CA²RE VALENCIA

CA²RE VALENCIA: EXPERIMENTATION
April 11-13, 2024

book of abstracts

ABOUT EXPERIMENTATION IN VALENCIA

Experimentation is the process by which certain operations are carried out to discover, verify, or demonstrate specific phenomena. It is also a way to test, try out, or assess a product for subsequent validation. Experimenting can also be related to a form of active learning that leads to new perceptions or sensations.

In the realm of architectural and artistic research, design itself is a laboratory —a testing ground—where different methods and creative processes intersect, yielding new knowledge. Tamke, Nicholas, and Thomsen (2018) distinguished four distinct characteristics of experiments: speculation (‘a way of posing questions’), reflection (‘a means to produce ideas’), evaluation (‘external testing’), and interface (‘an interface that provides common ground for interdisciplinary collaboration’).

This edition of CA2RE proposes to explore the concept of experiment in the most varied and open way possible. It seeks to demonstrate its validity as a design-driven methodology particularly focused on artistic and architectural practice. The experiment understood as a method of knowledge creation, can establish itself as the difference between creative practice and practice-based research (Zupančič, 2020).

All these reflections fit into the city of Valencia's current context, which will be the European Green Capital in 2024 and has been chosen as one of the 100 cities to follow the European Climate Mission roadmap. Researchers are invited to consider experimentation as a factor fostering new and innovative approaches for creation in artistic and architectural research, which generates bridges between academia and practice and contributes to the New European Bauhaus values.

References:

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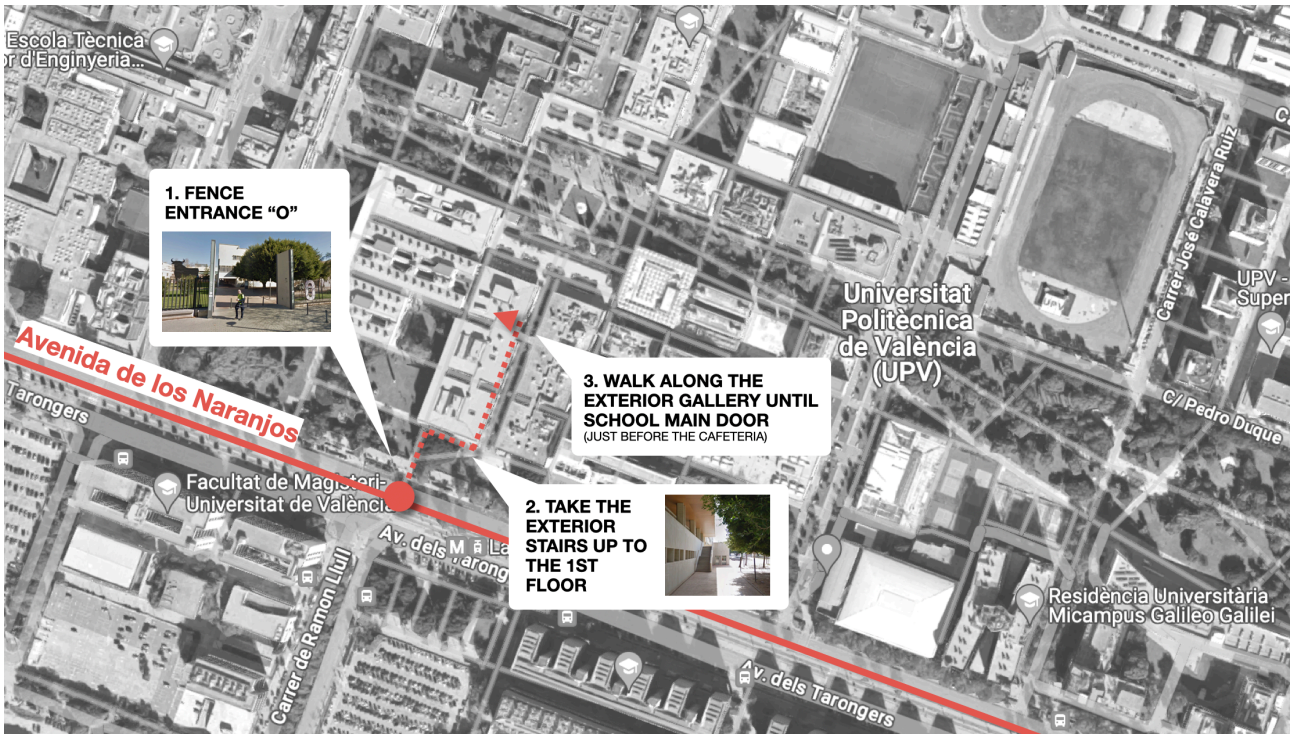
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VENUE
PROGRAM
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OPENING LECTURE
digiNEB workshop
ABSTRACTS

VENUE



Universitat Politècnica de València
School of Architecture (2-D building)
Camí de Vera s/n - 46022 Valencia (Spain)

PROGRAM

Thursday – 11 Apr.

15:00 Reception at the school hall

ROOM A - SALA DE PROYECCIONES

15:00 Pre-conference event: PhD Defense + Exhibition

Enrico Miglietta

ROOM A - SALA DE PROYECCIONES

18:00 Opening lecture: "From Artefact to Artifice. Knowledge Embeddedness in Doctoral Research by Design"

Pau Bajet

ROOM A - SALA DE PROYECCIONES ONLINE

Architect (ETSAB-UPC). Doctor of Philosophy (PhD-Eur) 'by design' at the School of Art, Architecture and Design at London Metropolitan University, supervised by Florian Beigel and Philip Christou; awarded La Caixa Fellowship. Associate Fellow of Architectural Design at ETSAB (2017 – to date) and Guest Professor of Social Logics at MIAD, ETSALS-URL (2020 – to date). Co-curator of the World Congress of Architects UIA-UNESCO Barcelona 2026. Co-director of Quaderns d'arquitectura i urbanisme No. 274 (Spring 2024). Co-curator of the exhibition 'Unveiled Affinities: Quaderns in Europe' (COAC Barcelona, 2019).

Friday – 12 Apr.

09:00 Sessions

ROOM A - SALA DE PROYECCIONES	ROOM B - SALÓN DE GRADOS	ROOM C - SALA DE VIDEOCONFERENCIAS
Maureen Selina Laverty	Matthew Crabbe	Michele Porcelluzzi

10:00 Sessions

ROOM A - SALA DE PROYECCIONES	ROOM B - SALÓN DE GRADOS	ROOM C - SALA DE VIDEOCONFERENCIAS
Giulia Azzini	Eline van Leeuwen	Dezire Tilinger

11:00 Coffee/tea break

ROOM C - SALA DE VIDEOCONFERENCIAS

11:15 Sessions

ROOM A - SALA DE PROYECCIONES	ROOM B - SALÓN DE GRADOS	ROOM C - SALA DE VIDEOCONFERENCIAS
Ivana Lovrinčević	Stefan Gzyl	Elien Vissers-Similon

12:15 Sessions

ROOM A - SALA DE PROYECCIONES	ROOM B - SALÓN DE GRADOS	ROOM C - SALA DE VIDEOCONFERENCIAS
Cecilia De Marinis	Taufan ter Weel	Hermano Luz Rodrigues

13:15 Lunch break

14:30 Sessions

ROOM A - SALA DE PROYECCIONES	ROOM B - SALÓN DE GRADOS	ROOM C - SALA DE VIDEOCONFERENCIAS
Beatrice Basile	Michela Vanda Caserini	Maddalena Laddaga

15:30 Sessions

ROOM A - SALA DE PROYECCIONES	ROOM B - SALÓN DE GRADOS	ROOM C - SALA DE VIDEOCONFERENCIAS
Eva Sollgruber	Nina Bačun	Zheng Wu

16:30 Coffee/tea break

ROOM C - SALA DE VIDEOCONFERENCIAS

16:30 Coffee/tea break

ROOM C - SALA DE VIDEOCONFERENCIAS

16:45 Sessions

ROOM A - SALA DE PROYECCIONES	ROOM B - SALÓN DE GRADOS	ROOM C - SALA DE VIDEOCONFERENCIAS
Raffaella Cavallaro	Viktorija Bogdanova	Francesco Airoldi

17:45 digiNEB workshop

Sharing Experimentation: New European Bauhaus and Digital Interplays - Experiences in Southern Europe.

The New European Bauhaus is a creative and interdisciplinary initiative that connects the European Green Deal to our living spaces and experiences launched by the European Commission in 2020. As a bottom-up initiative, it grows from the active participation of its community of actors in the built environment. This workshop is part of the digiNEB project which aims to foster a digital ecosystem for the New European Bauhaus initiative.

In this session we will delve into the vibrant collective ecosystem of the New European Bauhaus in southern Europe, with special emphasis on the experiences of Spain and Portugal. Our objective is to analyze how digital tools, projects and collaborations are influencing the architectural landscape by promoting innovation within the region.

21:00 Conference dinner

Saturday – 13 Apr.

09:00 Sessions

ROOM A - SALA DE PROYECCIONES	ROOM B - SALÓN DE GRADOS	ROOM C - SALA DE VIDEOCONFERENCIAS
Cláudia Batista	Miljana Niković	Weronika Gajda

10:00 Sessions

ROOM A - SALA DE PROYECCIONES	ROOM B - SALÓN DE GRADOS	ROOM C - SALA DE VIDEOCONFERENCIAS
Duccio Fantoni	Nathan De Feyter	Zhihang Lin

11:00 Coffee/tea break

11:15 Sessions

ROOM A - SALA DE PROYECCIONES	ROOM B - SALÓN DE GRADOS	ROOM C - SALA DE VIDEOCONFERENCIAS
Ran Pan	Charlotte Erckrath	Inès Zaid

12:15 Closing session

ROOM A - SALA DE PROYECCIONES ONLINE

ONLINE ENVIRONMENTS

Thursday, April 11: Room A - Sala de Proyecciones
Opening lecture: Microsoft Teams link

Friday, April 12: Room C - Sala de videoconferencias
Presentations session: Microsoft Teams link

Saturday, April 13: Room C - Sala de videoconferencias
Presentations sessions: Microsoft Teams link

Saturday, April 13: Room A - Sala de Proyecciones
Closing session: Microsoft Teams link

OPENING LECTURE

From Artefact to Artifice. Knowledge Embeddedness in Doctoral Research by Design.

Pau Bajet (Barcelona, 1988)
Architect (ETSAB-UPC). Doctor of Philosophy (PhD-Eur) 'by design' at the School of Art, Architecture and Design at London Metropolitan University, supervised by Florian Beigel and Philip Christou; awarded La Caixa Fellowship. Associate Fellow of Architectural Design at ETSAB (2017 – to date) and Guest Professor of Social Logics at MIAD, ETSALS-URL (2020 – to date). Co-curator of the World Congress of Architects UIA-UNESCO Barcelona 2026. Co-director of Quaderns d'arquitectura i urbanisme No. 274 (Spring 2024). Co-curator of the exhibition 'Unveiled Affinities: Quaderns in Europe' (COAC Barcelona, 2019). After having worked for David Chipperfield Architects in London, he

cofounded Bajet Giramé in 2017. The practice has been Finalist in the ARQUIN-FAD Awards, recognized with the XI, XII and XIII AJAC Awards, the Gold Award Best Architects and selected for the Premio Enor. It has been published, exhibited and awarded in international competitions for emerging architects such as the Lisbon Triennale, Eme3 and Europan, besides having been awarded 1st prize in different national competitions. Current projects include 72 social dwelling units in el Prat de Llobregat; 83 social dwelling units, an elderly residence and a district community centre for the Barcelona Council; a 2ha rural campsite near Ebre's river delta; a 27ha urban expansion for the municipality of Alcanar; as well as several retrofit projects for domestic and office spaces.

digiNEB workshop

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ABSTRACTS

FRIDAY, APRIL 12
SESSION 1
9:00 - 10:00

ROOM A - SALA DE PROYECCIONES

Maureen Selina Laverty

Unravelling and redressing neurodivergent sensory experiences with clothing

BACKGROUND

The human race is neurodiverse, meaning that we all shape and are shaped by our environment in many different ways. Whether we are conscious of it or not, each of us are constantly searching for our own unique sensory equilibrium that enables us to make our contribution to the world. The human race thrives on this diversity. However, for people who are neurodivergent[1] sensory inputs from their environments can more intensely impact the experiences that they shape and are shaped by (Gaudion, 2015). For example bright lights, loud sounds, strong smells and soft touch can be perceived as threats (Robertson & Simmons, 2013). These fight or flight triggers can result in the body being stuck in a state of chronic stress, disabling a person's interactions with the world around them.

One of my neurodivergent informants described her body as "being too porous so too many of the wrong sensations get through. This leads to sensory overwhelm which is exhausting to process and very distressing for my body" (Anna, 36). The author Katherine May, who herself is on the autism spectrum, writes about sensations "that scream so loud that you want to retreat". And how she "inhabit(s) a body that simply stops responding when it reaches its point of overwhelm" (May, 2018). On the other hand, another informant explained that "with heightened sensitivities, the reward is high. When the sensory input is right, it is wonderful!" (Eva, 55).

As a fashion designer I approach clothes as our most immediate environment. They are the most intimate artefacts that touch our skin. Every day our moving bodies are shaping and being shaped by what we wear. The sensations that unfold in this dynamic reciprocal dialogue are tactile, sonic, and kinaesthetic. My first PhD research question asked: *how do clothing sensations impact neurodivergent individuals' quality of life?*

METHODOLOGY

To answer this question, I have collaborated with almost 70 neurodivergent individuals. Through a series of wardrobe studies[2] we took a phenomenological approach to elucidate the relationship between their lived sensory experiences, their existing clothing and clothing aspirations. For some it was simply a quick chat. For others it has been a series of intensive meetings spanning a couple of years; our collaborative dialogue and articulation of sensory experiences sharpening with each rendezvous. The informants range from non-verbal children, to active teenagers, to young professionals, to a factory worker and a diplomat in their 60s. They are all in mainstream education or full-time employment. The wardrobes I examine are situated mainly in Europe: physically, culturally, and climatically.

[1] In the context of my research participants neurodivergence includes people on the autism spectrum and/or with ADHD and dyspraxia.
[2] semi-structured interviews in the presence of their wardrobe contents

I use the term *wardrobe* both literally and metaphorically (Klepp & Bjerck, 2014). My intention was to visit each participant's physical wardrobe in their home. For most participants that has been the case. However, for some it felt too intimate. So they packed up the contents of their wardrobes into shopping bags and brought them to nearby cafes. For a few, the loud background sounds of a cafe were too overwhelming so they let me rummage through their drawers in the privacy of their work offices. I embraced every opportunity for a wardrobe study, even unpacking the contents of someone's suitcase at a conference. Covid-19 restrictions meant that sometimes there was a computer screen partitioning me from the wardrobe. The adaptability of the wardrobe methodology was key, in particular with participants who are non-verbal or have communication challenges. The red thread through each adaptation was a sensory ethnographic approach that was "not so much to study other people's sensory values and behaviours, but to collaborate with them to explore and identify these." (Pink, 2009)

INSIGHTS

Selected excerpts from the wardrobe studies:

> ***Stine, 26, Researcher***
> *Study Location: Community project & her home*
>
> Stine anticipated some knee and hip flexing as we shovelled the ground so some stretch in the trousers was essential. She also anticipated that the ground might be abrasive. Toughness was therefore an equally important characteristic to ease of movement. She had settled on a pair of jeans with a little elastic content. However, she now regretted that decision as the hardware from the waistband was digging into her abdomen as she loaded stones from the ground into a wheelbarrow. Her trousers restricted this bending action by tightening the fabric across her obliques. This particular sensation is a daily obstacle for Stine. It can become so overwhelming that she cannot concentrate on anything else. Over several meet-ups, in Stine's home, we refined the description of this sensation as akin to that of a stranger slowly sliding their hand around your waist. The sensation approaches from behind. You can't quite process it until it's too late. Physically you feel restricted. Emotionally you feel violated. Socially you don't want to cause a scene.



Left: Stine climbing trees in her jeans.
Right: Tom sharing the sensorial qualities of his favourite shirt with me.
Photographer: Anders Myklebust

> ***Tom, 38, Innovation Manager***
> *Study Location: Many cafés*
>
> Tom had kept notes on a new tweed blazer he had bought. Standing in front of the mirror in the store, he had concluded that it fitted his body perfectly. Across the back there was an ease of movement and the cut was flattering. It projected the confidence of the character he wanted to inhabit at Monday's presentation. However, on Monday morning, the blazer inhabited him. Tom is very animated with his arms as he presents. The blazer was catching on the top of his inner arm. A catching that restricted him physically and distracted him mentally. This catching made a sound. The longer he wore the jacket the smell of the fabric became more potent. "I couldn't find a way to decode the experience, it was eating me up, it was almost animalistic, like an animal on my back with the sound and the smell and the restriction to my arms."

A summary of insights from wardrobe studies are:

- Cheap construction, as a result of fast-fashion, is one of the main culprits for sensory overwhelm: synthetic fibres, roughly overlocked seams, careless labelling, restrictive cuts.
- Natural fibres are overwhelmingly preferred because of tactility, smell, sound and thermal regulation. However, tactile perception, preferences and vernacular vary between participants. For some cashmere is a “soft” fabric. For others cashmere has small hairy fibres that cling to the skin. Such participants describe a smooth shirting cotton as “soft”.
- Clear patterns emerged with particularly sensitive body parts: back, neck, wrists, ankles, waist as these areas are perceived as most vulnerable to potential threats.
- Dominant fashion design practices are traditionally visual and static in their conception of clothing (Skjold, 2018). The wardrobe studies allowed me to see clothing as an act of dressing, a practice of wearing, a series of dynamic actions. This has shifted the moving body to the forefront of my design process.
- The potential for movement facilitates a physical freedom that is inextricably linked to emotional freedom: freedom of choice, freedom from judgement, freedom to move through the day free from distractions and restrictions.
- Comfort is more than simply soft materials or a lack of constraint. It is being able to comfort yourself at times of great discomfort. It is being comfortable with how you are socially presented: “the embedded meanings so implied, can be a source of ease and calm – or its reverse.” (Twigg, 2010)
- Clothing has the potential to activate pleasant sensory stimulation that overrides or dampens problematic sensory inputs from other sources.

TRANSLATION INTO DESIGN PRACTICE

My research is practice-based, therefore the second phase takes a design-driven approach to translate these insights into my design practice by purposefully including neurodiverse minds, bodies, and sensory perceptions. My second research question asks: *how can fashion designers consciously craft clothing sensations for, and with, wearers with diverse sensory needs?*

The research has culminated in three case studies that explore how we design out depleting sensory inputs and indulge the sensations that nourish. The anticipated outcome is a series of iterative prototypes whose contribution is less about the final product and more about a way of working; a blueprint for designers to guide them through sensory considerations. As we begin to test the prototypes in context we see clothes as an interface between us and our external environment. This composition of the melody of the clothing details and choreography of the moving fabric must be in harmony with both the wearer’s external environment but also their internal emotional state.

REFERENCES

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Klepp, I.G. and Bjerck, M. (2014) A Methodological Approach to the Materiality of Clothing: Wardrobe Studies. *International Journal of Social Research Methodology,* 17(4), pp. 373-386.

May, K. (2018) *The Electricity of Every Living Thing*. London: Trapeze.

Pink, S. (2009) *Doing Sensory Ethnography*. 1st edn. London: SAGE Publications Inc.

Robertson, A.E. and Simmons, D.R. (2012) The Relationship between Sensory Sensitivity and Autistic Traits on the General Population. *J Autism Dev Disord (2013),* 43: 775 - 784.

Skjold, E. (2018) Making sense of dress: On sensory perspectives of wardrobe research. *Artifact: Journal of Design Practice, 5(1)*, pp. 4.1-4.15.

Twigg, J. (2010) Clothing and dementia: A neglected dimension*? Journal of Aging Studies, 24(4),* pp. 223-230.

EXPERIMENTATION

The role of experimentation in my research is three fold. Firstly, my priority has always been to seek out neurodivergent voices which are excluded from participation in traditional data gathering activities. I therefore experimented with ethnographic techniques that are adaptable to a person’s sensory, communication, and social preferences. These techniques enabled the participation of neurodivergent individuals who had never shared their experiences before, including several who are non-verbal. Together we built a holistic narrative that provided insights into the physical, emotional and social impact of their sensory experiences. Secondly, the communication of these insights is a subject of ongoing careful contemplation that has involved experimentation with co-writing, video and sound recordings. Thirdly, I have purposefully experimented with how to include neurodiverse minds, bodies, and sensory perceptions within my own design practice. This continues to be a profound and infinite experience of questioning my education and unlearning habitual design processes.

CV

I am a fashion designer and action researcher currently in the 3rd year of a practice-based PhD at NTNU. I hold a bachelors in fashion design from NCAD, Dublin. I spent 3 years as a menswear pattern-cutter in London with fashion houses such as Alexander McQueen. These skills were then adapted during 5 years developing medical wearable technology in my native Ireland and the Netherlands. In 2020, I completed a masters in product design engineering at NTNU with a particular focus on participatory and inclusive design.

FRIDAY, APRIL 12
SESSION 1
9:00 - 10:00

ROOM B - SALÓN DE GRADOS

Matthew Crabbe

Between Experiment & Expectation: Photo narrative reflection on the lasting impact of an experimental design-studio

BETWEEN EXPERIMENT & EXPECTATION

Photo narrative reflection on the lasting impact of an experimental design-studio

ABSTRACT

The results of the recent EU research project “Architectures Afterlive: The Multi-Sector Impact of an Architectural Qualification” highlighted that architecture graduates are well equipped with transferable skills that allow them to succeed in new professions or even totally unrelated sectors [1]. Many soft skills, including communication, teamwork, problem-solving, organisation and an openness to learning, provide architectural graduates with multi-sector mobility that will be valuable in a rapidly changing world. Yet these skills are seldom an explicit part of curriculums, which more often focus on the design and technical expertise required for professional accreditation as an architect. This long-established balancing act poses a significant challenge for schools of architecture, professional bodies and offices. How do we balance transversal competencies with those required for professional accreditation? And which formats are effective at conveying transversal skills anyway?

In architectural education, experimental studio formats involving live projects, hands-on work with materials and cooperation with civil society partners can foster new forms of practice and professional identity by empowering students and demanding different competencies than a studio-based design project. These collective experiences often exert a lasting influence on participants by contributing to processes of self-actualisation regardless of whether they elect to pursue a career in architecture, another form of spatial practice or a completely unrelated sector. Yet unpacking which specific competencies these formats strengthen is problematic. More comprehensive investigations, such as the aforementioned *Architectures Afterlife*, have employed quantitative and qualitative social sciences methods such as surveys, focus groups and interviews to draw wider-reaching conclusions on architectural education across several institutions. By focusing on one specific design studio and a group of participants, I aim to capture the dynamic of an intense group experience and explore the tension between expectation and intention in studio teaching from the perspective of students and teaching staff through retrospective reflection.

To investigate this theme, I propose a mixed-method research methodology combining the established social sciences method of *photo-elication* with an arts-based *photo-narrative* approach. In photo elicitation, photographs are used to structure an interview with the participant - that is, the photographs are used to “elicit” responses related to the research themes. The value of the methodology lies in the assumption that photographs carry meaning and can arouse an emotional response, allowing for insights very different to those obtained in an interview. On the other hand, photo-narrative research uses photographs to tell a story, focusing on reflection and adding retrospective meaning to experiences [2]. Photo-narrative approaches push academic writing beyond traditional orthodoxies and produce insights on multiple levels. For the researcher, constructing a narrative using photographs is a form of inquiry with artistic and social value in itself; this can then be set against the interpretations and understandings of observers [3]. Both approaches focus on the way in which photographs enfold meanings that are both seen and unseen. This approach builds on a previous submission that combined photo-elicitation with a portrait photography method to investigate professional identity in graduates [4].

The proposal is to investigate the lasting impact of a master design studio from Summer 2022 in a workshop format in which participants will reflect on the gap between experiment and expectation using a series of narrative photographs. The studio was based in a village in the German state of Thüringia. In cooperation with the civil society organisation Haus Döschnitz e.V., the studio developed designs for an on-site trekking shelter and participated hands-on in restoration works on the historic post-timber house as part of two week-long excursions [5]. The initial excursion contributed to a strong collective dynamic throughout the semester, with the group living, cooking, working and spending

their free time together for one week in unfamiliar surroundings. I documented the excursion photographically, and these photographs have been used extensively in presentations and lectures since, through this process, they have come to embody further meanings and values.

Photographs from the excursion week will be provided to the participants in a workshop format. In smaller groups, they will write a series of captions under the photographs and use these to reconstruct their own narrative of the studio, which they will present to the rest of the group. By comparing the ensuing narratives, we will enter a group discussion surrounding the learning effects of the studio experience and further annotate the images with our reflections. Where and how did learning take place? What lasting impact did the experience have?

As the photographer, the chosen images will enfold my own narrative of the studio as seen through my lens and are not neutral but rather deeply personal, communicating my own values and intentions as a teacher and photographer[6]. In photographs, many things become “invisible”, such as the technical aspects of composing, selecting and editing the portraits. This inherent mystery makes the photograph a medium able to create a personal fictional narrative. Taking these images and overlaying them with the impressions and memories of others will create a rich, reflexive photo narrative, which can unlock critical reflection for the other participants and myself. The outcome should make a research contribution as a speculative practice-based approach and provide an insight into what kind of unexpected learning occurs in live-project studio formats.





Experiment

The proposal touches the idea of experiment on a number of different levels. Teaching as a form of creative practice is always experimental; as a collective and participatory process, it is open-ended and emergent. Through experimentation in architectural education, we can provide a necessary, safe space for students to experiment with different professional identities and directions. Understanding the lasting impact and meaning of these experiences is a subject that should fascinate all involved in teaching. With regard to the proposed research method, the combination of a social-sciences and an artistic approach should pose this question differently and also embrace the subjectiveness of individual experience. This experimental approach builds on previous work and is part of an iterative development of new approaches to understanding identity in architecture graduates. It highlights some of the specific challenges facing university educators, professional bodies and practising architects in accommodating the demands of a cohort who are becoming architects in a period of unprecedented upheaval.

[1] Langmann, Sten, and David Pick. *Photography as a Social Research Method*. Singapore: Springer Singapore, 2018. https://doi.org/10.1007/978-981-10-7279-6.
[2] Langmann & Pick (2018)
[3] Crabbe, Matthew. 2023. ‘Postcards from Practice’. In *CA2RE Zagreb Intersections*.
[4] Natural Building Lab. n.d. ‘Re:Treat Döschnitz’. Accessed 10 January 2024. https://www.nbl.berlin/projects/retreat-doschnitz-kreislaufgerechtes-bauen-zwischen-stadt-land/.
[5] Ketelle, Diane. 2014. ‘The Ground They Walk On: Photography and Narrative Inquiry’. *The Qualitative Report*, November. https://doi.org/10.46743/2160-3715/2010.1164.

FRIDAY, APRIL 12
SESSION 1
9:00 - 10:00

ROOM C - SALA DE VIDEOCONFERENCIAS

Michele Porcelluzzi

A classification of urban biodiverse urban public spaces: more-than-human communities vs. enclosed protected areas

A classification of urban biodiverse public spaces: more-than-human communities vs. enclosed protected areas

The fundamental role of biodiversity in fostering ecological resilience and enhancing the quality of urban life is widely recognized in academic research. Its benefits include improved mental health, enriched air and water quality, and increased social and recreational opportunities for residents. Once these advantages are recognized, there is a growing need to investigate innovative design strategies for introducing and increasing biodiversity in urban public spaces.

This paper aims to define a classification of biodiverse public spaces represented by a spectrum in which spaces can be classified according to how interaction between human and non-human agents is present. The extreme points of the spectrum – which will be the paper's focus–are here called "Spaces for more-than-human communities" and "Enclosed urban protected areas". The proposed classification, not present in previous research on the topic, aims to open new possibilities in defining design strategies for urban public areas.

Spaces for more-than-human communities

The first category is conceptualized as a type of urban area in which human and non-human inhabitants coexist symbiotically, contributing to each other's well-being and creating an interconnected urban ecosystem. In this approach, the conventional boundaries between urban spaces for humans and wildlife are blurred. The emphasis is on the coexistence and interdependence of species within the urban fabric.

To understand the theoretical background behind the idea of *spaces for more-than-human communities*, it is essential to explore its theoretical background. Actor-Network Theory (ANT) by Bruno Latour serves as a foundation, challenging traditional distinctions between human and non-human entities. ANT posits that both are integral parts of complex networks (Latour, 2005) and that carry out collective action. The call is for a shift from anthropocentrism to a more extensive approach, recognizing the agency of non-human entities in shaping the urban environment. Architectural designers' role is fundamental in responding to the needs and dynamics of both human and non-human stakeholders within urban spaces.

Another relevant theoretical premise is the research conducted by David Gandy, which emphasizes historical parallels and contemporary attitudes toward urban biodiversity. Gandy urges a critical examination of humans' relationships with nature in urban settings, advocating for more inclusive and equitable approaches to biodiversity conservation (Gandy, 2022).

Furthermore, David Maddox's vision emphasizes the need for urban environments that embrace biodiversity as an essential element for enhancing the quality of life for urban residents (Maddox, Herzog, & Wiesner, 2020). Community engagement and citizen initiatives are emphasized as useful and relevant to urban biodiversity conservation, contributing not only to biodiversity preservation but also to environmental education and social cohesion.

One more fundamental theoretical position is the one by Donna Haraway, whose book "Staying with the Trouble. Making Kin in the Chtulucene" is a reflection on overcoming conventional boundaries and the coexistence of humans and non-humans in shared spaces (Haraway, 2016). Haraway emphasizes the need to think beyond anthropocentrism and explore new ways of relating to the natural world, encouraging a deep understanding of the interconnectedness of all life forms within urban environments.



A concrete example of this approach is the project Krater, located in Ljubljana, Slovenia, and initiated by the non-profit urban design office Prostorož and the landscape architecture firm Trajna in 2020. Krater's facilities include a MycoLab, a surface for treating biomass, a fish pond, a beehive, an insect hotel and aviaries. All these elements allow the local community of the neighbourhood not only to co-inhabit the space with non-human forms of life but to interact with them directly and to learn from them through laboratorial activities and small craftmanship workshops. As the public program of activities is collectively managed and organized, Krater not only enhances biodiversity but also promotes a sense of shared ownership and stewardship of urban nature among the inhabitants.

As cities continue to evolve, this design attitude provides a

transformative lens through which to envision urban spaces that are not only ecologically valuable but also socially inclusive for communities.

Enclosed urban protected areas

The second analyzed category includes, on the contrary, spaces that prioritize the conservation of native ecosystems. As human activities increasingly intensify in urban areas, the preservation of biodiversity within urban confines becomes a complex challenge. A possible design strategy to improve the quality of biodiversity in public spaces is to conceive them as enclosed areas in which non-human agents can thrive undisturbed.



In these spaces, human access is strategically limited to prioritize native biodiversity conservation. These areas, often referred to as "wildlife reserves" or "urban refuges," are intentionally designed to be either entirely off-limits or minimally accessible to humans: the emphasis is on providing a haven where biodiversity can flourish without direct human interference.
Michael Hough's position aligns closely with the philosophy of enclosed urban protected areas (Hough, 2004). Hough, a landscape architect, emphasizes the significance of preserving and designing urban spaces where biodiversity can develop independently of human disturbance. His approach focuses on integrating ecological considerations into urban design and development, recognizing the need to balance human needs and the preservation of natural systems.
Another scholar in landscape architecture, Simon Bell, emphasizes the relevant role of islands of "wildness" within urban landscapes (Bell, 2012). His theoretical exploration aligns with the concept of creating public spaces for biodiversity within cities, underlining the benefits of embracing wildness to preserve native plant and animal species. Bell's assumption is that urban landscapes need not be entirely accessible for human inhabitants; instead, they can retain pockets of wildness, contributing to the overall health and well-being of local communities.
The theoretical position of *enclosed urban protected areas* is concretely transposed in the project The Birds' Palace, designed by Studio Ossidiana in 2021 in the Vondelpark in Amsterdam. This floating garden places nature beyond the direct reach of human visitors, who can only look at it from a 5-10m distance, fostering through this approach biodiversity conservation and raising public awareness of urban wildlife. One relevant aspect of The Birds' Palace is indeed its role as a living laboratory for studying the dynamics of untouched urban ecosystems: the intentional visibility of the enclosed area from the pond's perimeter allows for passive observation, fostering environmental education. This design approach transforms the enclosed space into an educational tool, emphasizing the importance of preserving biodiversity in urban environments.

