, permanent and temporary. Indeed, rediscovering the concept of "Third Landscape" of Gilles Clément [9], it is exactly in the "undefined" spaces and in their natural tendency to welcome diversity and accept changes that it is possible to realise the maximal potential of adaptability. Hence, instead of "black-or-white" areas (dry-wet, built-unbuilt, natural-urban), the challenge of the design process would be to create a more dynamic, hybrid areas, capable of adapting their nature according to the variable external conditions. In this way, the border becomes "active" and, through a sequence of both architectural, landscape and urban episodes able to both accommodate and react with water, it can actually lead to the creation of a "buffer space" which will be

able to actually absorb disturbances and still represent a social and urban opportunity for the city.

— *integrating the "temporal component" as fundamental part of the design process*. When considering urban waterfronts as ecosystems [10], the traditional anthropocentric attitude which tries to constrain a dynamic reality into a pre-ordinated and fixed scheme appears more and more inapplicable. As waterfront areas are intrinsically evolving contexts, the design research needs to be focused on architectural and urban expressions which can accommodate different temporal pashes and be consistent with additive, transformative and adaptive logics as a response to always-changing external perturbations. In these terms, the assumption "once built, always built" is critically exanimated in favour of a more dynamic interplay between water and urban context over the time, where the alternance between absence/presence of water or the continuous variation of water levels altimetry can become a tool to dynamically shape the space during different moments of the day, month, year or long term periods, creating multiple and changing urban and architectural scenarios and enhancing, as a result, also the identity and the urban quality of a place.

— *including landscape and urban mapping and drawing an essential design support*. Mapping is indeed seen as a fundamental resource to understand economic, urban and morphological transformations concerning waterfront areas; however, it cannot be considered as a neutral representation of a subject, but as a design process itself [11], capable of proposing innovative contents and shape reality according to established objectives [12]. In particular, it becomes an operative tool to combine objective interpretation levels (such as land uses, variation of water levels altimetry, climate change hazards and impacts, population, ...) with design key concepts and assumptions (such as future uses, expectations/needs, temporal design phases, etc..) in order to bring to light the inner relations and the

intrinsic potentials lying among the different components acting within the waterfront system and define, in this way, possible resilient design pathways.

Case studies

The potentials of these design assumptions have already been investigated in some countries, either as part of national programmes, urban visions or realised projects.

Regarding the concept of "active border", an interesting interpretation can be found in the guidelines identified by the *Rotterdam Climate Adaptation Strategy* [13], a framework developed by the Dutch city to ensure its adaptation to climate change in the coming decades. Here, a great attention is paid to the exploration of the possibilities that waterfront areas can have to define the transition between water and urbanization. In particular, water is seen not exclusively as a threat, but also as the fundamental component of the designs: the flood-risk issue is tackled through the design of an (integrated) urban multiscale system of open stepped quays, "floodable" parks and floating structures which creates a protective border that will help to withstand the water pressure in case of raising levels and, at the same time, enable the city to safely and harmoniously experience and live with the dynamics of the delta.

A similar logic, despite the substantial geographical, scalar, morphological and cultural differences, lies in a landscape project designed by the Chinese landscape firm Turenscape, the *Yanweizhou Park*, a restoration intervention of a local wetland located in the heart of Jinhua (Chiana). In this case, the design strategy chosen to address the severe threats posed by the annual flooding of the scope area deeply reformulates the traditional idea of protection: instead of strengthening the existing hard boundary between land and water through the reinforcement of concrete walls, the proposal of the Chinese architects focuses on the idea of

totally dissolving this edge into a system of floodable vegetated terraces, which not only slow eventual flooding down or absorb excessive stormwater, but also create a new, engaging transitional landscape, where iconic suspended bridges, floodable pedestrian paths, pavilions and gardens finally connect, instead of dividing, local people with the nature within the city.

Figure 1: *Artist's impression of The BIG U proposal. In the image it is visible the idea of the "active border", consisting in a sequence of public spaces, undulated berms, rain gardens, street furniture, pavilions, deployable walls and landform buildings which work both as a defence and an enhancement of the public realm. Source: https://big.dk/#projects-hud (accessed June 2021)*

Lastly, regarding the several possibilities according to which the "active border" paradigm can be articulated, it is worth to mention the *The BIG U* proposal developed by an international and multidisciplinary team led by the Danish firm BIG (Bjarke Ingels Group) for the enhancement and strengthen of the low-lying area of Lower Manhattan in New York [14]. Despite the clear intention of ensuring an adequate protection against coming threats such floods and storms, the main target of the proposal is "not (to) separate the community from the (Manhattan's) waterfront. Rather, the very structures that protect us from the elements will become attractive centres of social and recreational

activity that enhance the city and lay a positive groundwork for its future." ([14], p. 9). In the proposal, indeed, the waterfront is considered neither as an entirely built context nor a completely natural system, but it is envisioned as an adaptive transition (active border) which, variously shaped as undulated berms, rain gardens, stormwater buffers, street furniture, pavilions, deployable walls and landform buildings, can work as green infrastructure, create job opportunities, satisfy the neighbourhoods' necessity of facilities and recreational areas, improve the social security or even represent a vehicle for cultural expression and integration [1].

In all the describes strategies, though, the achievement of this dynamic transition between water and built-up is deeply linked to the inclusion of the "temporal component" into the design process. This same principle can be effectively analysed, on a smaller scale, in the Dutch example of the "water squares" and, in particular, the *Benthemplein* project in Rotterdam [15]. The idea of creating big urban reservoirs in order to store excess of stormwater has been already tested in different international contexts, such as Sao Paulo, where several "piscinões" ("swimming pools") have been built in order to mitigate the impacts of severe rainfalls. However, the peculiarity of the Dutch project is the great emphasis given to the idea of converting a necessity (stormwater protection) into a benefit for the urban environment. This target was achieved exactly through the inclusion already into the design phase of the possibility of an evolving perception and space usage of the area over the time. Indeed, this square is shaped in three lowered basins [2] which perfectly work as sport and theatre area (with zones dedicated for skaters, dancers, football, volleyball and basketball) but, in case of extreme weather conditions, they can easily rearrange into capacious water storages, reducing stormwater pressure and preventing local drainage system from collapsing.

Lastly, it is worth noting how in all the above-mentioned initiatives urban and landscape mapping played a fundamental role in the development of adaptive and resilient design solutions. In *The BIG U*, several indicators (such as expected surge levels, land use, ethnicity, income, open spaces, social infrastructures, ...) were overlapped in order to assess vulnerability and, at the same time, to research possible design pathways which could combine safety needs with residents' desire for an improved public realm [3]. Similarly, in the *Yanweizhou Park* project, mapping was an essential support to combine into systemic vision traditional (and often static) urban features with the extremely fragile and dynamic ecological environment of the Yanweizhou wetland. Finally, in both the "waters quare" projects and the *Rotterdam Climate Adaptation Strategy* the representation of criticalities became a fundamental tool to research when and at what water level adaptive measures needed to be developed, to investigate possible interventions and finally to evaluate and eventually implement the proposed design principles.

