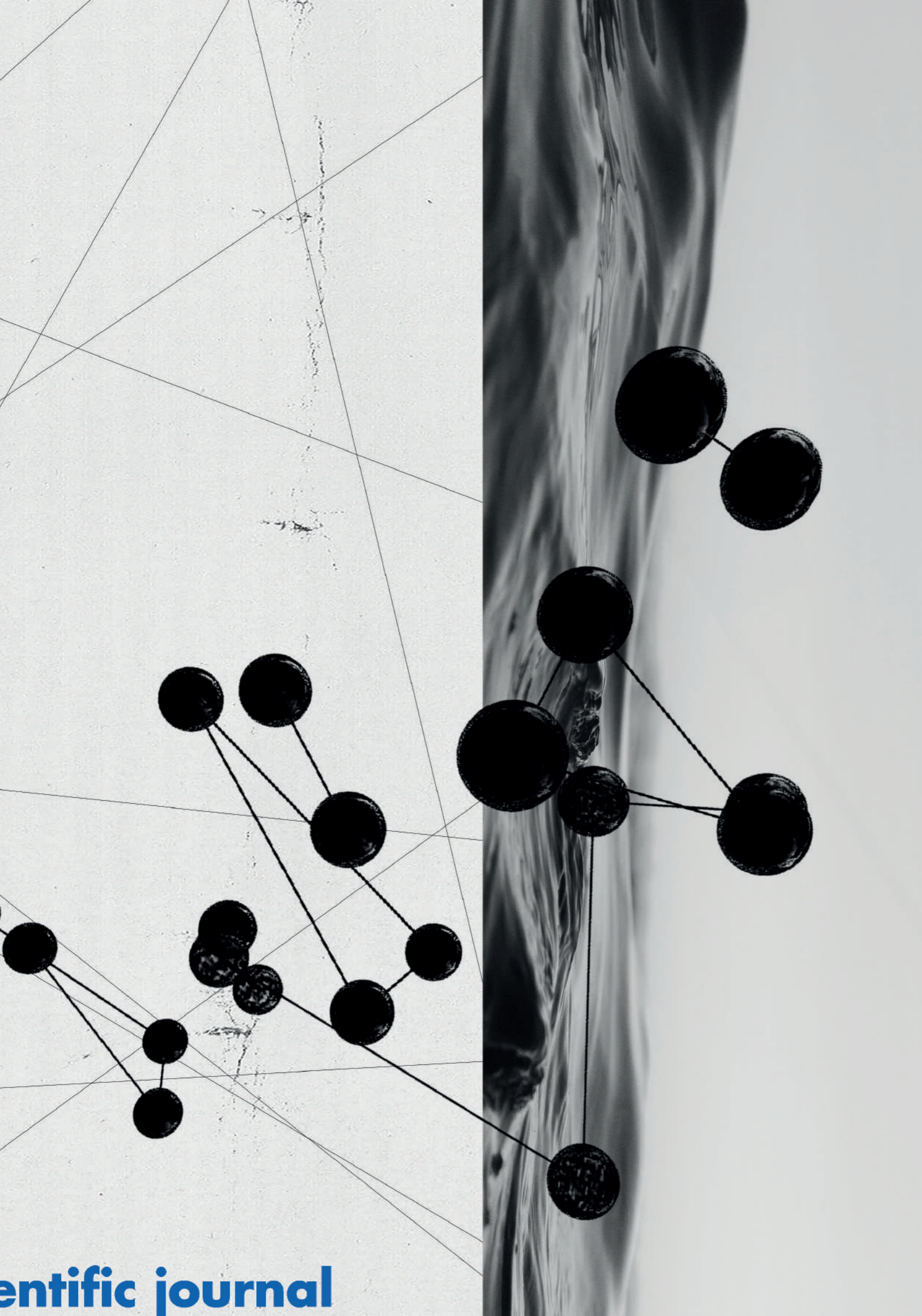


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UOU scientific journal

Issue #05/BORDERS

June 2023

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A new learning model for UOU

Letter from the director

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The *UNIVERSITY of Universities* project now involves 46 universities, and a total of 65 teachers participating from diverse backgrounds and interests, from their own cultures and different ways of understanding architecture.

That is, at the end of the day, one of the treasures of this learning project: our differences. Indeed, one can detect with precision those differentiations in the methodologies that each of us use in our teaching and, even more, in the expected results by the students.

We have just finished the third year of UOU. A long enough period of an intense collaboration exchanging workshops to get to know each other and to identify the use of these personal methodologies. It is true that the UOU model offers a lot of freedom to the teachers, since we are just asked to organize the best possible workshop that we can. Still, at the same time the UOU model is quite rigid when framed in the 2 weeks' duration of each workshop. They start with a 30 minutes' Presentation, followed by a 4 hours Crit in the first week, and concluding with another 3,5 hours Final Crit in the last week. It is also then when the presentation of the next workshop starts.

We also must remember that since we have more teachers offering workshops than weeks we have in the semester, the students have the possibility of choosing, and that is a second treasure of UOU. Our students are active members in their education right from the first day of the course, defining with their selections what kind of architects they want to be.

Once the student has chosen a workshop by a specific teacher, all of us follow the Crit system, where the student explains the project to the rest of the class. In this way the project becomes a starting point for a conversation between teachers and students, that constitutes a reflection on the theme and the architectural response. As the Socratic method, the teacher goes beyond the mechanical transmission of knowledge, to provoking critical thought. Still, as we mentioned at the beginning, each teacher always manages to leave his/her mark in this so systematic course. That is precisely the third treasure: how each of us help to improve the learning process. This paper will focus precisely on this, on the personal strategies that have appeared in parallel to the routine of the classroom based on the Crit system.

A GLASS ABOUT TO OVERFLOW

Everyday more and more of us realize how our dear schools of architecture, and our universities in general, are missing important opportunities for education. Without any doubt it is a consequence of the tedious process of self-validation, peer-validation and professional accreditations, where many teachers and institutions focus all their attention on the production of their own CVs forgetting its real nature, the origins that should embody them. Indeed, the pressure for accreditation is so high that it provokes multiple publications that feeds a structural endogamy and, as it is happening now for instance at Alicante University, the learning of the local language to a high C1 level responds just for the sake of getting extra points with a certificate that will assure a teaching position, missing in this way opportunities, for example, of finding critical cultural applications of the language in their teaching.

Another consequence of the individualism provoked by the accreditation stress is the disappearance of the director of the school of architecture as a the figure who ensures the relationship between taught modules for a real learning of architecture. On the contrary, we are arranged by compact academic calendars that do not keep space to have so many experiences, for instance, those field trips that have always been so essential in the education of the architect.

At this point, I would like to make use of my own experience when participating as a tutor in the PAT (*Plan Action Tutorial*) – a service for orientation to students at Alicante University. From my conversations with the students, I realize that they constantly ask for extracurricular activities. They, the students, are the ones who

intuitively demand for experiences that enrich their learning as future architects, as if they clearly realize that the modules offered by our schools of architecture do not cover their complete education. If it is true that on the one hand one feels proud of such students' concerns, on the other we should feel shame in calling those practices "extracurricular activities".

One of the very acclaimed activities by the students is to organize a series of **Jobsite Visits with Author**. These consist of learning directly from architects (usually young professionals who studied in our school of architecture) when visiting one of their works under construction. The students are organized in groups, and each of them is responsible to prepare a brochure of the project to be visited, including plans and sections, as well as other information about the authors. Usually it is a single house, and during the visit, the architects describe the process they followed to materialize a project that responded to the briefs and dreams of the clients. The explanation includes issues on economy, materials and building construction, law, aesthetics, sustainability and energy, structure, installations... as well as how to deal with the clients, who sometimes are even present in the visit. In that way our students have also a first contact with clients (Fig.1). The visit concludes inviting the architects for lunch, a very important moment since it is then when the students become more participative in a real dialogue with the architects. All issues explained before appear again but this time in a different way, more reflective, and not conceived as isolated facts but stablishing relationships between them (Fig.2). Without any doubt the students open our eyes on deficiencies in the architecture education that our schools are offering, helping us to imagine new extra curriculum practices to complete it.



Fig.1 – Jobsite visit with LA ERRERÍA office / single house in Novelda (January 2023).



Fig.2 – Conversation with ABEZ design in Orihuela (February 2023).

The series *Jobsite Visits with Author* is a good example of a methodology that relates and puts together all the modules taught in the school of architecture.

IDENTIFICATION OF METHODOLOGIES

With this perspective in mind, we have been detecting different the methodologies derived from the UOU workshops, and all of them can be considered as extracurricular activities as well:

• The Exhibition in the City

The workshop *EPHEMERAL ARCHITECTURE: URBAN FOLLIES*, organized by Sofia Aleixo and João Santa Rita (Évora University, Portugal) last semester, consisted of the interpretation of the Public Place and Local Heritage, designing small ephemeral architectural structure for the European Capital of Culture 2027.

After the 2-week online workshop, all the students organized in international groups continued working for an exhibition of their projects



Fig.3 – Exhibition in the Church of Antigo Convento do Salvador (April 2023).

in the centre of Évora (Fig.3). The experience was so exciting that even one of the students of Alicante went to stay there and learn from the experience of mounting an exhibition in a historical building, as well as explaining their work to society.

Similarly, the workshop *NEW VISION OF PERFECT PLACE TO GIVE A BIRTH*, directed by Marcin Kolakowski and Franka Jagielak (University of Lincoln, UK & Pedagogical University Cracow, Poland), was presented with the possibility to participate in the **Exhibition and Research Seminar** which will be organised at the University of Lincoln.

It was really fascinating in their methodology to learn how they introduced an exercise for the students to interview their mothers, asking for the moment of giving birth to them. Without any doubt a stimulant conversation with one's mother to generate an "idealistic vision of place which do not exist".

In the same way, last semester finished with the workshop *ARCHITECTURE, CREATIVITY AND DEVELOPMENT IN THE DAWN OF ARTIFICIAL INTELLIGENCE*, proposed by Sinan Mihelčič, from the Faculty of Architecture of the University of Ljubljana (Slovenia). Based on the belief that as the near future of architecture and urbanism will be greatly influenced by AI we first need to know what kind of tools will be available and how

to use them. This thought is very attractive to our students, eager to learn new ways of production. And it shows a real contrast with other teachers of architecture design who keep serious doubts and fears of the intelligence demonstrated by machines, even forbidding its use in class since it questions the role of the architect. The results obtained of Sinan's workshop will also be part of an **Exhibition on AI**.



Fig.4 – How to eat a Marinera, an edible lecture on Skeleton in Architecture (Murcia, November 2022).

• The field trip

Our partners from Umeå University (Sweden), Maria Luna Nobile and Richard Conway, visited Alicante University with their students last semester. In this way, the visit was more than a conventional field trip where the students are visitors. They also shared our classes and lectures, transforming the classroom in a multicultural context. Actually, the lectures changed their format, and when being asked to prepare a talk on the "Skeleton in Architecture", we organized it at lunch time, with local food that requires the knowledge of some principles of structure and construction to be able to be prepared and eaten.

Basically, it was a fun way of enjoying tasting a *marinera*, *salchicha seca*, *pastel de carne* and *paparajote* while learning about 'skeletons' directly from their hands (Fig.4).



Fig.5 – Capuchin Convent. Suspending time... by vmsa architects, UOU Reflections Series, Issue #01, Alicante University, (December 2022).

• The UOU Reflection series

We all remember special moments in our education, those that have transformed our way of thinking, coming to change our lives. I want to share a very special one: when I finished my architecture degree in Valencia, I went to study in London. There I lived with doctoral students from all over the world, in a collaborative environment, sharing ideas from different disciplines and cultures. Thus, I participated in the series of PORT TALKS - conferences that encouraged us to contrast our theses with the rest of the community, while the audience had a glass of Port wine. That small gesture opened new windows of opportunity, establishing dialogues with different knowledge.

Thirty years later, at UNIVERSITY of Universities we are applying that same collaborative attitude and intercultural education, in which all - professors and students - learn from differences. In fact, we borrowed the title from PORT TALKS for our Thursday night online lecture series during the height of the COVID-19 pandemic. Being online, these only lasted a maximum of 15 minutes, just long enough for the audience to enjoy

their drinks. Obviously, under these conditions, the topic to be discussed had to be very precise: a reflection originating from a project.

The conference given by Sofia Aleixo together with Víctor Mestre (vmsa arquitectos) is included in a book, the first of the UOU Reflections series: CAPUCHINS CONVENT. SUSPENDING TIME... Near Lisbon, in Alferrara, one finds the ruins of the Capuchin Convent, founded in the 16th century. When the architects were commissioned to restore it, they questioned how to incorporate the passage of time into the restoration. Or, put another way, how not to lose it. For this they came to consider preventing their work from being finalised. It was essential to them that their contribution became part of the process of time, perhaps waiting for future generations to find the necessary certainties to finish it.

The resulting project consists of wonderful falsework and wooden trusses that, in addition to providing security to the construction, generate a landscape in which the concept of time is always present. This careful and small publication, with 79 colour pages, DIN A5 format and soft cover, with a foreword by Joaquín Alvado Bañón (Alicante University), leaves us thinking: How is it possible that architects with so much experience and prestige still manage to maintain those doubts of youth? Those are the doubts that allow us to continue learning (Fig.5).

• BIP

We have also discovered during the last semester that the innovative Blended Intensive Programme of Erasmus+ is a perfect short mobility programme combining hybrid and classroom learning.

Along with our colleagues Jane Coulon, Christine Fontaine and Arturo Romero Carnicero,

from Ecole Nationale Supérieure d'Architecture La Réunion (France), Université Catholique de Louvain / UC Louvain (Belgium) and Karlsruher Institut für Technologie / KIT (Germany) respectively, we organized the BIP under the title "Rural Areas facing climate change".

A total of 43 students and 8 teachers met in the Cirque de Mafate Caldera in La Réunion island last Easter, with the aims to exchange views about the tropical and continental territories facing the challenges of climate changes and realities of new rurality. It was a unique opportunity to reflect on the problems of water management in all its forms, as well as on food and energy autonomy, not only by experiencing it by ourselves for a week but also realizing the differences with the other schools of architecture when facing the project. That for sure depends on the different roles for architects in every European country.