Towards new possibilities for public space design

Classifying urban public spaces into areas where humans and non-humans coexist and cooperate and areas from which humans are entirely excluded opens new research perspectives. These perspectives take into consideration not only how these spaces should be conceived but also how they could be designed. Including or excluding the human presence can be a starting point in the design process, and it has several implications on these areas' spatial features – in terms of heights, distances, urban furniture, and more – that allow designers to conceive spaces capable of improving the habitability for inhabitants belonging to different species.

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Reflection on the importance and role of <u>experimentation</u> in the research project

The doctoral research "Biodiverse Public Space: Collaborative Processes, Design Attitudes, and Hybrid Practices for More-than-human Communities" has a specific approach to the topic of public space design, both in its theoretical premise and in its methodology: it aims to classify public spaces - and subsequently identify strategies for their design - not according to their program or their morphology but according to how humans and non-humans coexist in the space. This approach experiments on how architectural design can establish a dialogue with other disciplines such as biology, ecology, zoology, and more. After identifying the categories presented in the paper, the experimentation will be carried out through on-site activities: selected public space projects across Europe will be investigated with an on-site analysis of interactions between humans and non-humans, interviews, and critical drawings.
In a historical moment in which social and environmental issues force practitioners and researchers to work in innovative modalities, experimentation has a central role in academic research: urgent global challenges can be faced more effectively if a transdisciplinary approach is adopted. Although the specific agency of architectural design should be clear, its tools and frameworks can be opened to new possible trajectories that make the results less certain but, at the same time, more adaptable and dialogic.

FRIDAY, APRIL 12
SESSION 2
10:00 - 11:00

ROOM A - SALA DE PROYECCIONES

Giulia Azzini

Re-thinking the liquid common ground. A regenerative project for the water spaces in Roveto Valley

Re-thinking the liquid common ground. A regenerative project for the water spaces in Roveto Valley

Keywords:
regeneration, mountain, water spaces, territorial fragility, public space

With the term 'liquidity' the sociologist and philosopher Zygmunt Bauman coined a metaphor that describes the modern condition (Bauman 2011): an intermediate state with a dynamic and provisional nature, characterized by the dimension of uncertainty.
Leaving aside the sociological application of the term, the idea of 'liquidity' can be attributed to space by identifying its provisional and unstable character: a state that belongs to every place but is particularly sensitive within the so-called fragile areas, often associated with marginal territories and mountain or rural settings, characterized by risk, depopulation, and precarious social and economic conditions (Carrosio, Faccini 2018). This state can also be linked to some distinctive elements of the territory: the complex river system represents an interesting field of investigation in this regard. Indeed, each watercourse has an intrinsic liquid and, therefore, dynamic and temporary nature: its characteristics largely depend on the morphology of the basin and soil features, other than on anthropic factors.

The present research, which began in June 2023, refers to the PhD scholarship *Theories and projects for a social and economic regeneration of rural architecture and landscape in mountain areas*, is funded by the Istituto Nazionale della Previdenza Sociale (INPS) and is developed in collaboration with Azienda Sviluppo Territorio in Roveto Valley, which thus becomes the experimental territory of the research.
The complexity of this Valley, and so of the possible themes through which to tackle a regenerative project, has required limiting the research to a specific field: the Liri system, defined by the Liri river, its source, and numerous tributaries, as well as the artifacts emerged for the water use and management, is an extremely actual and relevant topic when inscribed in a broader context of investigation. Indeed, if in the past the river system was an important source of sustenance for the territory, defining an essential part of its landscape, nowadays it represents just its "neglected area" (Clément 2004, p. 4) and, above all, a potential danger: the worsening of climatic conditions, together with the set of interventions that over the centuries have reduced the physical complexity, biological variety, and regeneration capacity
of the river ecosystem, has forced renewed questioning about its management and use, orienting processes aimed at its renaturalization, recovery, and revitalization (Oldani 2016, pp. 72-74).
On this basis, the theme of water is further declined according to its public and collective vocation: if the public space is the privileged scenario for the formation and preservation of the small rural communities identity, its design can be considered a qualitative and structural response to the challenges imposed by territorial marginality and climate change. In this regard, the concept of 'common ground' evokes the image not only of shared space and community (Chipperfield, 2012, p.13), but also of the antithetical pair of land and water, peculiar elements of mountain contexts around which architectural design can act as a dialectical tool.

Within this framework, the research reflects on the role of architecture as a condition able to systematize the features of fragile mountain contexts with the issues of our time, proposing a design-driven methodology based on the reformulation of the water spaces design in Roveto Valley, the testing ground through which to elaborate a regenerative project applicable to similar contexts.
The methodology employed can be divided into three different time phases: an exploratory one, a critical-interpretive one, and a transformative one.
Starting from the former, the exploratory phase involves understanding the place and the main issues to be addressed by the research, through site explorations and interviews with the local stakeholders.
The critical-interpretive phase, instead, is aimed at ensuring a reading of the place that is not purely analytical, but filtered through architectural sensitivity. In particular, an attempt will be made to identify and systematize, through a multi-scalar approach, the type of architectures developed with the river system: infrastructures for overcoming physical barriers, buildings for water control, and supply artifacts in smaller villages represent interesting typologies with a very different scale, essential parts of a single design system that needs to be faced in mountain areas.

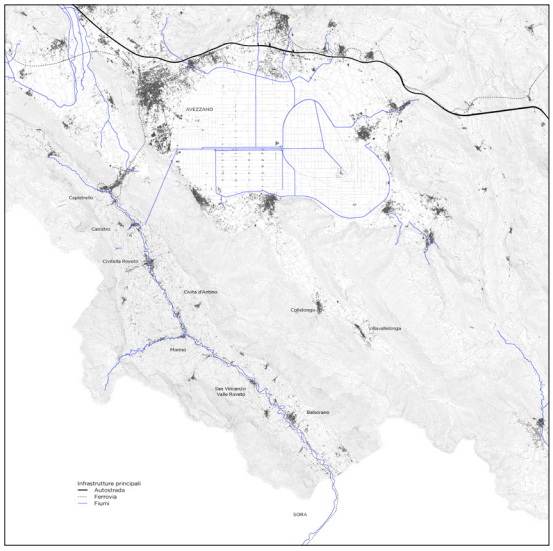


Fig. 1.

Finally, the transformative phase involves an evaluation of how the above-mentioned typologies can be rethought or recovered through site-specific interventions creating new balances in the place, and it makes use of two different design approaches: spatial adaptation and spatial re-signification. On the one hand, adaptation means modifying space to face future contingencies and mitigate their risks, especially through the collaboration between architectural sensitivity and technical or engineering choices: this kind of approach provides a perfect union of form and function, promoting interdisciplinarity as a critical and balanced collaboration between the various disciplines involved (Shannon, Smets 2009, p.9). On the other hand, spatial re-signification implies the attribution of new meaning to forgotten or disused places, enhancing their features: it is not a mere re-functionalization of spaces, but the recomposition of the relationships between their components by design.

Through the methodology described above it will be possible to build a single waterscape, essential for the understanding and the regeneration of the Roveto Valley landscape and, more generally, for the definition of a methodological project with guidelines applicable in similar contexts.
Within this framework, the 'liquid' common ground represents, on the one hand, a place of adaptation to the variable conditions to which the water system is subject, and on the other hand, a place of re-signification of the structured relationship between the human landscape and the river ecosystem. In this context, architectural design can trigger virtuous dynamics for the regeneration of mountain areas, through a reading of the water spaces that simultaneously concerns the issues of sustainability, safety, and economic, environmental, and social regeneration; this allows intervention on the territory by employing the two approaches of adaptation and spatial re-signification, which address all the multiple issues illustrated, highlighting the role of the design as a dialectical tool.
The relevance of such research is evident in light of the depopulation processes affecting mountain areas and the worsening climatic conditions: the rediscovery of the margins, the valorization of the diversity, and the reevaluation of residual spaces allow for an effective response to the problems posed by contemporaneity and, ultimately, foster the enhancement of the fragmented and plural nature of the Italian territory (Lantieri, Simoni, Zucca 2021, p.40).

Experimentation in the research project.

If the Roveto Valley represents the testing ground for the development of regenerative strategies applicable to similar contexts, the river system constitutes an experimentation territory in the same Valley: indeed, this is still an unexplored field, although the recent stipulation of a river contract (2015) shows a first sign of interest and awareness by some local municipalities.
Thus, the centrality of experimentation in the present research project originates, on the one hand, from the lack of knowledge regarding this topic, and on the other hand, from the assumption that it can still acquire considerable value for the territory and for its inhabitants: experimentation is here conceived as a tool for the active and progressive knowledge of the river system on the different scales of the landscape and the village and, at the same time, of the possible ways of intervention through the architectural discipline in its multi-scalar declinations.
Experimentation concerning this theme takes on even more relevance with the worsening climate crisis, which makes it urgent to critically reflect on the development of appropriate strategies to limit water and hydrogeological risk, which can further exacerbate the marginal condition of these territories.

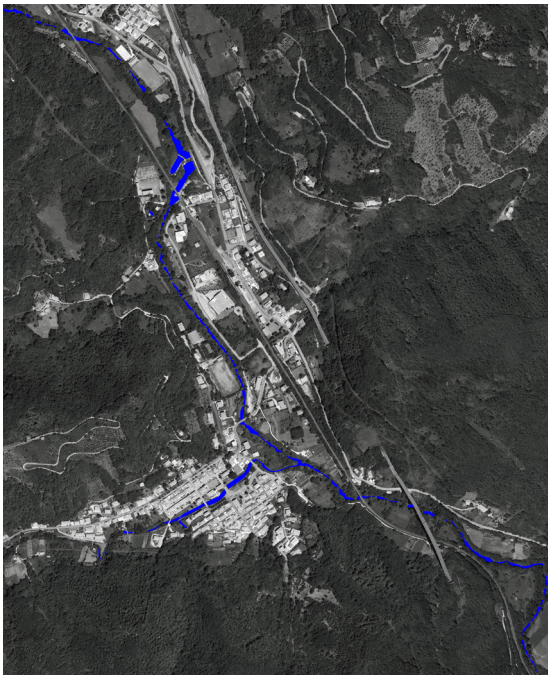


Fig. 2.

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Images

Fig. 1: The Liri system in the Roveto Valley. Graphic reworking by the author.

Fig. 2: The relationship between the Liri and Morino (AQ), one of the municipalities involved in the river contract stipulated in 2015 (Balsorano, Canistro, Capistrello, Cappadocia, Castellafiume, Civita d'Antino, Civitella Roveto, Morino, San Vincenzo Valle Roveto,). Graphic reworking by the author.

FRIDAY, APRIL 12
SESSION 2
10:00 - 11:00

ROOM B - SALÓN DE GRADOS

Eline van Leeuwen

Psychiatric atmospheres : understanding spatial experience of psychiatric hospital architecture

Psychiatric atmospheres : understanding spatial experience of psychiatric hospital architecture

The relation between our experience and the environment forms a central theme in the profession of architecture (Brodrück, 2021; Rasmussen, 1986; Thiis Evensen, 2020; Zumthor, 2006), and architecture itself is even described to be a 'fundamental fact of human perception'(Böhme, 2018). If we accept that atmospheres shape a person's being-in-the-world as a whole, our utmost care and attention should be dedicated to design those spaces in which we live our most intimate hardships and existential vulnerabilities. However, to attend to the question '*How should we design architectural space for psychiatric healthcare?'* it is vital to first address the various complexities of the task at hand and dissect the imperative questions that precede any attempted solution. Most fundamentally, how do both (1) architectural form and (2) the phenomenology of psychiatric conditions influence people's embodied experience of their immediate surroundings? If we want to centre *architectural research and design* around the perception of psychiatric patients, how can we support them in expressing their spatial perception? How do we approach the deeply subconscious way in which humans register and experience atmosphere – even regardless of mental challenges…? A hopeful start and theoretical framework for tackling these questions is the recent rise of *enactive approaches* to understanding human cognition (Varela et al., 2016) and subsequently psychopathology (Fuchs, 2018). Likewise, the field of architecture increasing recognized architectural space as *lived space* that transcends geometry and measurability, and which can be fully appreciated only through the joined effort of all our senses (Pallasmaa, 2012).

Our aim is to develop a multifaceted understanding of 'psychiatric hospital atmospheres', interrogating the relation between theory, form and experience of their architectural presence. We propose to approach the complexity of this issue as a creative, process-driven and open-ended experiment: exploring the task with primary focus on rigorously *addressing the relevant issues* at stake. Rather than predefining and controlling the desired outcome, we direct our efforts to posing questions (***speculation***), producing novel ideas and approaches (***reflection***) and confronting existing insights with each other in innovative ways (***evaluation***) – with the hope and trust that these experimental activities will ultimately become a breeding ground (***interface***) to raise the *next* relevant questions (Tamke, Nicholas & Thomsen, 2017). We set out to shape four different narratives through carefully specified 'lenses' that each deal with a relevant aspects of the challenge. This allows us to formulate pertinent questions and attend to the tensions at the heart of the issue. Using these lenses we will continuously shift between immersive closeness and reflective distance and we will navigate between different modes of thinking and forms of perceiving (theoretical, explicated, implicit, bodily).

The historical lens allows to explore how collective thought regarding 'architectural experience' has influenced the way we designed psychiatric hospitals over the course of history. We observe how the notion of 'experience' gradually comes to the forefront in architectural theory and how our growing self-awareness influences the way we design for different forms of experience (the beautiful, the sublime, the picturesque, the uncanny). We further interrogate how this collective perception of architectural experience has shaped the built form of psychiatric hospitals – ultimately shaping the way patients are 'afforded' experience of architectural atmospheres.



Figure 1Entrance to the Noorder Sanatorium (1935) in Zuidlaren

The architectural lens allows to interrogate the tension between immersive, instantaneous and all-encompassing qualities of atmospheric experience and the more continuous and durable qualities of the architectural composition itself. Can we capture how architecture forms an outline for situated atmospheres, while remaining true to the transient, singular and ephemeral nature of

atmospheric *experiences*? By ***evaluating*** six architectural environments we investigate if we can describe them in a way that is methodical while also evoking poetic quality of their atmospheres. We use the researchers bodily experience to investigate resonance between different architectural qualities, confronting the existing insights of Hermann Schmitz' *Neue phänomenologie* with the embodied knowledge of first hand lived experience.

Through the **implicit** lens we aim to recognize and interrogate various non-verbal and non-explicated forms of 'knowing'. We acknowledge the relevance of bodily experience, vague or half-forgotten memories and *tacit* forms of understanding (Polanyi, 1966) to consolidate the poetic (Bachelard, 1994), intuitive and embodied aspects of atmospheric experience and relate them to other research methodologies. In doing this we intend to address the prevailing tension between *verbal* and *visual* logic of thinking in spatial research and the phenomenological tradition. We shape the implicit lens through site visits, drawing psychiatric hospitals, participatory observation and working at a psychiatric hospital for the full duration of the project. Rather than being articulated separately, the narrative of tacit knowledge continuously resonates with the other narratives throughout the experimentation process. It remains readily available as an interface for the interpretation and convergence of all narratives.

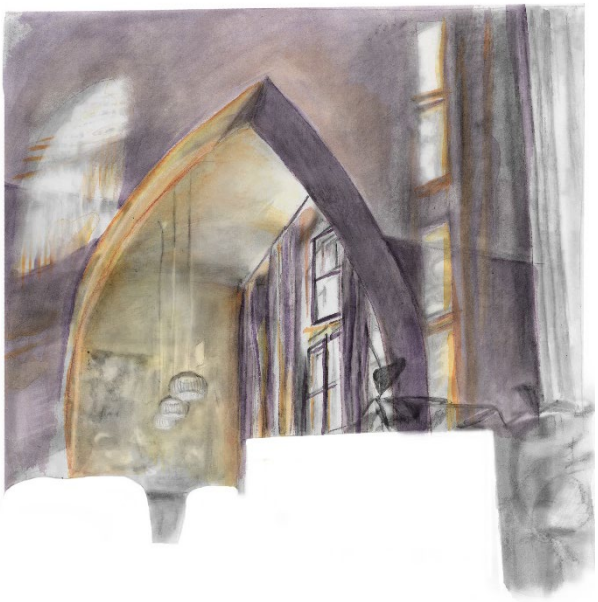


Figure 2 Common room at daytime, Soteria Berlin (2015)

Through the **(inter)subjective** lens we observe the various different way in which people can be (personally) affected by and involved with the psychiatric hospital. We explore different roles, interests, unique perspectives of 'stakeholders' and what 'being-in-the-hospital' means to each of them. We address the fundamental tension in psychiatric care and acknowledge the validity of the *personal perspective*, whilst also seeking to arrive at shared understanding and attunement. To do so, we combine existing accounts on the phenomenology of psychopathology (Fuchs & Schlimme, 2009; Stanghellini, 2004; Van Duppen, 2017) with ego documents, personal reflection and (verbal as well as graphic) dialogue with patients about their personal experience.

By recurring immersion and distancing, we hope to continuously (re)generate a (re)new(ed) overview of the general pursuit to arrive at a holistic view on 'atmospheres of the psychiatric hospital'. In accordance with the paradigm of embodied experience, we hope to consolidate the narratives by understanding their mutual intertwinement. Rather than developing a 'absolute' cathartic or all-encompassing solution, this research experiment aspires to trace complexities, ambiguities, curiosities, difficulties and uncertainties. We accept the impossibility of a ready-made solution and instead explore the dynamic occurrence *between* previously well-defined concepts. The fruitful outcome of the experiment should be a comprehensive understanding of cross-disciplinary *narrative resonance*, providing common ground for interdisciplinary collaboration in the future.

Reflection on the experimentation

Experimentation in this project has been vital to allow the multifaceted and multidirectional approach of the topic, incorporating interests about both the theoretical and the experiential, including a historic approach, including methodologies like drawing but also moving across the boundaries of individual fields – incorporating phenomenology of psychopathology. To truly ask the relevant questions and develop meaningful insights, there must be room to explore and include intuitively relevant media (poetic, narrative, artistic) instead of the more pre-determined and traditional scientific approaches. Since the ambition of the project is to form a bridge between different fields and previously pursued paths, we must allow ourselves to explore limitations and tensions beyond established frameworks and traditional research fields, possibly even beyond the limits of your own expertise. The experimental approach allows to combine systematic methodologies (such as the works of Hermann Schmitz and Ralph Brodrück) with intuitive forms of understanding that may be more established in the arts than in academic research.

FRIDAY, APRIL 12
SESSION 2
10:00 - 11:00

ROOM C - SALA DE VIDEOCONFERENCIAS

Dezire Tilinger

Alternative urban scenarios of the Sava amphitheatre - a comparative analysis of three plans from three different planning periods with space syntax –

Alternative urban scenarios of the Sava amphitheatre
- a comparative analysis of three plans from three different planning periods with space syntax –

The research examines the role and possibility of applying hypothetical/speculative models, or alternative urban scenarios, in contemporary architectural and urban practice in order to explore the complex relationship between the planned and realized. The research project aims to show how three very different planning paradigms, the socialist-modernist, the postmodernist and the neoliberal, compare to each other through the example of the Sava amphitheatre.

The Sava Amphitheatre is located on the right shore of the Sava River in Belgrade, near the old city centre. It was mostly unbuilt and was a popular bathing spot before 1884. when the main railway station was built there, the site was suddenly occupied by a large number of railroad tracks. At the time, because it was convenient for the transportation of goods, most of Belgrade's industry was located at its shores, limiting the access to the riverfronts for its residents.[1] But, due to its attractive location on the riverbank and the emergence of New Belgrade, a massive socialist urban development from the Yugoslav era, across the river, it was realised that the Sava amphitheatre had potential to expand the old city core and link it to the then new socialist city rising on the left riverbank.[2] For these reasons, it has occupied the imagination of architects and urban planners alike for decades, but despite the many plans prepared for it during the 20th century, it was only recently developed, as displacing the Main train station has proven to be quite a challenge. Out of the many plans available for the analysis, as this part of the city has a very complex urban history, three were chosen to represent three different planning paradigms that marked Belgrade's development: **1) The Home of Friendship**, or monumental congress centre complex proposed for the 5th meeting of the Non-aligned (1975) – as a representation of the socialist planning paradigm and one of the first plans for the redevelopment of the area[3], **2) The Town on Water** (Varoš na vodi, 1990) that proposed a wide variety of open public spaces – the postmodern paradigm[4], and lastly, **3) The Belgrade Waterfront project** that is in the last phases of its development for the neoliberal paradigm.

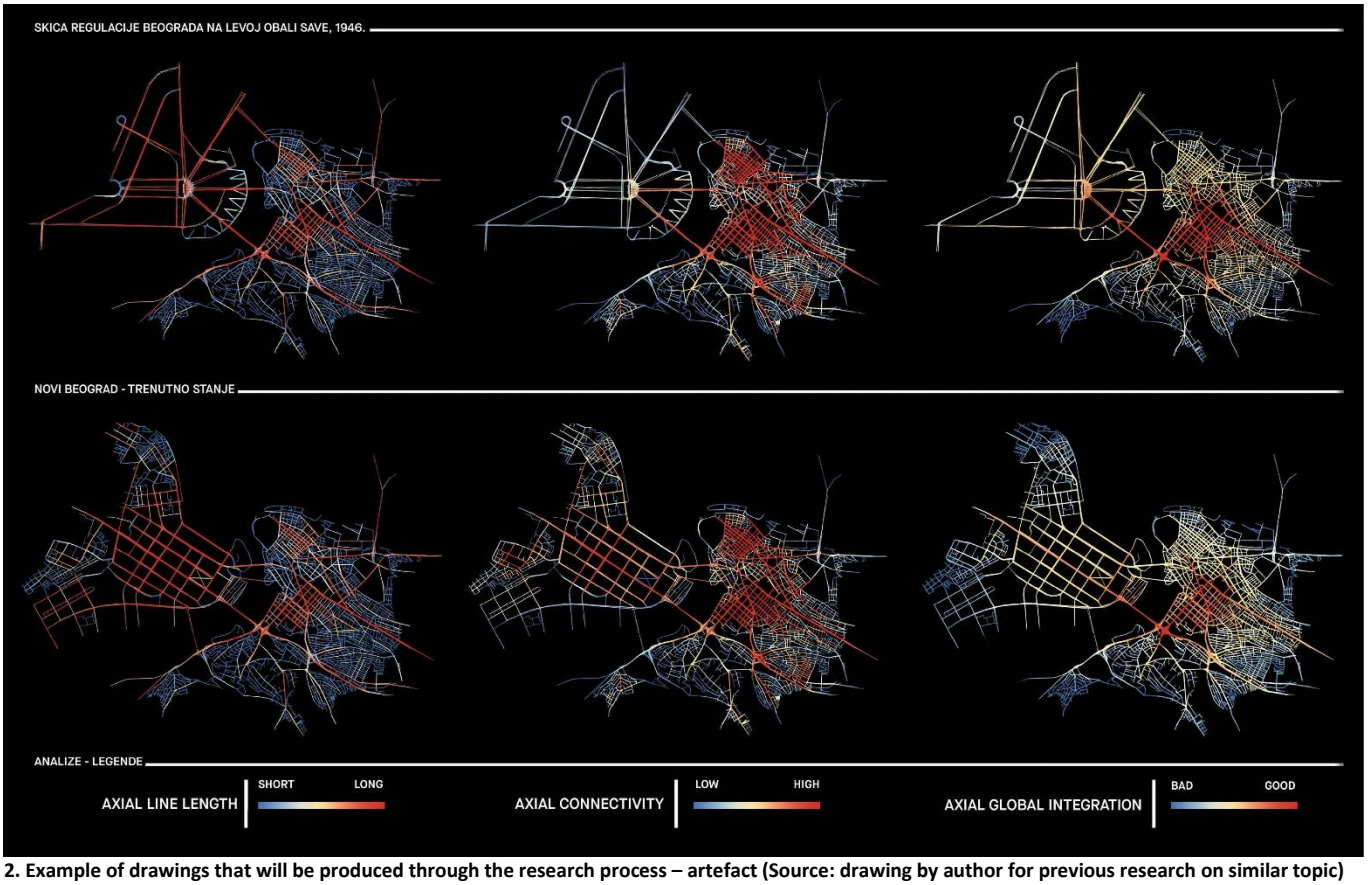


1. Plans that will be analysed: 1) The home of friendship; 2) The Town on Water; 3) The Belgrade Waterfront project (Source: 70 godina Urbanističkog zavoda Beograda. Knj. 2. Planovi. (2018).

All the projects proposed the displacement of the train station, which sparks a broader debate about what kind of relationships the analyzed paradigms had towards built heritage, but that is where similarities stop. The main difference between the earlier projects and the current development lies in their attitude towards the plot on the riverbank across it, known as block 18 and one of the few still undeveloped New Belgrade blocks. The 1975 and 1990 projects insisted on connecting the two blocks opposite of each other with bridges and treating them as one single development and spatial unit. The underlying logic of the projects was that those two plots, which also happened to be the geometric centre of Belgrade, formed a link between the old and the, then new, socialist part of the city and should, therefore, function as a public space accompanied by cultural and educational facilities. The projects were developed by prominent architects and the Urban Planning Institute of Belgrade, as well as through architectural competitions, with the aim of achieving an urban unit that integrates the two very different Belgrades on its side, but is also well suited to the morphology of old Belgrade behind it and is thoughtful towards the new skyline it will form.[5] Contrary to that, The Belgrade Waterfront project is an urban megaproject criticized for its lack of public spaces, open and built, as it is essentially an exclusive residential, commercial and office space, which in the opinion of experts is ruining Belgrade's skyline and identity, as well as questioning the resilience and sustainability of the project which is regarded to have "national importance". It is financed by Eagle Hills, a foreign investor from the United Arab Emirates (UAE), with considerable subsidies provided by the Serbian government. The government which put the project into motion sees it as a good example of urban development, but many professionals and citizens point out that the project is a usurpation of the planning procedures and practices and that many laws had to be changed or bypassed in order to legitimize the project, while also highlighting the lack of participation and transparency.[6]

The methodology is based on the comparison of the three observed plans through a dialogue of qualitative and quantitative methods by crossing a historical-interpretive approach and space syntax, a tool for quantifying results in the field of urban morphology, resulting in a comparative analytical drawing of the current and hypothetical states of the former Main Railway site. Combining these methods provides a more holistic view of the case studies, as the historical-interpretative approach allows for a detailed understanding of the socio-political context from which the three analysed projects arose, as well as a better reading of the drawings derived from the space syntax software. On the other hand, space syntax is a well-known methodology and a viable way to add a layer of quantifiable data to support the interpretation process.

The aim of the research is twofold: firstly, it provides insight into the pros and cons of the three planning paradigms it tests and argues that, for this case study, implementing some design principles from the first two projects could have improved the current urban development; and secondly, it tests the potential for using space syntax methodology in a historical-interpretative research framework rather than only a tool used in the design process. The paper is divided into three parts: 1) the introductory - describing the thematic and methodologic framework; 2) the application – which will further describe the case studies and apply the previously described methodology; and lastly, 3) the discussion – which will deal with describing and analysing the results and identifying the next steps of the research, as well as its weak and strong points.



2. Example of drawings that will be produced through the research process – artefact (Source: drawing by author for previous research on similar topic)

The role of EXPERIMENTATION in the research project

The experimentation aspect of the proposed research lies in the unconventional use of the space syntax methodology, which, even though it has a wide spectrum of uses, is mainly used in practice as part of the design process to test various design options, or in theory as a way to research the relationship between space and different social patterns, but rarely as a tool for testing urban scenarios from different periods within the same urban context. This could be because many questions arise regarding the precision of the proposed usage and the nature of the research itself (speculation), as it is more complex than just drawing in old plans instead of the existing condition to the place of interest. The built environment around the analysed spot also changes more or less, depending on the case and analysed period, making the implementations of old plans within it a lot more complex and forcing the researcher to work in a sort of anachronous state (reflection), shifting the research more towards the qualitative and interpretative than the experimental (evaluation), which space syntax (interface), due to its ability to quantify data is often used for. The proposed retroactive observation of plans represents, first of all, an abstract and complex exercise and a possibility for testing the limits of space syntax usage in combination with the historical interpretative method, but it also creates an opportunity to extract lessons from previous urban planning experiences, that could then be translated into recommendations for planning in the future.

[1] Nikolić, Marko, and Milena Vukmirović. "Industrial Heritage along Belgrade Waterfront in Planning Documents." *Arhitektura i urbanizam*, no. 51 (2020): 86–103. https://doi.org/10.5937/a-u0-28961.
[2] Perić, Ana. "Public Engagement under Authoritarian Entrepreneurialism: The Belgrade Waterfront Project." *Urban* Research & Practice 13, no. 2 (2019): 213–27. https://doi.org/10.1080/17535069.2019.1670469.
[3] *70 godina Urbanističkog zavoda Beograda. Knj. 2. Planovi*. (2018).
[4] Ibid.
[5] Perić, Ana. "Public Engagement", 213–27.
[6] Perić, Ana, and Marija Maruna. "Post-Socialist Discourse of Urban Megaproject Development: From City on the Water to Belgrade Waterfront." *Cities* 130 (2022): 103876. https://doi.org/10.1016/j.cities.2022.103876.

FRIDAY, APRIL 12
SESSION 3
11:15 - 12:15

ROOM A - SALA DE PROYECCIONES

Ivana Lovrinčević

Architectural hybridity interpretation instrument – Design-driven diagrammatic mapping

Architectural hybridity interpretation instrument – Design-driven diagrammatic mapping

Hybridization occurs as a consequence of cultural development and stratification. The theorists of social-humanist discourse have put forward hypotheses that interpret hybrids as an extremely important factor of cultural progress in transcultural discourse. Hybridization is described as a process that creates new possibilities through the mixing, combining and fusion of different cultural patterns. Néstor García Canclini, one of the leading theorists in the field of cultural hybridization in postcolonial discourse, states that hybridity causes connections on multiple cultural levels. He believes that the consequence of hybridization is the breaking of the exclusive ties of culture and territory and the expansion of communication and knowledge. Permanent crossing, transition and mixing are a modern creation that causes a state of liminality.[1] Homi Bhabha talks about the ambivalence of the border experience through the processes of crossing and translation.[2] The border in culture is a spatial, not a linear concept, and represents the field of action of hybridization and the emergence of that transitional/border state.

Hybridity in architecture is a phenomenon caused by the development of culture and transitions between architectural directions and influences. It is manifested by the synthesis of different tendencies and concepts. Architectural theory recognizes hybridity as a process, and hybrids as a condition that participates in the transformation of norms and typological frameworks. Hybridity in architecture is a kind of intentional or accidental experiment, responding to the polyvalent state of reality and resulting with the liminal state of architecture. Kisho Kurokawa talks about hybrid architecture through existence in symbiosis. He states that such architecture is a response to the demands and experiences of tradition and innovation of modern technologies. He believes that the rhizome, as a system based on a hybrid concept, will become the basis of the current and future development of society and culture.[3]

This paper is part of ongoing doctoral research exploring hybrid architecture that does not identify with any typology and implies a number of possibilities to become something else at any moment. It is a space in motion, a series of possible functions. Hybridity exists beyond the limits of perception and we cannot place it in norms or shape it into a paradigm. We cannot read or interpret it as a standard architectural language. Its specific narrative is not fully comprehensible within the framework of the perceptual tool. Methodical instrument for hybrid architecture interpretation was constructed as part of ongoing doctoral research. This instrument is considered an experiment whose aim is to demonstrate hybridity in architecture.

The product of architectural design should be explored within the scope of the design instruments referring to design-driven research. This research project proposes diagrammatic mapping involving a combination of content analysis and a series of specific architectural analytical procedures. These procedures are in the domain of architectural descriptive interpretation including axonometric and isometric drawings, diagrammatic labeling and recording, graphic and semantic analysis. Proposed analysis is used to decode and disassemble hybrid architecture and to describe layers and principles of hybridization in architecture. In order to interpret hybridity as part of design-driven research, we must define design tools that will refer to the elements of architecture. It will enable us to distinguish the layers of hybridity and to name them. The drawing was chosen as the fundamental expression of the architects. When choosing a way to display hybrid architecture, the absence of subjectivity in the drawing is necessary. In the case of a perspective view, the imperative is on the space from the observer's point of view. The objectivity of the axonometric or isometric view allows us to observe and analyze the hybrid architecture beyond space and time, at the same time having an insight into the interior and exterior of the architectural space. Unlike the perspective representation that is both spatially and temporally static by imposing a specific viewing angle at a particular moment in time, axonometric representation offers complete liberation from time and space.[4] Drawings that are proposed as an instrument of interpretation of hybrid architecture must be in a reduced, diagrammatic form in order to highlight spatial elements and relationships. Auguste Choisy established the analytical-narrative attributes of the axonometric drawing as a representation of architecture. Choisy believes that this type of drawing represents a synthesis of the plans of the space shown. At the same time, it presents plans and sections, but also distances the observer from the object so that he becomes an objective viewer. Observing the architectural hybrid through axonometry, we can move through different parts of the space, breaking it into fragments and inducing them as a whole.