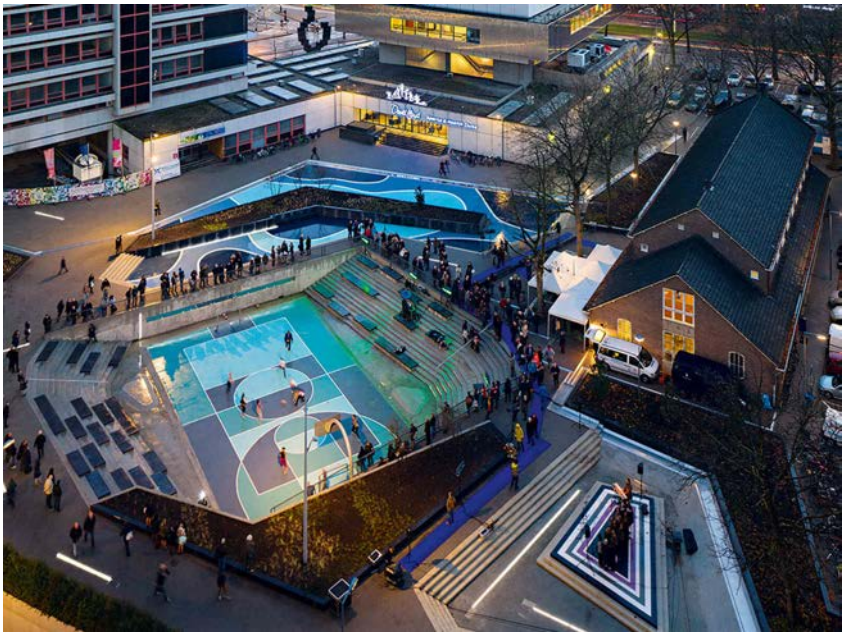


Figure 2: *Benthemplein in Rotterdam. The image shows sequence of the three main basins, which are normally used for recreational purposes but can be transformed into water storage during extreme weather conditions. Source: https://www.theneweconomy.com/technology/rotterdams-water-management-gives-rise-to-exceptional-city (accessed June 2021)*

Figure 3: *Selection of some explorative indicators used for the definition of The BIG U proposal. In this case mapping tools were used not only to enhance flood protection but also, and above all, to improve the urban quality and fulfil the social and cultural needs of the involved communities. Source: BIG (Bjarke Ingels Group) with One Architecture, Starr Whitehouse, James Lima Planning + Development, Green Shield Ecology, AEA Consulting, Level Agency for Infrastructure, ARCADIS, Buro Happold (2014): The Big "U", Rebuild by design, http://www.rebuildbydesign.org... (accessed June 2021)*

Conclusions

As analysed in the previous paragraphs, the consequences of climate change combined with recent the socio-economic transformations concerning urban waterfronts have arisen new challenges that traditional measures seem to be unable to effectively address. The unpredictability of water-related disasters and the speed with which these phenomena are increasing in magnitude and frequency have led to the necessity to design resilient systems, capable not only to avoid, but also to absorb eventual disturbances and still recover. In order to achieve this condition, though, the paper has identified some key concepts which need to lead the design process, becoming both its theoretical and practical ground: active border, temporal component and urban and landscape mapping. As the analysis of the case studies has demonstrated, indeed, the combination of the proposed key concepts reveals to be a fundamental prerequisite in order to achieve in operative terms that adaptive and responsive condition in waterfront areas that is essential for a resilient behaviour in

case of extreme situations. Moreover, in this way, not only is safety accomplished, but also urban waterfronts become, again, attractive areas and a space where to create social, cultural and economic opportunities for the cities.

Therefore, through a further analysis of "best-practice" case-studies (such as the Dutch environment) and the comparison with other contexts which have been recently experiencing the severe consequences of climate change but whose water management and design appears to be still behind if compared to other international experiences (such as in the Mediterranean basin, and in particular the Adriatic and Ionian area), the following step of the research will be the translation of these key concepts into operative architectural and urban design principles and strategies, in order to build a design methodology that can also become a reference for other countries which are still trying to define more suitable resilient means for the development and the protection of their own urban waterfronts.

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School Patios
The Influence of Architecture on Childhood Development; The Concept of the Third Teacher / Vila Nove de Gaia

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Initial doctoral stage

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#

Outdoor environment; school patios; children development

Abstract

Several studies early pointed out the crucial need for leisure activities on children's cognitive development process (i.e. Waldorf method, Reggio Emília schools, Montessori method, Froebel kindergardens). The relevance of the topic has been recurrent for more than a century and it is still relevant. In Portugal, daily school hours vary between 6 to 10 hours and testimonies informally recollected from teachers, warn about the increasing failure on children's motor coordination. In this context, the opportunity of the discussion about the potential positive impact of the design of school patios is raised, both in the transmission and assimilation of knowledge and in the psychomotor development of children, as well as a main strategy to avoid dissemination of contagious illnesses. This investigation is focused on case studies elected from schools for children 3-10 years old in Vila Nova de Gaia (VNG).

Paper

1. Introduction

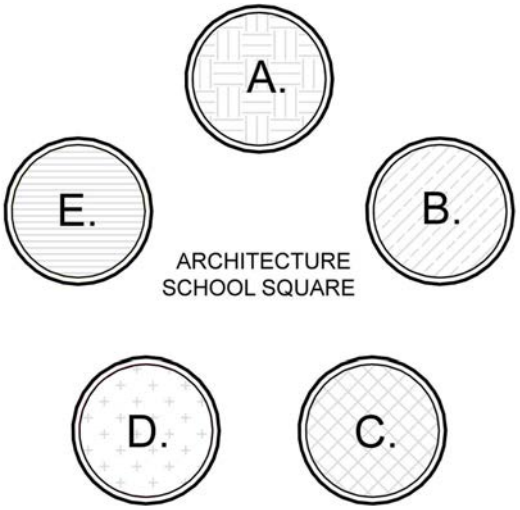
There is currently a concern for school buildings to meet the demands concerning lightning, thermal and acoustic comfort, air quality and good ventilation of the rooms. We talk about the ideal materials to be used inside, the choice of flooring and colours. But what has been said about exterior use?

Psychologists and teachers point out about the decrease in motor coordination in children, derived from sedentary lifestyles or the decrease in the use of quality recreational space [1]

According to UN data, about 55% of the world population already lives in urban areas, by 2050 this number should reach the 70% mark. In the case of Portugal, Vila Nova de Gaia´s schools has followed this trend.