ARCHITECTURE MAFATE

We believe that there is no architecture in Mafate, but there are important people who 'validate' the constructions present there.

For example, the building for the chapel could have any other function, even to be a construction for keeping animals. What makes it to be a chapel is the presence of the priest and the religious elements. In the same way of thinking we could say that the postman of Mafate embodies the Post Office. These are our "Super Heroes" who embody architectural powers, helping to create a community:

- The Priest
- The Teacher
- The Postman
- The Nurse
- The Gravedigger
- The Helicopter Pilot

The challenge of our students was to give an architectural present to each of them:

- To the Priest: A portable chapel, to be able to take it with him when visiting old parishioner who cannot walk to the chapel anymore.

- To the Teacher: A map of Roche Plate done by her students, with more important information for them than the one given by an "orthodox" map.

- To the Postman: A post-box for him, placed in La Brèche, to receive there all the notes by visitors who want to communicate with him.

- The Nurse: In the absence of a pharmacy, what about to mark those plants with medical properties? There are so many in Mafate, that we have started the job. The nurse is nature itself.

- The Gravedigger: We planted for him two trees by the altar of the cemetery. In just few years, he will enjoy there a fresh shadow and shade.

- The Helicopter Pilot: Instead of marking the small heliports with loose stones painted in white colour, what about with we organize them creating a stone bench? So exciting to wait for the needed helicopter!

Now it would be fantastic to receive feedback from these Superheroes to be able to help our students to advance with our reflections.

QUESTIONNAIRE

- Name and job:
- What do admire the most of Mafate?
- If you could commission us a job as architects to improve your work, what would you like?
- What do you think about our present? Do you consider it to be Architecture?
- Last, we would like to continue collaborating with you. Do you have any suggestion?



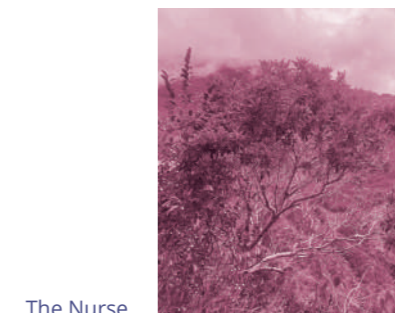
The Priest



The Teacher



The Postman



The Nurse



The Gravedigger



The Helicopter Pilot



• **Summer course ProtoLAB**

One still remembers with emotion the online class with Mauricio Morales Beltrán and Jerzy Łątka last year, when the latter showed us life, with the camera of a mobile 'phone, the works in progress to receive the Ukrainian war refugees in Wrocław. Done by his students, and following the instructions of Shigeru Ban, there were cardboard structures with textiles that dignify with privacy the huge space of a railway station ready to accommodate desperate families. These two colleagues, from Yaşar Üniversitesi (Türkiye) and Wrocław University of Science and Technology (Poland) respectively, are fascinated giving the students the opportunity to design and build directly by themselves. *ProtoLAB* is the name of the annual workshop that they

organize: it takes 2 weeks, divided into an online design week and onsite manufacturing process organized in Wrocław.

Learning from their methodology of putting together design and production, we have extended it by creating *ProtoLAB UA*, and encouraging the rest of the UOU partners to do the same (Fig.6). In this way the online part will be organized by the different schools, although working together, and for the manufacturing process all of us will join at the old and incredible tram depot in Poland.

This "extracurricular activity" is considered so important by our students of Alicante that they have created with their own funding the *PAT scholarship* to travel to Wrocław.

• **UOU Scientific Journal**

Without any doubt our journal is the result of another precious methodology derived from the UOU workshops. Each issue is edited by a different colleague and focuses on the personal research applied in the classroom. It is, therefore, also considered as an extracurricular activity that gives voice to students by encouraging them to write, show their work and have a first publication. This is the case, for example, of the present issue #5, *BORDERS*, edited by Mike Devereux (University of the West of England / UWE Bristol, UK), since it contains an article by our former student Verónica Amorós Botía (Alicante University) (Fig.7) as well as the ATLAS section of short presentations of student work, and this time includes a student essay by Matt Reed (University of Brighton).

UA CURSOS D'ESTIU CURSOS DE VERANO **RAFAEL ALTAMIRA** Campus de Sant Vicent del Raspeig

PROTOLAB UA
7 al 14 de julio de 2023

Dirección: Javier Sánchez Merina.
Créditos: 24 horas / 2,4 créditos ECTS.
Precio: estudiantes, PDI/PAS UA, alumniUA y personas desempleadas: 70 €. General: 105€.
Curso online.

ProtoLAB UA se trata de un Curso de Verano online de la UA, donde nuestros estudiantes dan respuestas arquitectónicas sobre emergencias actuales. Tiene un marcado carácter internacional, al estar realizado en paralelo con otras escuelas de arquitectura. De hecho, al final del Curso de Verano ProtoLAB UA, nuestros estudiantes si lo desean, podrán inscribirse en otro curso de verano con el mismo nombre, aunque entonces será presencial, en Polonia, organizado por la Universidad de Wrocław, donde construirán las propuestas proyectadas en ProtoLAB UA.

Más información en la web de ProtoLAB Wrocław es: <http://protolab.archi>.

<https://web.ua.es/es/verano/>
<https://web.ua.es/es/verano/2023/campus/protolab-ua.html>



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Fig.6 - Poster of the Summer Course *ProtoLAB* (Alicante University, July 2023).

AN EXPERIENTIAL PROPOSAL FOR THE NEXT COURSE, 2023-24

In the last months, my colleague Joaquín Alvaro and I have been collaborating with other universities. We have travelled to different schools of architecture for teaching, workshops, lectures, and tutorials. All those experiences have been short in time but very intense. With those students, apart from having classes, we shared lunches, walks... time, where all of us spoke a lot on architecture and their education. When coming back to Alicante, our first comments about the education of the architect were always the same: how important it is to share moments of coexistence with our students! The point that sometimes we have managed to get to know students from other schools even better than ours is something that makes us reflect. It is essential to introduce adjustments for our future classes by asking how can

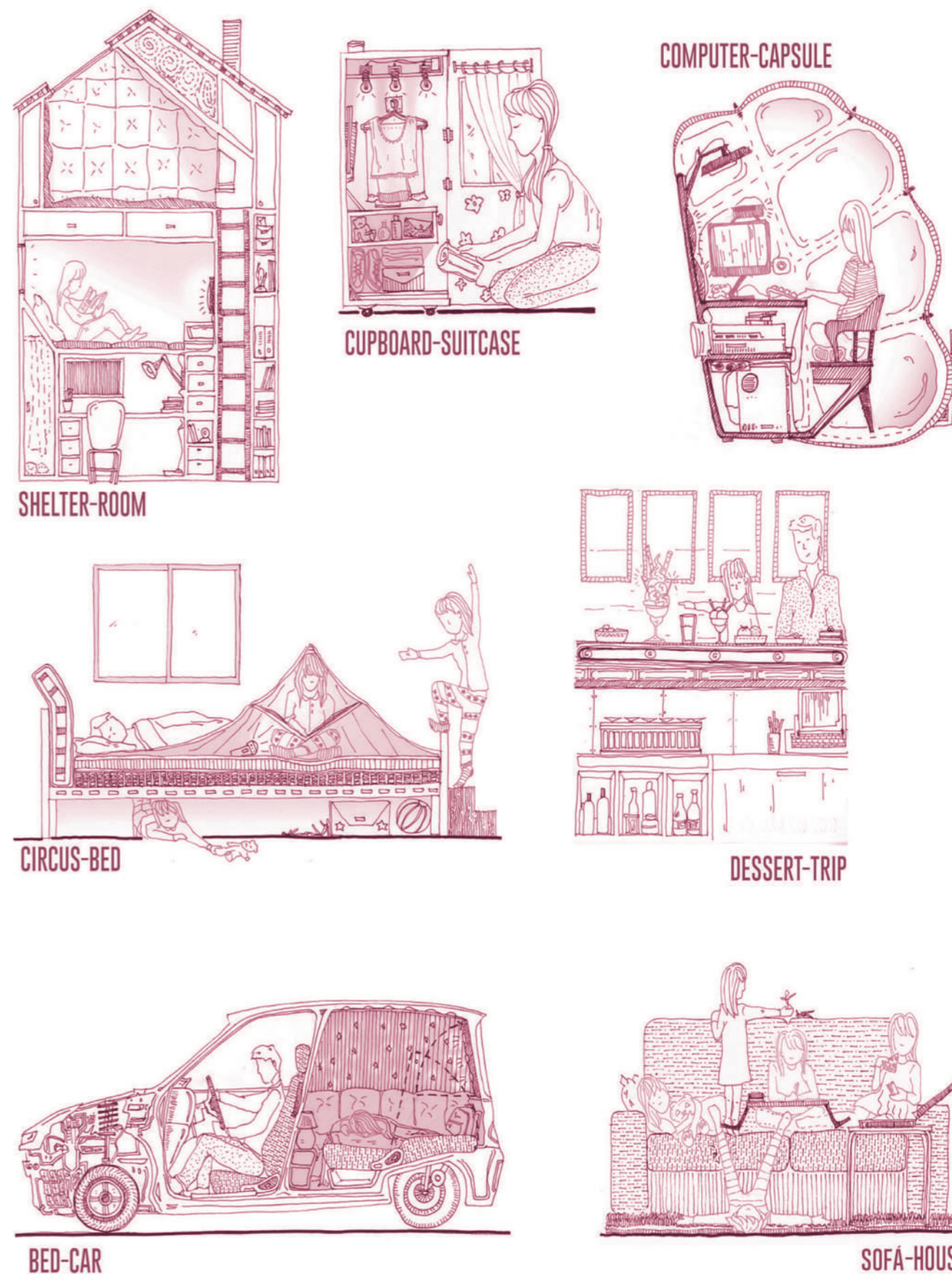


Fig.3 - Carmen's experiences-series of drawings. Own elaboration.

Fig.7 - Publication *UOU*s# 5 with an extract from the Final Project by Verónica Amorós Botía (Alicante University, July 2023).

we add extra-curriculum activities, and even more: We should question that name “extra”, and to make them part of the course. Our challenge is to incorporate the experiential character of the face to face into the possibilities of the online. Apart from continuing with all the methodologies listed above, this is our proposal for learning architecture design next academic year at Alicante UOU, and to be shared with the rest of our international colleagues at UOU, so:

At the end of every workshop there will be a week for public engagement in which students exhibit (in many possible ways) their outputs from the workshop just completed. In this way it breaks up the rhythm enforced by starting one workshop immediately after another and allows students to reflect on their work and make it exhibitable. It has the potential to make UOU ‘external’ (public) and ‘transferable’ (moving between cities). UOU was born out of covid; so, by necessity it was one hundred percent online. Without losing the benefit that online learning, of allowing us to be far-reaching, the ‘week of public engagement’ brings a welcome evolutionary step.

However, there are some logistical issues. Our many universities teach to different patterns: weekly and by semester and by pedagogical cultural. For instance, our colleague Mike Devereux comments that at UWE their students do approximately 5 modules at a time but they last all year (not just one semester). Their model means they are often having assessment during the year (not just at the end) that might well distract them from organising a public event. But they - Mike confirms - can be flexible, the important thing for them is to know in advance how they might operate UOU and integrate it to their pattern and they can then successfully mould / stitch the teaching together.

Under such a positive attitude for international collaboration, this is the proposed programme:

1st SEMESTER 2023-24
Classes: Friday mornings
9am-1pm / Total ws: 4

Students will do 4 x fortnight-long online workshops during the first semester, organized in a series of:

- 2-week UOU workshop on Fridays.
(Online, from location chosen by each student)
- Followed by an extra week, where the students will prepare an exhibition to share the work with society.
(Face to face in the beach, the market, the castle, the museum)

Calendar sheet UOU 1s 23/24 - Fig.8.

2nd SEMESTER 2023-24
Classes: Tuesday + Friday
mornings 9am-1pm / Total ws: 5

Students will do 5 x fortnight-long online workshops during the second semester, organized in a series of:

- 2-week UOU workshops on Fridays.
(Online, from location chosen by each student)
- Micro-field trip to a nearby destination.
Every Tuesday for an active reflection to improve the ws.
- Followed by an extra week, where the students will prepare an Exhibition to share the work with society.
(Face to face, the cultural centre, the esplanade, the train station, the island)

NEW OPPORTUNITIES FOR INTERNATIONAL COLLABORATIONS

This adjustment brings these kinds of cases:

1. Each of the workshops can organize a parallel exhibition in your own city. The ‘public engagement week’ can be done in the home city or act as an opportunity to travel and display work in one of the UOU cities. Such a public display would disseminate the good work we all do with our students (and that the students do) and it would ensure the UOU has public impact.
2. One can propose a field trip with the students to Alicante during that extra week, to celebrate the exhibition of you own workshop.
3. Every UOU colleague could come to Alicante during that extra week as an ERASMUS teacher, for his/her exhibition.

Sofia already did it with her workshop in Évora, involving students from Alicante. And both Marcin, Franca and Sinan are already working in a similar way with their own workshops. Luna and Richard managed to integrate the field trip as part of a UOU experiential practice.

Their involvement is fundamental for all of us, something that makes us look forward to starting the new year. At last, a hybrid equilibrium between the best of the international online model and the experiential face-to-face one.

UOU is an excellent opportunity for students and staff, moving it to a next stage is exciting.