Design-driven diagrammatic mapping as an instrument of architectural analysis refers to several case studies that have already been carried out through doctoral research. This paper presents and describes that instrument. It involves several steps. Each case study went through three iterations of analysis. The drawings complement each other by successively adding structural elements in order to narratively explain the recognized principles of hybridization. The iterations of the drawings and the complexity of the display achieve the impression of layering that hybrid architecture brings with it or of infinity that characterizes liminal architecture. Two types of drawings were used for all case studies – axonometric (30° and 60° angles) and isometric (30° and 30° angles), without shortening the real dimensions. It made it possible to see the architecture with the exception of the subjective position and provided a timeless view of the selected object. A special type of representation was used - chtonic projection or more simply "frog's eye" view or "view from below". This way of presenting architecture was specific to James Stirling, whose building is one of the subjects of analysis in this research. This way of architecture observation, before any mapping began, positioned the viewer within and below the viewed space. The intention is to emphasize the relationship between the plan and the elevation of spatial elements. The drawing without reduction of dimensions, skewed perspective or details allowed a clear perception and mapping of the relationship between

[1] See in: Nestor Garsija Kanklini, „Hibridne kulture, prikrivena moć," u *Studije kulture*, ur. Jelena Đorđević (Beograd: Službeni glasnik, 2008), 580.
[2] See in: Homi K. Bhabha, *The Location of Culture* (London; New York: Routledge, 1994).
[3] See in: Kisho Kurokawa. *The Philosophy of Symbiosis*. (London: Academy editions, 1994).
[4] See in: Stan Allen. *Practice: Architecture, technique + representation* (New York: Routledge, 2009), 16.

the elements. Architecture is abstracted, and reference architectural elements are highlighted in the foreground. Part of the mapping instrument involves simple, easy-to-read drawing elements – various uses of dots, lines, and hatches. A label palette was established and then applied to iterations of three-dimensional object representations.

The expected outcome of this paper is the improvement of the proposed instrument through dialogue and sharing of knowledge and experiences of the scientific community. In conclusion, the aim of this work is to open a debate on the topic of hybridity research in architecture. Also, considering the proposed diagrammatic mapping as an experiment, the expected result is the verification of the phenomenon of hybridity interpretation instrument.

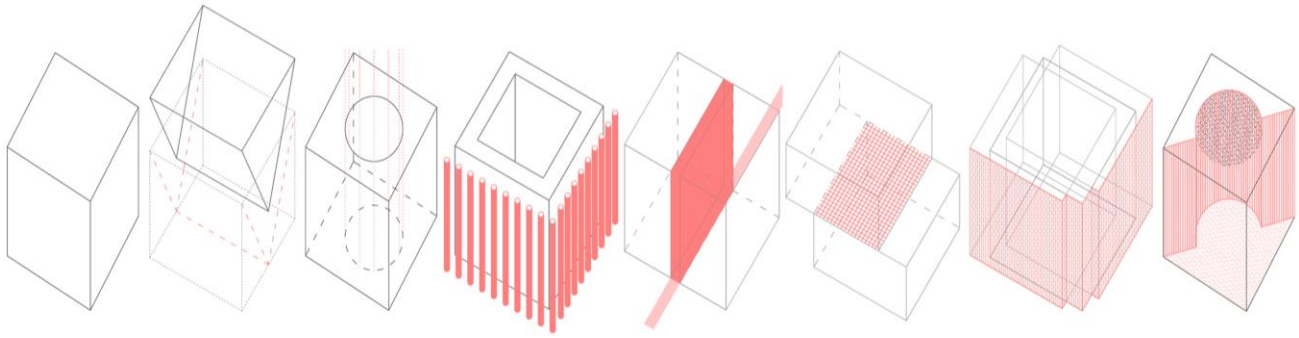


Figure 1 - Label palette: pure form, order/geometry/system, interpolation, transcription, juxtaposition, superposition, folding and coding (from left to right).

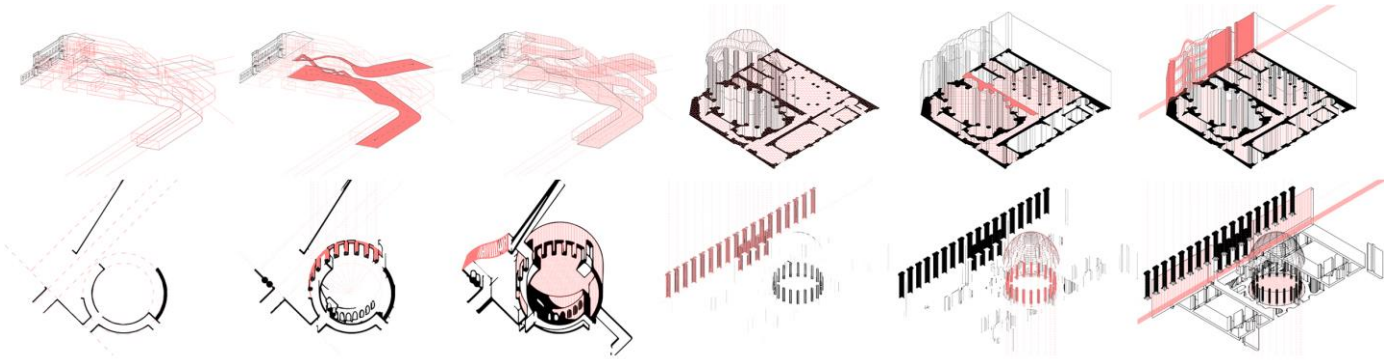


Figure 2 - Diagrammatic mapping, selected case studies: MAXXI Museum, San Carlo alle Quattro Fontane, Neue Staatsgalerie, Altes Museum.

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Experimentation – short reflection on the importance and role of experimentation in the research

Ivana Lovrinčević; University of Belgrade - Faculty of architecture, Serbia

The experimental nature of any process during scientific research makes it an important factor because of the referential and relevant results. In the context of architecture, the experiment enables examination of both the static and livable side of architecture. Architects design a frozen sequence of the life of an architectural object before its inhabitation. After the construction, the architecture lives and changes uncontrolled or at least uninstructed. Experimentation allows the researcher to test and discover elements of architecture or confirm the existence of certain phenomena both in virtual and actual space and time. Specifically within research by design, the researcher has the opportunity to directly obtain results from the living part of his experiment. Results of this type can also have a deferred or variable value, something as Derrida's *la différance*.[5]

The experiment as a research method provides a wide range of possibilities depending on the variables and phenomena involved in it, and the results obtained are indisputable. The value of the experiment in the field of architectural research is the possibility to constantly and side-by-side observe the virtual and actual. Results balance those two states and expand the perception and scope of architectural design.

[5] In perception through *la différance*, meaning is never present finally, but is always postponed and scattered in different trajectories. The term *différance* also refers to the French word *différer*, which has two meanings: to postpone and to differentiate.
See in: Jacques Derrida, „Différance," u *Margins of Philosophy* (Chicago: The University of Chicago Press, 1982), 1-28.

FRIDAY, APRIL 12
SESSION 3
11:15 - 12:15

ROOM B - SALÓN DE GRADOS

Stefan Gzyl

Caracas, Departure City. Practices of cares in the aftermath of emigration and collapse

Caracas, Departure City. Practices of cares in the aftermath of emigration and collapse

Introduction

For the last two decades, Venezuela has been immersed in a conflict marked by economic instability, political turmoil, social upheaval, and breakdown of infrastructure and services. The accelerated decline of living conditions since 2014 has triggered an unprecedented migratory crisis that cuts across the entire social spectrum. Nearly eight million people, about 26 percent of the population, have left the country.[1]

Within Venezuelan cities, migration has left behind a vast material legacy accumulated during decades of economic growth and upward social mobility, when an oil-backed economy underpinned rapid urban expansion and a thriving middle class. This material accumulation includes everything from houses and apartments to cars, books, furniture, artwork, pets, and plants. However, after emigration, these physical remnants are not abandoned or left to ruin. Instead, they are at the center of ***caretaking practices*** that revolve around preserving, salvaging, or transforming migrants' belongings and domestic spaces. Caretaking sits at the intersection of emigration and collapse, supported on the one hand by transnational networks, migrants' evolving needs, and the possibility of return, and on the other hand relying on local networks of informal trade, cooperation and solidarity that help face daily challenges. Through caretaking, ordinary actions like maintaining or repairing left-behind spaces transcend their practical dimension, prompting a critical exploration of what is being preserved, whether the 'things' themselves or a "larger" underlying order.[2]

Research framework

The research argues that Caracas has entered a post-collapse phase. This phase is essentially an aftermath, a state *beyond* crisis where mutually exclusive categories such as progress / decline, legal / illegal, formal / informal, ethical / unethical, are irrelevant as conceptual or operative frameworks. Drawing on Janet Roitman's notion of "Anti-Crisis"[3] and Steven J. Jackson's proposition of taking breakdown and collapse as a starting points,[4] the research examines the figure of the caretaker from a socio-spatial perspective. The research contends that caretakers' entanglement with collapse complicates our understanding of care as both ethics and practice, and questions collapse narratives and their associated imaginary of ruin and decay.

Methodology: a routine of overexposure.

The research employs an evolving and experimental fieldwork methodology, combining documentation techniques spanning architecture and ethnography. It introduces the concept of a ***routine of overexposure***, where 'data saturation' –regarded in qualitative research as the point where the fieldwork should stop– is instead taken as a point of departure. In Caracas, the systematic and repetitive engagement with the residues of departure gradually uncovered the vastness and diversity of the material accumulation produced by the emigration and demise of the city's middle class. It also exposed its ambiguous relationship with the city, ubiquitous but hidden from view. As a routine of overexposure, the fieldwork operated as a form of friction, a rubbing-against-reality that gradually eroded the layer of protection that conceals material residues and shields practices, opening doors into private worlds and personal stories.

Finally, the fieldwork itself produced its own form of accumulation, a collection of distinct yet individually incomplete ***episodes*** that varied in duration, intensity, and relation. Episodes could be fleeting images caught on camera from the driver's seat or anecdotes relayed by others; they could extend over several visits to a specific place, they could be concatenated, recurrent, or contained within other episodes. Episodes are fragmentary in nature, like pieces or slices a reality containing just enough (spatial, material) information so that they may be used to assemble a larger story. In their (re)assembly, the field journal becomes a "recursive" tool that not only records chronological entries but also juxtaposes and opens them to other readings.[5]

Conference contribution

The research is inscribed within a PhD project in its intermediate stage. The presentation at CA²RE: Experimentation will focus on methodological aspects of the research and the methodology's transformative potential. The presentation aims to elucidate how a 'routine of overexposure' serves as more than just a descriptive tool and becomes an instrument for actively producing a specific reality.

Episodes from two successive fieldtrips will be presented as narratives weaving together architectural, photographic, and written elements. The episodic nature of the fieldwork, where distinct moments are captured and presented as fragments, offers a unique narrative structure. This

approach, far from constructing a linear story, allows the audience to engage with the material in a way that mirrors the lived experience of the researcher.

By presenting episodes that are individually incomplete yet collectively comprehensive, the presentation will open the possibility of multiple readings, demonstrating how experimentation can lead to insights into the complexities of emigration, collapse, and caretaking practices. This interdisciplinary approach exemplifies the potential of experimentation to reshape conventional narratives and offer a fresh perspective on challenging socio-spatial phenomena, underscoring its role in shaping perspectives and generating knowledge.

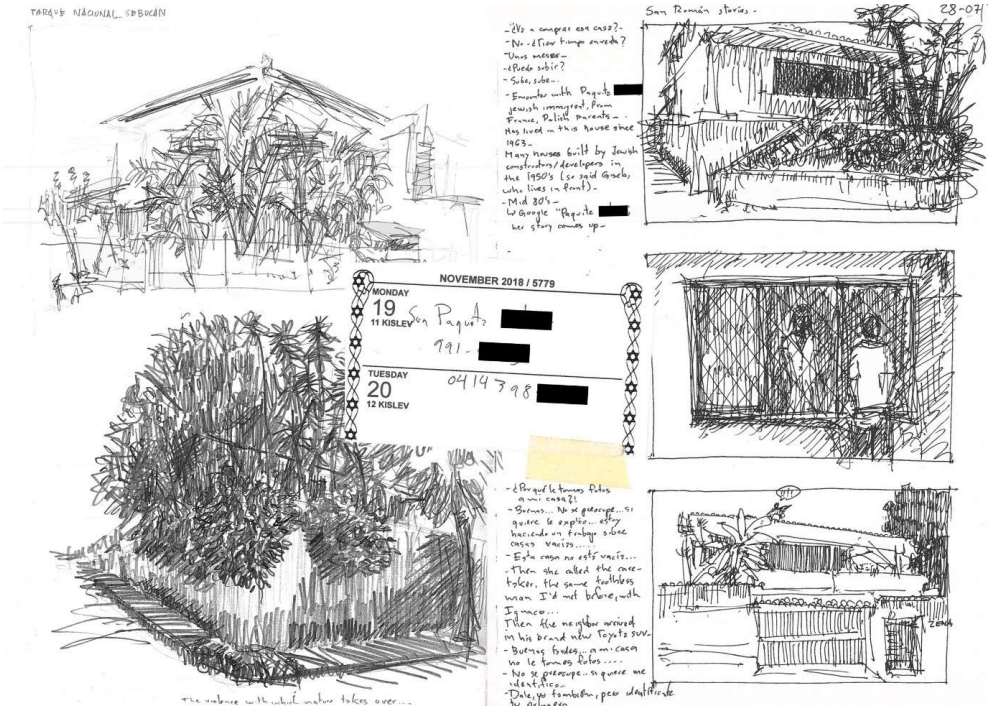


Fig.1. Excerpt from field journal. Facades of vacant houses in gated community and encounter with residents. July 2023

Reflection. Experimentation in the research project.

Dealing with an evolving and multi-faceted problem taking place in a volatile and uncertain context entails a singular research challenge, one in which the work can easily, and perhaps inadvertently, slip back towards a space from which control can be exerted. What if instead of reducing, simplifying, codifying, one acknowledges and embraces the messiness and the elusiveness of the problem? What are the methodological and representation tools that we have, as architect-researchers, to contend with these conditions?

With these questions in mind, experimentation requires not only speculation, reflection, evaluation, and interface, but also and firstly, renunciation of control and an openness to chance. In other words, experimentation is about disposition before anything else.

The conference opens up a diverse interpretation of experimentation. It invites participants to demonstrate its validity as a design-driven methodology beyond mere validation and as a method of knowledge creation. In my relationship between city and fieldwork, the city became field through the work, that is, a specific and systematic mode of engagement with one's surroundings created the conditions for the object of study to emerge and be seen under a specific light. The methodology evolved out of a specific relationship with the city, and the city became a dynamic testing ground for it. Out of this interchange, a new reality can emerge and be shared.

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FRIDAY, APRIL 12
SESSION 3
11:15 - 12:15

ROOM C - SALA DE VIDEOCONFERENCIAS

Elien Vissers-Similon

Spatial interpretation in a diffusion-powered accelerated architectural design process

Spatial interpretation in a diffusion-powered accelerated architectural design process

Introduction

The advent of democratised diffusion models poses the question whether architectural design processes could be accelerated: can rapid almost intuitive image generation enhance and/or bypass traditional 19th-century representational methods such as orthographic plans and sections? Text-to-image and image-to-image diffusion models offer an easy interface for fast design iterations and provide a creative process that harnesses the power of artificial intelligence (AI) without the need for additional technical knowledge, i.e. understanding how to set up and train generative machine learning models.

Research shows that diffusion models can accelerate and improve ideation during the sketch design phase [1-3]. Additionally, past experiments indicate that designers have reservations about the use of diffusion models when having to translate a sequence of sketch design images into a design concept during the preliminary design phase, and often fall back to traditional representational methods such as plans and sections [4]. We refer to this translation as the designer's *spatial interpretation*.

This paper focuses on the preliminary design phase and analyses the designer's spatial interpretation during an accelerated design process where AI-powered design methods are encouraged and traditional representational methods are discouraged.

Experiment

We study the results of an AI-powered accelerated design process conducted by 110 third-year students of architecture. The designers are divided in groups of four, so that each group consists of a modeler, a sketcher, a renderer and a generator. The modeler is asked to use 3D modelling software such as ArchiCAD, Sketchup or Revit. The renderer is asked to use real-time rendering software with and without integrated diffusion models, such as Twinmotion, LookX.ai and Prome AI. The sketcher is asked to sketch as freely as possible, sketching by hand or using sketching- and drawing software, which includes the use of Photoshop's latest AI-powered generative options. Lastly, the generator is asked to use Midjourney to generate images based on textual and/or visual input.

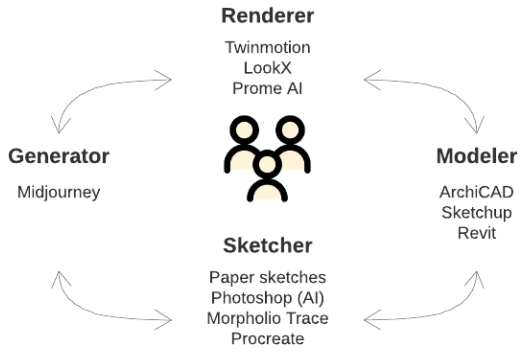


Figure 1: Role distribution in the design team (Vissers-Similon, 2024)

The experiment is limited in time and scope, as the designers are given four afternoons to start from a pre-existing sketch design and transform it into a preliminary design concept. Before the experiment starts, designers will receive a short training with exercises on how to use software they aren't familiar with yet, such as Midjourney, LookX.ai, Prome AI and the generative options within Photoshop. The pre-existing sketch design that serves as a starting point for the designers consists of images of a massing for a large building block (± 100 x 100 meters) and a design brief for a mixed public and private programme.

On the first day, each team member will work individually with the provided sketch design documents to create: various 3D models with primary tectonics (modeler), black and white line drawings (sketcher), different scenes / point of views to envision the design (renderer) and a visual storyboard (generator).

On the second day, each team member takes material from his or her colleagues and works individually to create: refined 3D models with secondary tectonics (modeler), refined line drawings of the scenes (sketcher), clay-renderings and AI-powered renderings (renderer), a sequence of generated images (generator). Each team member may find implicit inspiration in the materials from his or her colleague, or explicitly use the materials. For example, an exported line drawing from the modeler can serve as the input for an AI-powered rendering, and the line drawings from the sketcher or renderings from the renderer can serve as visual input for the generator's image prompts.

On the third day, designers are encouraged to work together and experiment further in any possible way.

On the fourth day, the design team selects their best produced images and creates a series of annotated drawings in which they highlight the key elements for their preliminary design. The format of annotations is provided by the research team and includes: style, structure, spatial relationships, programme, materials, building shape, atmosphere.

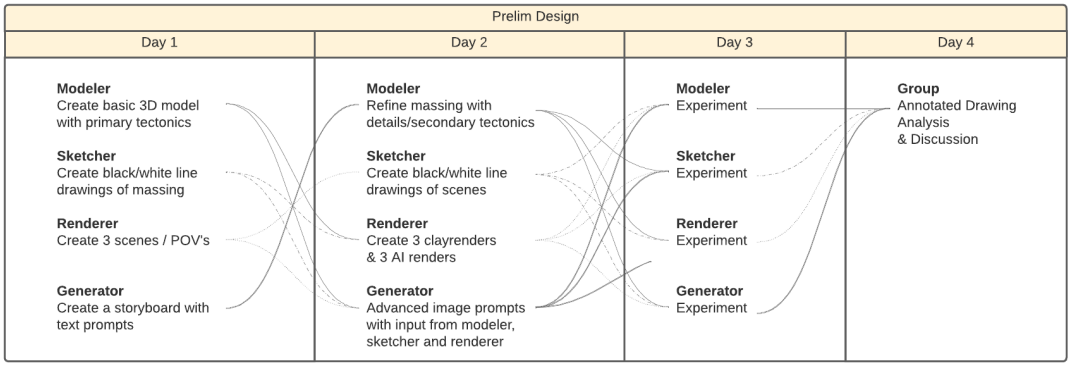


Figure 2: Tasks within the preliminary design phase (Vissers-Similon, 2024)

Research data

We provide a template on miro.com where team members post intermediate results and the relationships between results are visually displayed (e.g. rendering 6 was based on sketch 3). The template also includes information on the used software and techniques, such as which prompts were used. The generator generates images in a Discord channel that is shared with the research team, so that the generated output can always be traced back to the textual and visual input. Furthermore, the designers will be asked to write down their experiences and collaboration with the new AI-powered design methods in a personal reflection.

Expected results

We conduct four analyses. Firstly, we reconstruct each annotated drawing through the template to calculate the share that AI-powered methods played in creating the final product. This provides valuable information on the integration of AI-powered design methods into the architectural design process. Secondly, we examine the annotations: which type of annotations – and therefore design decisions – are more prevalent in the drawings that were produced with (or without) the support of artificial intelligence, and what do the annotations tell us about the designer's spatial interpretation? Thirdly, we analyse the reconstruction of the annotated drawings and the reflection texts to examine patterns in collaboration between the different roles in the design team. The fourth analysis is outside the scope of this paper and will compare the annotated drawings of the preliminary design phase with the results at the end of the final design phase to assess the impact of the AI-powered design methods.

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Reflection on EXPERIMENTATION

My research field – the integration of artificial intelligence in architectural design – develops rapidly, with new techniques and developments emerging almost monthly. However, the architect's design process and workflow remains consistent over long periods of time and is often very personal. Therefore, methods of experimentation are ideal – and required – to test different AI techniques for their accessibility, productivity and usability for architectural design. My current research project revolves around diffusion models: generating images through text-to-image and image-to-image interfaces. Through a series of experiments I engage students of architecture in using diffusion models for the sketch, preliminary and final design phases. I want to discover if and how diffusion models could be used to increase productivity and creative results and whether they are indeed suitable to be used by the median architect in terms of complexity and incorporation within existing workflows.

A first set of experiments gave students free choice on which representational methods to use and showed that diffusion models were widely used and praised in the sketch design phase, but quickly abandoned in favour of traditional 19th-century representational methods such as plans and sections in the preliminary design phase. Therefore, the second set of experiments – which is represented in this paper – assigns different roles within a design team, encouraging students to work on massing and images rather than plans and sections, while introducing various AI-powered design tools. Experimentation is therefore both a driving and leading force at this stage of the research project.

FRIDAY, APRIL 12
SESSION 4
12:15 - 13:15

ROOM A - SALA DE PROYECCIONES

Cecilia De Marinis

Experimentation in design pedagogy: an open situated and transformative research method

Experimentation in design pedagogy: an open situated and transformative research method.

In the rapidly changing landscape of today's world, design assumes a crucial role in questioning the present and imagining alternative futures. Design pedagogy has therefore the role and responsibility to train conscientious designers capable of navigating the complexity of evolving societal, technological, and environmental landscapes with critical and creative thinking.

Experimentation is a cornerstone in design pedagogy, serving as a vital learning and teaching method. It allows to explore, transform, and discover, providing a hands-on and exploratory approach to learning, and contributing to viewing design not only as a practice but also as a research field that focuses on envisioning the world as it could be.
Through experimentation, students not only gain practical skills but also cultivate a mindset of curiosity, adaptability, and openness essential for navigating the complexity of an ever-changing world.

In this text I present the perspective and experience of the Master's in Design Research (MDR) at BAU, College of Arts and Design. The program, serving as a platform for "*reflection in action",* focuses on design research methods and experimental approaches encouraging students to envision and materialise alternative and more equitable futures.

The *"reflection in action"* approach emphasises an intertwined relationship among making, feeling, and thinking. It represents a pedagogical method that incorporates the experiential, social, and material dimensions of design, achieved through hands-on experimentation and trial-and-error processes. This approach aims to equip students with the skills to navigate the complex and uncertain terrain of the creative process, as described by Shön (1983) as the "swampy lowland."

In the MDR program, experimentation, situated alongside other design research methods, assumes a pivotal role in the process of imagining and prototyping alternative futures, constituting a foundational step in the experiential learning process.
In this context, experimentation transcends mere testing; it is considered as a dynamic tool for thinking and exploration, a realm where experiential knowledge evolves. In the experimentation process, thinking and making seamlessly converge into a unique and unified mode of thought, specific to design.

The emphasis on experimentation as a research method goes beyond conventional paradigms, portraying it as a means to learn the art of *"staying with the trouble"*, as intended by philosopher Donna Haraway (2016), therefore learning how to navigate and embrace uncertainty and complexity, with an intention to focus not only on problem-solving but also on the ability to raise new questions. Hence, in this perspective, experimentation serves as a method to access the unknown, facilitating the unveiling of new knowledge and fostering continuous refinement and improvement, while becoming an intrinsic aspect of the iterative design process. The significance of experimentation extends to its application in diverse realms, encompassing materials, research methods, disciplines, and theories. It represents a dynamic tool for exploration and innovation within the multifaceted landscape of design research.

In the iterative process of making, testing, and prototyping, experimentation as a design pedagogy method, also values the importance of embracing failure as a learning opportunity, encouraging risk-taking, enabling students to explore new ideas and push boundaries, and making space for the unexpected and unpredictable. This openness to uncertainty and not-knowing as a method of inquiry requires students to learn how to inhabit uncertainty and ambiguity in the process. Such approach can be explained by and expanded to the idea of *"thinking diffractively"* (Haraway 2004/1992) as a way of going beyond the conventional and making space for the unforeseen, the interferences and differences. The metaphor of diffraction as a thinking mode broadens the scope of the *"reflection in action"* approach, to encompass concepts of interconnection and interference.

Furthermore, in the MDR program experimentation in understood as a *"situated method"*, drawing on the concept of situated knowledge as conceptualised by Haraway (1988) which refers to the idea that knowledge is always situated and partial, contextualised within specific social, cultural, and historical contexts. Haraway argues against the idea of a universal, objective standpoint and emphasises that knowledge is always situated within perspectives and power dynamics. This concept challenges traditional notions of objectivity and encourages an understanding of knowledge production as inherently tied to the experiences and perspectives of those generating it.
Similarly, experimentation as a research method needs to be situated, acknowledging its partiality and temporality, and taking account of its specific context, time, and limitations.

To explain those reflections in a pedagogical and situated action, I present here the example of the final thesis project *"Bastard Soils. Becoming on the threshold"* (Tierras Bastardas. Devenir en el umbral) that embeds all the insights presented in this text. The project explores concepts like limbos, becoming, and transition through hands-on material research with raw clay. Emphasising the process of co-creation with matter, the project delves into the transformative nature of clay as a medium for exploration, challenging fixed categories. Drawing inspiration from Braidotti (1994), clay is interpreted as a nomadic subject, constantly transforming and reinventing itself. The material exploration takes place in the Badalona territory, incorporating various soils into the slow process of transforming clay into ceramics. The *"reflection in action"* approach is evident in the student's dialogue with the material, combining ideas with hands-on manipulation. The experiential research in pottery making delves into entanglements, sympoiesis, transformation, and hybridity. The material outcomes include clay artifacts that encapsulate the entire co-creation process, showcasing germination and firing traces, challenging the boundaries between mud and ceramics (Figure 1). This project exemplifies a pedagogical approach integrating experiential, social, and material aspects, intertwining making, feeling, and thinking.



To conclude, within the MDR, we consider experimentation not only as a teaching method but also as a broad approach to design pedagogy that challenges educators to incorporate diverse forms of knowledge production into their teaching methods. This poses a complex challenge, as design educators navigate the delicate balance of embracing uncertainty and not-knowing in the teaching process. Drawing on the pedagogical research developed by Professor Marta Camps (2019) we suggest understanding design pedagogy as a practice that accompanies students in their discovery processes rather than merely transferring knowledge. Camps proposes a pedagogy of *"knowledge in action"*, deviating from predefined learning objectives to be responsive to possibilities sparked by openness. This approach encourages growth and receptiveness, pushing educators to navigate discomfort and engage in situated experimentation, where judgment is suspended in favour of new possibilities. Rooted in experiential learning and the intertwined relationship between thinking and making, this pedagogical model advocates for a model of diffraction in action, moving beyond reflection.
Figure 1. Project: "Bastard Soils. Becoming on the threshold" 2023. Credits: Marina Muñoz and Rubén Aznar

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A short reflection on the importance and role of experimentation in the research project

Experimentation stands as the cornerstone in the research project, playing a pivotal role in steering through the intricacies of design and fostering innovation. In the dynamic landscape of contemporary design research, it is the driving force propelling projects forward.

Fundamentally, experimentation offers a hands-on approach to learning and discovery, going beyond conventional design boundaries. It contributes to position design not only as a practice but as a research field that focuses on envisioning the world as it could be.

Experimentation is foundational for imagining alternative futures. It is a dynamic tool, converging thinking and making into a unique and unified mode of thought, specific to design.

Emphasis lies not just on problem-solving but the ability to pose new questions, cultivating a mindset of curiosity, adaptability, and openness essential for navigating the complexity of an ever-changing world.

The significance of experimentation extends beyond materials and methods, representing a dynamic instrument for exploration and innovation within the multifaceted landscape of design research. The iterative process values embracing failure, encourages risk-taking, and explores novel ideas.

Experimentation can also be considered as a "situated method" acknowledging its partiality and temporality, and taking account of its specific context, time, and limitations. This approach challenges traditional notions, emphasising that knowledge production is tied to perspectives and power dynamics.

Experimentation in the research project is not just a method; it is a mindset, a tool for exploration, and a driving force for transformation and innovation in the ever-evolving landscape of our world.

FRIDAY, APRIL 12
SESSION 4
12:15 - 13:15

ROOM B - SALÓN DE GRADOS

Taufan ter Weel

Sonic Experimentation and the Machinic Production of Subjectivity and Sense

Sonic Experimentation and the Machinic Production of Subjectivity and Sense

Abstract submission CA²RE Valencia 2024

Anonymised document

Category: paper

Presentation format: hybrid between paper presentation and performance with sound excerpts

Keywords: sonic experimentation, sound installation, machinic subjectivity, material-discursive entanglement

Notes on experimentation

My research combines a practice-based and theoretical path at the intersections of sonic and spatial practice and thinking. The transdisciplinary approach is informed by different fields, moving across architecture, sound art, sound studies, and the philosophy of technology. The research explores relations between artistic experimentation and broader socio-technical transformations – between sound and signal processing in spatial practice (more concretely, a series of sound installations and spatial interventions carried out by the author) on the one hand, and the machinic production of subjectivity within the present-day context of ubiquitous computational capitalism on the other. First, it attempts to explicate philosophical concepts (such as modulation, transduction, and machinic subjectivity) through practical experimentation, whereby the specific attentiveness to sound and vibrational energy resonates with the turn to affect and ontology (to an analogue mode of thinking) in critical theory and philosophy. Second, it explores other ways of engaging with the environment, or other human-machine-environment relationships, seeking to move beyond the predominant processes of automation which characterise today's control societies.

Extended abstract

Machines express the social formations producing them and engaging with them. This involves the production of concepts and artefacts – the process is both discursive and material-energetic, it is entangled. The advent of modern machines in which electromagnetic waves are being used as carriers of information, radically changes and complicates the relations between bodies and environments. This technological evolution, ranging from early electric telecommunication to electronic media to ubiquitous computing, transforms how we engage with the environment with which we reciprocally produce subjectivity and sense. It involves the transmission and processing of signals imperceptible by the human sensory apparatus. The increasing invisibility challenges the predominant ocularcentric perspective, which prioritises vision over the other senses. This coincides with the decline of the symbolic, the succession of representational crises, and the uncertainties we are confronted with today, produced by the techno-scientific milieu which we are part of.

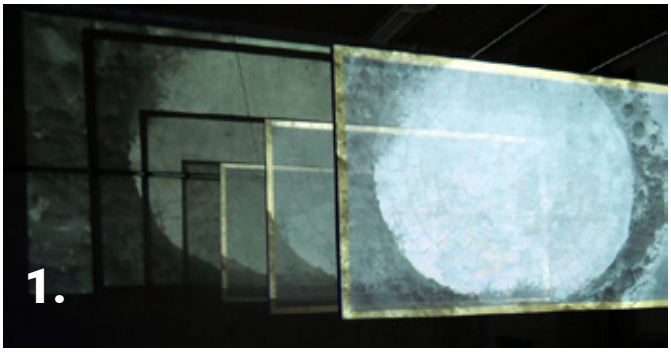
The paper explains how artistic experimentation is entangled with broader socio-technical transformations More specifically, it draws relations between sound and signal processing in spatial practice on the one hand, and the machinic production of subjectivity and sense on the other. It will explicate the physical principles and philosophical concepts of modulation and transduction (related to an analogue and diagrammatic way of thinking) as well as algorithmic logic (discrete functions, the digital). In the context of the convolutions of ubiquitous computing and capitalism we are confronted with today, it problematises continuous and spatially diffuse forms of control and the condition in which habit, decision-making, and to a certain extent perception itself are affected by machinic processes at a preconscious stage (e.g., predictive algorithms). I call this ubiquitous control and automated subservience, respectively. These processes can be grasped (and controlled) through diagrammatic more than representational thinking.