With this we have the removal of human beings from natural environments and the increase in the so-called "nature deficit disorder", with children at greater risk obesity, anxiety, depression, anxiety, attention deficit, cognitive problems. [2] Children between the ages of 3 and 10 remain between 6 – 10 hours daily within the school compound. It is a home-school-home itinerary, always confined in closed spaces, corresponding to approximately 70% of the time in indoor spaces, being recognized by scholars as "Indoor generation", children and adolescents with little contact with fresh air, contemplate the sunlight and maintained contact with greenery. [3]

Following studies of the spread of disease and the tuberculosis crisis in Europe between the 19th and early 20th centuries, buildings reflected these concerns, much aimed at their natural ventilation. This theme is again present in the current Covid-19 pandemic crisis, and the need for classrooms with direct contact with the outdoors, open air. They could have taken advantage of this need and allied themselves with convictions linked to the ideals of biophilia, sustainability and better pedagogical formats, but unfortunately the main focus remained only on the issue of contagion [2].



A. Fröebel Kindergarden by Friedrich Fröbel, GERMANY(1782-1852)
B. Waldorf, by Rudolf Steiner, AUSTRIA(1861-1925)
C. Montessori,by Maria Montessori, ITALY (1870-1952)
D. Reggio Emilia, by Loriz Malaguzzi, ITALY (1920-1994)
E. Traditional Pedagogy in Portugal

Figure 1: Different Pedagogies and the space

Several pedagogies, created since the late 19th century, already analyzed the impact of the quality of the environment/architecture on the learning process [5]. They consider that the environment can be considered as a third teacher: firstly it will be the teacher, followed by the teaching method. [21]

Among recognized pedagogies, we can highlight Kindergartens by Froebel [17], Waldorf [18], Montessori [19] and Reggio Emilia [20]. They schematized ideal spaces for the teaching practice, or report the importance of having rooms with direct relation to the outside. (Fig.1)

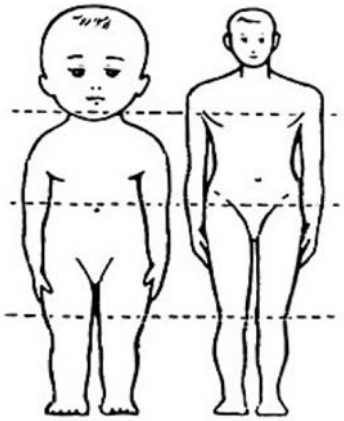


Figure 2: Diagram made by Montessori on body and leg correlation

Within Portugal, Maria Montessori's pedagogical lines are more widespread among architects, possibly due to the way they are equated in layout and dimensions, but without radically breaking with the current building method. A doctor and educationalist, between 1949 and 1952 she received three nominations for the Nobel Peace Prize. In 1926 she published her book La Scoperta del Bambino [4], presenting her studies on thinking about learning in the early years of the child. Based on the child's scale, he developed observations relevant to the act of designing, and specified for the first time the child's scale as an important factor to take into account when designing space.

"Evidently, the rational means of combating scoliosis is the modification of the working conditions of school-children, preventing them from remaining for hours in a vicious position" **([4],p.19)**

Montessori reports on the need for furniture suitable to the children's ages, in order to achieve autonomy, thus promoting motrocity and psychological values in their development. It also concludes the indispensable link of nature contact, especially in urban school children, in order to promote an adult who respects his environment, as he lived and interacted with nature and not only made observations distanced from reality.

Presents a chapter on the proportions of a child's body, having verified that in a newborn baby the legs only correspond to 32% of its stature, at 3 years of age, when they start kindergarten they represent 38% and exceed adult proportions at 7 years of age, with the legs representing 57% of the body (only at puberty will the trunk grow until it reaches 50% of an adult's). (Fig.2) And from this, he explains the natural need for a child to move.

This new concern, of spaces and schools oriented to respect the child's perspective and development, can be seen in Arne Jacobsen's design for Munkegaard Primary and Secondary School, Copenhagen, 1956, where he sought to relate the classrooms to the outdoors. Aldo Van Eyck and his 700 play cannons developed in the Netherlands, with the aim of qualifying abandoned areas affected by the pumping of the Second World War with recreational and convivial spaces [21].

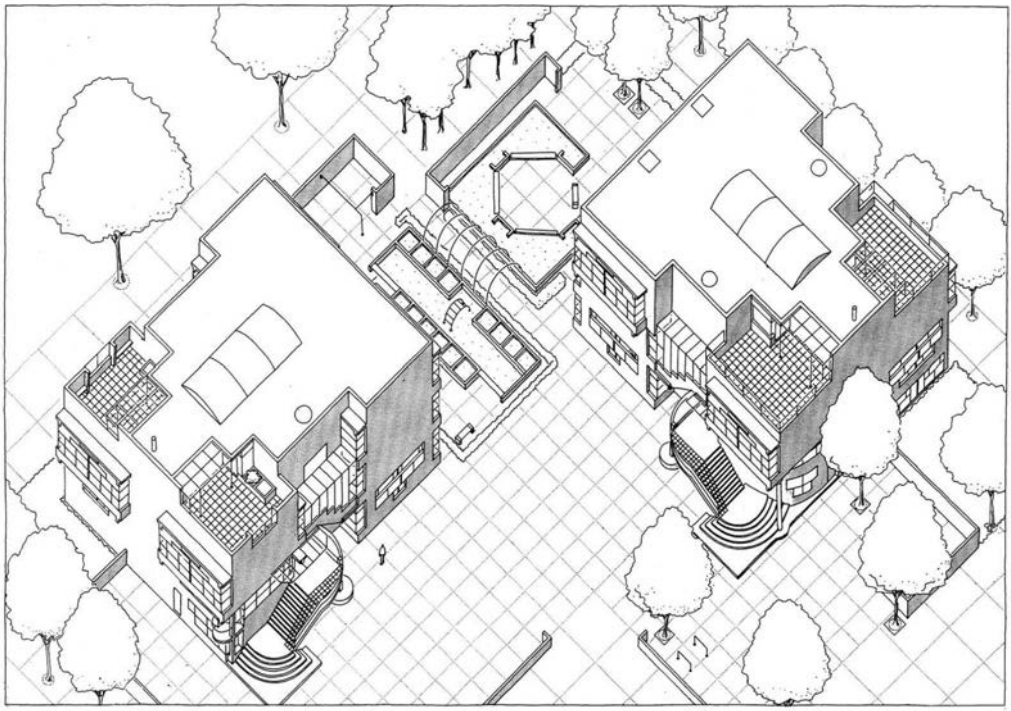


Figure 3: Apollo Schools, Amsterdam, 1980 (in: www.ahh.nl)

In Herman Hertzberger's school building projects, we can see the dialogue between architecture and the user, with the perspective of designing spaces from the child's perspective, combined with the interest of pedagogical development. [6] (Fig.3). They was a student, as a child, in a school with Montessori methodology, and developed as his first work after graduating, a school in this pedagogical line, exactly where his wife worked as a teacher. [7]

The highlights of both Montessori pedagogy and Hertzberger's design intentions lie in the following points, the last three of which are the architect's: (Fig.4) (Fig.5) (Fig.6)

— To make a child self-sufficient, whenever possible in safety. Through appropriate furniture and the distribution of spaces which are easy to understand and understand;

— create direct links from the classrooms to the outside, not only for reasons of salubrity, but using it as an extension of the interior room;

— promote convivial spaces as well as more private spaces of concentration, trying to stimulate public and private relations, correlating them with the teaching itself and understood the functioning of the city

— create a more attractive corridor, not only to pass through but also to be in: he called it a "learning street

— stimulate and provoke, through details in the architectural design, that the spaces are inhabited, and that there is an interaction of the user with the space.