UNIVERSITYofUniversities / workshops ARCH+ARTS 1s 2023/24

Week	WORKSHOPS	PROF / UNIV	AIMS	METHOD	TECHNIQUE	STRENGTHS	TEACHING DAY AND HOURS
1	15 Sep	INTRODUCTION	UOU professors				Friday 12:30-13:30 CET
2	18 Sep - 22 Sep	WS 1A / ARCH:					Fridays 09:30-13:30 CET
3	25 Sep - 29 Sep						
4	06 Oct						
5	09 Oct - 13 Oct	WS 2A / ARCH:					Fridays 09:30-13:30 CET
6	16 Oct - 20 Oct						
7	27 Oct						
8	30 Oct - 03 Nov	WS 3A / ARCH:					Fridays 09:30-13:30 CET
9	06 Nov - 10 Nov						
10	17 Nov						
11	20 Nov - 24 Nov	WS 4A / ARCH:					Fridays 09:30-13:30 CET
12	27 Nov - 01 Dic						
14	15 Dic						
15	22 Dic	PRESENTATIONS UOU					

Fig.8 – Ready to be filled with activity for 23/24 - Calendar sheet of workshops UOU 1s 2023/24. Students will choose their workshops from a catalogue made of all the offers.

EDITORIAL

BORDERS

This is the fifth edition of the UOU Journal. This time our theme is **BORDERS**

The C-19 pandemic has subsided and the world can now sit back and take time to reflect upon just how quickly a virus can spread with scant regard to international borders. The events of the last three years have brought home to us the wisdom in the words of the poet John Donne (1624) who wrote:

*'No man is an island,
Entire of itself;
Every man is a piece of the continent,
A part of the main.'*

So, whilst we might divide up the spaces we inhabit, those spaces (both tangible and intangible) are always part of something bigger. And, in the disciplines of architecture and urbanism nothing is more true. Our ideas, our approaches to thinking about space and place and our contributions to contemporary discourse in these fields needs to be, as Donne put it, a 'part of the main': a shared conversation and resource; shared across borders, and certainly not constrained by borders.

As designers of places, we are inherently concerned with time and space. The concept of separating space has been with us ever since humans settled down, laid out cities and built. We define those places we design by scale and the key concepts behind the separation of space can be easily transferred between national, urban and building scales.

At their most strategic level, the concept and theories of this spatial separation are international in scale from the fluid, outward looking, ancient Greek idea of οἰκουμένη (ecumene) - signifying the moveable edge of the known world - to the fixed inwardly looking constructions of the ancient Roman

'limes' (limit) - marking the edge of the Empire and, indeed, the edge of the house (lintel). But also, they are present at the urban scale. City walls and gates (intra and extra muros), contemporary ring roads (Périphérique, Ringstraße) and green belts (suburban and metropolitan) divide the city up according to the forces acting upon the contemporary production of space. And of course, at the building scale, as we cross the symbolic 'threshold' we enter a series of interior spaces and rooms (fixed or fluid) that have been planned and laid out using separation as a key design tool. These dividing mechanisms have agency. They affect how we read, experience and use space.

But, borders are also a record of how space changes over time. Borders, frontiers and thresholds and the divisions, and separations they imply, evolve over time, gaining and losing spatial agency as time progresses. Yet their traces might remain, still playing a curious role in the built and inhabited realm. Places of heritage, history, nostalgia and influence.

The multi-disciplinary literature, from fine arts to social sciences and on to pure sciences that concerns itself with the subject of borders and frontiers reveals and asks questions around ideas of: entry, exit, control, defence, binary, the known and unknown, exclusion, intrusion, contact, membership, cultural belonging, physical presence, precision, transformation, exchange, peripherality, porosity, marginality, temporality and dynamism to name but a few.

And whilst we can look at and consider 'borders', 'thresholds' and the like as physical elements in the creative process that make up places across many scales we can just as equally reflect on them as intangible contributors towards a *genus loci* and a new reading of space. What is more, it is not now just a question of tangible and intangible. Today, and in the near future, we face the simultaneous emergence and merging of new borders between our world and

another parallel 'artificial' one (whatever we mean by 'artificial') in the form of augmented reality (AR) and Artificial Intelligence (AI). All of which makes for a rich seam of discussion to be mined in this edition.

Traditionally, borders could be seen as lines on a plan (dividing up countries, regions, cities and buildings). But that is too simplistic. Many of the narratives around 'borders' present us with intangible notions and concepts that are very difficult to map. Exactly because traditional borders and frontiers are often presented as a *fait accompli* in a simple Cartesian representation of space, alternative ways of looking at them are now required. And, that is why Giudice & Giubilaro (2015) argue that the reducing of the border to a single line on a map hides its complexity and that there is a need to understand the border to understand the place. As Richter and Peitgen put it: "The fascination of boundaries lies in their ambivalent role of dividing and connecting at the same time." (1985, p.571-572). So, to capture that fascination and to address this shortcoming, visual artists, poets, novelists, architects, urbanists and many others engaged in considering the places and spaces we build have more recently been provoked into a response far more nuanced and sophisticated than simple mapping.

In this edition we are tasked with considering the questions that surround the concept of a 'border' and how we address it in architecture and urbanism. That is why the call for this edition invited contributors to consider this idea of the border widely: tangibly, intangibly, large scale, small scale and as conceptually and intellectually as appropriate, bringing new thinking to the fields of architecture and urbanism. And, the response has been appropriately far reaching and far thinking.

To present that response for this edition the contributions have been divided into four sections although, of course, these overlap to a large extent.

Devereux, Michael¹

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SECTION 1 /

'OBSERVING THE BORDER'

we have a wide range of submissions that pick up on some of the main suggestions of the call.

In **'Learning from Gevgelija'** we start our investigation of the border at the wide international scale as Ioannis Orlis, Evelyn Gavrilou, and Aspasia Kouzoupi from the University of Thessaly draw parallels between **'Learning from Las Vegas'** the 1972 seminal work of Robert Venturi, Denise Scott Brown and Steven Izenour and the present Greece-North Macedonia border condition. Through a method that involves immersing themselves in the ritual of border crossing and activities either side they observe the **'farmer-gambler'** as a product of the unique conditions either side of the line.

This idea of identifying a moment of spatial change is handled in a more scientific manner by Simona Dolana (University of Ion Mincu) in her paper **'The Administrative-Territorial Boundaries Available for a Multiscalar Analysis of EU Port Cities'** that suggests a new methodological approach to defining the administrative influence of the border of port cities that could positively impact on relationships with surrounding areas, new challenges and the way in which stakeholders are impacted by urban policy.

Staying at the urban scale Arturo Romero Carnicero (Karlsruhe I.T) in **'Exploring Metropolitan Borderscapes'** asks how 'border' cities like Basel (CH-D-F) employ design to enhance exportability of public space transnationally, concluding that much can be done without losing identity and that the lessons might well be applicable to cities elsewhere that have internal rather than international borders.

Still in section 1, Mónica Dazzini Langdon takes us out of Europe to study the border in Ecuador. In **'Crossing gender and biogeography to rethink the**

habitat of a fluvial community in Ecuador' she describes her work in decoding the way in which gender creates spatial borders in the way space is occupied in the wetlands of Ecuador explaining how housing and spatial design are closely linked to economic activity and thereby gender.

Finally in section 1, but still on the theme of water – land borders, Doina Carter's paper on **'Fluid boundaries: architectural tool kits for water-lands'** uses the UOU workshop idea as a basis for seeing how communities living on these borders are impacted by changes in weather and how groups of architecture students responded to the challenge of conceiving ways to alleviate problems associated with this. Doina's conclusion that group working produces better results is a testimony to the UOU workshop model.



Poste Douanes F-B.



Km0.

SECTION 2 /

'THE URBAN BORDER'

brings us to a slightly more detailed scale and three articles that look in some detail at the (unintended) implications of bordering a space – the creation of residual (marginal) spaces

'Borders. The architecture of street' by Martina D'Alessandro (University of Bologna) explains to us how using an understanding of the void as a concept guides us towards a better grasp of residual spaces. And this, she argues can in turn help us see the street as having architectural value and lead to new design solutions

In a very relevant paper on contemporary borders between cultures and identity in European cities, **'The secret life of urban margins'** by Maria Fierro (University of Naples, Federico II), examines a specific community – the Rom(a) – and ideas of settlement and encampment at the edge. The author concludes by suggesting the opportunity of an architecture for unforeseen that responds to the differing needs of such border communities.

Staying with a focus on the border as a place of simultaneous 'settlement' and 'movement' we turn our attention to Paris in Stefano Mastromarino's and Camillo Boano's (Politecnico di Torino and UCL London) piece on **'Makeshift borders in Porte de la Chapelle'**. They identify how infrastructure – in this case the Périphérique ring road - generates thresholds and encounters, is the gathering place for refugees and displaced persons, and then is the focus of weak policy that serves to keep alive other more affluent parts of a city.



Tryweryn.



Roman Limes Hadrians Wall.

SECTION 3 /

'THE BORDER AND THE BUILDING'

turns towards the building scale and responses to borders and barriers that impact one way or another on the way we respond.

'Border conditions of transitional housing: centering the lived experience of residents' by Donagh Horgan (Erasmus University Rotterdam) and Sonja Oliveira (University of Strathclyde) investigates the frontier of housing uncertainty in the UK as a place of experimentation with new ideas of modern methods of construction. Shortcomings in such an approach are revealed around the balance to be struck between ease of assembly and occupiers' comfort.

Staying on the way in which housing can be considered as a border space for wider cultural and social issues to confront each other, Verónica Amorós (University of Alicante), in a beautifully illustrated paper, **'Enabling: On the dispersion of the nuclear family model. New parameters of the boundary of living'** writes about the need to reconsider spatial divisions in housing design as the dominance of the traditional nuclear family is challenged. Property limits and demarcations re questioned and different potential approaches are suggested.

Sensory constraints as a border is the subject of the paper by Glyn Everett and Emily Annakin (University of the West of England). In their contribution **'How can the architectural design of public buildings be improved for Visually Impaired people?'** they highlight the border that exists for visually impaired and other disabled people in the built environment and especially in public buildings. Their findings suggest how design can help but that the lived experience of those on this border is paramount in finding a successful solution.

Poste Douanes F-B.
'Gare Maritime' - a memory of the frontier.
France-UK Border.



SECTION 4 /

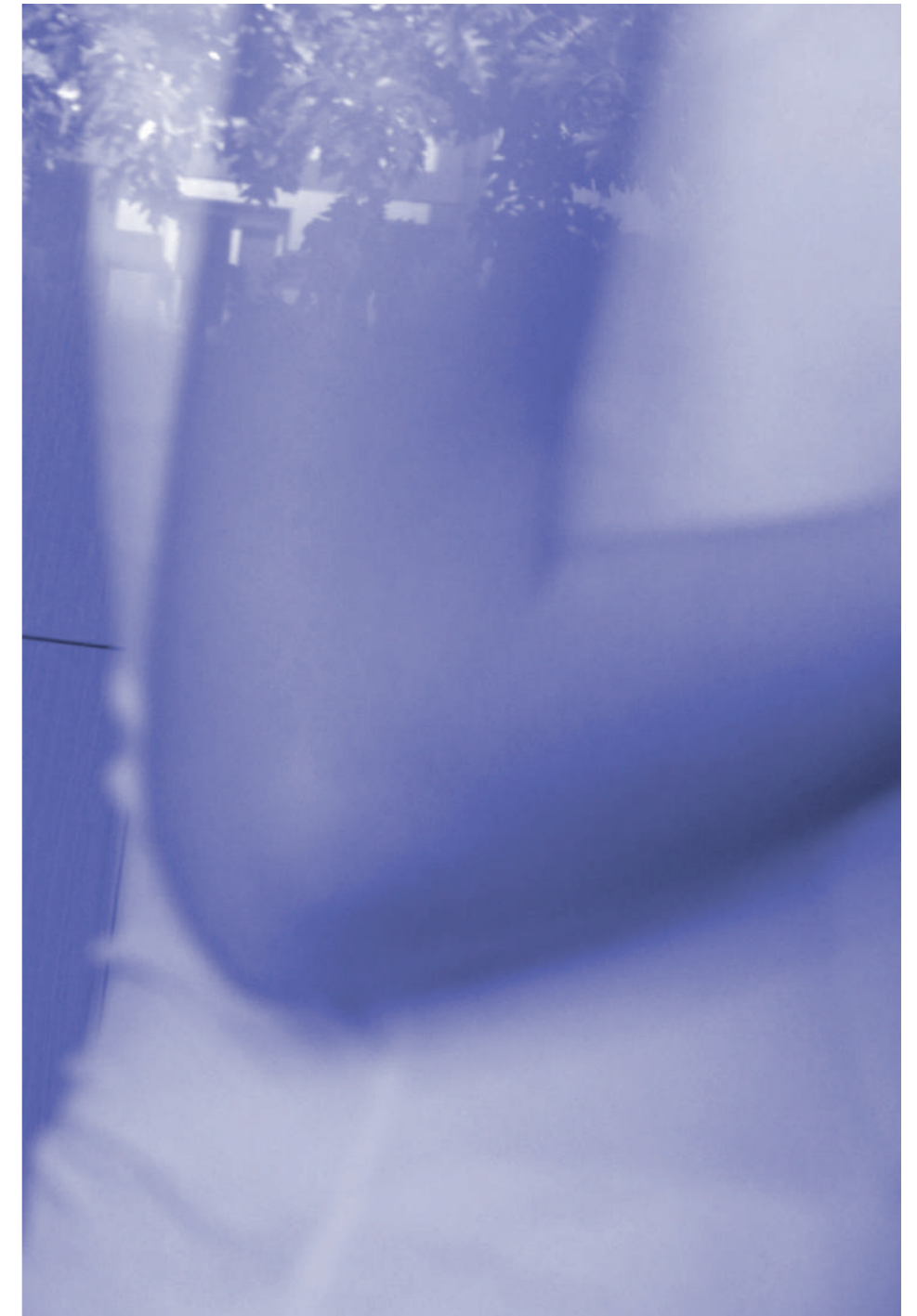
'THE BORDER AS IMAGE AND THOUGHT'

takes us on a journey into new ways of looking at the border. We have three articles here, but I also draw your attention to the essay by Matt Reed elsewhere in this edition that, in an eloquent and thought provoking way, explores some of the contemporary debates surrounding AR.

In her article **'IRL Re-engaging the physical within liminal landscapes'** Sarah Stevens (University of Brighton) explores the liminal space between the digital and physical. She identifies a 'new' world where time can be reversed and truth re-written. Working with students, Sarah has explored this territory, asking if we can create architecture that blur these boundaries. She emphasises the need for designers to be storytellers and concludes there is potential for this new liminal world to contribute to more sustainable future.