The multimedia installation *Geometries of Time* (2021) was a collaborative work that explored different scientific abstractions produced from the Enlightenment onward in connection with their social and environmental implications. More specifically, the project questions and contextualises the tensions between the increasingly blurring absolute representations of reality and the relative spacetime of entangled processes by means of architectural diagramming and multi-media experimentation. 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 (see figure 1), creating an entanglement of interrelated landscapes, maps, and abstractions of space, time, matter, and energy.

In the site-specific sound installations *Architectural Plug-In* (2022) and *Concrete Entanglemen*t (2023), background noise from the building – which could range from structure-borne vibrations to electromagnetic waves – was picked up by various types of microphones attached to surrounding structures, resonating bodies, surfaces, and/or technical installations. Only concrete sounds present on site were processed in real time – the works involved no fixed media such as pre-recorded material and no synthetic sounds produced by oscillators. Input signals are processed and audio channels and modulation links are routed by means of the processing patches. The combination of *transduction circuits* and *processing patches* (see figures 2 and 3) allows for the emergence and exploration of new sonic and spatio-temporal relationships. Various input signals are treated as sound material and/or converted into modulation signals in order to draw different dynamic relationships.

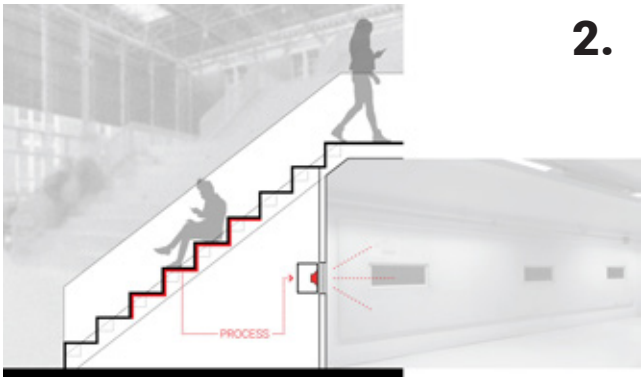
Modulation and Transduction Beyond Control (2023) is a sound installation which was presented at philosophy conference that focused on Gilles Deleuze's "Postscript on the Societies of Control" (1990). The starting point was the philosophical concept of modulation in the work of Deleuze and Gilbert Simondon. In his essay on control societies, Deleuze stated that the crisis of disciplinary environments of enclosure, analysed by Michel Foucault, initiates the gradual transition to the societies of control, which operate through continuous modulation rather than through enclosures or moulds (characterised by hylomorphism: imposing form on matter). Modulation is also the primary principle of signal transmission in machines – that is, the use of (electromagnetic) energy as carrier of information – which radically changed the philosophy of technology. This sound installation seeks to actively engage the audience in the process of modulation, in exploring and co-constituting a sound environment beyond control. The installation (see figure 4) consists of a system of loudspeakers, microphones, and signal processors, which enables (processed) feedback and cross-modulations to produce a continuously evolving sound space. Each microphone is linked to a different combination of modulations and responds in an unpredictable manner.

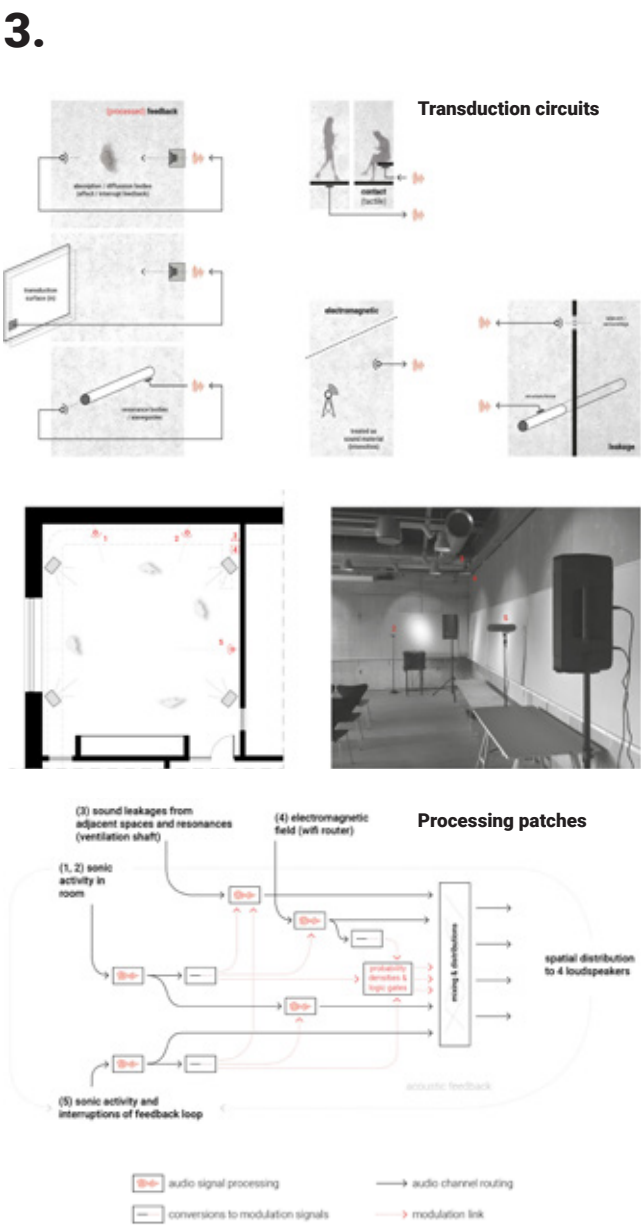
The last project to be discussed is work-in-progress: a sound installation which explores convolutions of the discursive and the machinic in the production of subjectivity through real-time processing of speech. A booth is installed in the given exhibition room to allow the audience to speak into a microphone. The speech signals are recorded, stored in buffers (a temporary sound archive), and processed in real time. The recorded material is cut into phrases, words, smaller samples or grains, which are, in turn, selected, processed, and distributed to four loudspeakers. Carefully chosen words (and perhaps other vocal expressions) are subjected to machinic processes – the distinction between human and non-human decision-making blurs.





The works aim to contribute to exploring possibilities for another space (other human-machine-environment relations) which moves beyond the inevitability of subservience to the dominant mode of subjectivation, without slipping into binary opposition or, on the contrary, postmodern, depoliticised and uncritical relativism. The social relevance, or urgency, lies in the aforementioned problem of automated subservience and ubiquitous control inherent in the concrete entanglement between bodies, media technologies, and lived environment, which should be understood as a continuous and reciprocal process of formation.





FRIDAY, APRIL 12
SESSION 4
12:15 - 13:15

ROOM C - SALA DE VIDEOCONFERENCIAS

Hermano Luz Rodrigues

On the Ambiguity between 3D visualizations and Physical Spaces

On the Ambiguity between 3D visualizations and Physical Spaces

My research aims to examine how realistic creative digital visualizations of non-humans (e.g. architectural visualizations) may affect people's perception of physical sites and public spaces which might have a bearing on public decision-making. It focuses on studying the social, aesthetic, and political implications that may derive from this perception.

The quality, access, and proliferation of digital visualization and simulation tools have advanced rapidly. Creative digital visualizations have become commonplace in the public sphere. The public's unmediated and head-on relationship with CGI is in itself quite new. On social media, for example, one might find incredibly realistic videos of a crowd flabbergasted by whales swimming in the skies of Dubai; Large popcorns exploding out of the canvas of Andy Warhol's Campbell's soup paintings at the MOMA; and several vehicles shaped as giant designer-bags driving around Paris. These popular short videos often confuse the public into thinking these images are real.

Recent studies have analysed the implications to society of realistic digitally-generated images such as Deepfakes. Up until now, these critical and interdisciplinary studies have predominantly focused their attention on images that simulate human figures. In contrast, there have been less critical takes on other types of realistic visualizations. Their approach is premised on the fact that only 'human' visualizations may present threats to individual sovereignty. However, non-human digital visualizations may actually present risks of a collective nature.

In 2021, a video of a surreal light and fireworks show at Seattle's Space Needle Tower went viral. The roughly 10-minute spectacle depicted the monument wrapped around "holograms", light animations, and fireworks that resembled a science fiction piece[1]. In fact, the video was a digital visualization that mixed CGI with real footage of the existing site. In a creative effort to salvage the annual fireworks show which was inaccessible during COVID-19 restrictions, the organizers of the event hired a team of creative technologists to produce a virtual light show experience that would be streamed online. The digital light show was surprisingly given the same credibility and publicity as its prior physical counterparts. Although there were attempts by the event organizers to describe the digital contents of the production, in the end, many viewers were left confused and believed the effects "were actually happening in real life"[2].

The sci-fi fireworks spectacle was perceived and disseminated by many on social media as a physical occurrence. It soon gained traction abroad but without the proper context. In a post by blogTo, a Toronto-based media company with over 700 thousand followers on social media, the Space Needle event was used as a means to demand reform and denounce Toronto's lack of investment in public infrastructure. The article, entitled "Seattle's Space Needle Puts CN Tower to Shame after New Year's Eve's Light Show", cited several posts from local citizens that compared the digital Space Needle footage with Toronto's similar but physical event. One of the quoted citizens had posted on X a clip of the digital event alongside their remarks: "Hey, Toronto, the CN Tower's gotta step it up"[3].

What is interesting about this artistic visualization is how quickly it shaped into a political tool. The digital footage reached people in other countries without context, and soon enough it was interpreted as a "the grass is greener on the other side" situation, aggravating their dismay towards their public sphere. While this case did not escalate to more than civic criticism and fault-finding, it illustrates the potential that creative realistic visualizations with benign intentions may spin out of control.

A similar episode occurred with respect to the Marble Arch Mound. I am referring to the architectural project in London by MVRDV in which rendering visualizations were influential in its approval and reception. The rendering's realistic and seductive imagery was central to the project's promotion. The delivered project, however, looked nothing like the proposed renderings and was a fiasco that culminated in refunds, closures/reschedules, and resignations[4].

While the Marble Arch Mound's unsatisfactory delivery may be attributed to several factors associated with its construction, its poor reception was directly linked to its digital representation: "Within two days of its opening, the faux knoll(...)was forced to temporarily close due to complaints that it failed to live up to what promotional design renderings had promised", wrote The Architect's Newspaper[5]. The comparison with the seductive renderings was ubiquitous among journals. The

Guardian commented that "(...)The trees were looking skinnier and less luxuriant than the computer-generated promotional images had suggested"[6], and Frieze magazine even published a satire piece which underscored that: "We all saw the first architectural renders(...)a place of sublime natural beauty in the midst of the modern city"[7].

The public's disappointment was linked to a failure to live up to the renderings. The renderings were taken at face value, no longer an approximation or illustration of a product - but a facsimile. How likely was it then that the rendering was acting as a surrogate of the physical site, in the public's understanding? To what extent are digital visualizations crossing a threshold in which the degree of simulation is such that it may be interpreted as fact? Baudrillard once posed the question: what happens when the distance "between the real and the imaginary, tends to abolish itself, to be reabsorbed on behalf of the model?"[8]

When thinking about the impact of experiments with digital media on people's perception of public spaces, we commonly imagine physical structures that incorporate digital technologies. However, digital media may transform public spaces without tangibility and by imaging alone. Bruno Latour wrote that "we are no longer physically adjusted to our imaging technology" and that this has contributed to a "general atmosphere of fakery"[9]. In my research, I seek to investigate the social, ethical, and political implications of the use of digital realistic visualizations in the context of public spaces, considering the following dualities: the assimilation of and ambiguity between digital and physical spaces; and how this phenomenon may be linked to perceptions of authenticity and sovereignty.

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Reflection on the Role of Experimentation

Experimentation implies, with it, a connotation of risk in one's approach to research and practice—that of stepping out of one's comfort zone. This "nonconformity" never stems from action alone but from reflexivity towards action/practice. My project originates from such a notion of reflexivity in my practice in the field of 3D visualization and creative technologies. It draws on the difficulties I have encountered to define a critical lineage of inquiry and methods related to the field. How can such an influential creative practice be so uncritical and unaware? In this sense, my project is driven by the absence of experimentation and critical social research in the field, and the desire to fill that gap.

FRIDAY, APRIL 12
SESSION 5
14:30 - 15:30

ROOM A - SALA DE PROYECCIONES

Beatrice Basile

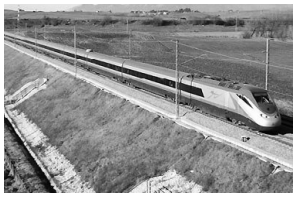
Rewriting Railway Infrastructure: An Architectural Approach to the Infrastructural Edge as Opportunity of Urban Regeneration. A reflection on FNM Rail Network in the North of Italy.



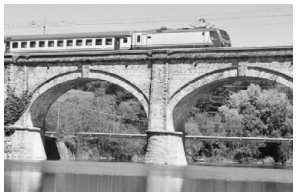


LINE





EDGE





CONNETTING ELEMENTS





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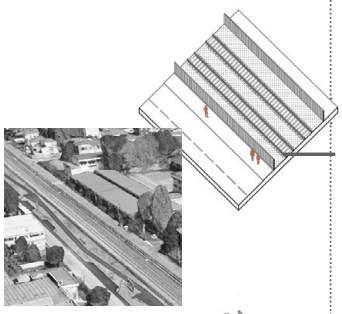
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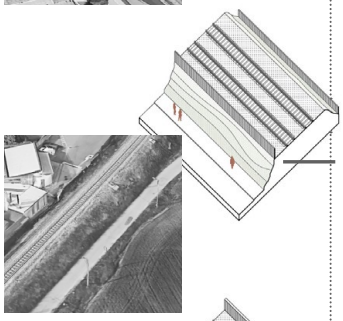
The research is framed into the Italian PNRR PhD scholarships program and it is co-funded by FNM Group, a leading group in sustainable integrated mobility in Lombardy and one of the main Italian non-state investors in the sector. This will also be the key point for the subsequent reflection on the conference topic, experimentation.

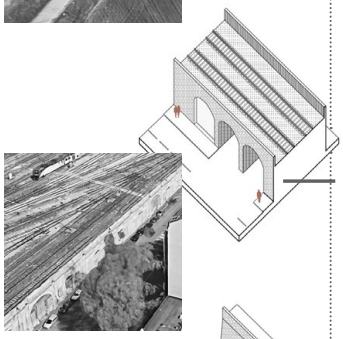
With its linear extension railway infrastructure defines the landscape, often inserting itself in a merely functional way into consolidated realities of which it generates a laceration. In the early 19th century the infrastructural drawing asked for a completely new approach and the progressive and rapid evolution of technology brought the radical transformation of different territories, crossed by this longitudinal, almost flat line. At first, the development engine for new and existing settlements (polarisation effect), external to the historical centre, with the gradual expansion of the urban fabric, the railway soon became a barrier, an edge – second phase – and with the further city development in the third phase it began to be read as a caesura. The railway imposed itself as a strictly designed system that does not admit exceptions, with its own architectural components – often new specifically dedicated typologies – that define the infrastructural landscape. Guided by its own laws (maximum gradients, radii of curvature...), interfacing the consolidated urban fabric, this line inserts into the territory with an independence that generates residual spaces, interrupted transversalities, contrasting boundaries, etc.
A series of critical issues related to the insertion of the infrastructure into consolidated urban contexts are still encountered today: the punctual relationship of its linear development, of its edges, with the territory it crosses and 'touches' still seems to be addressed only by railway engineers and the purely infrastructural project.
Into the framework of Mission 2 (Green Revolution and Ecological Transition) and Mission 3 (Infrastructure for Sustainable Mobility) of the NRP/PNRR (National Recovery and Resilience Plan), the research, therefore, aims to investigate what role a specific architectural approach can have nowadays in the development of infrastructural components, how architecture can contribute to the reinterpretation of the relationships between the railway and its closest urban/ suburban context, between the tracks and the urban fabric in which they are inserted.

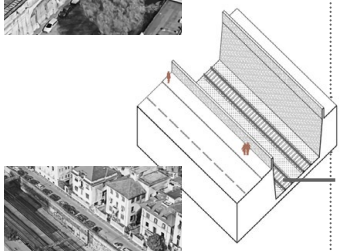
The railway: linear system and point-to-point system
The linear extension and the continuity of the infrastructure are perhaps its most evident intrinsic character and identity: being at the same time a potentiality, due to its capacity to connect distant territories and to be an engine of development, and a criticality, due to the necessary lacerations it entails (interruption of anthropic transversalities – such as roads, routes, farm systems, urban and rural textures, etc. – and environmental ones – such as hydrographic basins, ecological corridors, natural habitats, etc.). Despite the hard character of the infrastructure, however, the autonomy of the route does not necessarily imply a complete lack of sensitivity towards the territory through which it passes: since design choices related to the path are the result of a compromise between the construction costs and the subsequent operating costs, they always seek the least possible intervention on the existing (such as earth movements for the embankment, viaducts, tunnels, etc.) paying attention to the morphology of the crossed territory. Linearity is also the property that requires mediation with the territory, which must first of all deal with the intrinsic danger implied by the infrastructure that needs to be isolated/protected thus defining a linear variable boundary (railway embankments, acoustic and physical barriers, protective elements, etc.). Shifting the point of view from the physicality of infrastructure to its relationship with the territory, the edge no longer refers only to the protective element of the track, but it investigates the punctual relationship between the track itself and the territory in which it is inserted, trying to understand level differences, the built/natural interface, the relationship with the public/private space, with the system of residual areas generated by the passage of the railway, etc.

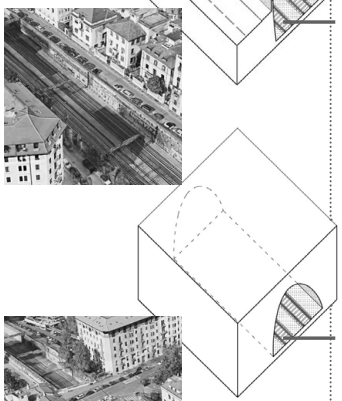
The railway system is characterized also by a number of punctual elements that are fundamental for the definition of infrastructural identity. Some of these are once more related to the railway line: viaducts, tunnels, and bridges are elements that punctually respond to the morphology of the crossed territory, with which the rigidity of the railway line must interface guaranteeing the continuity of its longitudinal development. Other crossing elements are the interface between the anthropic elements that the railway interrupts and the infrastructure itself. Natural and anthropic paths, whether pre-existing or not, must cross the line, passing at a higher or lower elevation with bridges, car/pedestrian subways, overpasses, pedestrian footbridges, etc.
Their design has changed considerably over time, and from the first 'works of art', masterpieces of engineering for their landscape insertion, we have moved on to today's prefabricated systems based on functionality and economy of the intervention. Despite the cost of construction has always determined design choices, the presence of common guidelines for the individual components did not initially











exclude the site-specific declination of the works and architectural attention to the contexts of reference; on the contrary, the current risk of a sterile repetition of prefabricated solutions dictated by merely functional and economic logics, allows us to frame what different role the architectural discipline can play today in interfacing with the infrastructure.

The edge: the architectural relationship between railway and territory

Starting from the historical evolution of the secular relationship between the railway and the territory, the research aims to get to an interpretative analysis of the complex and heterogeneous situations that arose over time. With a multidisciplinary and multiscalar approach, the research focuses on urban and architectural design: from the large scale in which the infrastructure expresses its specific condition as a linear mark to the urban one, up to the specific elements that characterize the physicality of the infrastructure, as a dismountable object (point-to-point system) with definite 1:1 relationship between the parts. This 'decompositional' typological approach brings to an analysis and classification of the different interfaces between the rail and specific crossed places, to define recurring conditions. The aim is to propose a new approach to the edge/barrier of the infrastructure and its crossing elements shifting from considering it a simple line, giving it a thickness, a depth to become a buffer zone. A filter that tries to offer the city places to be, regenerating residual spaces, urban voids, interrupted transversalities, connecting and considering them as a longitudinal system that can give a new quality to the infrastructure boundary.

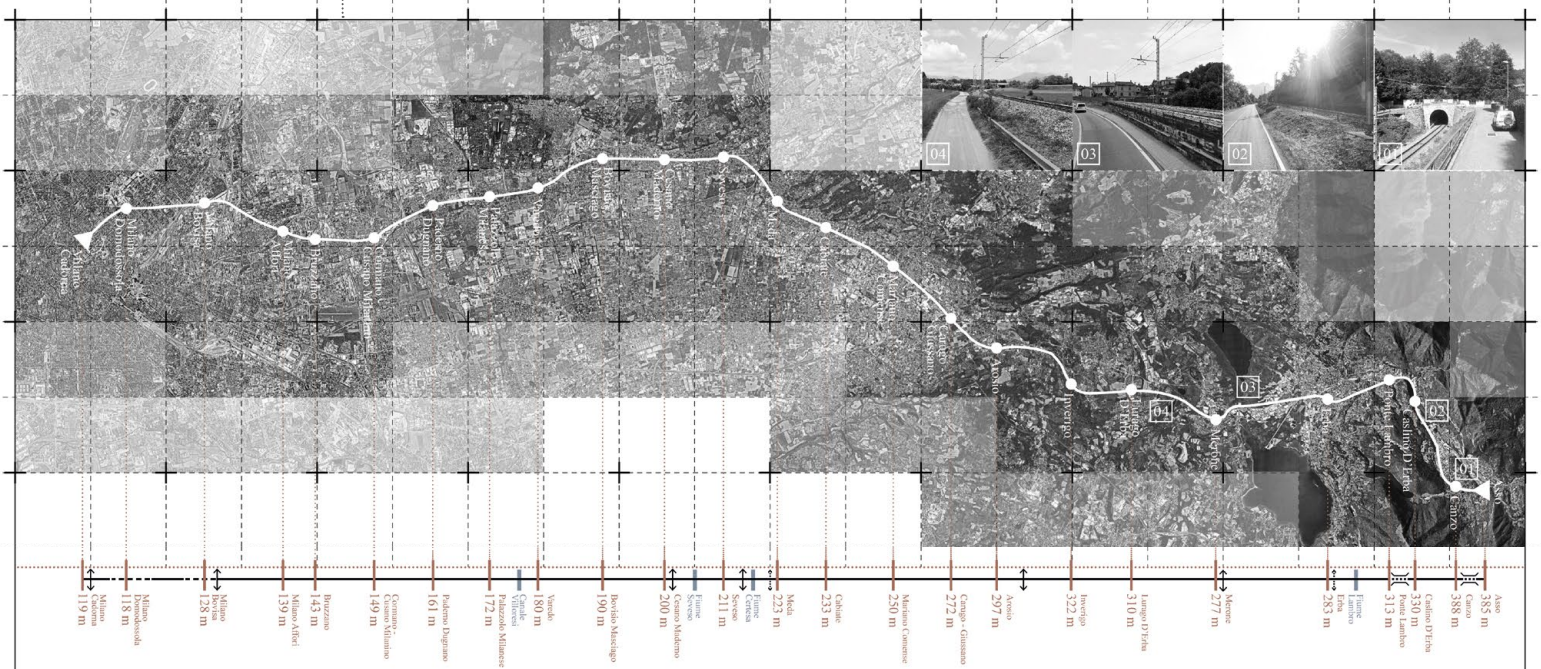
IMPORTANCE AND ROLE OF EXPERIMENTATION IN THE RESEARCH PROJECT

As previously anticipated the peculiarity of a co-funded PhD scholarship offers the opportunity to focus part of the research on a specific context that becomes a testing ground for a design-driven approach. The specificity of Italian PNRR PhD programs with a defined research topic/context opens to a different approach to the research itself asking for a new dialogue between academia and practice, university and local/regional institutions.
Thus, experimentation as a form of design-driven verification of the research outputs finds a concrete response, also thanks to the six-month compulsory internship at the company/local institution.
This framework offers an additional opportunity to the research providing access to the company's historical archives, its projects and direct confrontation with experts in the field,
In this research, this framework allows the application of the design-driven method to the specific context of the FNM railway network developed in the Lombardy region in northern Italy. It is a widespread rail system characterized by short distances between its stations whose main role is to offer commuters a direct link between suburban northern areas and the centre of Milan. This context offers a densely urbanised territory that the railway encountered generating different complex conditions and examples of heterogeneous relationships between the line and the urban fabric.
The definite territory becomes a laboratory itself being both the starting point of the research and its final testing ground to experiment with design solutions/guidelines and verify the outputs of practice-based research.









FRIDAY, APRIL 12
SESSION 5
14:30 - 15:30

ROOM B - SALÓN DE GRADOS

Michela Vanda Caserini

Dwelling in Chamanculo C Representing and Designing the Domestic Space of an Unplanned Environment

Dwelling in Chamanculo C
Representing and Designing the Domestic Space of an Unplanned Environment

This research originated from an agreement between Politecnico of Milan and Ars progetti S.P.A., a consulting firm that secured the REGENERA project in 2022. Funded by the Italian cooperation (AICS), the project's aim is to develop urban and architectural improvements for the unplanned Chamanculo C district in Maputo, Mozambique.
The PhD research is supported by a scholarship provided by the National Operational Programme on Research and Innovation that follows the objectives of the European Union's cohesion policy in disadvantaged areas and promotes sustainable and green thematic research. Additionally, the program encourages the PhD candidate to have an academic path within the university and an engagement in a real project with a company fostering a design-driven research approach.

The REGENERA project, in which I am involved as a junior architect and researcher, focuses on the urban reassessment of road infrastructure and its drainage system. Located in a vulnerable area of the capital and frequently affected by flooding, Chamanculo C necessitates a slum-upgrading intervention based on the urban reassessment of road infrastructure and its drainage system. The intervention, identified and designed by the REGENERA Project, involves the demolition of several houses along the main road of the neighborhood. This will demand the construction of new houses embracing in-situ relocation and the engagement of the community through a participatory design approach. The need to understand a suitable design and a sensitive approach within the delicate issue of demolition and reconstruction gives rise to some of the key research questions: How do the inhabitants of Chamanculo C dwell? How can their dwellings be represented and how can ethnographic analysis support the design phase?

Understanding how people dwell in an unplanned district implies, as a first step, a comprehension of the literature review related to the informal side of architecture. The focus on the architectural form of spontaneous dwellings and their representation stems from a critical question arising from the disparity between the widespread prevalence of spontaneous urban architecture, as a direct response to contemporary challenges in the Global South, and the limited research conducted on this subject. As Peter Kellet pointed out, spontaneous settlements were often viewed as visual and social pollution, reinforcing negative stereotypes and prejudices about the morals, abilities, and values of the residents. Over time, these settlements have been primarily interpreted through safety and overcrowding lenses, neglecting architectural considerations. While vernacular and rural architecture have gained attention in the last century, spontaneous urban dwellings, despite their extensive prevalence, are still overlooked.
This part of the research explains the need to understand and depict the architectural forms of informal architecture as they are becoming the common way of dwelling in the cities of the Global South. Today, the tumultuous development of the cities led to the incessant growth of unplanned districts, and to say that with Colin Ward's words: "limiting the discussion to monuments and squares is akin to reducing botanical science to roses and lilies". For the explained reasons, we might necessitate a shift away from folkloristic, sociological, and process-related perspectives to immerse ourselves in the architectural sight.

Beyond the critical examination of the architecture in informal settlements, the question of how to represent unplanned architecture drives the research to find ways to depict an architecture that is usually not represented and that doesn't follow the codes of the official architecture. This leads to experimenting different kinds of drawings aligning with an ethnographical approach, hopefully looking for a more sensitive understanding of the architectural characteristics and, furthermore, creating a base for the design phase. Indeed, the expectation of drawing a subaltern architecture belonging to a fragile context is an attempt to depict something that usually stays in the shadow. Ultimately, doing research on subaltern architectures and making drawings on them means giving a voice to something that is usually silent. This condition raises the relevant issue to understand the technique and tools that could be welcomed by the inhabitants.

Following the path of architectural ethnography outlined by Atelier Bow-Wow, various hand-drawing methods have been analyzed, with the Modernologio theory of Wajiro Kon, who was involved in depicting ordinary lives of common people, and the Uzo Nishiyama Investigation on living styles, serving as the primary drawing references. The choice of these case studies is influenced by the technique employed, thus the free hand drawing, and even more to the analyzed subject: the ordinary or "trivial" architecture. Additionally, the work of other architects, such as Hayuda Tayob in South Africa and the field survey of Balkrishna Vithaldas Doshi in India, has been studied as reference for the design phase. This part became fundamental to understanding the application of the tool of hand drawings already experimented by other architects.

The hybrid nature of the work encourages using a mixed methodology with a documentary phase in the university, followed by fieldwork in Maputo involving hand-drawings, pictures, notes, and analyses taken from conversations with the inhabitants and the design phase, which is developed in the office and on the field through a participatory design approach that will be reported in the thesis.

In June 2023, a preliminary site inspection was possible through a workshop with the students of the Politecnico of Milan's Master Design for Development course, where I worked as an assistant professor. Subsequently, a second site visit was conducted directly with the ARS company. The mission was followed by an on-site verification of data in the neighborhood, which was undertaken throughout August, giving the possibility of preparing assessments, documenting streets, public buildings, facilities, houses, open spaces, trees, communication routes, etc. During this phase, I worked alongside a Chamanculo resident, not only for security reasons but especially to strengthen the relationship between me and the local inhabitants. Parallel to the urban analysis, initial visits to the residences, called "quintal," were made, conducting a preliminary test on how to represent them in the research (see the attached picture). Hand drawings were supported by pictures taken with a camera when inhabitants allowed it.

The next month, February 2024, will be dedicated to the on-site deep analysis of the houses that will be demolished and rebuilt. A surveyor and a sociologist recently started the survey of the affected houses. From my side, the surveys that will take place from February involve in-depth hand drawings, pictures, and conversations that will constitute the preparatory documents for the participatory design phase that will take place in two months.

Due to the nature of my position, being a researcher and an architect located between the university, the consulting firm, and the community of Chamanculo C, the overall purpose of this work is to positively and effectively contribute to the redesign phase of the houses. The whole process will be nourished with deep and meticulous ethnographical analysis aiming at both understanding how people live and supporting the participatory design also through a deep involvement of the local residents.
Expected outcomes include a detailed record of the houses to support the participatory design phase. Since the submission of the architectural project is set for August, the thesis will report the entire process of analysis and project design, while the construction work that will start next year won't be documented and might be reported in further researches.

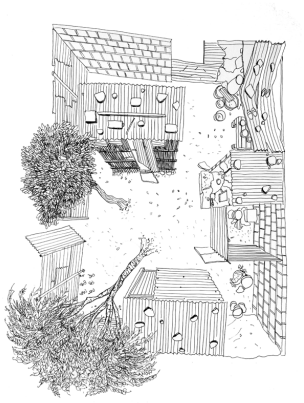
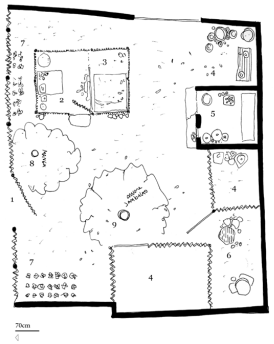


Image 01: centrul perspective from the top- page to the right sketch of the distribution
Author's drawing



1 Entrance-2 Living room-3 Bedroom-4 Storage-5 Kitchen-6 Toilet-7 Vegetable garden-8 Mango tree-9 Jambalao tree

Reflection about Experimentation

The act of experimenting conjures in my mind the image of a child escaping from an enclosure, aware that only outside that *perime*ter can one encounter the resources to generate an exchange and ex*perime*nt to gain knowledge.
That child leaping over the boundary is the same one within me, urging me to seek and experiment with representation techniques different from the conventional ones to depict an unconventional and delicate subject – the self-built houses in an informal neighborhood of Maputo.
This compels me to test hand drawing as a common language that can be understood even by those who cannot grasp architectural technical language, creating a shared artifact originating from the hands – the body part most inclined to experimentation. From the hands, this experiment engages the entire body through fieldwork and direct contact with residents, becoming a fusion. At this point, the experiment transforms the thesis into a bridge connecting the voices and bodies of citizens in an informal settlement to the minds of consultants in a professional firm.
To experiment means to take risks, and it is through the tension of risk and the fear of the danger of failure that we strengthen our ideas because they require testing, relying on solid yet perhaps less-known references before being experimented upon. This condition brings to light hidden, understudied models that can support the experiment while simultaneously expanding the horizon of knowledge toward the Other.
Indeed, the conscious escape from the perimeter, exploring the unknown outside, may be the quintessential approach to experimentation.