He wrote several studies on lived space, where we can highlight in the projects Apollo Schools, Amsterdam, 1980 and Montessori, Delft, 1960, some images that illustrate this concern and intention of environments that communicate (Fig.4) (Fig.5) (Fig.6)

Maia [10] says: "not always being a child means having childhood", reporting that the child needs to be

stimulated in this learning process and we consider that the school square design, can have this role of stimulus/provocation. Noites [11] considers that in the classroom of the future, spaces will be "defined according to the actions that are intended to be carried out (interacting, sharing or presenting and more intimate spaces for actions such as creating, investigating or developing)".

Figure 4: The design of the furniture, which serves as a bench as a play space. In the child's eye, it challenges curiosity and use. Montessori, Delft, 1960 (in: Images taken from the Hertzberger website: www.ahh.nl)

In counterpoint to these occupations of the exterior and the intentions of the Hetzberger projects, we will analyse in the next phase of this ULP doctoral project, the reality of the school squares. Located in the district of Porto, namely in Vila Nova de Gaia, there are 70 public teaching establishments divided into 14 groupings [9].

Raising these questions, is the school square in VNG constituted as a distinct element of the school itself or integrated in the strategies between the building and the square? We will seek to investigate whether the square manages to promote socialization, creativity, motor skills, language, thinking, exploration and how it manages to promote child development.

Following the recommendation of paragraph 2 of Article 25 of the Decree-Law [147]/97, of 11 June, the Joint Order No. [268]/97 of 25 August, which determines for the outdoor space

— easy access to the activity room,

— no less than twice the size of the activity room (which is 2 m^2/child, with a maximum of 25 children). But teachers teachers say isn't enough!

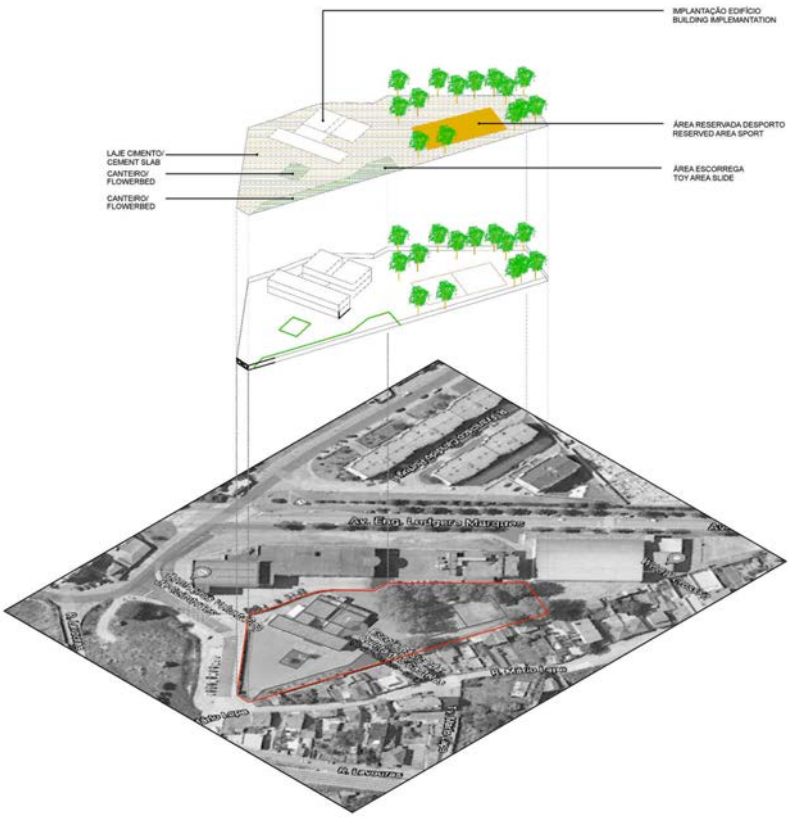


Figure 5: Type occupation of the outdoor space of VNG schools

For primary school there is no definition of minimum area required, it only refers to safety issues, and it is verified that in schoolyards for these ages there are no designed elements, with the exception of shelter, in the few cases where this occurs. From the teachers' perspective these are elements that contribute less to the discovery process and to the psychic and motor development, if compared with unstructured play [12] and the development of risk management by the child, with the support of architecture [13]

The DL ^{50}/2018, repasses the municipalities to the competences of maintenance and works of school spaces. It is necessary to unveil how the program of needs is presented in the tenders that are presented to architects.

How do the architects idealize this space? The research will seek to understand if during the intervention project the square is considered as an integral part in the children's education and in what way it is designed.

Peter Barrett and his team recently developed a research at the University of Salford, UK, on primary school projects: HEAD Project (Holistic Evidence and Design). They found that classrooms with physical differences could have learning variation of more than 15% when over one year.

And how can the outdoors contribute to this factor? Psychologists and teachers argue that contact with nature, play and crafts contribute favourably to children with learning difficulties [14].

Currently, standard toys such as slides or other pre-designed toys are introduced to primary schools. First of all, it is important to understand who is proposing them and for what purposes.

It may be the source of the questioning, if there is an interpretation in which the unstructured space should be devoid of elements and design. The educators underline that they need space available for children to run freely, but that they should not be totally flat, to stimulate other movements as well. And they ask for spaces where children can have various interpretations.

In the architects' surveys, under development at the time, we can see that there is a requirement to delimit the flat space to its full extent so that the child can run and jump, when teachers also refer to the need to carry barriers, difficulties as a process of personal growth and coordination. And that they delimit spaces for playing and sitting (such as picnic tables, for example) when children need to have outside spaces to stimulate their creativity and appropriation, as advocated by Hetzberger.

2. Metodology

Despite the differences in topography, typology and programmatic content both in architecture and pedagogical process, the present work will focus on the outdoor environment and its appropriation by children from public pre-school and primary schools. It will present the following methodological structure:

2.1 Case Studies

a. Analysis of works carried out that considered the exterior of the building an extension of the school's interior space:

- Apollo Schools, Amsterdam, 1980 and Montessori, Delft, 1960 (Herman Hertzberger);
- Primary and secondary school, Copenhagen, 1956 (Arne Jacobsen);
- Municipal Orphanage, Amsterdam, 1960 (Aldo van Eyck).
- French School, Porto — Pólo Jardim Infância Marques de Aguiar (1959) and Pólo 1º ciclo Nuno Valentim (2014)
- Study working group projects like PatioVivo Foundation in Chile [23]
- *Centro Infantil El Guadual/Daniel Joseph Feldman Mowerman + Iván D.Q. Sanchez, 2014*

b. Analysis of the design elements and space designed by Aldo van Eyck in Dutch playgrounds

c. Establish the main differences in the design of outdoor playground spaces following Wardorf-Montessori-Froebel-Emilia pedagogies and traditional pedagogy in Portugal.

d. Analysis of the Portuguese regulations on education and school environment.