Artificial Intelligence is the subject of David Serra Navarro's (University of Girona) paper, **'Cartographies and limits through the accumulation of imaginaries.'** The author looks at questions around the use of AI technology from an artistic point of view. He draws together notions of borders from open source materials and with the intervention of AI presents a series of resulting images. He reminds us of the implications for research in architecture and urbanism of this new tool.

Memory and time transcend a border between a space we now occupy and a previous one. Tülay Zivali (Samsun University, Turkey) explores a case from the Balkans in the paper: **'A Battle of Memory and Image: War Tourism as Reconstruction Strategy in Sarajevo.'** The city works with this intangible border and uses it as a tourist attraction. The memory of war and the passage of time are such that they now serve as an economic driver for the town. They



Crossing at the Border.

now create a new image for the future, crossing a temporal border from past to present.

This rich variety of interpretations of the border as a condition, tangible and intangible, presented by all contributors has been exciting to read and thought provoking to reflect upon. My thanks to them all.

(All images M. Devereux).

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Limits, Borders, Boundaries and Edges

A conversation between
the Editorial Committee members

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MD With settlement comes a limitation, a border, an edge that demarcates space and place. Since Uruk, Memphis, Harappa and Liangzhu such edges define cultures and their consequent urban patterns, the like of which are still our concern today wherever we are. They express a sense of belonging that manifests itself physically. At its largest scale, the Great Wall of China, but also in the city wall and in the house – the very word ‘limit’ signifies at once the extremity of a territory but also the stone over a doorway - a lintel. Urbanism and architecture are beholden to the limit, the feature that separates and defines one space from another. Without the limit, the border or the edge would there be architecture? Would there be urbanism? The boundary defies scale. For Pyramus and Thisbe the wall was both the limit of the room and the edge of their world. A physical threshold that separated and divided their lives. But, as they knew, such a barrier was not just tangible, it was, at the same time, intangible. And so, hence the importance of the border. It is a tool through which architects and urbanists shape space, and importantly the way we feel in that space. What the parents of Pyramus and Thisbe used to divide we must use as a tool to celebrate difference, to learn and to unite. Architecture and urbanism as disciplines and in the way they are taught in our universities have to do that.

SA It is interesting that you, Mike, call on a Babylonian love story to address the topic of this UOU scientific journal on Borders...after all it was a question of communication between two people enclosed in each one's space, and therefore, presenting the space as the physical limit of the soul, the walls as the edge of love, or, in another words, architecture as limiting the free expression of being. If in architecture the concept of Temporality, perceived as “the condition of lasting for short period of time” is in opposition of Permanency, perceived as durable, immutable, and therefore stable, then it may be assumed that architectural limits are fixed, and therefore independent of or unaffected by time. However, as Pyramus and Thisbe have demonstrated, this non-temporal existence falls apart when love come to play. The indisputable relevance of this UOUsj number in terms of discovering new frontiers, new borders in innovative architectural territories, seems somehow to induce the link to the next UoU sj on Temporality, as borders may not be indefinite, triggering the merging of different realities and producing new and unknown lands, such as Peter Pan created the Neverland. And is this not an exciting image when teaching architecture? When establishing briefs with challenges that also promote positive thought, responsibility, mutual help and friendship?

JA The edge (An experiment)

As Mike suggests, we must use architecture as a tool to celebrate difference, to learn and to unite. My proposal for the way to teach in our universities is related to experiment the edge.

Despite the proliferation of Institutions such as Universities, architectural Associations and large scale exhibitions can't, on their own, define the legitimacy of contemporary architecture today. Architecture nowadays, is a constellation of public spheres as narratives of autonomous subjectivity. Working on the architecture edge enact the multidisciplinary direction through which architectural practices and processes come most alive. In the studios, a constitutive map of contemporary knowledge circuits: art, theory, science, culture, ecology, and politics collides. Urban systems and meta-territory experience on the edge open to freedom openness and changes.

As Rem Koolhaas wrote in his Manifesto "Content":

"Architecture is a fuzzy amalgamation of ancient knowledge and contemporary practice, an awkward way to look at the world and an inadequate medium to operate on it... Architecture is too slow. Yet, the word "architecture" is still pronounced with certain reverence (outside of the profession). It embodies the lingering hope – or the vague memory of hope- that shape, form, coherence could be imposed on the violent surf of information that washes over us daily. Maybe, architecture doesn't have to be stupid after all. Liberated from the obligation to construct, it can become a way of thinking about anything – a discipline that represents relationships, proportions, connections, effects, and the diagram of everything."

Liberated from the obligation to construct, "The edge" is as an experimental architectural room to discuss about architecture, to unify differences. No disciplines and no hierarchies. The edge as a zone of activity a communicative and practical intersection. Three kind of spaces to understand the function of an interactive atmosphere on the edge: a conflictive space (Ring), a soft space (Love Room) and a leisure space (Karaoke)

The ring.

The last two decades have witnessed a series of conflicts. To understand the contemporary architectural space, we need to manage the emergent habitational problems to offer a singular perspective on the limits. Conflictive contemporary situations. Refugees and walls.

The Love Room.

The pop up spaces appear on the edge, everywhere. The ordinary and the emergence and maintenance of manners, customs, and responsibilities are part of the everyday architecture and live.

Soft spaces signal an attempt to understand the implications of relational approaches for spatial planning and interpersonal programs.

Love Hotels in Tokyo with creative names and kitschy façades, often adorned with neon colors, and gaudy decor. Domesticity as the border of the discipline.

The Karaoke.

We propose a leisure space, a space for fun, to enjoy and to spend a good time a space for happiness. Karaoke spaces with color and music, stage and multiscreen television.

Conflicts, domesticity and leisure redefine the boundaries of architecture and prepare us to reinvent constantly the limits.

"Space has no room, time not a moment for us. We are excluded. In order to be included – to help our homecoming- we must gathered into the meaning (we are the subject as well as the object of architecture). Whatever space and time mean, place and occasion mean more. For space in our image is place, and time in our image is occasion". van Eyck (1968).

SA How right you are JA, how important it is to experiment the edge in architecture education...to be on top of the limit between known and unknown, with no safety nets below us, only with the sky above our heads. It is then that Peter Pan comes flying and lets us know that the unknown is the most wonderful feeling in the world! Aren't you all tired of certainties? Is it not the challenge of designing a Cube (the Mukaab) or a Line (the Neom) that makes us aspire to new worlds and new ways of living? Just to imagine the possibility makes me shiver...

MBB I reflect on Mike's question: Without the limit, the border or the edge would there be architecture? Certainly not. The boundary defies scale indeed, yet it also defines it.

Limits in architecture are physical manifestations of a change, of a discontinuity. Before and after the limit there is continuity. In mathematics, the notion of limit is a value to which a definition or progression approaches in function of certain inputs. Interestingly enough, such value —the limit— sometimes is not part of the continuum domain of the function is precisely defining. In architecture, values or points become lines and spaces through experience, through moving in and out, through time; Limits in architecture, hence, define those regions where spaces stop being what they are or stop being perceived in the way they were. If limits are thus regions, borders and boundaries are linear extensions of small changes, which occur at local level. This is what one could assume as an edge: a sharp change that is only meaningful in physical terms, yet it entails semantic constructions as part of a border or a boundary.

Whereas limits are self-referred, i.e., their existence is independent of architectural definitions, the notion of boundary entails the existence of a center, however this may be materialized, and thus the nature of borders heavily depends on how architecture is being conceived and integrated with a specific place. Border and boundaries, therefore, are integrated with the places where they originated from.

SA Again, the topic of the line, as a division....but,... in Neom the line is the unity, the place where people live...will they live there? Will it be livable?

MLN Border, thresholds, boundaries, edges, limits are defined in two dimensions: space and time (as mentioned by you all).

I would like to propose a reflection on the spatial aspect mentioned in the beginning of this conversation: the wall, the fence, the enclosure. For Le Corbusier the act of delimiting the space through a fence introduce the notion of design of our own space, looking at it not it could even be seen as an appropriation of the nature.

"Delimiting (Recintare) is the act of collective recognition and appropriation of a portion of land or physical space; it is the act of its definition and separation from the rest of the world-nature. [...] the enclosure is the shape of the object, the way in which it presents itself to the outside world, with which it reveals itself."

With this definition Vittorio Gregotti introduces the first issue of the monographic architectural journal «Rassegna», in the early 80's, entitled: Recinti / Enclosures. The space, following the relationship that he establishes with the act of delimiting, through the wall, introduces the dichotomy interior/exterior. Furthermore, interior and exterior are considered as topological, imaginary, geometric and technical regions, both equally related to the enclosure itself, which represents the boundary between them. This relationship that the element establishes with the enclosed space is linked to the characteristics of the specific place in which it is inserted, determining the shape of the element itself which in this way reveals itself to the outside world. The wall, as the construction of a place, determines the character of the contained space and consequently of the space that surrounds it. Where does the limit of architecture intervene? When architecture becomes the expression of the power of human beings on the nature? What will be the future?

SA Dear MLN, how exciting it is to have different cultural contexts in this talk. Thank God we are not all equal Europeans, in THAT sense! Of course Italy and its architectural journal «Rassegna» took this topic in the 1980s! Architecture was going through profound changes and change always brings the most relevant topics into the discussion. Post-Modernism: was it a matter of envelope design?

JAC The term 'limit' carries an inherent sense of something physical, yet our understanding of such concepts is primarily mediated by our perception, deeply rooted in our bodily experience.

Juhani Pallasmaa, in his seminal work, "The Eyes of the Skin: Architecture and the Senses" (1996), offers a compelling insight into this idea. He posits, "*All the senses, including vision, are extensions of the tactile sense; the senses are specializations of skin tissue, and all sensory experiences are modes of touching and thus related to tactility*" (Pallasmaa, 1996, p.10). This perspective reframes our understanding of spatial limits and borders from merely physical constructs to perceived experiences that resonate on a tactile, sensory level. Much like the architectural envelope, our skin becomes an edge, a liminal space that connects us to and isolates us from our environment. It resonates with JA's proposition of 'The Edge' to unravel the complex nature of architecture beyond physicality, a shared experiential realm that necessitates no disciplines and no hierarchies. Beyond the tactile understanding, our perception of spatial limits is also significantly influenced by our psychological perception of self, our cognitive awareness of our body, its dimensions and its positioning in space. Merleau-Ponty's "Phenomenology of Perception" (1945) posits our body as our primary way of connecting with the world; our body and the space it inhabits are inextricably linked, "*our body is not in space like things; it inhabits or haunts space*" (Merleau-Ponty, 1945, p.5). This means our perception of limits, boundaries, and edges is shaped by our conscious understanding of our body and its relational dynamics with our surroundings. It echoes MD's emphasis on the need to look beyond the confines of classrooms and studios, challenges the notion of boundaries and borders, and embrace a more fluid, open and inclusive perspective.

Nevertheless, the question arises: How will this relationship transform in the future? As we enter an era where technology and our bodies merge, a point where augmented and virtual reality interfaces are woven into the fabric of our existence, how will our perception of spatial limits and borders evolve? This echoes SA's wonder about the temporal aspect of borders and limits and her anticipation of new architectural territories being ushered in by the change.

Furthermore, these shifts will challenge us to re-imagine public spaces, not as static, physically confined areas but as fluid, interconnected spaces that extend into the virtual realm. Much like the human skin, the urban fabric will serve as an interface for communication, facilitating a complex and dynamic interaction between the physical and the digital, the individual and the collective. This new paradigm will redefine the urban edge, blurring the line between the public and the private, the physical and the virtual, the built and the imagined.

In the context of architectural education, it is crucial to embrace this evolving understanding of limits and borders, not as static and concrete but as dynamic and fluctuating constructs that are molded by our sensory and cognitive experiences. The works of Pallasmaa and Merleau-Ponty, along with emerging research in virtual and mixed reality, offer invaluable insight into this paradigm shift. We must instill

in our students the importance of sensory engagement and cognitive perception in shaping architectural spaces and their inherent limits. The key is to equip them to design not just for the physical but also for the perceptual.

In conclusion, we must acknowledge the complexities and intricacies of the concepts of edge and limit, which go beyond the physical realm and delve into the tactile and the psychological, thus necessitating a more holistic, experimental, and multi-sensory approach to architecture and urbanism. As we anticipate the future and its virtual and mixed realities, we must equip ourselves and the next generation of architects to navigate and shape these new territories and the accompanying shifting perception of limits, borders, and edges, leading to architecture and cities that are genuinely inclusive, immersive, and responsive.

MD The above contributions provoke me to think more about this question of the 'boundary' in architectural thought and practice, and how that then plays out in architectural education. Education needs to come out from inside the border that is defined as the classroom or studio, it needs to dispense with the rigid formality of the curriculum – (not altogether there are necessary constraints and norms for us to follow) - in so far as it can. It needs to be experimental, to unite cultures without subsuming them into one dominant approach to design, it needs to be open and not closed, embrace non-architects and non-urbanists (beyond our professional borders) who have so much to teach us. You all make good and relevant points in the conversation above, including: '*Where does the limit of architecture intervene?*' (MLN); *...the nature of borders heavily depends on how architecture is being conceived*' (MLN); and we have a suggestion of a space – The Edge - to consider such questions in more depth than this conversation allows. "*The edge' is as an experimental architectonical room to discuss about architecture, to unify differences. No disciplines and no hierarchies.*" (JA). And perhaps that discussion will truly question barriers we face – intellectual, cultural, design, political, social disciplinary etc...'*We must instill in our students the importance of sensory engagement and cognitive perception in shaping architectural spaces and their inherent limits.*'(JAC).

I see the discussion as able to trigger 'the merging of different realities and producing new and unknown lands' (SA). Perhaps these unknown lands will have borders, but not barriers.