FRIDAY, APRIL 12
SESSION 5
14:30 - 15:30

ROOM C - SALA DE VIDEOCONFERENCIAS

Maddalena Laddaga

Performative Housing For Self-Sufficient Communities

(online)

Performative Housing For Self-Sufficient Communities

Surpassing the rhetoric of the 'green' notion of sustaina-ble design, an ecological approach is needed to respond to the environmental crisis and the effects of climate change on contemporary society. Therefore, this research by design investigates how to develop energy and water self-sufficient community housing for affordable solutions, evolving the tradi-tional bioclimatic design principles and integrating ad-vanced methods in architecture. At the same time, the design driven research investigates the experimentation methodology through digital tools to define the design project. The results will be an information-based design process of an innovative dwelling approach and a design housing project.

Addressing the emergencies

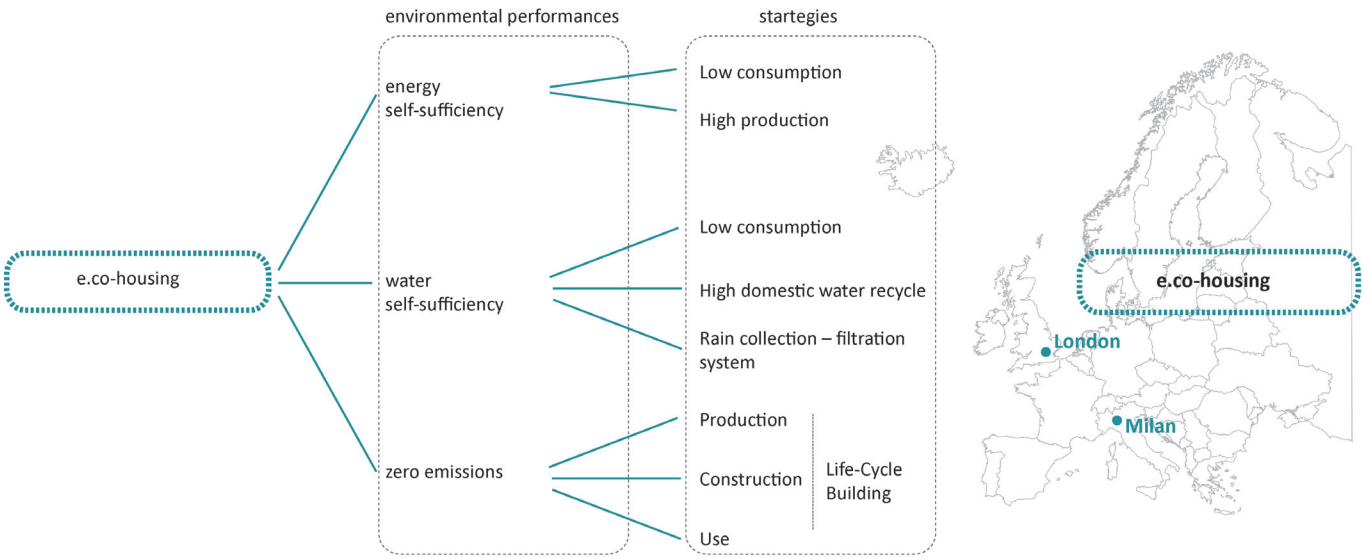
As recently reported in the European Green Deal project, sustainable buildings in European countries will drive to achieve decarbonisation and define a clean energy sys-tem. The energy consumption is mainly from buildings, considering buildings make one-third of EU emissions. "But only 1% of buildings undergo energy-efficient reno-vation every year, so effective action is crucial to making Europe climate-neutral (net zero emissions) by 2050. Cur-rently, roughly 75% of buildings in the EU are not energy efficient, yet 85-95% of today's buildings will still be in use in 2050." as reported by the European Commission. Therefore, it has been singled out in the EU Green Deal as an essential point to drive energy efficiency in the sec-tor and obtain results. "With nearly 34 million Europeans unable to afford to heat their homes properly, renovation also tackles energy poverty. It can address the health and well-being of vulnerable people while reducing their energy bills", as outlined in the Commission recommen-dation on energy poverty (Renovation Wave, European Commission 2020).
The housing system should be reconsidered in the era of climate change and energy crisis. The sustainable solu-tions adopted in research are insufficient and need a more radical approach. Academic research should lead the way for further practice years. Jeremy Till, in The Ar-chitectural Review article, investigates the architectural approach to climate change through the magazine ar-chive, quoting some provocative sustainable architec-ture examples:
"These examples are indicative of an attitude in archi-tectural culture which, in prioritising other values, at the best addresses climate change in a very partial manner, and at worst ignores the consequences of breakdown".
The research should address the emergencies starting from our home. In fact, residential buildings are one of the largest segments of the construction buildings in our cities.

Housing and self-sufficiency

The research is based on an analysis of energy and water self-sufficiency built case studies. On the one hand, there are relevant case study solutions for single units from the 70' to the contemporary age. One example of a contemporary project is the Rambla climate house by Andres Jaques and Miguel Mesa de Castillo. The authors designed a climatic device and an ecologic system to recycle water and improve climatic conditions in and around the house beyond more usual conventional bioclimatic solutions. On the other hand, the investigation of collective housing projects is more challenging: there is a small number of case studies in the literature review, and it is not easy to evaluate the most recent built construction cases. A gap in research and practice refers mainly to self-sufficiency in collective housing projects. One symbolic example is BedZED from 2002, a pioneer housing community project designed by ZedFactory with Bill Duster's lead. From the beginning, the project was described as a new manifesto of sustainable housing; after twenty years, the utopian approach looks with some unsuccessful results.

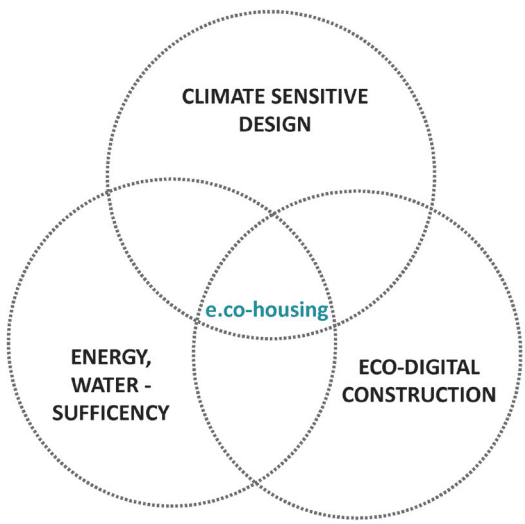
Research by design / Design Driven Research methodology

The research aims to develop a design-based methodology within an evolutionary approach to develop new collective housing buildings project. With this premise, the research starts from case studies analysis to list the main criteria to adopt or to be improved and then considers dwelling buildings as living infrastructures, open systems able to evolve and expand over space and time according to climate change dynamics and social needs.
The methodology starts from the context with climate, environmental and social data to set the design process from the beginning, using digital tools to process the data and inform the design project:
Could the digital tool be a merging driver for bioclimatic approach and adapt the energy and water system based on self-sufficiency? Could the research by design use digital or parametric tools as an experimentation tool to speculate and evaluate possible solutions?
The design-driven research methodology takes inspiration from Prof. Peter Trummer's research conducted as the head of the Associative Design Program at the Berlage Institute in Rotterdam. Mainly, the research is applied on a neighbourhood scale, but over the years, the investigation has been conducted on different scales, arriving at the façade components using associative computational techniques. Peter Trummer explains that "the information, elaborated constraints, can be instituted within a computational process as a strategy for defining the whole of a functioning system" and create a "mor-



phogenetic process from which a form emerges".
With this premise and the inspiration from the above experience, the research investigates a comparative approach based on two different European climatic scenarios to test the design methodology and to develop specific design-driven research in different environmental conditions. Improving the environmental performances is an opportunity to explore possible spatial expansions and programmatic hybridisation towards "e.co communities" in the post-pandemic era. The two selected locations are London and Milan; the two climates lightly diverge (Cfa and Cfb, Köppen climate classification). Environmental simulations and social mapping of digital tools will inform the design project towards customised solutions.
This approach will formulate innovative ideas for energy- and water-positive communities that will share several environmental and social facilities at the cluster scale. At the same time, the proposal wants to cover the gap in the theoretical contribution, sharing the methodology and the approach. The result of such a research-by-design approach will be an architectural design process for new performative building housing an "e.co-housing" within an outcome of a design project.

Key words: energy sufficient housing, water sufficient housing, climate sensitive design, collective housing



Images by the author

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A short reflection on the importance and role of EXPERIMENTATION in the research project

My personal research agenda has developed a series of research and teaching experiences of experimenting through built life projects as community-oriented projects in the last ten years. These academic and unacademic experiences challenged me to test the methodology and the experimental idea in many different contexts, from Europe to Africa, and in multidisciplinary teams and desperate scenarios. The realized life projects had different scales, timing, typology, materials and different kinds of communities: mobile kitchen in Barcelona, Spain; small house in Douala, Cameroon; benches in Matera, Italy and Douala, Cameroon; open-air gym in Milan, Italy; and so on. Some of the experiences are reported in papers or publications. However, continuing to use the same approach to address the research with the following questions: How is the experimentation methodology applied useful to achieve the outcome and the research? Is the experimentation process the central part of the research? To transform the concept of experimenting in a more virtual way , the PhD research is focused on transforming the more physical prototyping experimentation in a more digital way using digital tools. The investigation aims to understand how digital could help the experimentation methodology and the design process. The precedent was a research that I was involved in the University of Westminster, Architecture and Cities, in London. The African Off-grid Housing research project was financed by GCRF (Global Challenges Research Fund – UK). During the pandemic, it was impossible to prototype the project in Africa, so we designed a fabrication protocol to share with our local partners in Africa.

FRIDAY, APRIL 12
SESSION 6
15:30 - 16:30

ROOM A - SALA DE PROYECCIONES

Eva Sollgruber

Designing the Conversion. Sketching as a Tool for Experimentation and Reconstruction

DESIGNING THE CONVERSION

Sketching as a Tool for Experimentation and Reconstruction

In 1989, the Austrian architect Hermann Czech published the text "Der Umbau" (The Conversion), in which he sets out his theory on the practice of reconstruction.[1] He uses the term “Umbau” as an operator for reflecting not only on the architectural and constructive facet of reconstruction and refurbishment of existing buildings, but also on the design process as well as urban and cultural issues. He defines the term very broadly by setting out “urban”, “structural-spatial”, “cultural” and “methodological” aspects of conversion. With the methodological aspect he touches upon the design process which he considers as a process of constant conversion. He argues that if the characteristic of conversion is the existence of predetermined decisions and their remodeling, then every design process is a reconstruction: "If one realizes that every design process represents a series of decisions in which later decisions are determined by earlier ones, it makes no significant difference whether the earlier decisions were one's own or those of others."[2] Designing within the constraints of an existing building conceived by others, or designing a new structure/building – for Czech it all falls under the concept of “Umbau”. Thereby considering the design process as well as the (newly designed or refurbished) building as open end, ever changing and evolving, being under permanent reconstruction and allowing us to look backwards (preserving, learning from etc.) and forward (changing, inventing etc.) at the same time. Through the lens of Czech’s writings, architecture, the built environment and the practice of designing become an open, circular process, which can foster a change in the way we design and construct buildings and thereby changing parameters of the existing spatial-political system we live in.

Within the design process, this notion of an open end, of constant reconstruction, manifests itself most vividly in the act of sketching. The cyclical, non-linear process of sketching helps to test and evaluate abstract ideas and theories, probing the “contours of an unknown territory”[3]. “As the pen moves across the paper, the ideas both concretize and evolve. After each stroke, it is possible to re-evaluate what is already there and whether the decisions made earlier make sense, whether a new variation emerges, whether the idea needs to be tested differently, or whether the idea is discarded.”[4] Each stroke of the pencil is informed by existing images within the designer’s mind (Pallasmaa: “Hand-Mind-Fusion”) and strokes just made a second before, merging past, present and future.

The aim of sketching in the context of architectural designing is not solely to analyze and thereby understand an existing situation or “wicked” (Rittel) problem, but also to explore possible adaptions and changes of the status quo. According to the architect Simon Kretz, “the world is not first analyzed and then designed through the practical activity of designing, but is experimentally changed and examined at the same time through designing.”[5] Here designing means to experimentally test and research ideas and theories and at the same time apply them, thereby combining the two seemingly separate procedures of analysis and synthesis. According to Kretz designing is a knowledge-oriented experiment in which analysis and synthesis intermingle, with the aim of investigating and altering reality. He is referring to Donald Schön, who characterized the tasks carried out by practitioners (e. g. designers) as “an experiment which serves to generate both a new understanding of the phenonema and a change in the situation.”[6] When describing the practice of architecture in particular,

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[1] Czech, Hermann (1996): „Der Umbau (1989)“, in: Czech, Hermann: Zur Abwechslung. Ausgewählte Schriften zur Architektur, Vienna: Löcker Verlag, pp.125-127.

[2] Idem., p. 127. Quote translated by the author, original in German: “Macht man sich einmal bewusst, dass jeder Entwurfsprozess eine Entscheidungsreihe darstellt, in der spätere Entscheidungen von früheren determiniert sind, so macht es keinen wesentlichen Unterschied, ob die früheren Entscheidungen eigene oder fremde waren.“

[3] Pallasmaa, Juhani (2009): The Thinking Hand. Existential and Embodied Wisdom in Architecture, West Sussex: John Wiley & Sons Ltd, p. 73.

[4] Quote by Theresa Schleinitz, designer of one the case studies presented in this research.

[5] Kretz, Simon (2020): Der Kosmos des Entwerfens. Untersuchungen zum entwerfenden Denken, Zürich: Verlag der Buchhandlung Walther König, p. 28. Quote translated by the author, original in German: „Die Welt wird durch die praktische Tätigkeit des Entwerfens dementsprechend nicht zuerst analysiert und danach entworfen, sondern experimentell durch das Entwerfen im selben Zug sowohl verändert als auch untersucht.“

[6] Schön, Donald (1983): The Reflective Practitioner. How Professionals Think in Action, New York City: Basic Books, p. 68.

Schön characterizes each action within the design process as “a local experiment which contributes to the global experiment of reframing the problem.”[7]
The case studies presented in this research (see a selection of drawings attached) combine an investigation on the architectural design process with theories of Czech concerning the topic of reconstruction. On the one hand – based upon the theories of Schön and Kretz – the design process is understood as an experiment and on the other hand the projects themselves are considered to be experiments, since the designers aim to develop new ways of designing and thinking about architecture – meaning buildings and the discipline as a whole.
The idea of conversion á la Czech can function as an operator for thinking, not only about the design process, but about architecture in a broader sense, touching upon ecological and social issues. Dealing with given circumstances, the context, is inherent to reconstruction. The question is how can we reconstruct/remodel existing structures for the future; be it our building stock, standardized, structurally manifested patriarchal norms, or the capitalist exploration of people and nature? Touching upon a variety of issues, the common denominator of the presented case studies is the aim of developing an architectural project, considering architectural thinking and its design tools as the driving force for change.

REFLECTION

In this research the role of experimentation is twofold: on the one hand the issues tackled with the presented case studies ask for an experimental approach since they try to challenge the status quo and find answers to issues whose parameters for a solution are uncertain or even unknow. Dealing with burning issues like climate neutrality or gender equality new paths have to be taken. In order to deal with issues which are coined by “uncertainty, instability, uniqueness and value conflict”[8] experiments have to be conducted which serve to generate new knowledge and possibly change an existing situation.
On the other hand, the design process itself is considered to be such an experiment with the aim of understanding and altering the world – reconstruct it. Since every design endeavor is coined by uncertainty and instability, there are design tools, like sketching, which support the task of experimentation and help to develop future visions, not only for the architectural practice and urban planning, but for the society as a whole.

Sample of sketches of the research[9]:
The cyclical, non-linear process of sketching considered as a "tactile probing through sketching"[10].

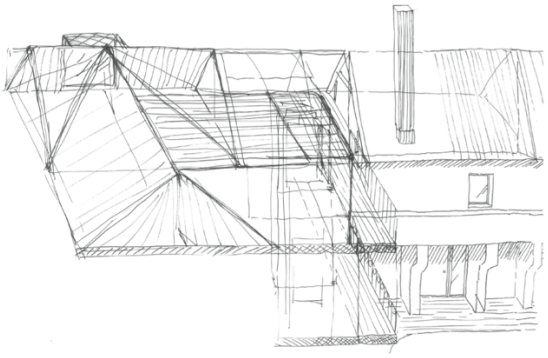


Fig. 01

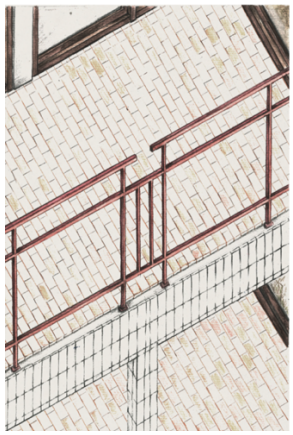


Fig. 02

[7] Idem., p. 94.
[8] Schön, Donald (1983): The Reflective Practitioner. How Professionals Think in Action, New York City: Basic Books, p. 49.
[9] Fig. 01 by Theresa Schleinitz, Fig. 02 by Juliane Geldner.
[10] Pallasmaa, Juhani (2009): The Thinking Hand. Existential and Embodied Wisdom in Architecture, West Sussex: John Wiley & Sons Ltd, p. 73.

FRIDAY, APRIL 12
SESSION 6
15:30 - 16:30

ROOM B - SALÓN DE GRADOS

Nina Bačun

Experimenting with film techniques and cinematic expression within the case study of Sulphur Baths in Split: “The Architecture of Healing: Sulphurous Scapes”

Experimenting with film techniques and cinematic expression within the case study of Sulphur Baths in Split: "The Architecture of Healing: Sulphurous Scapes"

Keywords: architectural cinematic space**,** diegetic space, film architecture

This research challenges the boundaries of architectural understanding, questioning conventional interpretations and representations of architecture. It delves into the portrayal of architectural space within moving images — the architecture of imagery independent from the conventional realm of architectural practice — 'architecture in cinema' and 'cinema in architecture' — the constructed space created under the influence of film. The research operates on the premise that architectural cinematic space can be interpreted both as representational and performative, encompassing both physical and mediated dimensions. By highlighting the use of film techniques and cinematic space as tools for critical research in architectural design, this study explores the formal and programmatic aspects of cinematic architecture. It raises questions and speculates on the opportunities that film techniques present to architects, enabling them to mentally or physically construct space. One of the main aims is to broaden the horizons of architectural design thinking by identifying interaction patterns that could serve as models derived from representations, reinterpretations, and insightful analyses of cinematic spaces within architecture and landscape contexts. Additionally it endeavours to systematise and establish a more defined theoretical framework for the interactions between architecture and film.

Cinematic space, whether imagined, real, or hybrid, exists as a nexus between constructed and lived realities, intertwining elements of the mundane with the extraordinary. And as architect Juhani Pallasmaa notices: "The architecture of cinema does not possess a utilitarian or inherent value — the characters, events and architecture interact and designate each other."[1] Consequently, one might wonder what implications arise when physical architecture begins to align with the characteristics of cinematic space? What could happen if built architecture starts to reflect the qualities of cinematic space? To comprehend this concept visually, it is essential to understand the nature of cinematic space and the specific spatiality — spatial dimensions — it encompasses. Cinematic space, primarily assembled by montage techniques—whether formal or physical—conveys stories through spatial manipulation frequently contrary to the usual understanding of built architecture—diverging from traditional architectural interpretations and challenging conventional perceptions of architectural design. Therefore, montage has the potential to enhance or even facilitate a 'performative aspect of space', particularly in today's context where engagement with architecture is increasingly mediated rather than solely based on direct experience. As our lives increasingly unfold within digital realms, architecture becomes more than just physical structures; it also encompasses a collection of mediated realities.

1. Pallasmaa, Juhani. (2008) The Architecture of Image: Existential Space in Cinema. Available at: https://static1.squarespace.com/static/5a6100b0f14aa191e1ab0947/t/5e6979e27e1d0b209126d185/1583970871368/PALLASMAA_CINEMA.pdf (Accessed: 2.1.2024.)

For Jacques Lévy, a geography and urbanist professor, cinema is made up of a 'number of languages that are spatial by definition in that they consist first and foremost of images.' According to him, cinematic space shows the presence of 'space as environment' but also 'spatiality as action,' as he broadens the definition set forth by André Gardies encompassing the four types of cinematic spaces that contribute to the spatial essence of a film: 1. 'Cinematographic space' as the 'institutional' setting (the movie theatre, domestic environments containing screens, etc.), in which viewers are immersed in or exposed to; 2. 'Diegetic space' — space as environment — is what the film establishes as a reality independent — distant — from the story — film's geographicity, a space as a set or context — 'anecdotal space'; 3. 'Narrative space' relates to the specific spatiality of the characters, which gives substance to the story — as a framework for the action and 4. 'Viewer space' — the spatiality produced by the mode of communication that the film adopts towards the viewer — the very subjective quality of space based on personal associations.

This paper seeks to correlate concepts from both André Gardies and Jacques Lévy emphasising the importance of cinematic space (Fig. 1).

Among cinematic spaces, mentioned by Gardies, diegetic space—as an environment—emerges as a notably compelling domain for experimentation. Such diegetic spaces can defy architectural accuracy, may challenge architectural norms, or more precisely can be 'architecturally incorrect' especially considering that a city is a multifaceted geographical system or entity not solely defined or shaped by the activities of its transient inhabitants. Within such cinematic realms, the city or room is tailored to fit the practical limitations of filming, the chosen means of expression, or the narrative requirements, achieved through the art of montage. Thus, the next step would be to experiment with conceiving new spaces through cinematographic diegetic approaches.

In a recent case study of Sulphur Baths building in Split, reflection is conveyed through the experimental essay film titled "The Architecture of Healing: Sulphurous Scapes (43° 30.547′ N, 16° 26.22′ E)". The primary objective of experimenting with film form was to reinterpret spaces within existing architecture. Probing and reshaping its structural components, thereby addressing the inherent 'architecture of the film' itself. One could perceive it as the preliminary step preceding the process of conceiving new spaces (Fig. 2).

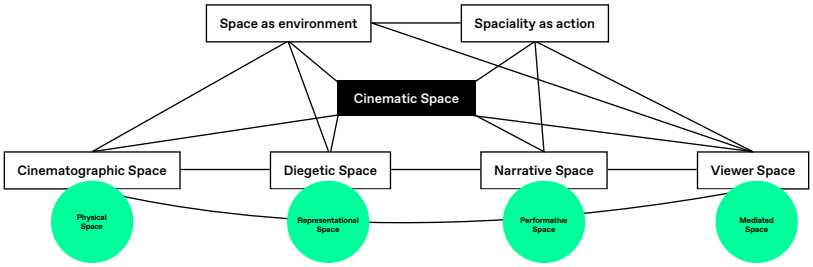


Fig. 1 André Gardies's four kinds of cinematic spaces correlated with Jacques Lévy's concepts of space



Fig. 2 Still from the film *The Architecture of Healing: Sulphurous Scapes (43° 30.547′ N, 16° 26.22′ E*), 2023
https://www.youtube.com/watch?v=jSIUN-m9cXw

A short reflection on the importance and role of EXPERIMENTATION in the research project:

Indistinct boundaries between architectural exploration and cinematic experimentation

The research uses film techniques as additional elements or supplementary contributors enriching architectural paradigms. Exploring through — and in — the medium of film, static and moving images are used as tools, and as a research method through which one can confirm or disprove an initial hypothesis.

Moving beyond conventional historical narratives and representations of architecture, the experimental essay film "The Architecture of Healing: Sulphurous Scapes (43° 30.547′ N, 16° 26.22′ E)" centers on the Sulfur Baths in Split — a space dedicated to the well-being of the body and spirit. It resides on the boundary between 'order' and 'disorder,' involving self-preservation that isolates or connects with others — duality that gives rise to what we term a liminal space. The work is structured around three interwoven thematic segments. One relates to historical and spatial narratives, combining fact with fiction. The mythological part focuses on representations of both diseased and healthy bodies in art and medicine, while the natural theme examines sulphur in its various forms through a lens of popular scientific discourse. As the human body undergoes deconstruction, it gives rise to remarkable architectural forms, with sulphur standing out as the catalyst for specific types of architecture. By exploring the architectural dimensions of the building, and correlating them with the human body and sulfur, the viewers delve into the inherent 'architecture of the film' itself.

FRIDAY, APRIL 12
SESSION 6
15:30 - 16:30

ROOM C - SALA DE VIDEOCONFERENCIAS

Zheng Wu

Wind-Driven Urban Design: design urban ventilation corridors from the block scale

(online)

Wind-Driven Urban Design: design urban ventilation corridors from the block scale

Abstract. Urban wind corridors are gradually being incorporated into the urban planning agendas of various countries, while the current focus of urban wind corridor construction is on urban spatial development strategies, leaving gaps in the specific design of urban morphology at the micro-scale. To drive the transformation of urban space from the perspective of human-environment interaction, this paper introduces the concept of Wind-Driven Urban Design (WDUD). This concept aims to reveal the mechanisms of mutual influence between urban morphology and ventilation, as well as the synergistic effects of wind environments in urban climates. To accomplish these objectives, the paper proposes a Five-Step process: In the first step, conduct climate research at the urban scale to locate urban wind corridors and establish spatial control measures, providing design constraints; The second step involves studies on urban morphology. Parameterize the morphology of urban blocks and establish a database; Proceed to the third step involving Computational Fluid Dynamics (CFD) simulations. Evaluate the current ventilation performance of urban blocks and conduct sensitivity analysis on block ventilation. Subsequently, integrate generic and local design rules to construct WDUD prototypes; The fourth step involves using a genetic algorithm for multi-objective optimization of block forms, seeking ideal solutions under formulated rules. Conduct single-factor controlled variable experiments based on the sensitivity analysis from the previous step; In the fifth step, summarize block design strategies for urban new areas and established regions based on ideal solutions and controlled variable experiments.

Keywords. Urban Morphology, Wind Environment, Urban Design, Multi-objective Optimization, CFD Simulation

Motivation. The rapid urbanization has led to a passive increase in surface roughness and an imbalance in the ratio of people to land, resulting in a global climate crisis dominated by urban heat islands. In numerous studies related to urban cooling, optimizing wind environments has been proven to be an effective means of mitigating urban heat islands. Therefore, to address climate challenges, countries have gradually initiated research on urban wind corridors and incorporated them into comprehensive urban planning agendas.

Background. Currently, urban wind corridor research primarily emphasizes urban spatial development strategies, with less attention to the specific design of urban morphology, especially at the micro-scale. This has resulted in communication barriers between urban planners and architects.

Meanwhile, urban climate research with a focus on optimizing the wind environment still has limitations in guiding urban design and spatial transformation. Existing research can be broadly categorized into two types: the analysis of the coupling relationship between urban environment and morphological indicators, and automatic optimization experiments based on ideal models. Single research conclusions fail to encompass both the maximization of optimization degrees meeting preset conditions for urban new areas and guidance for the redevelopment of urban built-up areas.

Objectives. To balance the balance among residents, buildings, and the environment during the urban design process and better accomplish the task of "placemaking" within the urban built environment or planned areas, this paper introduces the concept of "Wind-Driven Urban Design", which is based on an assumption: There exists a mechanism of mutual influence between urban morphology and urban ventilation. By studying this interaction and integrating universal and local urban design rules, this study aims to construct an urban design model that optimizes multiple objectives for the urban environment.

This model will be driven by the following questions: - What are the basic urban components that constitute city blocks? - What indicators should be used to quantify these components in the wind-driven urban design model? - To what extent do these components influence urban ventilation? What are the evaluation criteria for urban ventilation? - How can the design of these components help optimize urban ventilation?

Methodology. To address the above issues, this paper proposes a five-step process to achieve a transition from Urban ventilation corridor planning to block-scale urban design (**Fig.1**). The focus of this paper will be on the logic of block design and the process of generating block morphology, and the research area will focus on Berlin, Germany.

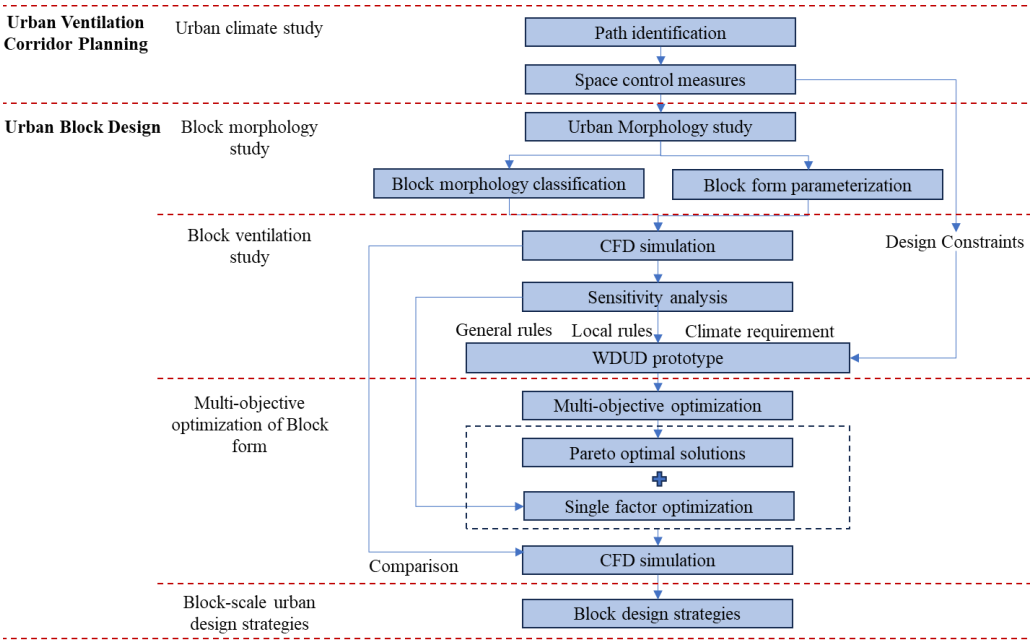


Fig.1 Zheng Wu, *Workflow of Wind-Driven Urban Design (WDUD)*, 2024, Drawn by the author.

The first step involves using a simplified method based on urban morphology to quickly identify potential Urban ventilation corridors in Berlin. Additionally, control measures for different regions are proposed based on the analysis of urban wind and thermal environments, providing constraints for the subsequent Wind-Driven Urban Design (WDUD) prototype.

The second step involves reviewing relevant urban morphology methods to understand universal design rules constituting urban units. Street block typology is then defined based on urban morphology features, with the parametrization of spatial forms for various block types and the construction of a foundational database.

In the third step, combining data from the previous two steps, Computational Fluid Dynamics (CFD) simulations are used to assess the ventilation performance of representative samples. The analysis explores the coupling relationships between block parameters and urban ventilation, with the conclusions serving as the data foundation for the WDUD prototype.

The fourth step employs a genetic algorithm to explore a solution set for optimizing block morphology based on ventilation performance, developing an extensible generative framework. The generated super solutions simultaneously meet multiple optimization objectives, providing an ideal reference for new area construction. Meanwhile, the analysis of coupling relationships in the previous step guides controlled variable experiments for transforming single morphological factors, with the experimental conclusions guiding the transformation of the urban built environment. Ideal solutions and transformations of single morphological factors are then subjected to CFD simulations to validate the ventilation improvement effects.

In the fifth step, block design strategies are extended based on qualitative and quantitative discussions. This five-step framework is applicable to block configuration, tree cluster scale, and building forms to achieve the expected ventilation benefits, including thermal and wind comfort. The concept of wind-driven urban design will reveal the interactive responses between airflow, people, and blocks.

Thinking about EXPERIMENTATION. Compared to traditional design methods, simulation experiments based on computer computational power are essential means for exploring greater development potential in various fields of architectural design and urban planning. The research in this paper falls within the interdisciplinary domain of urban planning, urban climate, and computer science. Computational Fluid Dynamics (CFD) simulation experiments and multi-objective optimization experiments based on genetic algorithms are core components for constructing the Wind-Driven Urban Design (WDUD) prototype in this paper and generating block design strategies. Through these experiments, the paper will be able to explore an ideal solution set that meets design constraints and experimental objectives, providing detailed and scientifically informed references and guidance for urban development.