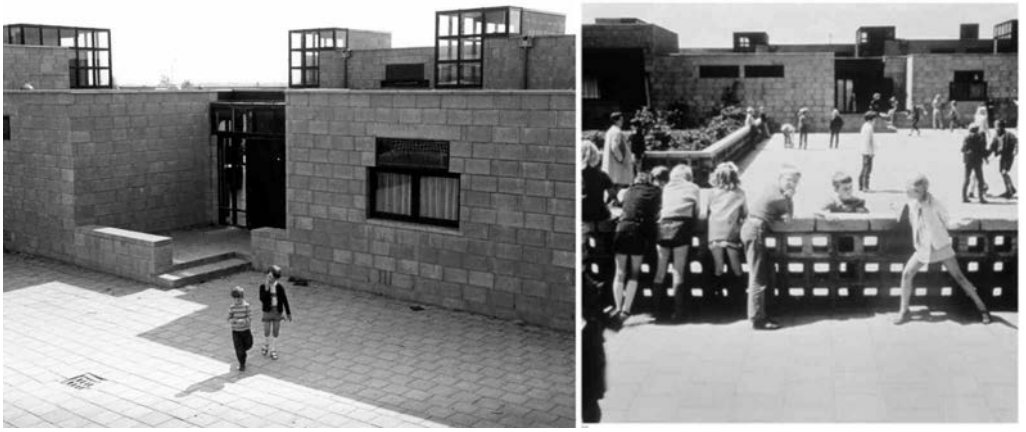


Figure 6: At the entrance of the school, in the design of the volumes, he interprets the need for half a wall, which can serve as a bench for parents to wait for their children and be able to combine activities (8).* Today, the exterior wall no longer consists of perforated bricks.

2.2 Survey of school outdoor spaces in VNG:

By means of GoogleMaps and available photographs (due to covid-19 it is not possible to enter all the schools), sampling will be made of the 70 establishments (by area, for example). They will be catalogued by typology and brief description of the occupation of the external space, solar insolation, floor type (in case it is confirmed that this type of documentation does not exist in the responsible bodies). (Fig.7)

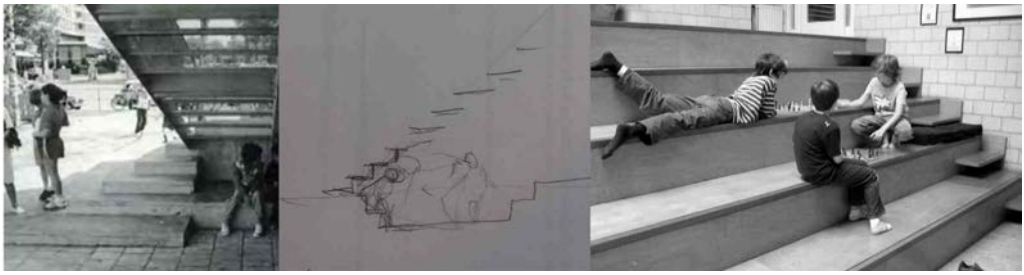


Figure 7: In the images, the architect seeks to create spaces for living-conviviality on the stairs, which is normally designed only to serve as circulation. Or he seeks to create amphitheatres, in this case in the interior, to promote convivial spaces, but designed with dimensions and materials that serve to promote living. Apollo Schools, Amsterdam, 1980 (in: www.ahh.nl)

2.3 Selection of the objects of study:

Due to the need for epidemiological control of the pandemic due to COVID-19, schools were forced to use outdoor spaces frequently. In this way, it will be possible

to have study material on what they look like and which elements and provisions of the outdoor space are necessary for children's development at the cognitive, affective and psychomotor level.

In VNG, analysing the schools designed from the Estado Novo period to the current year of the research. The following schools will be chosen for case studies:

- 01 with Centenary typology (Estado Novo);
- 01 with the Open typology;
- Cedro School, by the architect Fernando Távora (1960)

2.4 Surveys and Pilot Project

With the collaboration of professionals in the area of Social Sciences, surveys will be carried out with the school community: teachers, students, parents and others. We will use research and design interventions in schools will be proposed as a process of analysis, seeking to understand how they are included in the process of improving spaces, and what the school they would wish to have/work or design/design would look like.

To base our research, we invited 2 schools to participate in the Pilot project. They are entering school recess. The project has interested the pedagogical team, but is waiting for approval from the school management.

The children will be invited to participate by making a survey of their school. With the help of teachers and parents, they will build a model of the space, delimiting the street, the pavement, the surrounding wall, the yard and its connection with the school building. They will be asked to draw or photograph the spaces in the school they use most and how.

After the school survey, we will carry out the post-occupancy analysis [15], concluding with marking the most enjoyable outdoor spaces.

3. Expected Outcomes

1. Open discussion about the school square and its potential in child development and the reason for the apparent abandonment of the requalification of school squares (discussions with architects and the community).
2. Create pilot project with 1 – 2 schools in order to analyse the impact on some changes and the construction by all involved in a new reality. And publish the result of this activity in local newspapers.
3. Create a bank of ideas and modular solutions or possibilities so that whenever possible they can be implemented in a quick, effective and low cost way, avoiding the bureaucracy of permissions.

4. Conclusion

In the Sustainable Development Goals, item 4 is dedicated to quality education, and we will seek to foster this debate through the use of schoolyards, seeking to stimulate the creation of individuals who seek to relate to the city space.

Therefore, within the scope of this doctoral research, the study will seek to establish:

— "the potential of school playgrounds in their ability to create stimulation and child development: socialisation, creativity, motor skills, language, thinking, exploration.

— will seek to promote a better understanding of the school space as a whole, where the outside can and should also be part of the design process.

— will develop a basic plan, with a choice of various materials and design possibilities which should be taken into account in both the architectural and landscape design of schoolyards: durability, low maintenance and low cost; importance of light; health; thermal comfort; colour; articulation of spaces; mobility; modularity and

the possibility of interaction with the environment elements.

It is necessary to requalify the "habitat" and, in the specific case of our research, to connote the exterior space of the school and the importance of the relationships between those who "inhabit" the school, between the building and its equipment.