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OBSERVING THE BORDER

Learning from Gevgelija

αναπαραστάσεις
πέρασμα
δίπολα
κατώφλια
υποδομές
representations
passage
dipoles
thresholds
infrastructures

Το άρθρο παρουσιάζει μια έρευνα που έχει ως αφετηρία ένα ταξίδι μεταξύ της Ίδας, ενός μικρού αγροτικού χωριού της βόρειας Ελλάδας, και τη Λωρίδα της Γευγελής, μιας παραμεθόριας περιοχής στο νότιο τμήμα της Βόρειας Μακεδονίας, όπου παρατηρείται η ανάπτυξη διαφόρων εμπορικών εγκαταστάσεων.

Για την πραγματοποίηση αυτού του ταξιδιού είναι απαραίτητη η πρόσβαση στον αυτοκινητόδρομο E-75 (Ευρωπαϊκή οδός 75) που συνδέει τις δύο χώρες. Μέσα από αυτή τη διαδρομή, από την Ίδα στη Λωρίδα της Γευγελής, μια σειρά από δίπολα ξεδιπλώνεται: το πέρασμα από ένα αγροτικό χωριό σε μια περιοχή επηρεασμένη από την υπερνεωτερικότητα ή έναν μη-τόπο, καθώς και το πέρασμα από το πεδίο της παραγωγής και συγκέντρωσης ενός αποθέματος, σε ένα πεδίο όπου αυτό καταναλώνεται και κατασπαταλάται.

Ως ερευνητική στρατηγική χρησιμοποιήθηκε εκτενώς η παραγωγή αναπαραστάσεων (χαρτών, διαγραμμάτων, μακετών) σε διαφορετικές κλίμακες του χώρου, προκειμένου να αποκωδικοποιηθεί το κύκλωμα των χώρων, προγραμμάτων και υποδομών. Αυτή η μέθοδος χρησιμοποιείται επιπλέον για να προσδιορίσει τη σχέση μεταξύ των υποδομών παραγωγής στη μία πλευρά με τις υποδομές κατανάλωσης στην άλλη, αλλά επίσης και το ρόλο του εθνικού συνόρου στην ανάπτυξη αυτής της σχέσης. Η μελέτη δίνει ιδιαίτερη έμφαση στην περιοχή αυτής της ανάπτυξης και στον τρόπο που αυτή παίρνει μορφή λόγω της εγγύτητάς της στο κρίσιμο σημείο όπου δύο σημαντικοί -αλλά με αντίθετο ρόλο άξονες- (το σύνορο και ο αυτοκινητόδρομος) συναντιούνται και δημιουργούν ένα κατώφλι.

This paper presents research that originates from a journey between Ida, a small agricultural village in northern Greece and Gevgelija's Strip, a border/customs area in southern North Macedonia, permeated with various commercial facilities.

To make the trip it is necessary to access the E-75 (European route 75) which connects the two countries. By performing this itinerary, from Ida to Gevgelija's Strip, a series of dipoles unfold: the passage from a rural village to an area influenced by supermodernity, or a non-place, as well as a passage from the field of production and accumulation of surplus/capital to the field where it is being consumed and wasted.

Throughout this research, different kinds of representations such as maps, diagrams and models, were extensively used as a research strategy and method to de-code the circuit of spaces, programmes and infrastructure. Furthermore, they were used to define a relationship between the infrastructures of production on one side and the infrastructures of consumption on the other, but also the role of the national border in the development of this relationship. The study puts a special focus on the area of this development and the way it has taken form due to its proximity to the critical point where two important - but with opposite roles - axes (the border and the motorway) coincide and create a threshold.

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INTRODUCTION

The following article/paper questions the role of the border as a simple dividing, (or land arranging) line in the countryside and suggests exploring the multiple layers of its functions and meanings within the wider area. By examining the effects of the border in the countryside, we can understand its potential to create mobility and opportunities for co-existence under certain circumstances.

In recent architectural discourse, there has been a shift of interest from the urban condition to the countryside. Two major exhibitions have contributed to that shift: "Agriculture and Architecture: Taking the Country's side" curated by Sebastien Marot in 2019 for the Lisbon Triennale and "Countryside, the future" curated by AMO and Rem Koolhaas in 2020 for the Guggenheim Museum in New

York. The first offers a critical retrospective of "various urban and regional planning models on the basis of the rich history of environmentalist movements" (Marot, 2019, 4) and calls for action for the future of the planet. The latter presents certain case studies on what is happening currently in the countryside, an until now "ignored realm" as Koolhaas characterises it, and calls for its rediscovery as "a place to resettle, to stay alive; enthusiastic human presence must reanimate it with new imagination" (AMO, Koolhaas, 2020, 3). Borders can also be considered part of this "ignored realm" as they are lengthy lines that primarily traverse the countryside.

The research presents the ritual of an oscillation between an agricultural environment and a non-place, which is located also in the countryside but bears the characteristics of globalisation and

produces a quasi-urban space. A critical part of this oscillation is the crossing of a border. Through this ritual we observe, document and highlight spatial moments of density and activity in an environment usually characterised by the opposite (dispersion and low population).

The whole venture of this investigation begins from a rather personal relationship with the countryside as a place of origin¹ which brought the knowledge of this trip being performed by several people. This knowledge produced a curiosity, which could not be satisfied by just **hearing stories** from others about this phenomenon, but it had to be investigated.

Part of the methodology of this investigation became the exploration of the mentality of the subjects performing this trip through **in-situ** research

which allowed the experience, observation, documentation, and re-composition of this complex border-line situation through various **representational tools** (diagrams, maps, models) on **key-concepts** [the dipole, the Strip, the Box, and the dilated limit alias threshold], a process mutually fed by **theoretical investigation** based on socio-anthropological theories, architectural studies, and commentary on both realised and unrealised projects. These representations comprise mobility flows, interpretations of the landscape and the border, a diverse multiplicity of different scales i.e. time and temporal scales, activity intensity scales, spatial scales and scales of influence.

Most importantly, the research focuses on the border area and investigates its possible role and influence in the development of specific spatial formations when interacting with infrastructure like international highways. It delves into the significance of crossing a border, the role of the border threshold, and the influence of architecture in the context of boundaries. How does the border line transform into a place, or rather a non-place, with complex characteristics? How does it define itself and its users/subjects through synergies and contradictions?

1. MATERIALS AND METHODS

The research begins in Ida, a small agricultural village in proximity to the border of northern Greece. Some years ago, a few local farmers, started visiting Gevgelija, a border town of North Macedonia, to take advantage of the substantially lower prices in newly built dental clinics and petrol stations but most significantly, to experience the luxury of the newly built hotel and casinos of the area. In Ida, stories were soon circulating about this place which attracted more and more people from the area.

Initially, this area of attraction seemed to us² like a "nowhere", since we knew nothing about it.

The area of Almopia, where Ida is located, is mostly flat, however, it is surrounded by mountains that become natural boundaries that sometimes are hard to cross - something that happens through a network of provincial roads that go uphill and downhill and are full of sharp turns- which added to the mystery of what could be hiding behind them (Fig.1).

Yet, this "nowhere" actually existed, and it hosted some quasi-hidden activity: gambling. At the outskirts of Gevgelija beginning from the border and along the E-75 highway that crosses it, an area of commercial activity -mostly hotel & casinos- was developed in the form of a strip similar to that studied by Venturi in *Learning from Las Vegas* (R. Venturi, et al, 1977). Gevgelija was already nicknamed as the "Las Vegas of the poor", due to the general state of poverty that prevails in the Balkans, something that also inspired the title of this project as a reference to the book.

Another interesting observation that acquired gradual importance in the context of this research was that people from Greece would not talk openly about visiting this place. Apart from the taboo-topic of gambling there was another taboo-issue: that of the 'contested' name of the republic of North Macedonia³. In the Greek region of Macedonia -where Ida is located-, people

strongly protested against the use of the name 'Macedonia' by the neighbouring country. Therefore, it seemed quite interesting, and somewhat contradictory, that many of them were also visiting this particular neighbouring country.

As a first way of an investigative approach, in-situ research was chosen. A typical trip from Ida to Gevgelija is examined.

In the framework of in situ research farmers from Ida were followed during harvesting season in their daily tasks, aiming to find out more about their lifestyle and the place they live and work in. That included visits to the orchards, the agricultural cooperative of the village and a privately-owned cold store located at its outskirts. The next step was to experience the passage from Ida to Gevgelija, along with some of the frequent travellers there. That allowed informal discussions during the trip, through which the mentality of the 'subjects' followed was approached, as well as their perspective towards the place we were visiting together. This mentality will be referred to, within this article, as the 'farmer-gambler'. The farmer-gambler is a person who makes a living by cultivating land that she or he usually owns and who then invests part of the profit made by this activity into gambling as a form of entertainment (Fig.2).

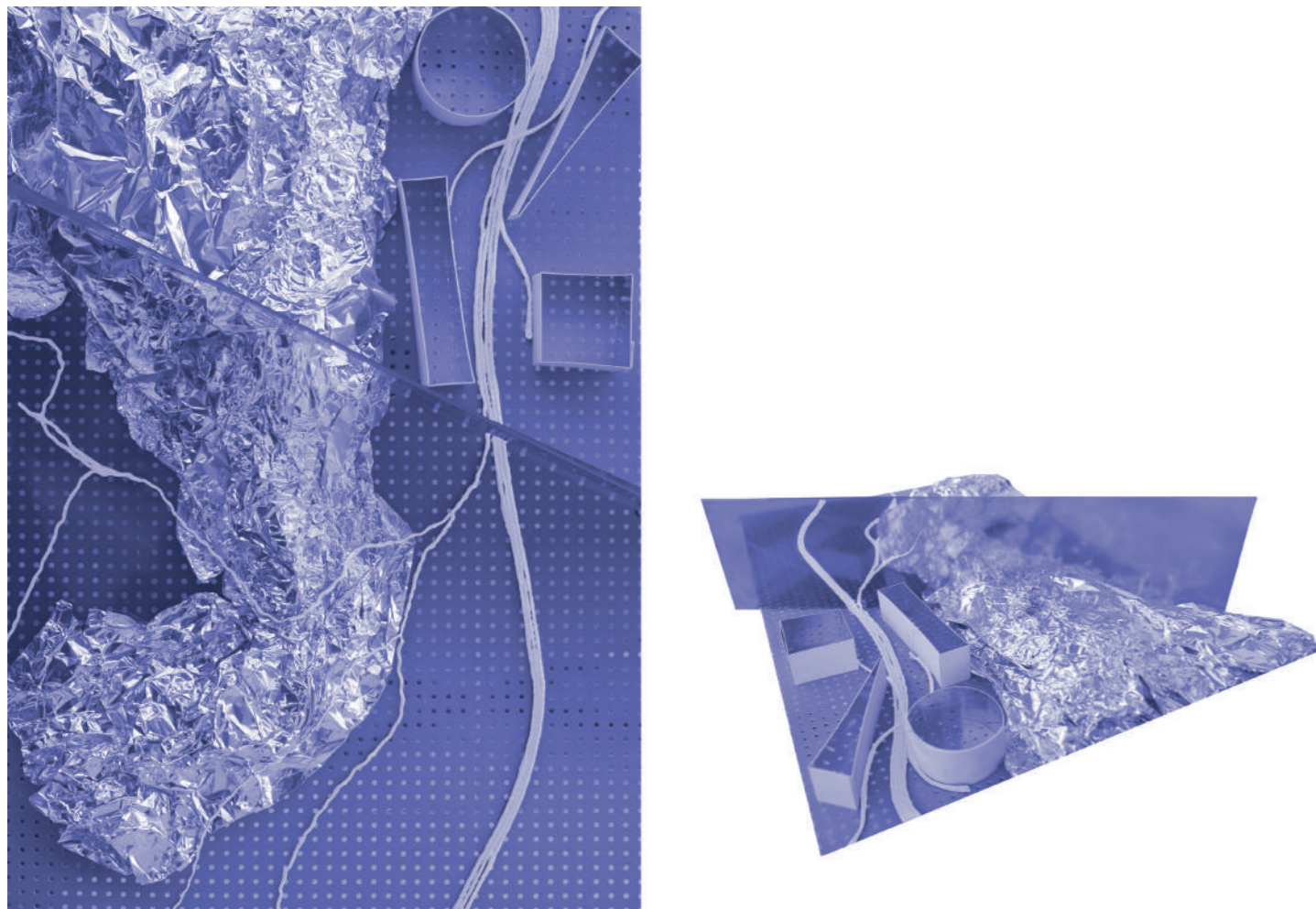


Fig.1 - From the plateau of Almopia and Ida to Gevgelija. Physical model including some of the geomorphology of the territory-Not in scale-. The border is built as a transparent wall. The road network is made with threads and the casinos take abstract out of scale forms and they are made with reflective material on the inside part to give an idea of the vast interiors because of repetitions. The border is made with red semi-transparent plastic sheet, like a wall. Figure by I. Orlis.

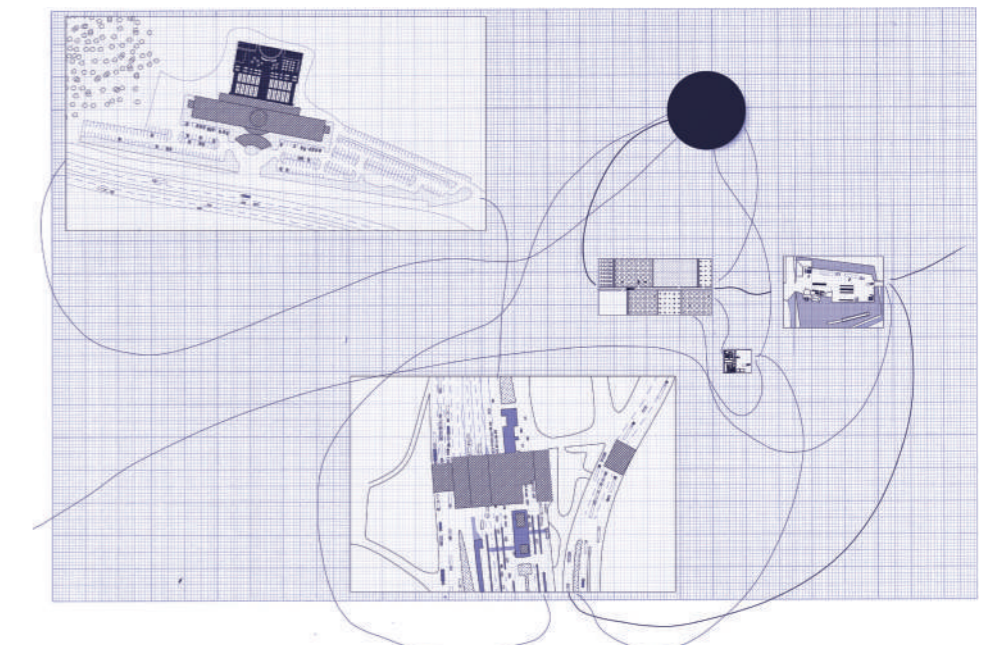


Fig.2 - Tracing the movements of a farmer from Ida between home (blue circle), orchard, agricultural cooperative, cold store, customs station, casino. Figure by I. Orlis.