FRIDAY, APRIL 12
SESSION 7
16:45 - 17:45

ROOM A - SALA DE PROYECCIONES

Raffaella Cavallaro

Dense Cities Compact Schools - Active learning spaces and school democratization

EXTENDED ILLUSTRATED ABSTRACTS

Dense Cities Compact Schools

Active learning spaces and school democratization

Dense Cities Compact Schools is a doctoral research project investigating the progressive rethinking of architecture for education in Europe's most densely populated cities in response to experiments introduced by the renewed relationship between pedagogical models and spatial structures. The PhD scholarship is funded with investments provided by the National Recovery and Resilience Plan (NRRP) on research lines for Public Administration (M4C1, 4.1) and involves the Schools Technical Area of the Municipality of Milan.

The substantial cultural and social changes in the current historical period make evident the need for updating learning spaces[3], which indeed requests for more articulation[4] than the conventional idea of schooling, breaking down the hierarchies to which we are accustomed but no longer correspond to contemporary ways of learning. Instead of a pattern formed by a sequence of functions ordered along a corridor, new forms of learning prompt confrontation with more complex diagrams that add new experiences to the designed educational spaces and encourage students to experiment, using their bodies and imaginations.

The spatial alternatives that contemporary pedagogy advocates to promote an education understood as an active experience[2], centered on the student and his or her specificities, find shape in extremely compact school buildings, which spaces assume a relevant and significant role in the city and the community in which they reside. Large spatial programs and the necessary intermingling of different functions, often realized on small plots of land, are now a common challenge for all new school construction projects in dense cities. However, they also represent an opportunity to design spaces whose use can change according to the users. This approach stems from a renewed democratic vision of schools[1] and the necessary redefinition of the links between the forms of learning and the forms of the city.

The research explores the compact school block, in its different configurations, as an architectural and urban element, capable of interpreting and transforming, on a case-by-case approach, programs, pedagogical visions and design limits into challenges that result in original experimentations able to give rise to more experiences. Quoting John Dewey, "there is an intimate and necessary relation between the process of actual experience and education"[2]. The ability of a space to evoke a certain quality of response in individuals significantly influences the design of what the noted American education philosopher would call the 'objective conditions of educational experience,' to which indeed belong the spatial conditions with which the learner is called upon to interact. The definition of such conditions brings with it the need to understand the needs and attitudes of individuals learning at a given time, for whom to design school environments that can be experienced without prejudice, open to individual interpretations and that allow the richness of informality to be investigated. (fig.1)

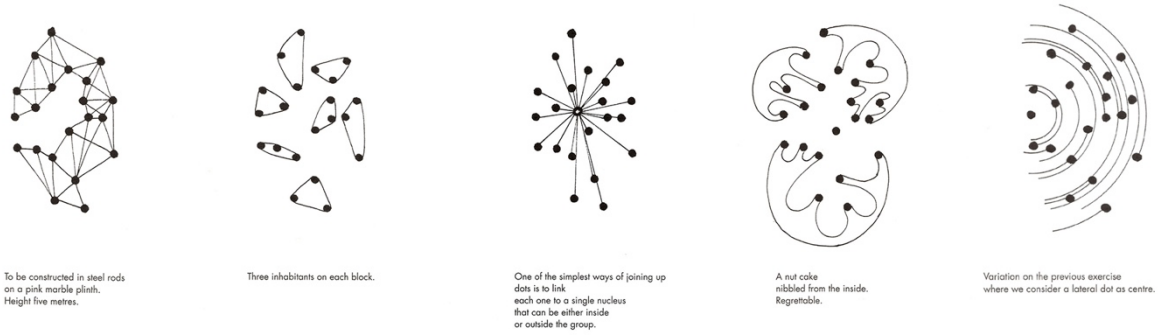


Figure 1: Munari, B. (1992). *Flight of Fancy.* [drawings]. ©1992 Bruno Munari
Munari's game of dots and lines highlights the power of imagination and interpretation: the drawing changes in each case according to context and how it is experienced.

Providing quality experiences is thus the *leitmotif* that binds contemporary and different European experimentations in education. 'Bio-diversity', 'flying-classroom', 'in-movement', 'inside-out' and 'public-space' are five thematic design categories that the present research identifies through the reading of architectural prototypes of compact schools considered exemplary concerning their ability to generate, through original spatial modes, valuable educational experiences. Rather than as mere school buildings, each project is conceived as an *idea* of educational architecture, based on pedagogical-architectural experimentations of active learning and interaction with the neighborhood: a fragment of 'inhabited landscape,' which in the long term will serve as a catalyst for biodiversity - École Primaire des Sciences et de la Biodiversité, Boulogne-Billancourt; a 'flying classroom', floating above a ground floor open to public uses, includes classrooms, group rooms, lounges, rooms and zenithally lit communal lobbies - Schulanlage Freilager, Zurich; a 'school in motion' designed to promote physical activity, encouraging children to be physically active throughout the day - Frederiksbjerg School, Aarhus; an 'outdoor school' for the 21st century, with no corridors or interior stairs, redefining the relationship between classroom and outdoor space by shifting circulation from inside

to outside - Wallrüti Schoolhouse, Winterthur; a 'magic box,' with staggered levels, that everyone can experience or traverse as they choose - Melopee School, Ghent.

Besides the benefit gained in terms of spatial qualities, a fundamental aspect emerges from the comparative analysis of compact school blocks to which this research intends to devote significant attention: the need for architecture for education to assume a central role in cities. The optimization of the overall building area, joined with all case studies, is followed by an increase of the open space area available and allows generous urban solutions that, through the design of outdoor spaces articulated on different levels and accessible at all times of the day, make the school a community space firmly anchored in the neighborhood[5]. The terraces and roofs of the buildings, designed to accommodate open spaces that integrate, in addition to the educational activities that take place outdoors during school hours, sports fields, spaces for play and areas for relaxation, enhance the multifunctional and flexible attitude of the buildings.

The critical reading of these identity school architectures, aware of their context but at the same time contemporary and experimental, is, therefore, a fundamental tool through which to extrapolate and synthesize spatial themes and qualities, measuring and comparing the impact that the adoption of innovative typological models of compact schools has on architectural, qualitative and quantitative aspects.

On the other hand, through the involvement of the public administration, recognizing and assuming that architecture for education in Milan will be characterized, in the coming years, by the progressive replacement of part of the built heritage with pre-packaged techniques that involve the use of prefabricated elements and the care of existing schools led to the definition of more specific objectives, such as the need to identify macro-strategies of intervention based on samples of schools: recovery, preservation and enhancement; demolition and replacement; expansion of the existing and architectural grafting.

By questioning conventions in school construction, the research thus aims to show that it is possible to break new ground at the content and pedagogical levels, highlighting how the challenges of limited space and contained budgets, energy efficiency and ecological transition can be transformed into opportunities to experiment with new solutions outside the usual standards. The goal is to formulate non-uniformed strategies, i.e., strategies that are not pre-packaged but convey a logic, to address changes related to goals, methods, and knowledge transfer tools that have significantly modified educational buildings' spatial requirements and architectural standards.

The expected outcome is the definition of an abacus of design approaches outlined by applying the non-uniformed strategies previously identified to sample buildings of the Milanese school heritage. By interweaving the strategic themes and macro-strategies of intervention and introducing physical, psychological, sociological, cultural, historical, economic and ecological factors, the research aims to formulate generalized strategies to apply to the design of compact school buildings that are wholly unique in the position that a given school building takes in a specific context. Both schools and parts of cities. Buildings in tune with their landscapes and spaces designed to foster human relationships.

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2. Dewey, J. (1938) *Experience and education*. New York: Collier Books.
3. Fondazione Giovanni Agnelli, *Rapporto sull'edilizia scolastica*. Laterza, Bari, 2019
4. Hertzberger, H. (2008) *Space and learning: Lessons in architecture 3*. Rotterdam: 010 Publishers
5. Hofmeister, S. (Ed.). (2020) *School Buildings - Spaces for Learning and the Community*. München: Detail Business Information GmbH.
6. Munari, B. (1992) *Viaggio nella fantasia*. Mantova: Maurizio Corraini.

REFLECTION ON THE CONFERENCE TOPIC

The *Dense Cities Compact Schools* research project aims to investigate the progressive rethinking of architecture for schools through the possible declinations that the compact school block design takes from different perspectives. Given the nature of the doctoral grant - funded with investments provided by the National Recovery and Resilience Plan (NRRP) on research lines for Public Administration - the goal is to narrow the huge gap between academia, architectural practice and the reality of municipal administrations.

In this sense, the research becomes experimentation, the attempt of which is to generate a design tool, in written and diagrammatic form, the application of which can strike a balance and act as a bridge between the different realities that shape the project and ensure its architectural quality, from the earliest stages of conception to realization. To draft this tool, the research places the design at the center, breaks it down and investigates the stages through which it is conceived, developed and implemented and then proposes innovative strategies to re-introduce them.

The study of historical sources and contemporary approaches, investigated and reworked in academia, drawing from both the architectural and pedagogical disciplines, are actualized by the precious interviews with architectural firms, which research the topic of the compact school block and create innovative learning spaces based on contemporary pedagogical approaches. The collaboration with the public administration makes it possible to connect the tool to reality by developing critical thinking related to the normative, technical-economic and bureaucratic aspects accompanying projects from feasibility study to realization.

FRIDAY, APRIL 12
SESSION 7
16:45 - 17:45

ROOM B - SALÓN DE GRADOS

Viktorija Bogdanova

Marija Dimitrievska Cilakova

Danica Spasevska

Site-Sensitive Narratives: Forms of Resistance or Forms of Obedience?

Site-Sensitive Narratives:

Forms of Resistance or Forms of Obedience?

By “site-sensitive” we define the local urban morphology, the repetitive micro and macro architectural elements that constitute a spatial pattern, as well as the intersections of the beliefs, rituals, lifestyles and habits of the local citizens and the visitors of the specific place. When designing a project, piece by piece we are assembling the puzzle of what we call the existing *architectural language* of the specific place. We do depth reading and excavations of meaningful local narratives; then, by extracting and interpreting their meaning, we construct the narrative of the newly designed project – the spatial being that will add another layer in the specific local architectural language.

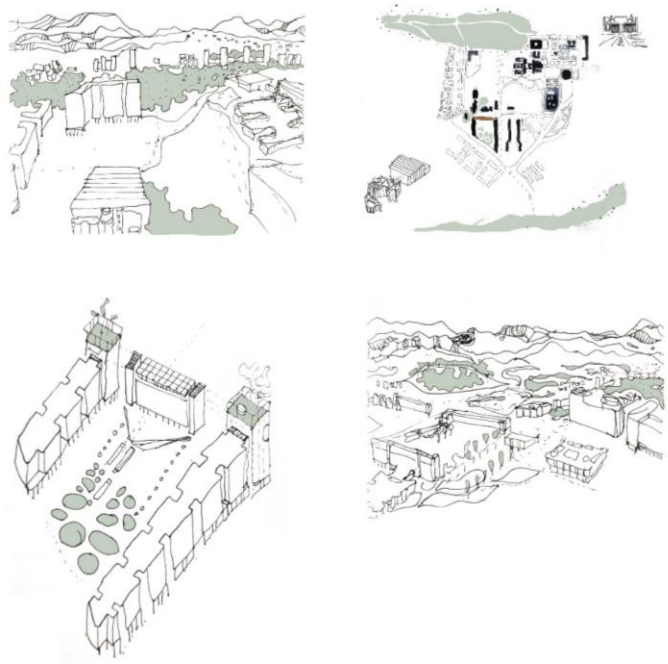
On one hand, the site-sensitive architecture is a continuation of valuable spatial qualities, a conscious obedience of the existing and good architectural patters. On the other hand, site-specific architecture can be also a critique of wrong and violent spatial behaviors: it can manifest a form of resistance against wrongdoings upon protected and *neglected* built cultural heritage. In both cases, a sensitive design-oriented approach in evaluating the “good”, “wrong”, “violent” and “real” is needed.

The paper/exhibition is aiming to explore the variations of obedience and resistance in site-sensitive architectural design through the four case studies of architectural competitions: a Recreation Center in Kičevo (North Macedonia), a University Housing Block in Podgorica (Montenegro), a Housing complex in Ljubljana (Slovenia) and a Health Center in Podgorica (Montenegro). The aim is to exhibit and discuss the variations of the methodologies, the communication tools and the research modalities among the different case studies.

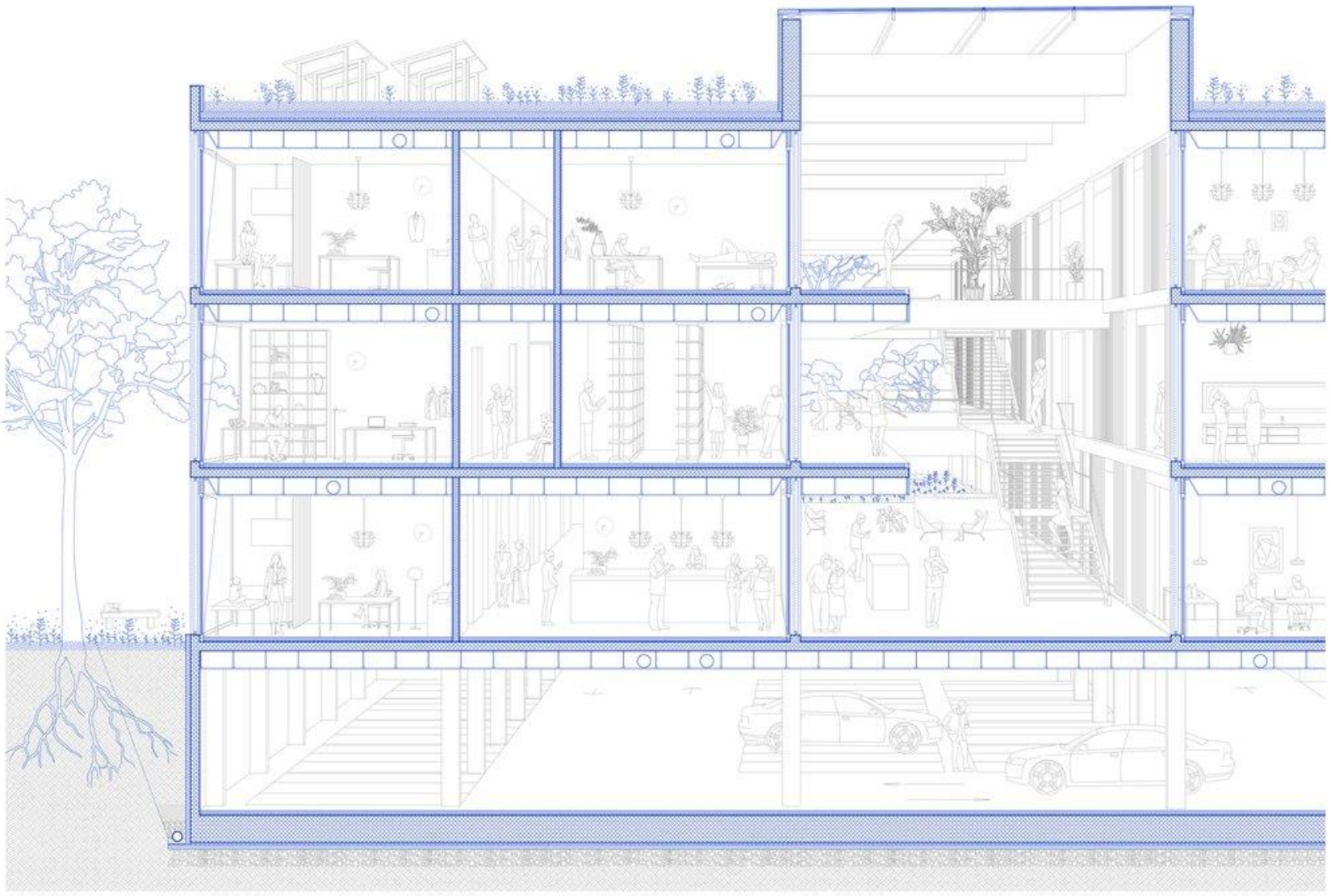
Keywords: site-sensitive, narrative architecture, spatial rituals

Reflection on the topic EXPERIMENTATION:

The exhibition will explore how the obedience-resistance dynamics in our design projects varies according to the specificities of the place and the culturally conditioned behavior. E*xperimental* is the cultivated sensitivity in the *forgetting* any prescribed methods, while inhabiting the role absolute beginners in each site. Modalities of the design research take different form with each new project, transcending any predicted step into a whirlpool of vertiginous circles of trial and error; there, design decisions swim back to the surface as almost self-conscious characters between the lines.



Site atmospheres (Podgorica)



Narrated detail section (Podgorica)

FRIDAY, APRIL 12
SESSION 7
16:45 - 17:45

ROOM C - SALA DE VIDEOCONFERENCIAS

Francesco Airoldi

Ex+per. Experimentation of architectural co-design strategies in fragile contexts

Ex+per
Experimentation of architectural co-design strategies in fragile contexts

Keywords: co-design, fragilities, spatial education.

Architectural co-design is a crucial field of research today, especially in fragile and at-risk contexts, where rapid transformations and important challenges affect their social and physical framework. To achieve conditions of anti-fragility of communities and places – an urgency related to changing environmental and climate scenarios in increasingly contracted temporalities – a critical reading of participatory practices and community-based approaches is proposed by looking at the topic of experimentation as an operant process of research, verification, and active learning, capable of bringing both designers and inhabitants to new awareness.
The contribution aims to investigate co-design strategies for architecture and their implication in disaster risk reduction (DRR) and climate change adaptation (CCA), focusing on the co-creative and educational potential of their experimentation to trigger or catalyze transformative processes in these fragile contexts. Adopting community-based approaches, it is possible to trigger bottom-up processes projecting any kind of intervention in an *ex-ante* temporality towards risk and introducing the theme of mitigation: this allows the designer to place himself in a less violent position towards territories and inhabitants, an attitude necessary in proportion to the degree of marginality of places.
The wide range of perspectives on participatory practices concerning living, anticipates the development of a research methodology applicable to architectural design that is highly adaptable to various social and territorial settings. However, in order to envision it as a design tool attuned to contemporary issues, it is essential to reconsider architectural co-design beyond conventional frameworks investigating its potential expressions (Navarra, 2017, 75). Specifically, given the polysemic dimension of this concept, there is a necessity for a sharing of its meanings, articulating its various facets through a common language. To do so, it is useful to identify the possible declinations of co-design and the levels of experimentation to which different methodological approaches correspond.

- The first and most widespread is the classical approach, which stems from the ideological matrix of 70s, easily identifiable in past experiences. It relies on moments of confrontation wherein residents are viewed as active contributors to project decisions (De Carlo, Marini, 2013): a very common practice for any project that proposes a participative methodology;
- In chronological order, the first forms of co-design occurred in vernacular architecture, with practices of self-construction and rituals that today could be counted in a self-deterministic approach;
- Personalizing space and architecture has become a common practice in modern times. An appropriative approach shifts the designer's focus to the users' needs. Incremental design practices emerge as a potential field of experimentation, particularly related to post-disaster scenarios and their temporal aspects (fig. 1);
- Considering architectural design as a process to build knowledge (Lari et al., 2013), the aim of the architect is to educate communities increasing awareness towards the built environment and social cohesion. In this sense, co-design can adopt a pedagogical approach, considering spatial education as one of the pillars of participatory architecture, especially in risk and uncertainty situations (fig. 2). In this scenario, workshops represent a tool of experimentation to engage both professionals and communities in spatial and architectural exploration;
- If the identity of man presupposes the identity of place (Norberg-Schulz, 1979), it is evident how the physical dimension of architecture can be combined with the social dimension of communities. An ethnographic approach led by the experimentation of fieldwork allows the designer to adopt a vision that relates the space and the individual assuming in addition to a figurative register an anthropological one (Bilò, 2014, 57).

Important moments for experimenting with the aforementioned community practices can be identified in collective activities like workshops, seminars, events, exhibitions, meetings and social networks: these represent the basic tools for defining effective co-design methodologies and for rethinking the relationship between designers and inhabitants. A specific design-driven research methodology, rooted in architectural co-design practices, derives from two significant phases: an analytical-synthetic first one, that addresses issues such as risk assessment, management, and communication, encompassing a typological-morphological analysis of territories; and a participatory second one, focusing on establishing resilient conditions and educating communities to preparedness. These phases are complemented by an ethnographic sensibility, drawing from anthropology, which serves as a valuable tool in co-design activities by combining spatial and social dimensions.

At this point, it is necessary to highlight how processes based on the participation of people aim to bridge not only the hiatus between the architect's specialist knowledge and the inhabitants' good common sense, but also a co-evolutionary gap between communities and territories which is both cause and consequence of those territorial fragilities that afflict especially marginal areas and minor contexts. Placing design hope in the role of communities – entities that are repositories of identity meanings deeply rooted in the places where they reside (Bauman, 2001) – also implies re-tying the futures of inhabitants and places. With this discourse, the scale of co-design shifts from the social to the spatial, from theoretical application to practical experimentation, losing some of its original ideological force, but focusing on properly architectural and landscape design issues. In other words, only through experimenting with participatory practices – that is, identifying co-design as a key to the process of transforming places – architecture can be considered as a space of collective engagement for the revitalization of fragile contexts subject to risk and uncertainty.

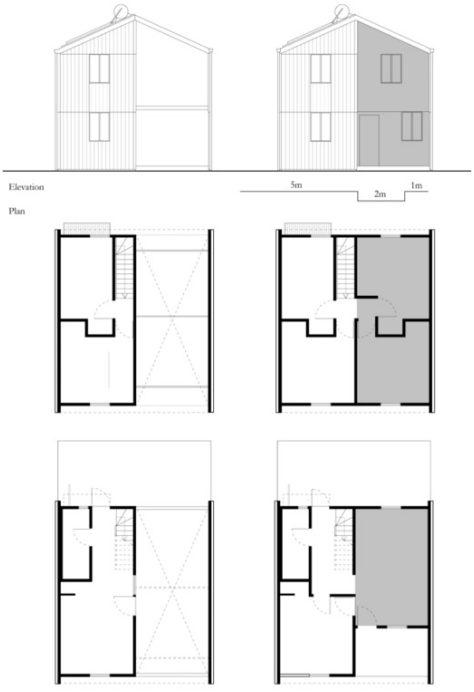
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Short reflection on the importance and role of experimentation in the research project

Experiment and experience have the same Latin root: both are derived from *experiri*, a verb composed of the particle *ex* meaning «from, out of, away» and the Indo-European root *per*, which stands for «to attempt, to test». Adopting a design-driven approach, the orientation of the research methodology should identify architectural design as the cultural environment for producing (*ex*) and testing (*per*) theoretical and technical knowledge. Moreover, the parallelism between experiment and experience takes on a significance of considerable interest in the field of architecture: if the purpose of design – an evident process of experimentation in each of its phases – is to build spaces, a reflection on the human experience that these generate turns out to be fundamental.

Another argument for the importance of experimentation in architectural design lies in the fact that it is an iterative process: as well as in science, with the experimental method, we start from observations to reach conclusions through a specific experience – sometimes repeated several times with the variation of the surrounding conditions –, in the same way in the design research it is necessary to interpret the context through architecture, which has the ability to give new meanings to the place in which it stands.



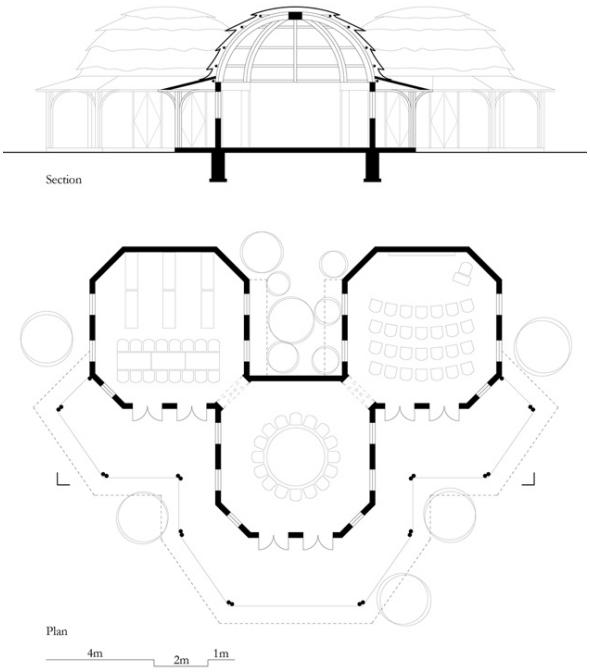


Fig. 1: Alejandro Aravena & ELEMENTAL, incremental design in *Villa Verde Housing*, Chile, 2010. Graphic reworking by the author.
Fig. 2: Yasmeen Lari, education of community in the *INTBAU Training and Resource Center*, Pakistan, 2019. Graphic reworking by the author.

SATURDAY, APRIL 13
SESSION 8
09:00 - 10:00

ROOM A - SALA DE PROYECCIONES

Cláudia Batista

The cartography of the method. The (geo)graphies of Álvaro Siza's sketchbooks in the construction of Malagueira

The cartography of the method.
The (geo)graphies of Álvaro Siza's sketchbooks in the construction of Malagueira.

The Malagueira Housing project (March 1977-) represents a significant moment in the career of the architect Álvaro Siza, due to its scale and the extensive research and work it entailed. Throughout the project, the architect meticulously recorded his constellations of desires, doubts, and certainties in sketchbooks, primarily through the medium of drawing, over a period of more than two decades (Guilherme e Salema, 2022). This research attempts to map and later translate into cartography the creative process of architecture, basing its analysis mainly on freehand drawing, as a visual and deeply corporeal experience of thought that clarifies internal images, rehearses and prefigures forms and living spaces.

The *corpus* of the sketchbooks for the Malagueira Housing Project was chosen as the object of analysis in an attempt to find the threads of thought that will allow us to retrace a genealogy of Álvaro Siza´s design methodology. These sketchbooks reflect and allow us to reconstruct the non-linear development of historical cognitive patterns in Álvaro Siza's architectural thinking (*poiesis*): themes such as the operative memory of history (see page 47 from notebook 5), the *genius loci* of the site (an almost obsessive record of the existing landscape networks, pages 9 and 31 from notebook 3) and the human qualities of the people who inhabit it, participate and inform this experimental process of trial and error, which gradually lays the foundations for the *body* of the project, as it gains autonomy. According to Siza: "At certain moments, the project takes on a life of its own, becoming a fickle animal, with restless legs and uncertain eyes"(2009, 25). Initially, drawings may reflect the perception of the environment and a speculative approach, but they tend to become more codified and systematised as the tried and tested solutions are consolidated, in the spirit of the *praxis* of the discipline (Zupančič, 2020). Drawing is at the service of knowledge production - it spatialises subjectivities in a non-linear way, in other words, it captures the "pulse" of thought (Rodrigues 2000).

The sketchbooks reveal several bodies in continuous dialogue: the traces of drawing are shaped by the physical body of the observer (his pain, sight, comfort) and the body without organs (interests, sensations) that mediates the perceptual relationship (Ventura, 2013); the body of writing completes to the act of drawing in a reflexive way; on the other hand, the technical tools and support also contribute to this process[1]. Thus, the analysis of the drawings cannot be approached linearly, as they are subjected to chance, circularity and external stimuli. The proposed cartography of those geographies is presented as a visual and textual narrative, based on a rhizomatic reading that aims to encompass the richness and complexity of creative thinking. This design-driven research approach[2] embraces ambiguity, non-linearity, and arbitrariness, in line with the philosophical thinking of Gilles Deleuze and Guattari (2016). According to Alexander Christopher (2002)[3], the traditional representation of the tree of knowledge is reductive in the face of the multiplicity it seeks to explain.

Analysing drawings is a complex task as it requires measuring the intangible: "to draw is to map the world through signs, locating the absence of the eyes" (Abraham, Miller e Groihofer, 2011, p. 102). Therefore, every drawing requires a certain degree of decoding of its signs. The threads of thought vary in their strength, expression and movement. Thus, the research identifies the corpus of the sketchbooks materialised in variable traces, in terms of their codification (system of representation), line typology (thickness, speed[4] and occupation) and the images evoked (themes), which are filtered through successive exercises of recognition, quantification, qualification and synthesis. The methodology is first focused on the weaving together of the different maps that can result from this circular process of analysis. Later, different patterns of analysis are rehearsed to translate the interactions (and subsequent iterations) between the choreographies of the line (e.g. speed), the underlying thoughts (systems of representation) and the growing seed autonomy of the project.

This research is currently at an early stage of development. Nevertheless, it already raises questions that transcend the discipline and will allow further analysis: what is the relationship between the strength of a line, its occupation and the phase of the design process (i.e. are faster drawings a sign of successful experimentation or simply the urge to express an urgent thought)? Can the archive of drawings reveal the foundations of the creative process and be given autonomy in relation to the project? Can new technologies analyse the architect's thinking development without distorting it or depriving it of meaning (Chau, 2021)?

Drawing, from a phenomenological perspective, is a response to various needs (seeing, understanding, memorising) that, when brought into contact with physical support (which gives shape to ideas), are transformed into something new (the creative act). This research puts forward the possibility that mapping architects' hand drawings can give us a deep insight into their creative webs of thought: first, it allows us to trace their desires, hesitations and references; secondly, it can also reveal influences and affinities, schools of thought and their relationship with history.

Experimentation is defined as the carrying out of a procedure or operation to resolve an uncertainty[5]. The object of analysis (the sketchbook) is a heterogeneous body, an uncertain territory of invention. In the case of the sketchbooks *corpus*, it is important to highlight two structuring principles concerning its method and approach that can also be applied to the methodology undertaken in this research (design-driven): the architect´s method is similar in its principles to the geological process of sedimentation: errors, doubts, and speculations are sedimented and lay the basis for future designs. There is a prior process of separation and accumulation carried out by the restless hand. As Siza states, "Architecture does not allow or accept improvisation, the immediate and directly transposed idea. Architecture is the revelation of nebulously latent collective desire"(2009, p. 169). The *corpus* is situated at the intersection of the desire for an idea and the need to construct. In other words, the architect usually designs from the inside out with the future in mind (Rodrigues, 2000)[6]. The research process itself carries out the same principles: analysis and speculation, based on extensive research, through the *tools*, proper mindset and *competencies* of architecture (Menezes de Sequeira *et al.*, 2012), slowly pave the way for the development of knowledge. The lines become blurred between theory and practice, as the methodological approach, in some ways, mirrors the creative process of the object being studied.

In today's context, where analogue drawing has been replaced by the digital paradigm, this archive highlights the instrumental dimension of freehand drawing and its attempt to slow down time while engaging the body during the various stages of the design process. The *corpus* is both epistemologically and aesthetically rich: it takes us to an interstitial place, between the mind, the thinking hand (Pallasmaa, 2009) and reality. Writing and drawing share the same potential to question the world, to make it more intelligible or to reshape it. The resulting cartography aims to *spatialise* knowledge and make it accessible to the practice and teaching of architecture.

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[1] "To draw is to cut an idea into a body, violating its silence. "(Abraham, Miller e Groihofer, 2011, p. 102).

[2] This hypothesis has already been put forward by ongoing research (Malagueira: Heritage for all. Contributions for its nomination. PTDC/ART-DAQ/32111/2017) and successive published articles (Guilherme e Salema, 2017, 2020, 2022, 2020).

[3] "It must be emphasised, lest the orderly mind shrink in horror from anything that is not clearly articulated and categorised in tree form, that the ideas of overlap, ambiguity, multiplicity of aspect, and the semilattice, are not less orderly than the rigid tree, but more so. They represent a thicker, tougher, more subtle and more complex view of structure.´´

[4] In a recent article for Drawing Matter, Lok Chan-Kau explains an experiment he carried out in which he tried to correlate the "speed of the lines with the content of the sketches" of the architect Siza Vieira and suggested an algorithm. The hypothesis is very meaningful, but we believe that it leaves out important criteria, such as the occupation of the page, the latent images and themes, the different *bodies* involved and a more rhizomatic organisation, as described.

[5] Merriam-Webster. (n.d.). Experiment. In Merriam-Webster.com thesaurus. Retrieved January 5, 2024, from https://www.merriam-webster.com/thesaurus/experiment.