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Reflexive Practice

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Initial doctoral stage

Supervisor: Henrik Oxvig, The Royal Danish Academy

Architectural media, Photography, Place

Abstract

The presented experimental work is a part of the PhD Project Reflexive Practice – Trans-medial Process and Method in architectural Education. The experiments are based on an architectural practice that reflects upon the significance of heterogeneous medial affordances conceptually, creatively and aesthetically. Through a montage of photographic series and footage of casting models and a specific site (with the working title *Simultaneity – Scapes & Elements)*, the project examines how the trans-medial practice influences the creator's imagination and creative process. The practice is contextualized on a critical reflection on the notion of place as a material and social compound.

Artefact

"Movement is a translation in space."
Gilles Deleuze [1]

The presented work is part of the experimental component of an ongoing PhD project on trans-mediality. It engages in a discussion on the relation between modes of articulation in aesthetic practices and our social imaginary, between how we conceive of and construct spatio-temporal situations, and how these practices impact on our understanding of the places we live in.

The contention is, that *place* is a specific outcome of relations between space and time. If we understand space as a dimension of simultaneity and relational multiplicity, and time as a dimension of duration and continuous becoming, we can define a concept of place as a dynamic relationship of changeable and variable time-space organizations [2]. What differentiates one place from another is the combination of the specific, albeit volatile, conditions that coexist exactly *here*. The contextual situation is not defined by its delimitation, but by its permeability and openness to other disparate cohesions. A place consists not only of many different

procedural speeds, but of different temporalities, of what Merleau-Ponty calls *Depth*, a simultaneous presence of past, present, and future [3]. This simultaneity is perceptible but at the same time a challenge to the imagination. In order to comprehend the sensed, we must mobilize an *imaginary* to match this complexity, to form a basis for understanding the situational contexts, for understanding not only what constitutes a place, but how it is permeated by different forces.

The artist and filmmaker, John Akomfrah, considers the multiscreen montage as a means to bring different ontologies into a relationship. He states: "the manipulation of temporality can be ordered to serve something else too, which is the coexistence of different renditions of time itself." [4]. To let situations of different time and space unfold simultaneously, he claims, is an orchestration of time as a kind of coexistence.

Accordingly, the present experimental work operates with similar conditions. The experiments consist of a montage of selected photographic series and footage of a specific site and casting models, with the working title *Simultaneity – Scapes & Elements*. The thematic focus is the simultaneous constituent aspects of a place, encompassing how the medial articulation has an impact on perception and creation of *place.* The photographic series of the site conveys a selection of contextual situations, not depicting a landscape as a whole, but rather local situations articulating specific procedural conditions of a place. The photographic series of casting models work in three phases: 1st phase – positive forms, etchings in polystyrene, 2nd phase – negative forms, plaster casting molds, and 3rd phase – positive forms, glass castings.

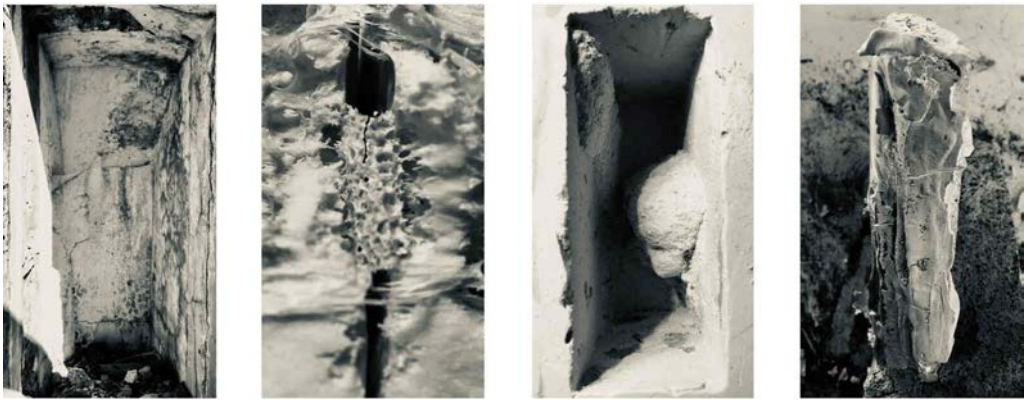

Figure 1: Excerpts of the experimental component. *SIMULTANEITY – Scapes & Elements*. Photographic series, on site and glass casting model phases I, II & III. Photos: Maja Zander Fisker, 2020.

The experimental work investigates how to transpose contextual situations between media, emphasizing procedural similarities rather than visual resemblance. The transpositions are not focused on topographical form or scale, but on situational processes that are physically decisive constituents of the given context.

The act of photography here functions as a catalyst that mediates between the models' various iteration phases and thereby their immediate hierarchy. The physical models are continually destroyed in the casting process, whereas the photographic series enables a fixation and exposition of the variety of spatio-temporal articulations within the singular stages. As photographic montage, the series alters former temporal interrelations or spatial categories, as it operates non-hierarchical space-time articulations in sequences of paired still and moving images. The montage forms its own sequential temporality through the proximity and simultaneity of coexisting differences. These juxtapositions serve to question and challenge their respective conventions and connotations. And yet, as Akomfrah claims, it is rather associations than contrapuntal properties that affect the change in reading, and thereby meaning creation in the material, and cause an emergence of new situations through the responsive encounter with a spectator.

Working with photography includes reflections on the relations between still and moving images. The still-image works as an incision in the world. The fixated recording establishes a composition, a singular event, and is yet a fragment of a cohesion. The movement-image, the recording in or of movement, ads a duration. The moment is, according to Deleuze, an immobile section in movement and movement a mobile section in duration, a whole. Thus, movement also means transformation of this whole.

Furthermore, photography alters the sense of materiality in the models, as the material qualities become ambiguous and appears with new spatial consequences. The close-up is generally defined by the way it frames, and in this case specifically by its ability to record and fixate possible interference in the photograph. In the movement-image, the close-up permits the recording of micro-movements, which appear as small vibrations, mirroring or distortions, and reflect Deleuze's definition of affect-images [5].

The creation of meaning in the trans-medial process takes place in parallel within two different registers. One consists of the iterative variations of the material within the individual medium. The other consists of the juxtaposition of the variations of the material, reiterated in the medial transpositions. The interference in and between these registers causes an additional diversity in the formation of meaning, as it is not limited to conditions in a single statement, but in this variety of medial articulations.

Thus, derived from iterations, the material does not convey mere information, it contains a *more*: a conglomerate of material specificities, which may deal with the same *problem*, but continually nuances its possible meaning [6]. This ambiguity in the material is not in itself coded and therefore appears as an open, sensuous enunciation that in the encounter with the recipient evokes an affect. In the process, the affect becomes

a co-creative premise for the creator's imagination. The articulations are not static statements, but rather temporary, non-static temporal situations. Imagination, here, is inseparable from the material production and therefore linked to the different media and the transpositions. The trans-medial process thus impact on thought and perception, in the exchange between affect and imagination, as the transpositions incessantly institute these recurring encounters with the material in new forms of aesthetic manifestation.

Figure 2: Excerpts of the experimental component. *SIMULTANEITY – Scapes & Elements*. Excerpts from photographic montage. Photos: Maja Zander Fisker, 2020.