With this road trip to Gevgelija, that had as a starting and returning point Ida, the aim was to go through as many stages of these subjects' experiences as possible. We⁴ went through the customs checks to cross the national border between Greece and North Macedonia and we also entered most of Gevgelija's casinos together.

During those stages of the research, photos and videos were taken from the majority of places we visited. The investigation comprises notes and, at some point, some sort of diary of the trip. A structured interview was also taken from one of the farmers-gamblers at a posterior stage of the in-situ research.

1.1 THE DIPOLE AND THE RELATION BETWEEN THE POLES

1.1.1. Ida and Gevgelija's Strip as opposite polarities

By experiencing the passage from the village of Ida to Gevgelija's Strip we were able to consider the structure of a **dipole** constituted by the two locations, alias the dipole <Ida-Gevgelija> (Fig.3).

Non-places an Introduction to an Anthropology of Supermodernity by Marc Auge (Auge, 1995) also contributed to the conceptualization of this abstract dipole between the two areas as the hypothesis was born that we were also experiencing a passage from a place [Ida] to a non-place [Gevgelija's Strip]. This structure of the dipole allows us a better estimation of the dynamic between the two locations by highlighting differences beyond the pair 'place-non-place.'

Auge also uses the notion of the passage in his book to introduce us to non-places as the corresponding chapter bears the title: "From places to Non-Places".

Place and non-place are considered a pair of opposites and it is often through their comparison

that we better understand the two terms. "If a place can be defined as relational, historical and connected with identity, then a space which cannot be defined as relational or historical, or concerned with identity will be a non-place" (Auge, 1995, 77-78).

In our case study on one hand, we have **Ida** which is an agrarian village with mainly native population.

People there mostly grow peach trees in their orchards to make a living. Cultivating this land is something that has been happening for many generations. The land is being passed on from one generation to the other

along with the responsibility for maintaining and cultivating it. The cultivated plain and the village are for the natives a living historical environment [heredity].

For the irrigation of the orchards underground water resources are exploited with the use of electric pumps, called *pomonas*, that drill the ground vertically and extract the water from below. On the surface, water channelling infrastructural networks running through the everyday life of the village, conduct water to the orchards.

Parallel to every road of the village or the agricultural plain runs an irrigation ditch that also functions as

a threshold for domestic courtyards, or the fields found behind them. It seems as they have always been there, connecting the village to the cultivated fields [metabolism].

The fruit that is being produced is collected and brought either to the agricultural cooperative of the village or to some private owned cold store. The facilities have grown **old** along with the houses of the village and they were built at scales that respect their context, so they have been incorporated into the environment.

In fact, though, this infrastructure has been built to service industrial agricultural production. This type of production is based on the intensive cultivation of the land using machines like tractors that run on fossil fuels and the addition of chemicals like soil improvers and pesticides that target bigger and bigger yields and a consistent quality of the product (Marot, 2019, 93).

Nevertheless, those practices are now connected with this place. Even the movements related to the logistics are consolidated for people and place. There is no need for intermediation of external symbols addressed to local people as instructions. If there is a sign, it is there to guide a stranger or a passer-by.

The infrastructure in Ida and the neighbouring villages of Almopia, has been built in order to serve mostly its native population: permanent residents who keep raising families there, growing their family trees, and secure a living by working their land; allowing for the place to stay alive as well, along with traditions and relationships between people and their environment.

This is how we conclude that we are dealing with an anthropological place as described by Auge. That is a place "of identity, of relations and of history" (Auge, 1995, 52).

On the other hand, we have the development of **Gevgelija's Strip**.

Gevgelija is a small city of North Macedonia, with a population

of approximately 16,000 people located on the south-eastern part of the country, close to the border with Greece.

The growth of the city is contained on the southern and eastern part by a series of axes. On the southern part, the city stops growing on the banks of the River Konska, a tributary of the River Vardar, and below that there is the border. Eastward to Gevgelija, there is Bogorodica, a small village also close to the border.

Between the city and the village lies a cultivated patch of land which could be considered as a connective tissue between them if not interrupted by the following axes.

On the eastern part of the city three important axes are developed, running in a north-south direction, subsequently intersecting with the line of the border which runs from east to west. Those three axes are: a) the railway between Thessaloniki and Skopje, b) the River Vardar and c) the E-75 motorway, which is the most important to this research (Fig.4).

The E-75 motorway is an international artery that works as an axis that connects the European North with the South. Beginning from the North, to end up to the South, the motorway passes through countries that are members of the EU and the Euro monetary union, or just the EU or neither of them.

A remarkably interesting dynamic appears to be developing, in the area we study. Gevgelija is the last city, as we descend through the motorway from the European North to the South, before we enter Greece, a member-state of the EU and the Euro currency. Therefore, this is a critical area, since the line of the border defines two different territories with different time zones, different laws, different language, different currency, different economies, and different geopolitical relations.

The different currencies of the two countries play an especially critical role in the creation of this border-

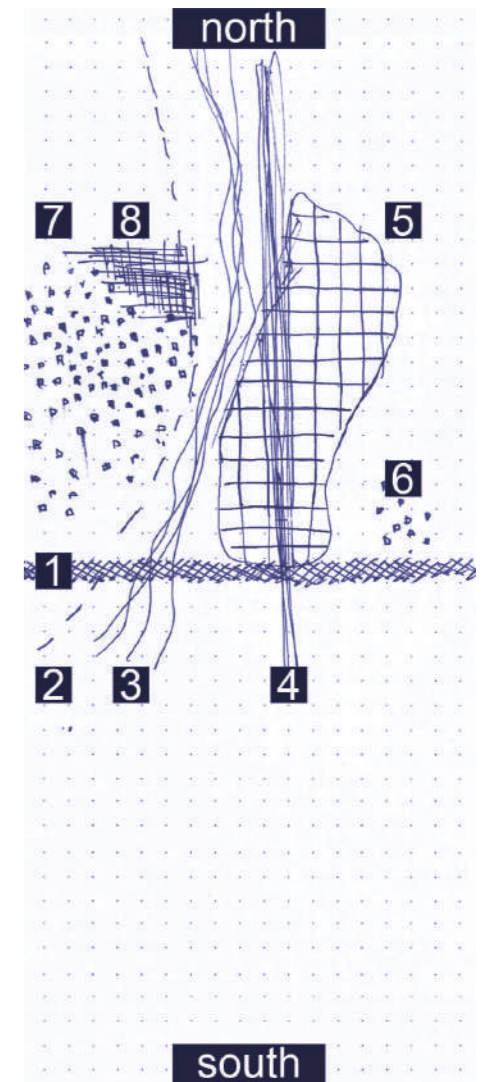


Fig.4 - The context of the area we examine: on the left side a city, on the right side a village. Between them a fabric of cultivated land interrupted by three important axes: the railroad, Vardar river and the E-75 motorway onto which this "other city" is developed. (1. The border, 2. railroad, 3. Vardar river, 4. E-75 motorway, 5. the "other" city, 6. Bogorodica village, 7. city of Gevgelija, 8. Industrial part). Figure by I. Orlis.

line condition being examined. As we approach the border, between the Greek village of Evzones and the North Macedonian city of Gevgelija, we notice that a weaker currency, actually fills up the space, whereas the stronger one leaves it empty.

That exchange rate between the two currencies has as a result much cheaper prices in services and products in North Macedonia compared to Greece. This way the market of North Macedonia becomes attractive for people living

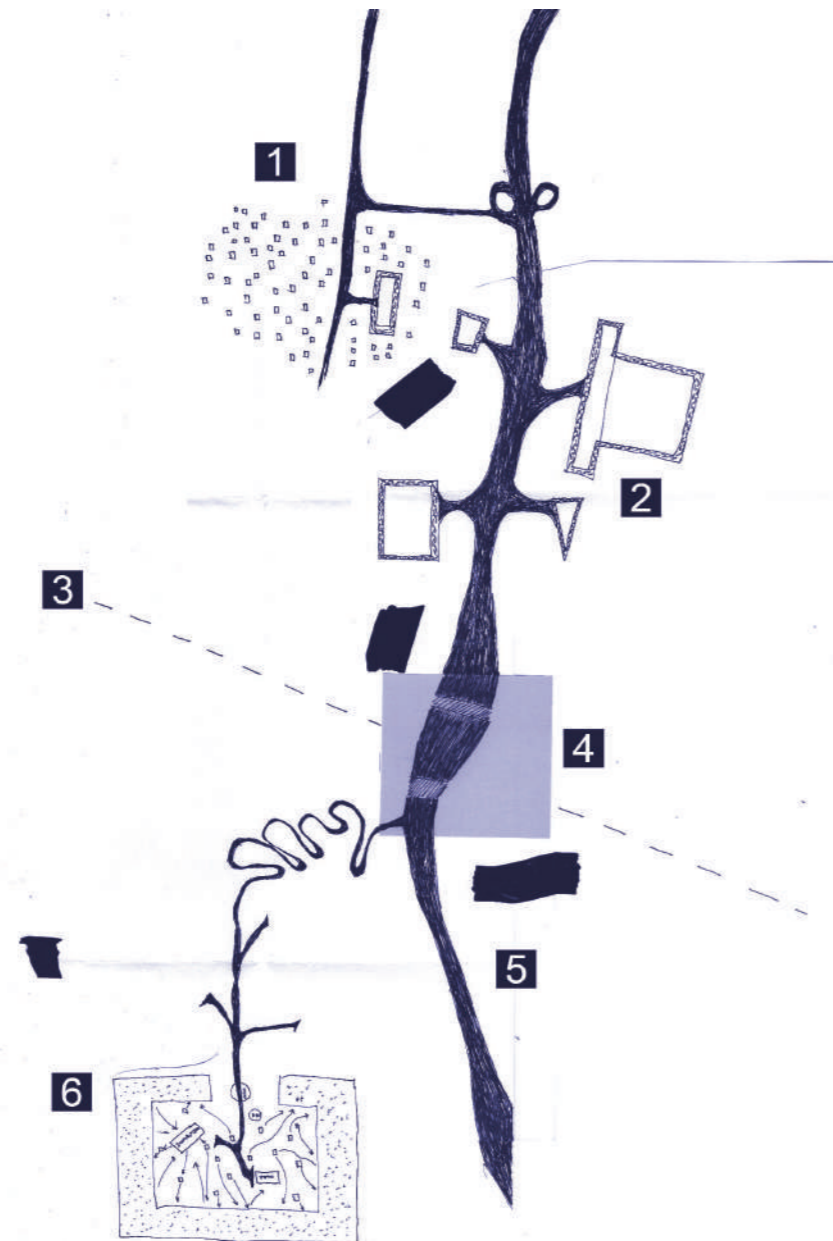


Fig.3 - From the productive field of the agricultural plain of Ida, to the E-75 highway and the insulated boxes of the casinos of Gevgelija connected to it. (1. City of Gevgelija, 2. Area of development, 3.Line of the Border, 4.Customs area, 5. E-75 motorway, 6. Ida village surrounded by the field of production) Figure by I. Orlis.

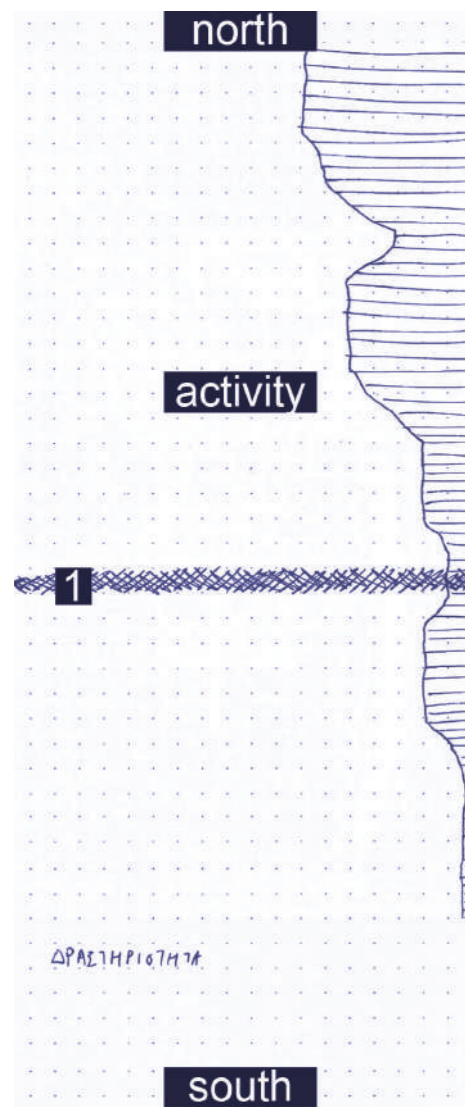


Fig.5 - Diagram of activity intensity along the axis of the motorway. As we approach the border on the Greek side there is almost nothing. After we cross the border, on the North Macedonian side an activity boom. (1. The Border). Figure by I. Orliis.

on the other side of the border [in Greece] and that fact produces spatial effects: On the Greek/ EU side of the borderland, almost nothing happens; there is very low commercial activity and human presence is scarce. When we pass to the North Macedonian side there is an activity boom (Fig.5).