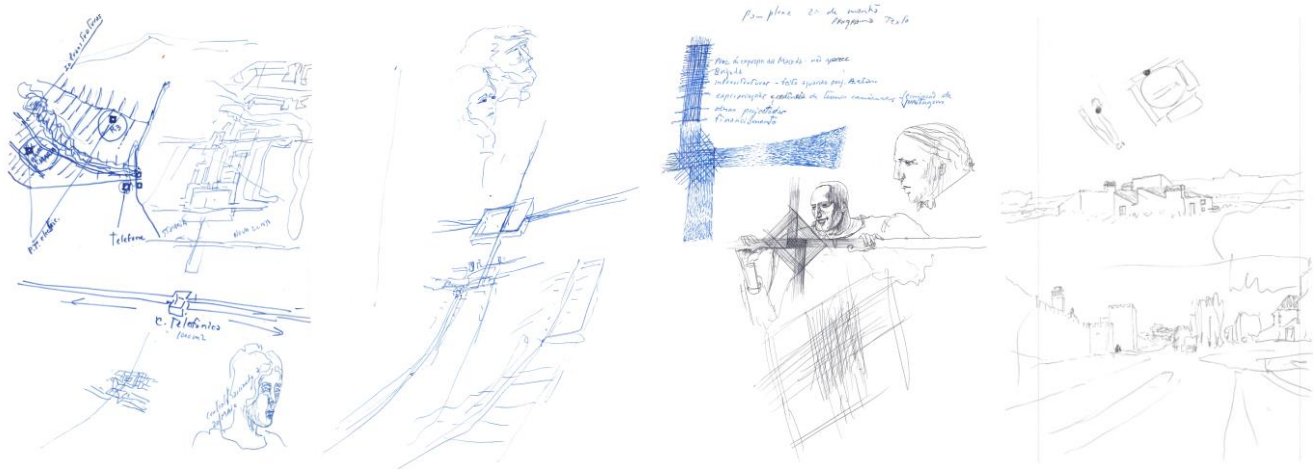
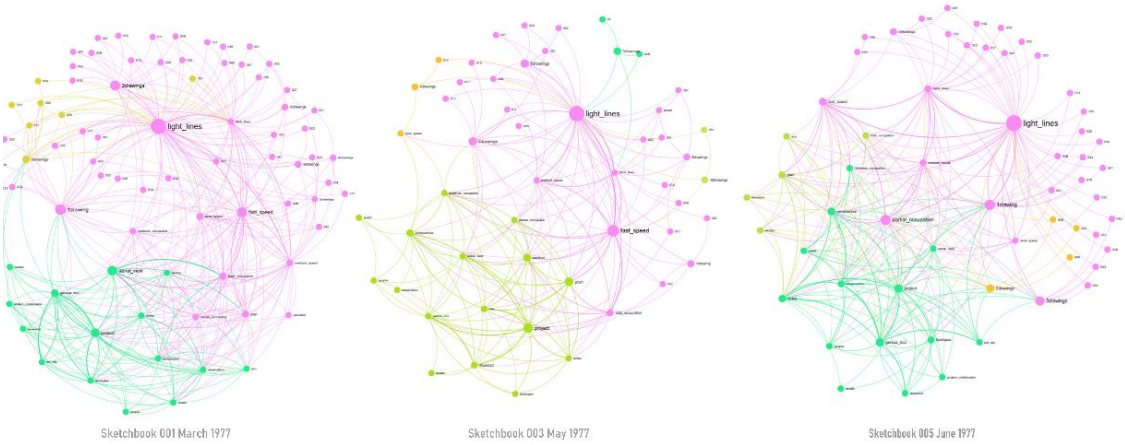


Figure 1. Pages 9, 19 and 31 from notebook 03 (May 1977) and page 47 from notebook 05 (June 1977), from left to right.
(The above drawings were made by Álvaro Siza Vieira and are used with the courtesy of Drawing Matter Collections, Álvaro Siza Archive, 1977. They have been digitally cleaned to improve the clarity of the lines and text).



Figures 2 and 3. The cartography resulting from the first three sketchbooks was analysed based on criteria such as line typology (thickness and strength), speed of hand movements (slow, medium, or fast lines), page occupation, themes, and number of drawings. The main topics, which had the greatest influence, were assigned different colours: pink (above 70%), green (20 to 30%), light green (below 10%), and orange (remaining). (Initial structural diagrams rendered with online software available at infranodus.com.)

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SATURDAY, APRIL 13
SESSION 8
09:00 - 10:00

ROOM B - SALÓN DE GRADOS

Miljana Niković

Belgrade on Screens

DDr statement / importance and role of EXPERIMENTATION in the research project:

In the early stages of my doctoral research, my agenda was clear. First, I would read "all relevant theories" that would give me important insights on the philosophical aspects of my topic. Then, once my theoretical approach refined, I would start collecting the required material and clarify the copyrights. Only after these steps, I would consider experimenting with the material. Fortunately, one of the most important advices that was given to me – at my first CA2RE presentation – was to start experimenting as soon as possible, to avoid bad surprises later. Indeed, the theoretical part of the research can be indefinite, as it evolves and grows constantly, based on our affinities, comprehension, and choices on the directions that we undertake.

When I started experimenting with the material, puting aside the copyrights or other administrative concerns that were previously limiting me, I immediately felt free: to explore, discover, self-educate and even fail. We have already discussed how crucial "learning-by-doing" methods are, especially in art-driven research and experimental cinema. Therefore, I understand the process of experimentation in my research as a series of tests where I can playfully "expect the unexpected", and welcome even the "mistakes" to happen. During the actual experimentation – in my case, video montage and editing – I observe new phenomena, led by intuitive and speculative (re)actions, making invisible connections visible, often leading to "tacit knowledge". In other words, experimentation gives me the ability to suddenly see something that I would have missed without the experiment.

Belgrade on Sceens:

Movement, Time, Difference, Repetition

Within the framework of my art-driven doctoral research, "Belgrade on Screens: Visions of Continuous Discontinuities", I explore the audiovisual representations of Belgrade. The main questions revolve around the impact of moving images on cognitive awareness, collective versus individual memories, and how they produce new interpretations of urban, historical and sociopolitical transformations through one specific location: the Terazije Square.

By mixing different film genres and by activating the film archives, the concept is to bring the collected material in an immersive environment. Experimenting with forms of Expanded Cinema and diverse montage techniques, my goal is to connect, de- and recontextualize fragmented past narratives in a spatial arrangement for phenomenological experiences, through a series of speculative multi-channel video installations. Once "released" from their institutional boxes – where they might be forgotten, hidden, lost, unaccessible – the films get a physical reality, in touch with broader audiences.

Motivated by the outcomes of my previous contribution at CA2RE Zagreb,[1] which was a result of reflections that happened during earlier presentations – Hamburg, Ljubljana, and Delft – I plan to continue exploring further with the same type of format: a multichannel experimental lecture-performance. Given that Valencia's edition explicitely encourages innovative configurations, in a "most varied and open way possible", I would like to take this opportunity as an invitation to develop alternative techniques and methods. Consequently, I rely on minimal technical support as I intend to intervene again with at least three screens. Their size and type can differ, and if any additional screens are available, I will be happy to use them and test unique spatial settings according to the location where the event will take place. The exhibition area(s) should be as dark as possible to allow the best perceptibility of the projected images. Ideally, the audience will have the option to walk around the screens.

While the lecture-performance held in Zagreb was my first experiment of that kind, the result was a sort of "making-of" showing the "behind the scenes" of the research. The main concern was to address institutional, financial and technological obstacles related to the questions of re-appropriation through found footage and film archives. In my opinion, being preoccupied with these issues makes any research more challenging, because it tends to distract the researcher from the initial topic. On the other hand, such a "diversion" can be rewarding because a systemic degradation can be detected. In that sense, although the tone of my work was rather self-ironic, the problems evoked through a series of mise-en-abyme situations opened a new set of research gaps in the fields of film theory, film history and practices in contemporary video art.

1 - The extended abstract and my lecture-performance CITIES ON SCREENS OR SCREENS OF CITIES, as well as my 3-channel video ALMOST WHITE CITY ON BARELY BLACK SCREENS, can be accessed on the following link: https://vimeo.com/miljananikovic/cities-on-screens-lecture

As an example, it became clear that to collaborate with most of the public services who "possess" cultural heritage, the best way is often within an informal agreement. This means that all types of footage or documents are kept behind the locked doors of mainly national or privatized film archives, controlled by individuals who are unwilling to follow their own policies. Struggling to establish an effective contact with most of Serbian institutions where films are being stored, my experimental methods are inspired by avant-garde and amateur filmmakers who work with low or no budget. Paradoxically, even internationally acclaimed filmmakers have to find an ally – an enthusiastic "insider" – who wants to help despite formal or technical constraints.

Consequently, being confronted to these complexities, new forms of political, historical, economic and aesthetic "dis/continuity" appeared, but on a typical meta-level. It is also why my 3-channel video "Almost White City On Barely Black Screens" acts as a DIY-intersection of tutorials, desktop cinema, and image manipulation. In fact, the multiple layers of this meta-level as acts of self-awareness – in my case deliberately obsessive and subjective – were also noted during the panel in Zagreb. One of these modalities consisted of deforming the original footage through different tools in the editing phase: mirroring, slowmotion, pixelation, distortion, multiplication, filters, etc. This oversaturation of effects and overwhelming input provoked reactions of "surprising captivation, confusion, enjoyful frustration, entanglement, and estrangement" — which was a stimulating feedback for me because it was my first lecture-performance, that I considered as a new type of experiment. Indeed, what if the "final product" or the "basis of my practice" evolves as a set of multi-channel video installations *and* lecture-performances?

Lastly, by experimenting with the audiovisual (formal) aspects of the footage as described above, not only do I avoid the bureaucratic complexities around copyright and budget, but I also "demystify" the images for a deeper interpretation. For instance, as implied in my DDr statement, my perception of a same scene or sequence can totally change during montage, and I can then attribute new meanings to its intrinsic value.

Although I have many examples, I can briefly describe one typical moment of "discovery" that I also gave during the exchange at the previous panel. It is the opening scene of a cult movie, filmed as a pan shot.[2]

While the camera moves from right to left, we recognize Belgrade's cityscape through several distinctive elements among generic buildings and their rooftops: the St. Mark's Church, the Parliament, the Trade Union Hall, and finally, the Terazije Square. Once I put the original next to its backwards version (played in reverse, from left to right), I realized that the "meeting point" – when the same frame appears on both screens – is the Parliament. This is no surprise, because it appears exactly in the middle of the 40 second pan shot, 20 seconds after the first frame. But this evidence is not perceived due to the continuity of the camera flow and the continuity of these specific locations, despite the discontinuity of their functiontional, urban, architectural and sociopolitical significance.

For the upcoming conference in Valencia, I propose a different approach, purely focused on Deleuzian philosopy that can be applied in the context of my research. For this, I will primarily refer to ideas described in "Cinema 1: The Movement-Image" (1983) and "Cinema 2: The Time-Image" (1985) where Gilles Deleuze dissects polarities representing two modes of cinematic expression – the first linked to the sensory-motor system, the second intervening in this system. A third volume that I will explore and incorporate in my experiment is "Difference and Repetition" (1968), where Deleuze questions the circular movement of time and the events that occur within these cycles. By merging these theories to the concepts of *continuity* (as repetition and time) and *discontinuity* (as difference and movement), I intend to transpose their respective "junctions" on the screens, by using collected film material. Finally, I will shortly introduce some of the virtual 3D models that I have recently started extending with the open-source software Blender, as I believe that it is a powerful tool to experiment countless types of scenography.



Lecture-performance at the CA2RE Zagreb, November 2023

2 - Panning is a camera movement where the camera pivots left or right on a horizontal axis while its base remains in a fixed location. It can be used to follow a moving character or to fit into a frame, such as panning across a landscape to create a sense of place and contextualize the story.

SATURDAY, APRIL 13
SESSION 8
09:00 - 10:00

ROOM C - SALA DE VIDEOCONFERENCIAS

Weronika Gajda

Citographer: Developing a Toolkit for On-Site Mapping with Non-human Senses

Citographer: Developing a Toolkit for On-Site Mapping with Non-human Senses

Introduction

This paper expands on 'Citography', an interdisciplinary PhD research exploring the transformative role of digital technologies in urban environments. In this phase the research focusses on the development of an urban mapping toolkit, building upon previous mapping experiments, harnessing the power of open-source and open data platforms. This step aims to refine urban mapping methods and advance critical cartographies, offering more profound insights in the urban impact of digital technologies. The presented design attempts are not just a set of tools but an approach to spatial understanding, blending different mediums and interdisciplinary knowledge serving a novel approach to mapping urban digital dimensions.

Context

The initial version of the Citographer toolkit was developed as part of a collaboration with Fieldstation Studio, led by Corneel Cannaerts and Michiel Helbig in summer 2023 at Columbia University in New York City. Under the title 'Architectures of Compression: excursions on Post-Digital Media Ecologies', it explored the impact of digital media on New York City, in order to further develop the concept of 'compressed city'. The studio undertook a fieldtrip collecting data using mixed tools, smartphone applications, gps tracking, sound recordings, more analogue methods and drawings based on observations during the fieldtrip. This collective experience and resulting data formed a basis for developing and testing urban mapping tools and methods, using tempo-spatial modeling, data scraping and visualization. This led to an interactive digital map capturing the collective urban experience, inspiring a reevaluation of mapping methods for more localized, on-site interaction with the environment.

Current Stage of Design

Building on the insights gained from the collaboration with Fieldstation Studio, the current project phase focuses on developing the Citographer toolkit, which consists of a Blender add-on that allows to import various forms of geolocated data: 3D models and geospatial data downloaded from opensource and commercial repositories, sensor logging data, images from smart phones or scraped from various websites. While these tools allow for data rich mappings of mediated experiences, we are currently developing an in-situ mapping and drawing tool. This tool, in its prototyping and testing stages, is designed with integrated IoT sensors to capture and translate environmental elements like noise, temperature, radio waves, and color spectrum into physical drawings. This approach is not just mapping but also about performing and engaging the person using the tool and viewers with the digital dimensions of urban environment.

Theoretical Framework

The Citography research project is an interdisciplinary collaboration between the KU Leuven Faculty of Architecture and the Faculty of Engineering Technology, that critically examines the impact of technology on urban environments. The deployment of technologies can not be isolated from its urban and societal context, i.e. it is approached as 'Situated Technology' adapting Donna Haraway's notion of 'Situated Knowledge' (1988). Haraway argues for a more subjective, contextualized understanding of knowledge, challenging the traditional notion of objectivity. A such, 'Situated Technology' emphasizes the development of tools that are aware of their context – both in terms of physical location and the cultural environment. This suggests that the developed urban mapping tools are not just globally applicable technologies but are adaptable to the unique nuances of different urban settings. They are designed to enhance human sensory experiences, thus providing richer insights into the urban fabric, seen through the lens of those who inhabit and interact with it.

For instance, the Citographer toolkit's design draws from the previous experiences, adapting for re-visiting spaces from fieldtrip trajectory in New York City. It gathers data based on its immediate surroundings—the scale is not limitless but is defined by the researcher's location, specificity of sensors, and the duration of the experience. Its operational speed and the nature of urban information it collects are designed to mirror the specific attributes of the urban landscape, shaped by personal choices. This level of adaptation ensures that the toolkit not only captures a particular moment of the city but also provides a narrative intertwined with the researcher's observations, annotations, and sketches, fostering a close dialogue with the context being situated.

While there is an extensive body of research on design and mapping tools in architecture and urban design, they mainly focus on technology as a medium for design, an extension of human capabilities through digital technologies. Here, urban mapping tools are seen not as mere passive devices, but as active agents that redefine our engagement with urban spaces. They extend our capabilities (McLuhan, 1964), allowing us to perceive, comprehend, and interact with cities in novel ways, thus making urban environments more interactive and immersive.

In this research we understand digital technologies not as singular media, but as part of ‘media ecologies’ (Taffel, 2016). Media ecology theory investigates the impact of media environments on human perception, cognition, and emotion. Applying this framework to urban contexts, we start to see digital technologies not just as functional tools, but as vital components interwoven into the urban infrastructure, merging seamlessly with the city's physical elements. This perspective unveils the urban landscape as a symbiotic ecosystem where digital and physical elements coexist and influence each other. The integration of hardware and software into urban infrastructure enables a more nuanced understanding of urban experiences and spaces.

Therefore, the Citographer toolkit, does not just collect or visualize data in isolation. Instead, its functionality is intrinsically linked to the presence and participation of a researcher or observer. This person's role is crucial - they do not merely accompany the tool or the other way around, but actively interact with it, contextualizing the data in relation to the immediate environment and its unique characteristics. This approach challenges the traditional, often oversaturated methods of data collection, advocating for a more sensory-rich understanding of our surroundings. The tools’ dependency on human interaction underscores the importance of combining our senses with technological extensions. It suggests that augmenting our perception of urban spaces with additional sensory data, like noise levels or telecommunication signals, should enrich, not simply replicate, our understanding of these environments.

In this context, the Citographer toolkit, equipped with IoT sensors, emerges as a distinct element within the media ecological infrastructure. However, it goes beyond mere integration and it is not designed to blend seamlessly with its surroundings in terms of hardware and software. The toolkit is noticeable, challenging the norm of invisibility and lack of transparency of media ecology in urban environments. This approach encourages public engagement and awareness, prompting a more conscious interaction with the technology and its role in public spaces.

Conclusion

The final paper will delve into the technical aspects of the Citographer toolkit, showcasing the initial prototypes and discussing the decisions behind their design. It will shed light on how tools can facilitate a nuanced understanding of urban interactions at a local scale, rethinking the conventional methods of urban studies. Ultimately, this paper aims not only to introduce the toolkit but also to inspire a transformative shift in the approach to spatial design within the field of architecture. It advocates for an exploratory methodology that transcends traditional disciplinary boundaries, fostering new perspectives and insights into the living and designing of cities.

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The Role of Experimentation

In the evolving practice of 'Citography', experimentation serves as a foundation for exploring the impact of digital technologies in urban settings. It fosters more critical and interdisciplinary approaches, thereby broadening spatial understanding and unlocking new insights in the toolkit’s use and design.

Therefore, the role of experimentation can be described as twofold. Firstly, experimentation acts as a critical response to the increasing impacts of digital technologies, delving into both their intended and unintended uses and consequences on inhabiting and designing urban environments. Through experimentation, it becomes more feasible to uncover technological biases, manipulations, and effects on the surroundings. These discoveries are instrumental in designing mapping tools and in the integration of digital technology into urban environments.

Secondly, the role of experimentation is crucial in fostering interdisciplinary dialogue. As 'Citography' bridges fields such as architecture and engineering design, experimentation becomes a common language, enabling the integration of expertise from these diverse domains and shaping future explorations in both disciplines. Through this approach, 'Citography' not only deepens our understanding of urban spaces but also establishes new forms of interdisciplinary collaboration.

SATURDAY, APRIL 13
SESSION 9
10:00 - 11:00

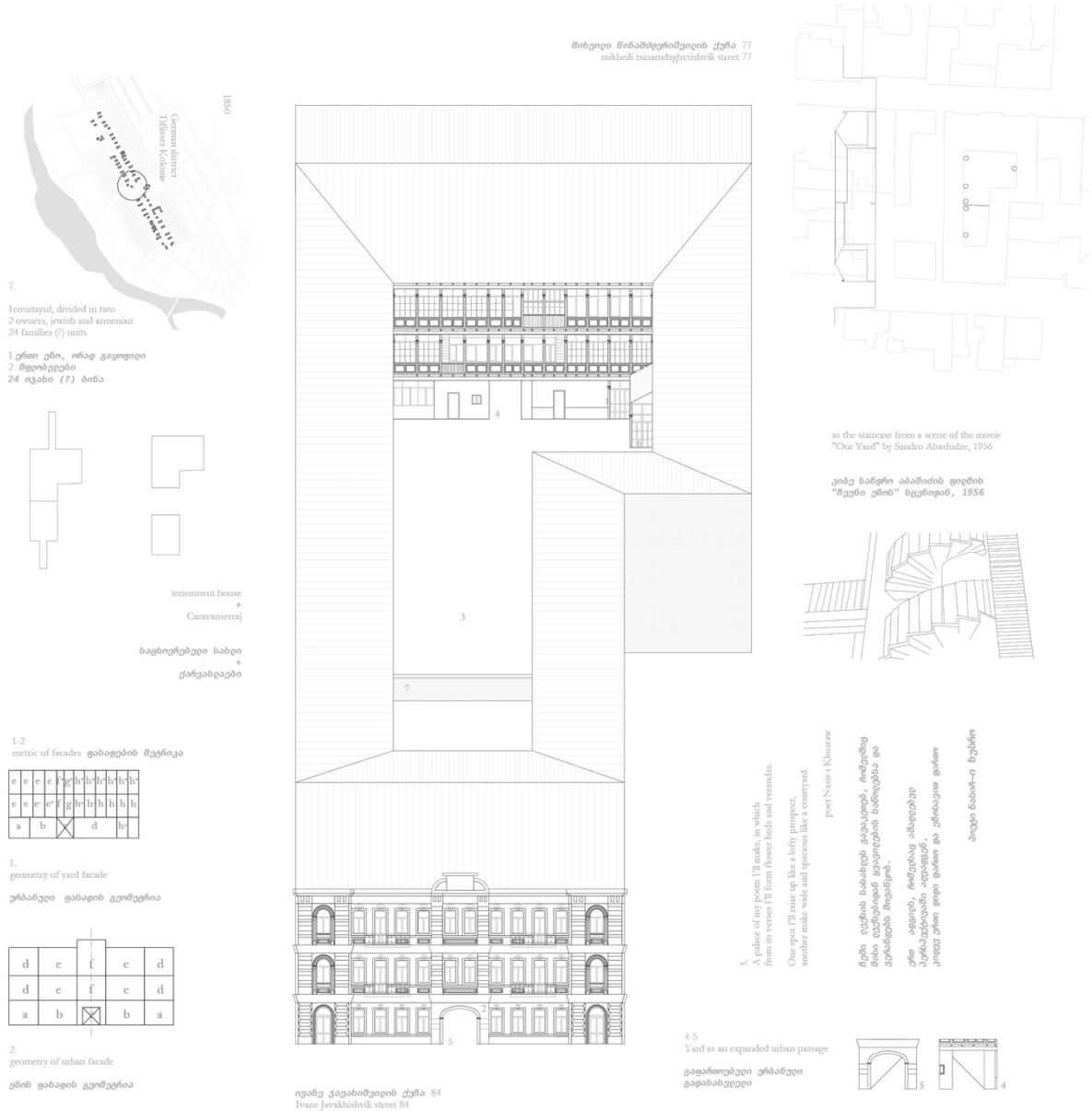
ROOM A - SALA DE PROYECCIONES

Duccio Fantoni

Unscripted Architecture: Notational Drawings on the Yards of Tbilisi

Unscripted Architecture: Notational Drawings on the Yards of Tbilisi

Extended Abstract
This study explores notational drawings as a hermeneutic and experimental tool for design-driven research.
The work is part of doctoral research on the role of the Yards[i] of Tbilisi, peculiar semi-public spaces between dwellings and streets, in the construction of the modern metropolis. Despite their pervasive presence in the urban fabric since the reconstruction of the city under the Russian Empire, these spaces are under-studied in the architectural field; they gained recognition in the soviet period through modernist paintings and cinematographic production, cherishing these urban conditions as places for sharing and togetherness in a subtle anti-colonial narrative.
The gap in the architectural knowledge regarding these spaces requires developing an experimental tool to deal with this phenomenon at the intersection of different disciplines.
The research aims to investigate these architectures as spaces of negotiation that compose a hidden urban pattern.
Therefore, the study uses notational drawings to trace retrospectively the unscripted quality of a precise selection of study cases, integrating a broader cultural context within the architectural discourse.
By presenting this experimental investigation, the study will discuss the role of notational drawings as a tool to study the under-documented, unscripted, and unknown in the Architecture discipline.



Draft of a Notational Drawing for Court-Yard in Javakhisvili street 84, Tbilisi

Notational drawings, in which writings and drawings overlap and coexist in the same space, belong to the architectural discipline as tacit knowledge. Both for theoretical exploration and practical necessity, notations are essential in a range of documents, from travel notebooks to constructive details. In the Villard de Honnecourt's "Livre de portraiture"[ii], the writings complete the drawings integrating different aspects to the graphical representation, sometimes overlapping and blending. Bernard Tschumi refers to his hand drawings as notations in contrast with the conventional name of sketches, distinguishing the first ones for the vivid conceptual character, "thoughts on paper"[iii], and the second as mediated outputs only for aesthetical purposes. In the work of Jhon Hejduk, the notations are highly dense and incorporate a wide range of observations, titles, captions, and geographical notes, resonating with poems, paintings, and artefacts.
Regarding this ambivalence of architectural documents, the philosopher Nelson Goodman observes: "The end product of architecture, unlike that of music, is not ephemeral; and the notational language was developed in response rather to the need for participation of many hands in construction… insofar as its notational language has not yet acquired full authority to divorce the identity of the work in all cases from particular production, architecture is a mixed and transitional case"[iv].
In this sense, the transitional role is implicitly embedded in the project as a mediation tool. Therefore, architectural drawings and writings participate in the notationality of architecture, producing and representing observations and prescriptions.
In a general sense, notations also refer to the act of overwriting a document for comments, corrections, or integrations. The presence of marginalia in manuscripts enriches the importance of a text, adding clues and interpretations; the process of layering notes entails a temporal dimension and the possibility for different agencies to participate in the process, suggesting additional clues and interpretations.

In the case of Yards of Tbilisi, this hybrid representation plays a crucial role in composing an original narrative for this urban phenomenon. Since architectural documentation of these artefacts is scarce and their presence is scattered in different media, notational drawings enable architecture to weave together different discourses.
The aim is to validate the general hypothesis of a kinship connecting the architecture of different Yards as spaces of negotiation for urban contradictions crossing different morphological configurations, geographical locations, and typological origins. Since the Architecture of the Yards participates in a complex entanglement of power relations, urban processes and constant alterations, it is necessary to elaborate a coherent framework of interpretations in which anomalies compose series and families as Carlo Ginzburg exposed: "Any document, even the most anomalous, can be inserted into a series; but not only that: it can, if properly analyzed, shed light on a still-broader documentary series"[v].
This study proposes to expand the notational dimension of architectural drawing to include other agencies. The intention is to highlight the semi-autonomy[vi] of architectural discourse in which external processes always partially interfere with architectural discipline. In this sense, notations mediate between different interferences and narratives. The retrospective use of notational drawings for scripting existing architectures has two implications: the hermeneutic dimension of the process in which artefacts and narratives coexist as traces to be read and the design dimension in which the knowledge is accessible to be used. The interpretative operation combines both dimensions to develop the research in a design-driven framework. Therefore, the methodological relevance of this study lies in the possibility of investigating the unscripted quality of architecture through a disciplinary tool that is able to expand the field of inquiry to reveal a network of relationships.

As a result, the study will produce a series of notational drawings of specific study cases. The selection criterion is the architectural potential of this urban phenomenon: a deep façade, with balconies or verandas, mediating the relationships with the street through a common accessible outdoor space and an articulated system of connections and staircases. Different sources, such as cinematographic documents, archival materials, modernist paintings, and literary narratives, partake through the drawings' notations as hermeneutic and experimental design processes. This series will compose an experiment to retrospectively script an unscripted architectural phenomenon in search of an urban pattern that latently operates in the power relation of the city.

Role and importance of Experimentation in the research
The research investigates a field in which documentation is scarce, scattered and, if present, possibly biased. Against this background, the role of Experimentation in the study is to generate a network of relationships to reveal a pattern for these unscripted architectures. As a "leap", this design process produces new knowledge, starting from clues and hints, moving toward quite an unknown territory. The initial hypothesis directs the investigation's trajectory rather than pre-defining the findings. Therefore, Experimentation allows the study to consider absences not only as limitations but also as a form of knowledge and as material for design. The research implications manifest in the use of notational drawings as an experimental tool, crossing sources, narratives, and architectural configurations. The methodological relevance of experimentation here is to make possible both the hybrid representation of different forms of discourse and the possibility of designing a space for negotiation between various agencies.

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[i] The term Yard refers to the Georgian word ეზო.
[ii] Villard de Honnecourt, *Album de Villard de Honnecourt* (Paris: Hachette Livre, 2013)
[iii] Bernard Tschumi, *Notations: Diagrams & Sequences* (London: Artifice, 2014)
[iv] Nelson Goodman, *Language of Art* (New York: Hackett, 1976), 221
[v] Carlo Ginzburg, *Threads and Traces. True Falsa Fictive* (Los Angeles: University of California Press, 2017), 202.
[vi] Tom Avermaete recovers this notion from Althusser in Tom Avermaete, *The socius of architecture: spatialising the social and socialising the spatial*, The Journal of Architecture, 23:4, 537-542, DOI: 10.1080/13602365.2018.1479353

SATURDAY, APRIL 13
SESSION 9
10:00 - 11:00

ROOM B - SALÓN DE GRADOS

Nathan De Feyter

Architectural Empowerment - Exploring the Emancipatory Power of critical Architectural Designs

Architectural Empowerment

Exploring the Emancipatory Power of critical Architectural Designs

1. Introduction

This paper explores the possible emancipatory potential inherent in co-created architectural designs within the context of design-driven participatory action research conducted in Ten Eekhovelei, a street in a post-war neighbourhood built in the 1930s in northeast Antwerp.

Building on the insights derived from two preceding CA²RE-papers that investigated the methodology of co-created drawings and their capacity to reveal profound insights about the case, this study aims to shift from drawing to design and use the collected data to set up a participatory design process. The goal is to shed more light on the emancipatory and transformative impact of such collaborative design processes.

2. Problem statement

As per Lefebvre's (1991) theory, society both shapes - and is shaped by - space and architecture. Lefebvre (1967) highlighted that space and architecture have a productive impact on citizens of any society, and it is their right to shape society through the use of these spaces. According to Leveratto et al. (2022), involving the community in urban planning and design processes by encouraging greater participation from planners and decision-makers in the neighbourhood is crucial. This can be achieved by taking action in the form of listening, learning, imagining, and collaborating with others to promote both social and spatial justice (Askins, 2018; Brinton Lykes & Crosby, 2014).

Despite the growing importance of participatory processes in architectural discourse for the sake of a more equitable society, as articulated by the New European Bauhaus (2023), policy actors seem to be failing to engage un(der)represented groups in the process of creating truly inclusive spaces. According to Beebeejaun (2017), focusing on the experiences of disadvantaged groups when involving the community in urban renewal projects can reveal the various obstacles and power dynamics present in spaces.

Besides the underrepresentation of disadvantaged groups in participatory processes, the tools architects use also face restrictions. Architecture is a profession that relies heavily on visual communication, both among professionals and with the general public. In architectural design, space is usually documented through orthographic projections like plans, sections and elevations, which have their limitations and specificities (Macken, 2014). Numerous studies have criticised the conventional visualisation techniques used by architects (Baltes-Brkljac, 2008; Daniel and Meitner, 2001; Sheppard, 1989). One of the main criticisms is that these methods often exclude outsiders. Technical drawings, for instance, are often considered too complex for the average untrained observer. Moreover, architectural representations are known to create perceptions, interpretations, and value judgments that can be different from those produced by actual encounters with presented environments. The potential consequences of such effects include poor decision-making, where unworthy projects are approved, good designs are rejected, and both planners and the public are left with unexpected outcomes.

3. Bridging the gaps

However, there are many examples of “counter-representation” to be found in architectural theory. The term refers to intentionally deviating from traditional modes of representation in architectural designs. This deviation defies norms, questions power structures, and critiques culture, society, and politics through architectural visual language (Singer, 2013). In this way, architectural designs can serve as a platform for expressing political or social views and represent marginalised voices.

Critical architectural representations focus on how individuals wish to represent themselves, providing them with more recognition and showcasing the variety of existing domestic forms and rationalities. This creates an alternative subjectivity. Through these designs, there is an opportunity to spread local knowledge and demonstrate the existence of alternative practices, where the micro-politics of self-transformation of individuals and places are seen as the primary catalyst for change (Di Feliciantonio, 2017). This approach questions distributive justice and imagines alternative designs that respond to the need for an architecture that is centred on recognising differences and the empowerment of others (Cruz, 2011). And thus, the question arises: how would design differ if its purpose was to reveal or inquire, rather than to persuade? What would the display consist of?

4. Introducing the case

To test the above-mentioned, a participatory design process was set up in the Ten Eekhovelei in Antwerp. The locality is recognised for its uniform row residences, high population density, and wide-ranging cultural background. Currently, the neighbourhood is mainly featured for its upcoming transition. The city council plans to create a large park on top of the busy Antwerp ring road, right behind the rowhouses (Ringpark het Schijn, 2022). Preparatory work has begun, and to minimise inconvenience for residents of Ten Eekhovelei, the city of Antwerp is offering homeowners the option to sell their properties voluntarily (AG Vespa, 2021). The city's offer is valid until the end of 2024. So far, 54 homes have been sold and are now vacant, representing about 20% of the entire strip. Purchasing property without considering displacement and loss of spatial practices is leading to the temporary deterioration of the area's character.

The city has taken a step towards addressing the issue of vacant properties by appointing a professional and independent company as vacancy manager. The vacancy manager is responsible for finding temporary occupants for vacant properties during construction work, which can last up to ten years. However, finding suitable occupants is proving to be a challenge due to the high vacancy rates and scattered availability of vacant properties, ranging from small one-room flats to family houses with gardens. Time is of the essence, as unoccupied properties and gardens are rapidly degrading.