Figure 3: Excerpts of the experimental component. *SIMULTANEITY – Scapes & Elements*. Excerpts from photographic montage. Photos: Maja Zander Fisker, 2020.

Figure 4: Excerpts of the experimental component. *SIMULTANEITY – Scapes & Elements*. Excerpts from photographic montage. Photos: Maja Zander Fisker, 2020.

These manifestations work not only as vehicle for the creator's creative process, but as interpersonal expressions that act into the communicative field of creation and encourage exchange, to be incorporated and tested in collective space [7]. The aesthetic creation produces models for the imagination and influences our social imaginary, as an inherent appeal to *the Other*, an appeal that transcends the delimitation of the individual, according to Arendt [8]. And by virtue of the relational gesture of appeal, the possibility arises of transcending our frame of understanding towards new meaning-creation.

1————Deleuze, Gilles (2020): Cinema I, The Movement-Image, translation by Hugh Tomlinson and Barbara Habberjam, London: Blomsbury Academic.

2————Massey,Doreen (2005): For Space, London: Sage.

3————Merleau-Ponty, Maurice (1984): "Eye and Mind" Art And its Significance. An Anthology of Aesthetic Theory. David Ross, Stephen [Ed.], Albany: State University of New Youk Press.

4————Løgstrup, Johanne (2020): The Contemporary Condition Co-existence of Times – A Conversation with John Akomfrah, Berlin: Sternberg Press.

5————Deleuze, Gilles (2020): Cinema I, The Movement-Image, translation by Hugh Tomlinson and Barbara Habberjam, London: Blomsbury Academic.

6————Deleuze, Gilles (2006): "What is the Creative Act?" In Two Regimes of Madness, Texts and Interviews 1975-1995, Ed. David Lapoujade, translation by Ames Hodges and Mike Taormina, Cambridge, MA: MIT Press.

7————Butler, Judith (2020): The Force of Nonviolence – An Ethico-Political Bind, London: Verso.

8————Arendt, Hannah (1958). The Human Condition. Chicago: The University of Chicago.

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Scien
Committee

5

tific

0

Panel

6

-Members

A

Anders Kruse Aagard
Aarhus School of Architecture
digital fabrication, materials, wood constructions, concrete, experiments
more →

Naime Esra Akin
Aarhus School of Architecture
sustainable architecture, social sustainability, urban/public spaces, architectural pedagogies
more →

Alper Semih Alkan
TU Delft
media theory, representation, visuality, hybrid mediality/materiality, technical images, disegno, drawing
more →

B

Matthias Ballestrem
HCU Hamburg
space perception, architecture psychology, typology, public interiors, design teaching, design build
more →

Fabrizia Berlingieri
Politecnico di Milano
urban architectures; design for transitions; infrastructure and urban form; contemporary architectural design theories
more →

Marcel Bleuler
Zurich University of the Arts
I explore research in terms of a negotiation of the relations between artistic production, knowledge production, social communities as well as society at large.
more →

Anđelka Bnin-Bninski
University of Belgrade
architect engineer with specializations in theory of arts and media and architectural philosophy
educator, curator and interdisciplinary researcher
practicing architect
current research focus on critical strategies and activist tactics of architectural drawing research in practice

Manuel Bogalheiro
Universidade Lusófona do Porto
philosophy of technics, materialities of media, theory of culture, ecology
more →

Ignacio Borrego Gómez-Pallete
TU Berlin
Practicing architect with focus on industrial and contemporary fabrication systems.
more →

Boštjan Botas Kenda
University of Ljubljana
my research areas are visual communications in public space in relation to publishing products
more → more#2 →

Marco Bovati
Politecnico di Milano
relation between Urban and Architectural Design and the aim of sustainability
strategies for sustainable architecture and urban regeneration, with particular attention to the intermediate scale (block, district)
role of environmental features in defining the guidelines of the interventions
reuse and recycling of abandoned soils, buildings and urban tissues
more →

Margitta Buchert
Leibniz University Hannover
The primary fields of research are 'Reflexive Design', 'Urban Architecture' along with the aesthetics and contextuality of architecture, arts, cities, and nature.
more →

C

Roberto Cavallo
TU Delft
architecture, urban design, interdisciplinary & multi-scale approach, design-driven research, infrastructures & built environment, circularity, cross-domain perspective, experimental pedagogies, participatory processes, practice-oriented research
more →

D

Johan De Walsche
University of Antwerp
design research methodology and design education
design as a tool for anticipating fast transitions
more →

Florian Dombois
Zurich University of the Arts
sound art, performance, art & architecture, artistic research; studies on time, labilities, wind and tectonic activity
Who is addressed by the research, who can take it further, transform it into a new state of relation? What if artists, architects, designers are the recipients, the people who gain from research directly?
more →

Débora Domingo-Calabuig
Universitat Politècnica de València
Her interests include the methods, means, and impact of architectural research. Her research focuses on the open design processes of the 60s and 70s architecture and urban design.
more →

Daniel Dubowitz
Manchester School of Architecture
urbanism practice and research – collaborative urbanism: regeneration of post-industrial cities across the UK, new methods for making tomorrow's cities, meaningful engagegement of citizens in their transformation pedagogy research: student investigation how architecture can be on the move and activate a state of change
more →

E

Riet Eeckhout
KU Leuven
Riet Eeckhout's research focuses on the agency of drawing within the discipline of architecture, more specifically the generative capacity of architectural drawing surpassing its representational nature. She exhibits, lecture's and writes about her drawing practice from within the discipline of architecture. The research is driven by projects in collaboration with an international network of architects and theorists to build knowledge on artefactual agency in processes and results.
more →

F

Kent Fitzsimons
Ecole nationale supérieure d'architecture et de paysage de Bordeaux
My research adopts a critical approach to theories regarding the relationship between social forms and material forms. This has brought me to study how architecture and architectural thought construct ideas about the body (gender, handicap, ageing), the intentions and effects of sustainable urban mobility projects (modal shift, active modes, social mixity), and the contrasts between politicizing architecture as form and politicizing architecture as process.

Domen Fras
University of Ljubljana
Typography and typeface design are two fields of my practice and research. I participated in numerous public and cultural projects in various media linking architectural, graphic and typographic design with strong focus on a relationship between the information conveyed by typography and its visual form.