Big autoroutes & motorways are infrastructural networks that take form as physical objects in our world and divide the land they traverse; they act as boundaries. We can only go with their flow or cross them by building bridges on top of them. The infrastructure of a motorway often takes advantage of the division it creates to produce its own enclaves around it, only accessible through the motorway

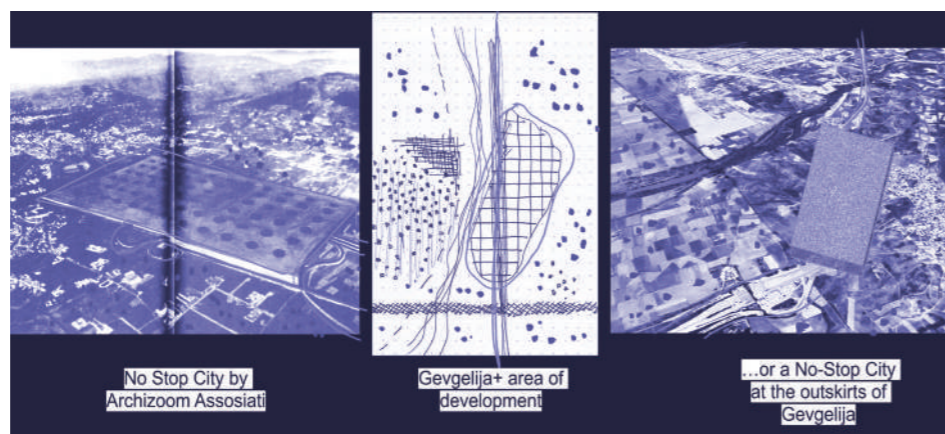


Fig.6 - Comparing the development of a No Stop City with the area of development at the outskirts of Gevgelija. (On the left part of the figure, an edited by author1 image is being used from BRANZI, Andrea. No-Stop City: Archizoom Associati. Orléans: HYX. 2006, p.68-69) Figure by I. Orliis.

itself.

The space of the motorway which, albeit an object placed in the countryside, does not form bonds with it, instead it lets it be a "backdrop". As highlighted by Marot even projects which try to suggest an incorporation and blending of urban features in/with the territory and practices of the countryside, like Branzi's Agronica (and other similar projects) cannot be easily succeed in achieving that goal.⁵

This is what we come across at the outskirts of Gevgelija: the development of Gevgelija's Strip.

The Strip develops in an area defined by the local authorities through an urban development master plan. The master plan is aiming at the commercial exploitation of plots of land found on the two sides of the motorway, beginning from the customs post of North Macedonia, towards the north.

The Strip comprises commercial facilities with programmes that were "copied" from the city, because they were proven to be successful in attracting visitors -mostly from Greece. The programme of the hotel-casino was the most popular.

The motorway in this area functions as vital infrastructure⁶ for 'boxes' to which the various programmes get attached to. The term "box" is used here to refer to standardised buildings constructed in a way that the appearance of the building from outside is not necessarily indicative of the type of

programme the building can host. The building, or part of it, becomes an insulated container since the activity it hosts does not require (or it is even incompatible with) an immediate contact with the outside environment, through windows for example. Like the unrealised, critical design project 'No-Stop City', architecture is stripped of its ability to intermediate between the inside and the outside of the building (Branzi, 2006, 152). This characterization is often given to generic, big buildings (logistics/ fulfilment/retail centres, hotels-casinos, storage) that appear in the countryside and are being serviced by other infrastructure like road networks.

Without the motorway none of the activities mentioned could be possible or at least survive. The 'box' is dependent to the motorway since the only way for someone to reach it is by driving there, along the motorway.

Located in the countryside, these big-sized facilities host a population that can only come from somewhere else. Since the countryside is an environment characterised by low density habitation and dispersion the motorway assumes the role of an inserter of the public into them.

We can even trace this dependent relationship of box-shaped architecture with the infrastructure of a motorway in the unrealised-critical project of Archizoom Associati, No Stop City. We notice similarities with the area we study to

one of the group's representations: they have placed the box that contains the No-Stop city at the periphery of some city. The grey inexpressive box is surrounded by cultivated land and sparsely located smaller buildings. However, there is also a motorway which penetrates the box from various sides.

If in our case we collect all the programmes scattered along the motorway, and place them in a single box instead of many, we would have a No-Stop City in Gevgelija (Fig.6).

On one hand, this development is neither dense nor big enough, nor has the structure to be named a city. On the other hand, the lifestyle of this area has if not metropolitan, for sure globalised characteristics, therefore we cannot name it a village either. But the main point is that this area has no permanent residents. Nobody belongs here.

The Strip is an elongated centre for the passers-by⁷. For some people it is a part of their trip while for others it is their getaway-destination, or the place they work. All the subjects that this area addresses to, have mutual characteristics with the subject M. Foucault names "guest in transit (Foucault Michel, 1986, 26), M. Auge

"passing stranger" (Auge Marc, 1995, 106) and Archizoom Associati "metropolitan nomad" (Branzi Andrea, 2006, 150).

The way that the relationships between people, architecture and environment are articulated in this space allows us to confirm that at a first estimation this area can be identified as a non-place as described by Auge who writes: "As anthropological places create the organically social, so non-places create solitary contractuality. [...] The link between individuals and their surroundings in the space of non-place is established through the mediation of words, or even texts" For the writer that way of mediation is a type of "instructions for use" that "absolves" the user of the non-place "of the need to stop or even look" (Auge, 1995, 94-97). Spaces that have the characteristics of a non-place according to the writer are motorways, supermarkets, big hotel chains where relationships between people and space are mediated through certain protocols, and symbols like traffic or commercial signs, labels or logos and not necessarily human communication.

The road signs on the motorway inform us about the exits we must take in order to get ourselves to the

parking lot of a hotel-casino, to a motorway service area (MSA), to a dental clinic or some other facility linked to it. The fact that traffic signs are used on/by the motorway to guide drivers to the casinos further highlights that motorway and casinos work as a system.

The buildings, in order to communicate what happens inside them⁸, use illuminated name signs, billboards, and big LED screens that advertise their offers by displaying their messages in Greek [Greek is not an official language of North Macedonia]. Some of those visual signals are visible from a very long distance.

Summing up, by travelling from the village of Ida to Gevgelija's Strip the unfolding of the following dipoles is witnessed: place-non-place, place of surplus stock production and capital accumulation - [non] place of consumption/wasting money, place where infrastructures are incorporated into the landscape- [non] place where infrastructures dominate and divide the landscape, buildings built in a scale that respects their context [the village] - buildings built in scales that are compatible with the motorway to which they form a system (Fig.7).

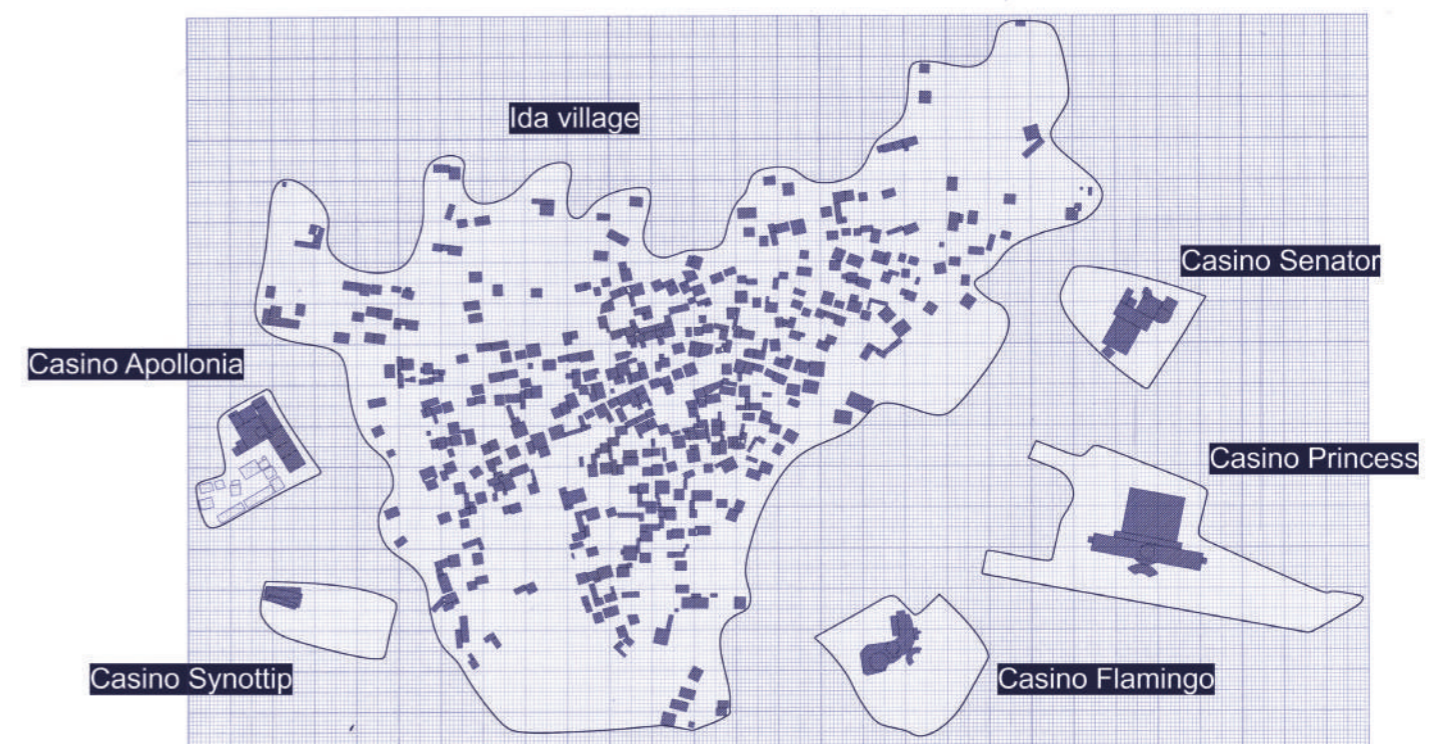


Fig.7 - Comparing scales between the village of Ida and the casinos of Gevgelija. The casinos altogether take almost as much space as the whole village of Ida. Figure by I. Orliis.

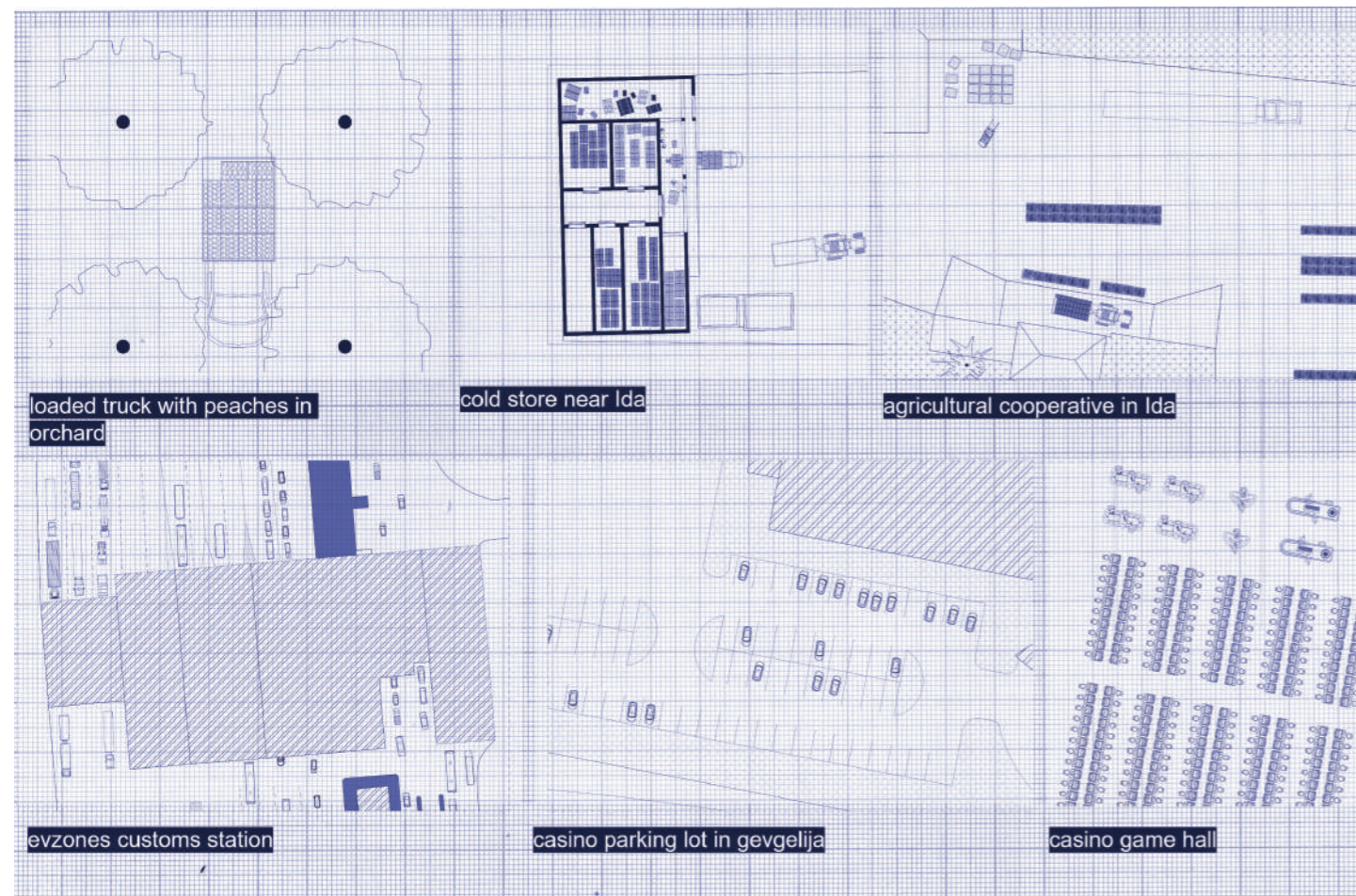


Fig.8 - From fruit trees to fruit [slot] machines: Details of the spaces structured around humans and objects according to the rules of logistics. Figure by I. Orlis.