5. First step of the design process

During the design phase, we build on earlier findings that were captured in critical drawings and describe the unique spatial practices in Ten Eekhove. These practices include the flexible use of the interior spaces and the possibility of merging adjacent houses due to their structural uniformity. Additionally, we have discovered that traditional rental market choices have broadened and challenged in Ten Eekhove, resulting in unique constellations of communal living across different units.

To perpetuate these unique characteristics, a design workshop was conducted on December 5, 2023. The workshop is part of an iterative process and was therefore preceded by roundtables with residents, people from the community centre and meetings with the vacancy manager and state agencies. All meetings aimed to collect feedback on spatial requirements and improve services for residents. We were able to visit vacant houses and obtain first-hand information on which associations were looking for a space to develop their activities. During the critical design workshop, several potential uses for vacant properties were pictured, all focusing on neighbourhood-oriented and future-oriented alternatives to the city's plans.

6. Next steps

Building upon the design process aimed at empowering marginalised residents, the next steps should prioritise continued engagement, collaboration, and the implementation of the co-created vision. Firstly, to improve the initial design proposals, it is

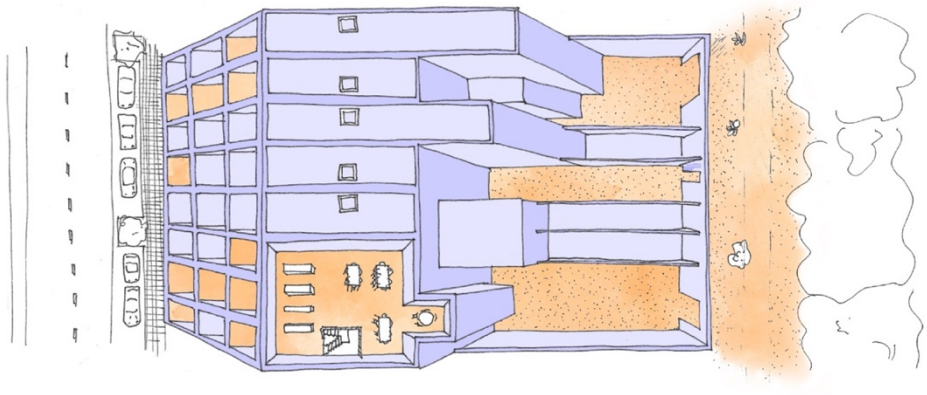
essential to collect more feedback from the community. This step will enable us to refine and enhance the ideas based on the residents' lived experiences and preferences. We need to organise more targeted workshops and discussions to ensure that the design resonates with the community's diverse needs. Keeping the community well-informed about the project's progress is crucial by regularly scheduling updates, meetings, and presentations.

During a later phase, it is crucial to equip the residents with arguments to actively participate in the implementation process. Capacity-building workshops on relevant skills such as sustainable practices and construction techniques can enhance the community's ability to contribute to the project and achieve critical practice. Additionally, it is necessary to explore funding opportunities and resources that can support the implementation phase. This may involve seeking grants, partnering with local businesses, or collaborating with (governmental) organisations.

Critical drawing, design, and practice collaborate to challenge conventional thinking, rethink societal norms, and fuel creative thinking. This triangular relationship promotes reflection and positive change in society.

Images





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Reflection on the importance and role of experimentation in the research project

The research project carried out in Ten Eekhovelei exemplifies the transformative role of experimentation in design-driven participatory action research. Experimentation goes beyond the traditional boundaries of architectural exploration and becomes a dynamic process that engages residents and stakeholders in a collective journey of discovery. The act of experimenting with design solutions becomes a medium for empowerment, allowing the community to actively shape their environment.

In this research, experimentation is the catalyst for emancipation, providing a platform for residents to challenge existing norms, envision alternative futures, and actively contribute to the development of their living spaces. As the design process unfolds, the experimentation with ideas, materials, and spatial configurations becomes a vehicle for empowerment, fostering a sense of ownership and agency within the community.

Experimentation is not just a research methodology in Ten Eekhovelei; it is a mechanism for social change, a tool for dismantling barriers, and a pathway towards a more inclusive urban environment. The significance of experimentation, therefore, lies not only in its ability to shape physical spaces but also in its profound capacity to empower individuals and communities in the pursuit of architectural emancipation.

SATURDAY, APRIL 13
SESSION 9
10:00 - 11:00

ROOM C - SALA DE VIDEOCONFERENCIAS

Zhihang Lin

Community-based Architectures for the Elderly: Towards the Integration of Healthcare Spaces with Nature

Community-based Architectures for the Elderly: Towards the Integration of Healthcare Spaces with Nature

Keywords: Architectural Design, Biophilic Design, Aging Community, Healthcare Architecture



Exterior view of Health Care Facility Josefhof, designed by Dietger Wissounig Architekten, Austria, 2019. © Paul Ott
This project integrates the building into the surrounding landscape, aims to create an atmosphere of harmony between nature and people.

The research on care and cure has received much attention in recent years due to the increasingly integrated research on the global aging problem and the unprevented epidemic, including research in architectural design. For instance, the publication of Murphy, Mansfield, and Barber (2021), titled *The Architecture of Health: Hospital Design and the Construction of Dignity*, presents a comprehensive introduction to the evolution of healthcare architecture, which assists in recognizing the significance of the hospital as a space of dignity. Additionally, the book *Architecture for Residential Care and Ageing Communities: Spaces for Dwelling and Healthcare*, edited by Gromark and Andersson (2021), explores and articulates new qualities in the designs, caring process, and healing atmospheres of aging residential care and aging communities. Architects have been called to address the fact that many of us have been compelled to take up new forms of care, "from mutual aid to social distancing and self-isolation." (Chatzidakis et al. 2020, 10-11) It is envisaged that care is centered on the well-being of individuals, and the bodies of carers and patients would constantly form new and evolving relationships with each other and the spaces around them (Lange and Schaad 2022). In addition, there has been a dramatic change in expectations and demands among the elderly, who are seeking a different healthcare approach and new policies that encourage and support healthy aging, such as in the field of palliative care (Dwight 2017, 26). In this realm, numerous architectural experiments have regarded facilities involved in therapeutic community-based environments.

Moreover, aiming to study the principles and practices that underpin the design of spaces for community healthcare, several specific euro-centric case studies have been selected, aiming at finding their correspondence in examples of aging community healthcare, referencing the categorization illustrated in the book *Living for the Elderly: Principles and Processes* (Feddersen and Lüdtke 2017). The aging community healthcare spaces will be studied, in this research project, through the lens of domesticity, drawing upon housing complexes for the elderly and institutions such as community healthcare centers, rehabilitation centers, or Alzheimer's day centers. The project will include a body of paradigmatic design references named "Case Studies Abaci," aiming at the collection and classification of contemporary architectural projects that align with the aforementioned typologies. The case study analysis will examine three thematic categories through a typological and analytical lens, generating comparative plans of "envelope," "in-between space," and "promenade." These investigations will provide a comparative experiential analysis of the spaces concerning the organization between internal and external environments, as well as the division between artifice and nature.

In addition, a series of experimental field studies, centered on the aging community healthcare system in Europe, will be conducted, integrating the results of observation, onsite documentation, and analysis. Besides the contemporary architectural projects listed in the "Case Studies Abaci" section, some community-scale historical projects will also be considered, such as Sanatorium Zonnestraal (Jan Duiker and Bernard Bijvoet, 1925-1931), l'Eau Vive hospital (Nicole Sonolet and Philippe Pajmelle, 1960s), and the De Drie Hoven housing complex for the elderly (Herman Hertzberger, 1964-1974). Furthermore, after a closer look at the role of biophilic design in spaces for aging community healthcare, a practical project will be conducted and serve as a test-case and real-world application. Upon redefining a paradigm and formulating standards for a given practice, distinct implications might be made under various design scenarios to establish an interactive aging community paradigm.

These parts will follow an introductory narrative analysis of a typical description concerning the etymology and notions of "care," "biophilia," and "community health" (Yanacek 2023; Wilson 1984; Goodman, Bunnell, and Posner 2014). In addition, a collection of state-of-the-art literature linked to "care, nature, and architecture" is systematically explored, entitled "Lessons from Hospital: Care as Active Practice," "Inspirations from Community: Care as Interactive Paradigm," "Biophilic Design Practice," as well as "Architecture and Nature Integration," respectively. It is increasingly important for architects to think inter-disciplinarily. For instance, the theories of the body and brain are interwoven with architectural discourse; "constructing the architect as a kind of doctor and the client as [the] patient" has always been tightly connected (Colomina 2019, 13). The recent publication entitled *Care* aims to demonstrate the intricate relationship between the discourses of architecture and care from various perspectives (Lange and Schaad 2022).

The investigation of architecture and nature integration has also long been a focus of contemporary architectural and urban design. The "Biophilia Hypothesis" was systematically proposed by Wilson (1984) and has been investigated as a potential strategy for exploring spatial ecology and human health. Recent academics Kellert, Heerwagen, and Mador point out that the goal of biophilic design is not about adding more visual interests or greening our buildings solely, but about "humanity's place in nature, and the natural world place in human society, a space where mutuality, respect, and enriching relation[s] can and should exist at all levels and emerge as the norm rather than the exception" (2008, 7), which underlines the significance of articulating a paradigm change in how we design and develop with nature in mind.

Healthcare architecture and nature gradually become an integral part of the architectural discourse and practice, drawing attention to the point of transitional spaces and guidelines. Ulrich observes biophilia theory and selectively reviews scientific research pertinent to designing healthcare settings that reduce stress and promote better health outcomes (Kellert, Heerwagen, and Mador 2008, chap. 6, 87). More recently, a phenomenal understanding of biophilic design guidelines has been drawn upon, with "[f]our biophilic patterns – Biomorphic Forms, Dynamic and Diffuse Light, Material Connection with Nature and Mystery – were primary to the design." (Browning and Ryan 2020, chap. 9, 180-181). In the "Introductory Note" to the volumes edited by Pasquale Miano (2020), Capuano points out that the research "address[es] the crucial issue of care structures and their relationship with the urban context" (2020, 13), which examines innovative architectural approaches to the configuration of care and healing spaces and their relationship with nature.

Although biophilic design has been applied and explored in many design contexts over the last few decades, little attention has been paid to developing theoretical and design approaches to community healthcare facilities against the backdrop of aging. So how do we redefine the space of community healthcare? What are the present forms of community healthcare facilities? How can we establish an effective design and theoretical framework for the spaces of community healthcare through the integration of buildings with nature? To answer these questions, the design-driven approach will be applied throughout the project.

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Experimentation

The design-driven methodology is used throughout this project. As a proven research strategy, "experimentation" is widely conducted in different phases. In the first phase (speculation), a collection of state-of-the-art literature linked to healthcare architecture and nature integration is systematically explored. An experimental, comparable review of the different pieces of literature plays an important role in developing an awareness of hypotheses and, latterly, posing research questions on the integration of research on spaces for aging community healthcare with nature. In the second phase (reflection), several specific case studies have been selected, aiming to find their correspondence in examples aligned with the aforementioned literature. The artifact of the case studies will be summarized in the form of abaci, providing a comparative experiential analysis of the spaces between the interior and exterior based on three categories. This kind of comparing, diagraming, and generalizing practice reveals the study as an experimental design action. The third phase (evaluation) draws attention to the experimental field research and the project practice. The field research will provide the potential to perceive the complexity of different interconnections between architecture and nature through in-depth observations. Project practice provides insight into the effectiveness of the strategy, which will allow me to recognize some potential unnoticed issues. The fourth phase (interface) will generate the final definition for the paradigm and formulate standards under a variety of design scenarios. The interpretational methods and design experimentation in different field actions will thus allow me to test the design hypotheses.

SATURDAY, APRIL 13
SESSION 10
11:15 - 12:15

ROOM A - SALA DE PROYECCIONES

Ran Pan

Speculative Urban Imaging

Speculative Urban Imaging

ABSTRACT

The education and practice of architecture and urbanism have been progressively encountering a new design context. The advent of digital design tools, coupled with their capacity for enhanced indexicality of images and digital virtuality, is inducing significant transformations in our approaches to sensing, experiencing, conceptualizing, and producing the multiplicity of urban life. Such a transformation necessitates learning, unlearning, and relearning issues such as how urban environments are produced, how they affect us, and how we, in turn, affect them; and what kind of collectives emerge from the urban environment. This process of learning is not only for students but also for educators; and in this sense, education is dealing with an open system, an uncertain future.

Within this context, the “do as I do” approach hardly makes sense in education, as both educators and learners are grappling with a speculative future, where repeatable and one-size-fits-all solutions may not exist. In this vein, the French philosopher Gilles Deleuze (1994) suggests that a better teaching method would be “do with me,” asserting that the true meaning of education should be reexamined according to its etymology– the Latin word educere, meaning to lead out, implies guiding towards new relationships, responses, and perceptions. It involves creating opportunities to pose new problems and to open up new potentialities (Colebrook, 2008). Leading out or opening up to these potentialities also entails differentiation and problematization (Bogue, 2008). This concept aligns with a term from French philosopher Henri Bergson, “intuition,” which media theorist Alexander Galloway (2021) highlights as one of the most significant “uncomputable” traits often excluded from digital computation and rational symbols. Galloway also ties intuition to “experience”, “flesh,” or “affect,” which are elements that can hardly be captured by a data-driven research paradigm, as it tends to fragment urban life into discrete units like integers, reducing it to numbers, figures, and objects. Contrarily, design is a process of correspondence: it is not about imposing a preconceived form onto a raw material substance, but rather about drawing out or bringing forth potentials that are immanent in a world of becoming (Ingold, 2013).

Sensibility, thus, is a crucial part of learning. It is more than a process that operates only inside the body; rather, it distributes widely through lived experience across both natural and technical environments (Protevi, 2010). Following this idea, experience and experimentation are powerful in terms of cultivating sensibility in design education by inviting both students and teachers to try, feel, and learn together through interaction with heterogeneous materials (Tamke, Nicholas, and Thomsen, 2017). How do we sense the effects of our actions in experiencing and experimentation? Connecting to the previous point about intuition, this research intends to start with Bergson’s idea of intuition, which can be interpreted simply as problematization, or speculatively and deliberately reflective awareness (Deleuze, 1991). Such an understanding of intuition echoes the first characteristic of experiments suggested by Tamke et al.(2017), namely, speculation.

In addition, given that the image and the imaginary play an important part in architecture and urban design, this research intends to focus on the process of imagining. However, instead of thinking of the image as objects, this research attempts to open up the concept as an untapped affective potential, providing more than an account of ‘what has been’ but also an invention of ‘what is to come’. This understanding aligns with Deleuze’s interpretation of film as movement-image and time-image, which is more than a generalized field or discipline. It is rather an arrangement or assemblage of moving images and sound that enables the affective process and sensation across heterogeneous materials (Deleuze, 1986a, 1986b). In this sense, the experimentation with moving images can be a valid starting point to combine the aforementioned ideas and concepts.

This research proposes an experimental workshop as a pedagogical catalyst to disrupt and reconceptualize the perception and memory of urban landscapes. The study is underpinned by the project ‘Speculative Urban Imaging,’ which serves as a critical tool for examining and engaging with urban life through a multisensory experience. The outcome of the workshop will be videos created by the participants, which aim to challenge the viewers’ habitual modes of perception by interweaving various dimensions of urban existence into a cohesive pedagogical narrative.

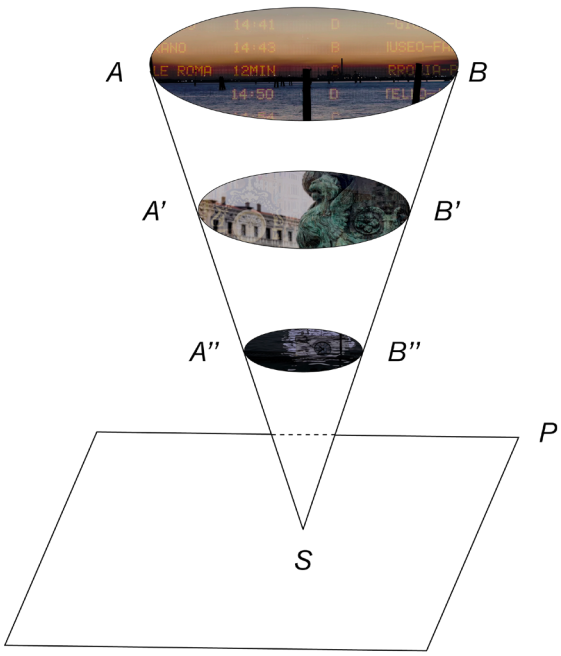
The workshop mainly focuses on five dimensions of exploration: (1) scales, both macro and micro. The workshop attempts to have participants operate the video through a dynamic range of scales, for instance, zooming into intimate details and zooming out to an expansive urban area. It intends

to prompt a reconsideration of perception and scale, encouraging viewers to reflect on their role within the larger urban system. (2) Other-less-ness, namely, to imagine a world that is isolated and full of solitude. In this process, the participants are asked to foster critical awareness and reflection upon their connections to the social network. (3) Audio/Sound. Another important dimension of this research is the auditory dimension, where a symphony of nondiegetic sounds is added to construct a diverse urban soundscape. This acoustic array, from ambient noise to music, seeks to shape the experiential journey, drawing the viewer into the multisensory complexity of the urban phenomenon. (4) Color and relations as haptic. This dimension dives into the effect of colors, particularly with the alteration of the hue and saturation evoking certain atmospheres and tactile engagement. This dimension extends beyond the visual to engage the haptic senses, inviting the viewer to 'feel' the image, to experience the urban environment through a lens that is at once vibrant and visceral. (5) Speeds. Lastly, the experiment focuses on contrasting the varying velocities of urban life, from the rhythmic, predictable patterns of human activities to the chaotic cadences of the natural world. This investigation of speed as a diffractive process encourages an alternative understanding of temporality and spatiality, provoking the viewers to experience time and space as flows.

Overall, this research attempts to experiment with how film, with its multiple components–images, montages, sounds, words, texts–could offer the means to facilitate speculation in design pedagogies. For one thing, film can provide extended parameters for recasting and rethinking earlier concepts, intensifying the affective process by creating a short-circuit between perception and imagination. Additionally, the extended parameters, ranging from words to audio-visual compounds, can convey more direct nuances in the virtual realm, thereby facilitating the transformation between imagination and invention.

REFLECTION

In this research, I expand the concept of experimentation from laboratory thinking into a broader sense and connect it with the experience and the dynamic process of "making". It becomes the nexus connecting critical educational concepts such as intuition and problematization, bridging the gap between sensation and cognitive understanding, and redefining imaging as an active and creative process. Experimentation opens up the possibility of the shift of pedagogical focus towards an immersive engagement with the materiality and potentiality of urban spaces, thereby redefining 'imaging' not just as a visual representation but as an affective, cognitive and creative process.





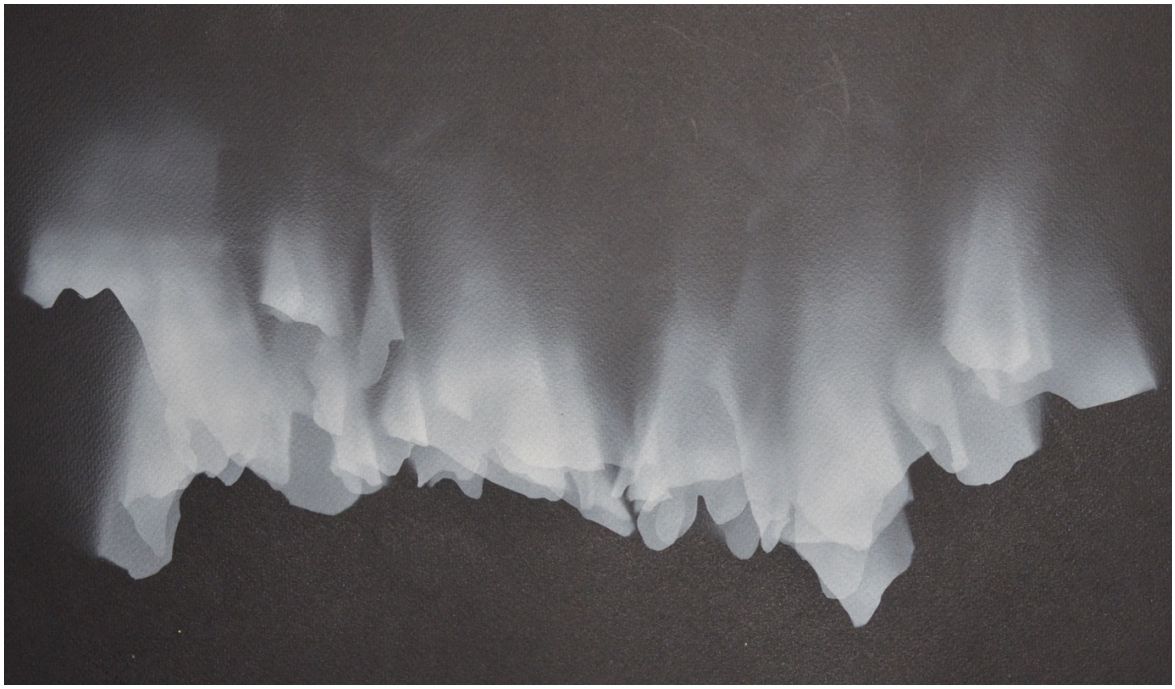
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SATURDAY, APRIL 13
SESSION 10
11:15 - 12:15

ROOM B - SALÓN DE GRADOS

Charlotte Erckrath

Stereo vision / cutting planes



Stereo vision / cutting planes

A long history of drawing tools tells of a desire to record the complexity of the world on paper. Optical devices such as the camera obscura or camera lucida take an important role in the development of our ways of seeing and understanding of the world. With each invention in image-making there arises new awareness on the limitations of capturing the world as experienced.

Image comparison and stereography is a large field that extracts the measurable orthographically projected space from perspective projection. The stereograph is a practical application implementing this understanding. It allows to interact spatially with a three-dimensional image by delineating section cuts with a marker inside the perspective space. These drawn lines effectively describe complex surfaces by contour lines as they are known from topographical maps.

The picture plane understood as section cut through the cone of vision is a crucial concept for perspectival seeing and as such pushes forward the entanglement of vision with spatial perception. Horizons, vanishing points, distance points become concepts that allow to organize and understand the perspectival space, while at the same time forming the foundation for the measurability of vision. The project draws forward the entanglement of the space of the drawing and the drawn space, the notion of embodiment in the inhabition of the space of the drawing. It engages the baroque as a field of reference and looks as baroque space through the concept of shifting projection planes.

The proposed paper further discusses the application of a stereoscopic drawing tool that has been designed by the author based on the Wheatstone Stereoscope from 1902. In theory the tool operates on homogeneous cartesian principles, however in practice it observes the scene from a subjective viewing position and as a consequence it deals with the hidden, the invisible and the overshadowed. In effect, gaps of knowledge and discontinuity reveal themselves as inherently part of this method. Might the discontinuous cutting plane provide pathways into an expanded understanding of designing that might include subjective and phenomenal qualities into the abstract projective drawing space?

The baroque is often read as a period but can also be understood as a means of operating. As a spatial technique, the baroque offers us concepts of open narratives, the hidden and layers of multiple possible interpretations folded into a single situation. The virtual sits within the Baroque Velasquez' painting Las Meninas from the 17th century. The painting displays a complex interweaving of spatial, visual and cognitive relationships described by Foucault in The Order of Things. This results in ever expanding possibilities of relations. In Las Meninas, time and place folds into each other, like a photograph that brings the past into the present. The painting interweaves the time of the observer with the time of painting, with the hidden painting that we can never see and the potential engages with our imagination. Open threads inhabit the painting, a mirror with uncertain reflections, an open doorway leads to questions about the actions of the past or future, each element has multiple

readings and potentialities abound. Thresholds are dissipated, boundaries blurred as the observer becomes actively involved, implicated in the making of the experience.

Interpreted as a series of views, picture planes of perspective projections, the project explores this folding of space through sectioning. It develops as a critique of architectural drawing conventions with the aim to provide a critical review of the application of Cartesian space in the designing of space. It seeks to evolve possibilities to mediate between the things seen and the projection drawing.

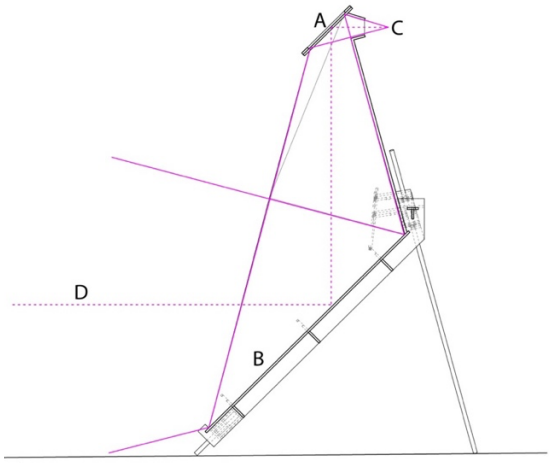


Figure 2. *Section of stereoscopic camera lucida with reflection path within the device. A – beam splitter that is both see-through and reflective, B – mirror, C – view point, D – reflection path*

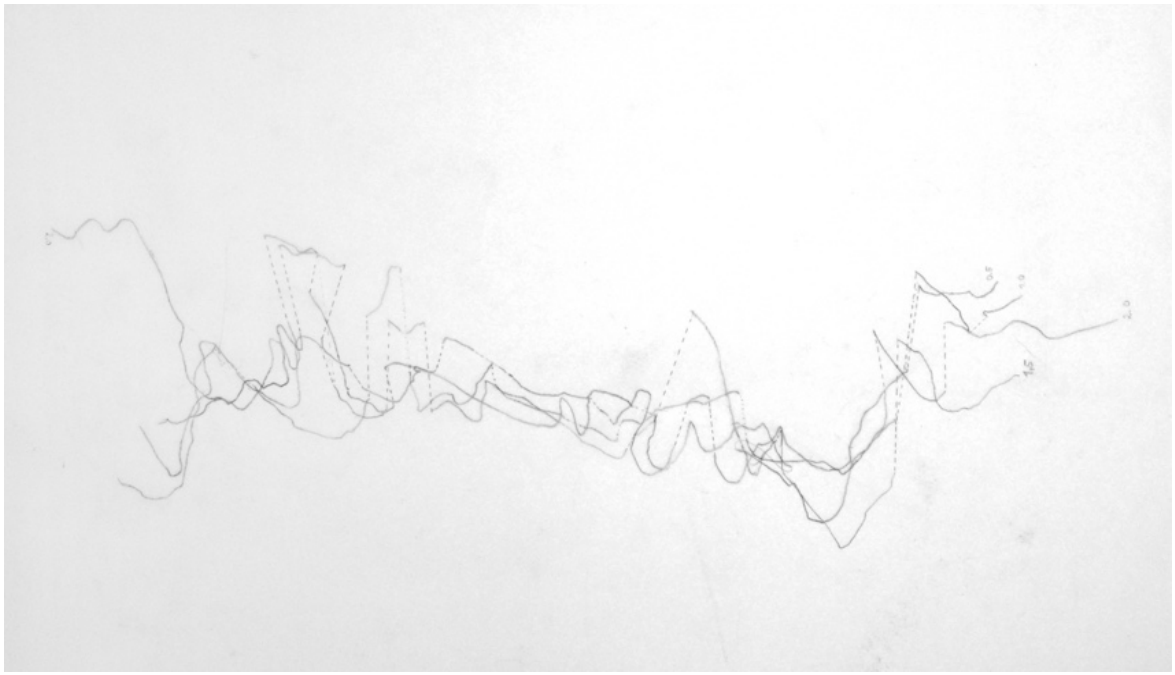


Figure 3. *Sections of the cloth with discontinuous locations that mark the hidden, the invisible and the overshadowed.*

On Experimentation

The project follows a research-by-design approach, where the development of the tool as well as the methods to employ the tool is carried out in a process of trying and failing. The reflection of the process drives the project further. In that sence experimentation takes place as a material practice and at the same time the project is paralleled with a theoretical discourse, where baroque concepts are tested in reflecting the work. The interaction of theory and practice sets the program for the experimentation.
The research sets its focus on designing methodologies for engaging with the larger topic of representation. The results critically reflect the method and allow to understand new aspects related to conventions of architectural drawings. The experiment is seen as the set up for the work to emerge.

SATURDAY, APRIL 13
SESSION 10
11:15 - 12:15

ROOM C - SALA DE VIDEOCONFERENCIAS

Inès Zaid

The measurement of spatal adaptability as a breeding ground for architectural experimentation

Author:

Research stage: Initial doctoral stage

Category: Extended abstract

The measurement of spatial adaptability as a breeding ground for architectural experimentation.

The interplay between rapid urbanisation and rampant uncertainty challenges cities globally to adapt to constantly evolving needs and pressures. In Europe, where the expansion of urban spaces currently surpasses population growth (1), adaptability has gained significant attention among designers, decision-makers and scholars.

Indeed, by addressing the built environment's obsolescence, adaptability addresses space and material scarcity whilst acknowledging the dynamic interaction between buildings and entities, aligning with the principles of the Open Building concept (2,3). Specifically, this study endeavours to centre the topic of architectural adaptability to its spatial dimension. Space is hereby "created by a constellation of natural and man-made objects [, where,] in the mind of the creator, user, or beholder; every architectural constellation establishes its spatial framework" (4) and is preserved as a resource.

The design-driven method of research, therefore, revolves around the "artefact" of the building to speculate, project, test, and imagine. Adaptability emphasises the role of time and spatial dimensions as actors of architectural creation. Thus, it extends the team of stakeholders beyond a selected team of individuals at a given moment and recognises that "a building is not something you finish; it is something you start", as aptly stated by Brand (4).

This vision of buildings reinforces the subjectification of architecture as an actor in its own right(5) that finds its theoretical roots in the Open Building movement(3), emphasising the collective involvement in the design process. The built environment becomes, therefore, a laboratory where urban and architectural forms are tested, ideas explored, and lessons learned. Indeed, architectural adaptability is the capacity to adapt to any change. It transforms the buildings into a design process as an exploratory quest where the building becomes both the tool, the entity and the recipient of new knowledge. It strives to transform the building into an experiment by constantly formulating wicked problems (5) that the building can sense and measure (6,7). Within this conceptual framework, stakeholders can, therefore, envision the physical, speculated, feasible, and expected building, to inform their design interventions in the way of experimentations (8)

The first phase of this research will engage the literature to define the meaning of adaptability and its interplay with experimentation. Using a systematic literature review, the material sourced will be selected in a reproducible fashion. This is important as the definition of adaptability can be very controversial, and although similar studies have been conducted (9–11), the specific spatiality of adaptability was never systematically reviewed. This will help support the identification of metrics and identify qualitative aspects of adaptability for driving design-driven methods of research that are backed by data in the context of architectural experimentation., resting the existing literature on the topic (12–14).

The second phase will address the overlapping qualitative elements of adaptability with the neu Bauhaus "beautiful, sustainable, together". These can find a direct parallel with a branch of the adaptability literature: evolutionary architecture. Derived from Darwin's theory of evolution, it draws parallels between design decisions and natural selection (2). This evolutionary matrix will constitute the backbone of this paper, to comprehend how evolving buildings constitute a compelling research by design method, even if, or *especially* because they are built. This creates the condition for stakeholders to converse, converge and diverge. In this setting, the building and the events (i.e., pandemic, floods, etc.) are all key players in the building's conception, creating data that can be measured and implemented towards a design agenda (7). Only one aspect of adaptability will be

selected for this study, focusing on the morphology and permeability of the building; it will demonstrate some scenarios in which architectural permeability is part of the wholesome experiment, which is the lifetime of an architectural structure.

This paper delves into research by design, shedding light on the continuum of design and stakeholder engagement, emphasising a passive yet impactful contribution to the design of buildings. Additionally, it explores methodologies for measuring this research by design through layered data sources, offering insights into the dynamic interplay of experimentation, stakeholder engagement, and architectural innovation.

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Reflection on the Topic:

In a world where actors and stakeholders within the build environment seek increasingly accurate certainty, through the ubiquity of big data, there is a stark misconception of what constitute a model, and the expression of a society ill at ease with the challenges ahead of us. By giving the illusion of accuracy, there is a nurturing of an anxiety towards the uncertainty that lies ahead of us. Beyond testing ideas and liberating architects from some or many constraints, experimentation is a great tool to foster and nurture positive methods of communication. This, in turn feeds the ground of experimentation as ideas and insight can flow in a more inclusive fashion and should be encouraged across disciplines.

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