G

Lidia Gasperoni
TU Berlin
philosophy of architecture, aesthetics, media, anthropocene, fieldwork
architectural theory and philosophy with a focus on media philosophy anthropocene theories, and aesthetics

Pieterjan Ginckels
KU Leuven
As a future-oriented researcher, pedagogue, architect, and visual artist, Pieterjan Ginckels sets up collective experiments, dealing with visual architectural cultures and the (post-)millennial and superficial sensibilities of the personae that are part of it — students, artists, architects, thinkers, and policy makers. #misanthropocene #postmillennialstudio #radicalsaturation #speedtrip #performance
more →

Pedro Guilherme
Universidade de Èvora
architectural competitions
research by design
drawing research
architecture's internationalization
Álvaro Siza Vieira drawings and research method
more →

H

Anke Haarmann
HCU Hamburg
As a philosopher and artist, I am interested in the aesthetic formulations of practice-based research. I have worked on artistic research for more than 10 years, published philosophical books on the topic and curated exhibitions.
more →

Christoph Heinemann
HCU Hamburg
Based on my proper approach on design experienced in our architectural practice ifau as well as on the design methods we develop and teach in our design studio at HCU in Hamburg, I am especially interested in a projective approach on architecture based on situative development strategies and relational practices, allowing to combine and process specific experiential knowledge and overarching societal issues.
more →

Marjan Hočevar
University of Ljubljana
epistemic cultures, cognitive styles, reflexivity, societal changes, integration / autonomy
more →

J

Matevž Juvančič
University of Ljubljana
education of general public on the topics of sustainability, public participation, visualizations and visual communication processes, generic urban elements, sustainability of urban neighbourhoods, notions of spatial character, spatial semantics and spatial identity
more →

L

Thierry Lagrange
KU Leuven
design-driven research methods
act of drawing
act of looking
the drawing in relation to new spatialities
more →

Jacopo Leveratto
Politecnico di Milano
critical spatial practices (practices of inhabitation and strategies of placemaking);
public space design (tactical interventions and re-activation projects);
post-human architecture (design for interspecies cohabitation)
more →

Jo Liekens
KU Leuven
architecture as a practice of agonistic staging, dissensus and politics; congregational agency, vibrant matters and more-than-human perspectives in architecture
more →

M

Mona Mahall
HCU Hamburg
Mona Mahall works at the intersection of art and architecture, across spatial, image, sound, and text practices.
more →

Michael McGarry
Queen's University Belfast
design practice research, representation, artistic practices, spatiality in the visual arts
more →

Nela Milić
University of the Arts, London

Elena Montanari
Politecnico di Milano
interior architecture; museum and exhibition design; built heritage; museographic heritage
Elena Montanari's research work revolves around the interplay among interior architecture, museographic culture and heritage valorization, with a particular focus on the latest trends in the design of museum architecture, on the adaptation of historical buildings into exhibition spaces, on the development of innovative memorial forms in heritage cities and in places of memory, on the musealization of "difficult built heritage", and on the raise of innovative theories and practices concerning exhibition design history and museographic heritage.

O

Dorotea Ottaviani
University of Johannesburg
creative practice research, adaptive reuse, public space, architectural pedagogy
more →

P

Maria Rita Pais
Universidade Lusófona
more →

Claus Peder Pedersen
Aarhus School of Architecture
Claus Peder Pedersen's research focuses on architectural design methodologies and creative processes with interest in representation and digital design tools. He is active in promoting practice- and design-driven research.
more →

Mark Pimlott
TU Delft
public interior, representation, subjectivities, territory and interior, continuous interior
Mark Pimlott's research is primarily concerned with the public interior, as a product of, on the one hand, ideologies and their imprint on territory, the city, its institutions and subjectivities, and on the other, systems of representation consciously or unconsciously attached to those ideologies.
more →

Gennaro Postiglione
Politecnico di Milano
interior architecture
interiors; architectural ethnography; adaptive reuse; rehousing
His research field is interiors culture, at the intersection between people, places, and practices, crossing architecture, ethnography, and material culture. The same theoretical background nourishes also his research by design activity focused on adaptive reuse of minor and neglected heritage.
more →

R

Paul O Robinson
University of Ljubljana
Paul O Robinson is a visual artist, architect, educator and maker of objects and spaces that question the hegemony of institutionalized practice. His multiform work and installations emerge through the artifice and layered entanglements between surface and narrative content.
more →

Alessandro Rocca
Politecnico di Milano
architectural and urban design
design-driven research
urban and rural wilderness
architectural theories, types and techniques
more →

Edite Rosa
Universidade Lusófona do Porto
design project, housing and public equipment's, urban and public space, social sustainability
The research interests are centred in the area of Architecture, in particular in the studies of modern architecture and practice of contemporary architecture.
more →

Mia Roth-Čerina
University of Zagreb
professional, teaching and research practices are architectural education and educational spaces, as well as the public space they interact with
more →

S

Sofia Salema
Universidade de Èvora
architectural research; teaching and research practices in architectural education; Álvaro Siza Vieira drawings and research method; heritage and research practices in restoration/conservation works; research practices in recognition of heritage values
more →

Markus Schwai
Norwegian University of Science and Technology
urban design, spatial planning, small scale urban changes (intended to change behavior), participation — co-design, design driven research
more →

T

Ana Telles
Universidade de Èvora
active pianist
music history and analysis (20th and 21st centuries), piano music, piano performance practices
more → more#2 →

Maria Topolčanska
Academy of Fine Arts Prague
pedagogy and research on architecture, city, art, urban politics, urban commons, property, land, mass housing, housing and work, typology, urban design, urbanization history, post-state socialist urbanity, education of architects, study vs. production of knowledge in architecture, architectural thinking in research, theory of contemporary practices of architecture, architecture related curatorial and editorial practices
more →

Manuela Triggianese
TU Delft
In her research, she explores the role of design in large scale interventions among multiple actors and she links her research to education by engaging them in all activities.
more#2 →

V

Ilaria Valente
Politecnico di Milano
Design methods and tools for architectural and urban regeneration in marginal fabrics and fragile territories.
more →

Jo Van Den Berghe
KU Leuven
experimental architectural design
Techné and Poiesis in making architecture (the poetics of making)
innovative versions of the architectural drawing as an indispensable locus between Techné and Poiesis
design-driven research and reflective architectur-al practice
more →

Esther Venrooij
KU Leuven
With a sharp focus, both in her studies and creative impulses on audio topography, she explores the way sound and movements inhabits space.
more →

Boštjan Vuga
University of Ljubljana
architecture, research, education
public! porous! placed!
i am very much interested how boundaries could be employed to place a porous architectural structure onto a specific place in order to generate or enhance publicness!
more →

W

Jürgen Weidinger
TU Berlin
landscape achitecture
designing and implementing landscape architecture projects
reflections on aesthetical perception and experience in landscape architectural design
critical reflection on the relation of practice and academic theories concerning the design disciplines
more →

Steffen Wellinger
Norwegian University of Science and Technology
public building, public space, live projects, architecture as a strategic tool, didactics
more →

Katrina Wiberg
Aarhus School of Architecture
landscape architecture and urban landscapes
climate adaptation and resilience with regard to water (rising sea levels, cloud burst, e.g.), research through designing, landscape analysis and scenarios emphasizing values-, scale and time perspectives
more →

Z

Tadeja Zupančič
University of Ljubljana
architecture, urban design, digital design;
research in architecture, research by design, creative practice research;
spatial identity, vulnerability, sensitive designer;
architectural education, lifelong learning in architecture, digital support to architectural design/research/education
more →