1.1.2. The box: common denominator between the poles

On both poles we can also locate a common architectural typology: the box. In order to be functional, both the cold store building for fruit near Ida and a casino in Gevgelija's Strip need to become environments where the relationship with space and time outside of them is abolished or controlled very strictly [insulation].

Their main function is the management of an interior space, analogous to No-Stop City [Archizoom Associati, 1972], where repetition, standardisation and indoor conditions controlled by technical means dominate.

They are buildings that belong to the realm of logistics, therefore are characterised by "an atemporal and aspatial dimension of quantities and

measurements that is nevertheless concretely embedded within the cycle of production, distribution, and consumption." (Marullo, 2015, 112) (Fig.8).

The cold store examined, found near Ida, has those characteristics so its chambers have a steadily low temperature -achieved through mechanical/technical means- and therefore the products inside can be kept with their qualitative characteristics almost unchanged or otherwise put, as fresh as possible. The main space of a casino in Gevgelija's Strip on the other hand, a room without windows, artificially lit and air conditioned, can feel comfortable in terms of weather and privacy protection, but also makes its visitors/users lose sense of time while being there acting as consumers.

Finally, both buildings appear attached to a road network. As we have already explained the way this happens for the casinos of Gevgelija's Strip, we will briefly

refer here to the cold store which appears in a position near the field of production and also with immediate access to the road, to serve its purpose as part of a distribution network.

1.2. THE DILATED LIMIT [as threshold]

A threshold can be described as an area placed between two different situations. The line of the border is an invisible boundary between two geographic regions that also constitute different political entities- sovereignties. Crossing that border-limit is usually something that happens through a standard procedure. Whereas the border is just a line on the map - in reality an invisible line-, at the areas defined as official crossing paths a dilation or expansion of the border occurs, and the area functions as threshold.

This phenomenon of dilation could also be described as an

incision in the middle of the width of the border line, creating an eye-shaped opening (Fig.9). This opening is an in-between space, a grey zone. On its upper and below sides there are the "lids" of the eye i.e., the customs stations, that control the flows of movement from the one side to the other along the motorway.

Practically, this dilated limit is placed on the E-75 motorway since it is a very important axis that connects the two countries. On the other hand, the line of the border is also an important axis that has the exactly opposite role of dividing them. Since the two axes cross each other, the area where they

intersect, becomes the position for the dilated limit or threshold. So, in this particular area from the one side there is the Evzones customs station, whereas from the other the Bogorodica customs station, and between the two the established threshold.

The space on the motorway between the two customs stations, that has been defined here as dilated limit, or threshold, or grey zone, is limited; the development of new commercial facilities inside that zone could be complicated. The only commercial facilities operating now within the area of the dilated limit is a Greek duty-free shop -like those we find at the airports- and two

small casinos.

Generally, the area around the border is a hub for people and products in transit, therefore it accumulates the indispensable infrastructure and services required to facilitate those activities. This consequently creates the opportunity for the installation and development of architectural programmes that could make this area not just a place you pass by to go from point A to point B, but also a destination (Fig.10). In this case, as mentioned in the previous subchapter, economic factors are also critical for the creation of such opportunities.

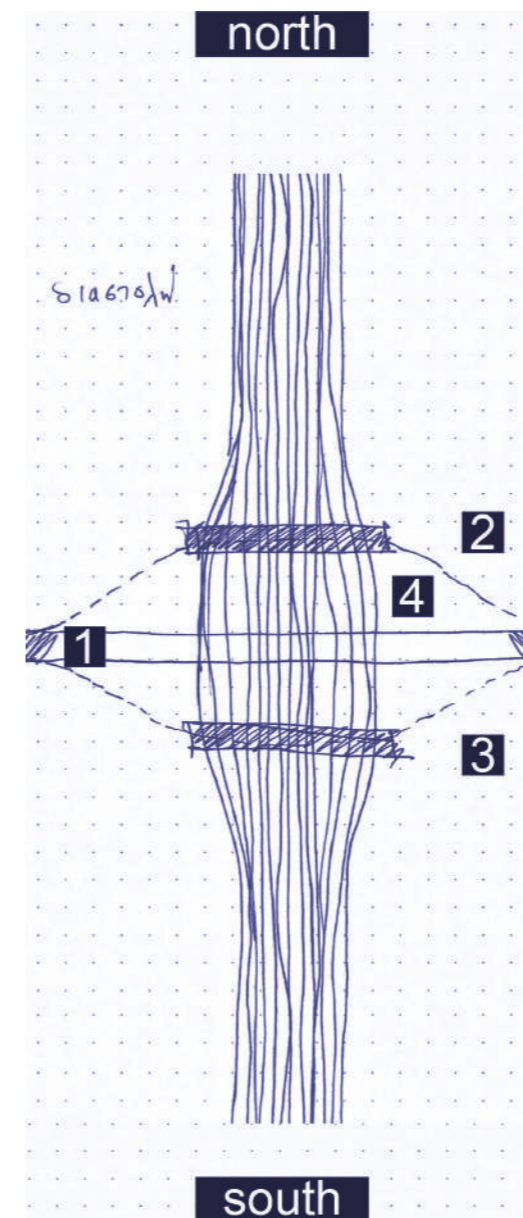


Fig.9 - The dilation of the limit. Where the motorway that connects the two countries meets the border that separates them, a dilation of the limit happens. (1. The border, 2.North Macedonia customs, 3.Greek customs, 4. The dilated limit or threshold) Figure by I. Orlis.

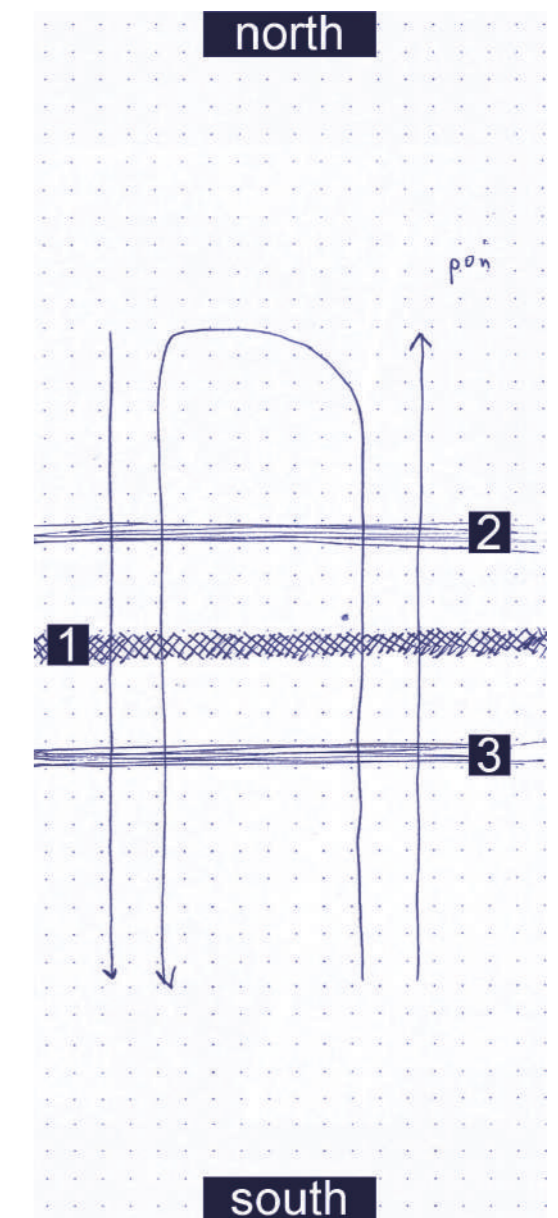


Fig.10 - Flows of movement at the customs area. For some the area is a place they pass by to go from point A to point B, whereas for others it is their destination. A U-TURN scheme appears as a generic itinerary track in this diagram, which could become a cluster of circuits if we place its beginning in Ida or other Greek villages or cities (1. The Border, 2. North Macedonia customs, 3. Greek customs) Figure by I. Orlis.

2. RESULTS

2.1. THE METASTATIC & DILATED THRESHOLD

In this section we investigate a 'metastasis' or in other words a transposition-and-expansion of the characteristics of the threshold in an area where they can develop further. The Metastatic & Dilated Threshold (Fig.11) is a mechanism that serves two purposes: a) making visitors feel at home when they are visiting Gevgelija's Strip, in particular visitors of Greek origin, b) increasing the Gevgelija's Strip influence beyond the border, specifically towards Greece. This mechanism functions by the time we exit the dilated limit or threshold.

The Metastatic and Dilated Threshold basically resides at the area of development of the Strip serving there the primary purpose (a) mentioned above. The Strip is a seemingly inclusive, or rather a pseudo-inclusive environment, because of its apparent neutrality and lack of historical references. References to history are carefully avoided, since the countries at the two sides of the border-Greece and North Macedonia- held different positions on the topic, especially before the *Prespa Agreement* was signed by the two states, an agreement which among other issues regulates the issue of historic claims by the two sides.⁹

This a-historical allure has been a way to conceal fanaticism and avoid misunderstandings that could obstruct the smooth operation of the 'consumption system' along the Strip. A typical example took place before the Agreement was signed between both parties: within the borders of North Macedonia: the name of the main motorway [E-75], was changed to "Motorway of Friendship"; whilst previously named as "Alexander the Great Motorway"; the previous choice of name was avoided since it could have been perceived as off-putting for some of the Greek travellers and potential consumers, or as a

"gesture of cultural appropriation". In the area of the Metastatic and Dilated threshold, extra measures are taken to make Greeks feel more welcome. Even though it is on North Macedonian territory, elements familiar to Greeks are incorporated:

the advertising billboards and the LED screens of the Hotel-Casinos and dental clinics are projecting messages written in Greek. The official currency of North Macedonia is the denar (MDK) but in this area you can do almost everything

using the Euro. Last but not least, at the facilities that operate there, employees know how to speak Greek, and use the Greek language when addressing visitors of Greek-origin and potential consumers.

In this transit centre, or centre for the passers-by, which is in the realm of the Metastatic and Dilated Threshold, a stranger can also feel at home because of the non-place character of this area. Auge's words are proven right: "in the world of Supermodernity people are always, and never, at home: the frontier zones or 'marchlands' he [Descombes] mentions no longer open to totally foreign worlds" (Auge, 1995, 109).

The proximity of the Strip to the border made its facilities noticeably irresistible. So close to Greece, but at the same time away from the Greek players' homes; at arm's length, protected by the national border and the casinos' policies on customers' privacy, which function as filters that protect anonymity. The direct connection to the motorway makes the Strip easily accessible and open to the big flows of movement.

In order to influence even more people from Greece to visit their facilities, some of Gevgelija's casinos extend the mechanism of the Metastatic and Dilated Threshold in action also to Greek territory. They manage to deterritorialize themselves and become present in Greek territory by using a variety of networks (Deleuze, Guattari, 2005).

Information networks (some of which are also deterritorialised themselves): some hotel-casino businesses of Gevgelija, buy airtime at Greek radio stations in order to advertise their facilities and amenities as well as their proximity to the border. They also send text messages to Greek players to invite them to lotteries or tournaments they organise, and they have a presence on popular social media.

Transportation networks: casinos offer their customers the option of free transportation to their premises beginning from big Greek cities and bringing them

back. There is a fleet of shuttle buses performing that itinerary between Greek cities and casinos of Gevgelija.

Interpersonal Networks: people who visit the casinos spread the word about the experience to their social circle. Casinos help the process by gifting people souvenirs (pens, lighters, key chains) with their brand printed on them to excite people's curiosity.

This way, these businesses manage to reach people from Greece, without leaving their territory but by using objects, networks and means that are or can be deterritorialised, creating signals and symbols which refer to the casinos.

The venture has succeeded. Thousands of people flock to Gevgelija's Strip to be temporarily freed from the burden of their identity and they adopt other roles: that of the passer-by, the passenger, the traveller, the customer, the lover, the gambler. All of that inside an environment which might not be their home, yet everybody speaks their language and therefore, understands their 'wishes'. Most of these 'wishes', constructed and fed by the mechanisms of the Metastatic and Dilated Threshold, are fulfilled, at least apparently/ seemingly, within the transit and consumption 'ritual'.

3. CONCLUSIONS: NODAL GENERATORS AND HETEROTOPIAS

In these final paragraphs a re-evaluation of the dipole Ida-Gevgelija is combined with a focus on the findings regarding the Metastatic and Dilated Threshold, as part of an effort to reach more general but not forced results, and potentially results which could apply beyond the case study area.

The dipole Ida-Gevgelija as well as its pairs of opposites (place-non place, field of production- field of waste), also brought to the surface similarities as well. In both locations we can observe ways of habitation

along and with infrastructures found in the countryside.

On the one side, at Ida, we see that the village is not only a place of history and identity, but also a concentration of infrastructures that serve the production and commercialisation of the peach. Part of that infrastructure is embedded as shown with the example of the irrigation ditches that run through the village and become part of the homes there.

What is observed on the 'other side', at Gevgelija's Strip, is the way that the infrastructure of the motorway is 'inhabited' by the various programmes that plug into it: the customs station, hotel and casino facilities, motorway service areas, dental clinics. Whereas the basic function of the motorway is high speed movement, along the Strip it stops; exits and interchanges are added to service the facilities previously mentioned. This way the motorway becomes frequently used and a quasi- familiar infrastructure for the people visiting the Strip.

The motorway is a spine for the Strip, which becomes a nodal generator of quasi-urbanity; quasi urbanity stands for the fact that the Strip's scattered buildings, functioning as isolating introvert boxes, do not consist of an urban whole, lacking public spaces, continuous public networks, and public buildings which refer to the social sphere and the local context of the city of Gevgelija.

Through the Strip, acting as an acquaintance and bonding generator at the periphery of Gevgelija, new social relationships and social identities are formed. Our study offers as an example the formation of this transitional, transnational and hybrid persona, that is the farmer-gambler. This transitional persona might have as a home-base the village of Ida and as a basic occupation farming, but they also spend parts of their life at the 'other side' of the border. There they might foster a different lifestyle with urban characteristics and enjoy new experiences of luxury and pleasure within a homogeneous, world market globalisation ambience.

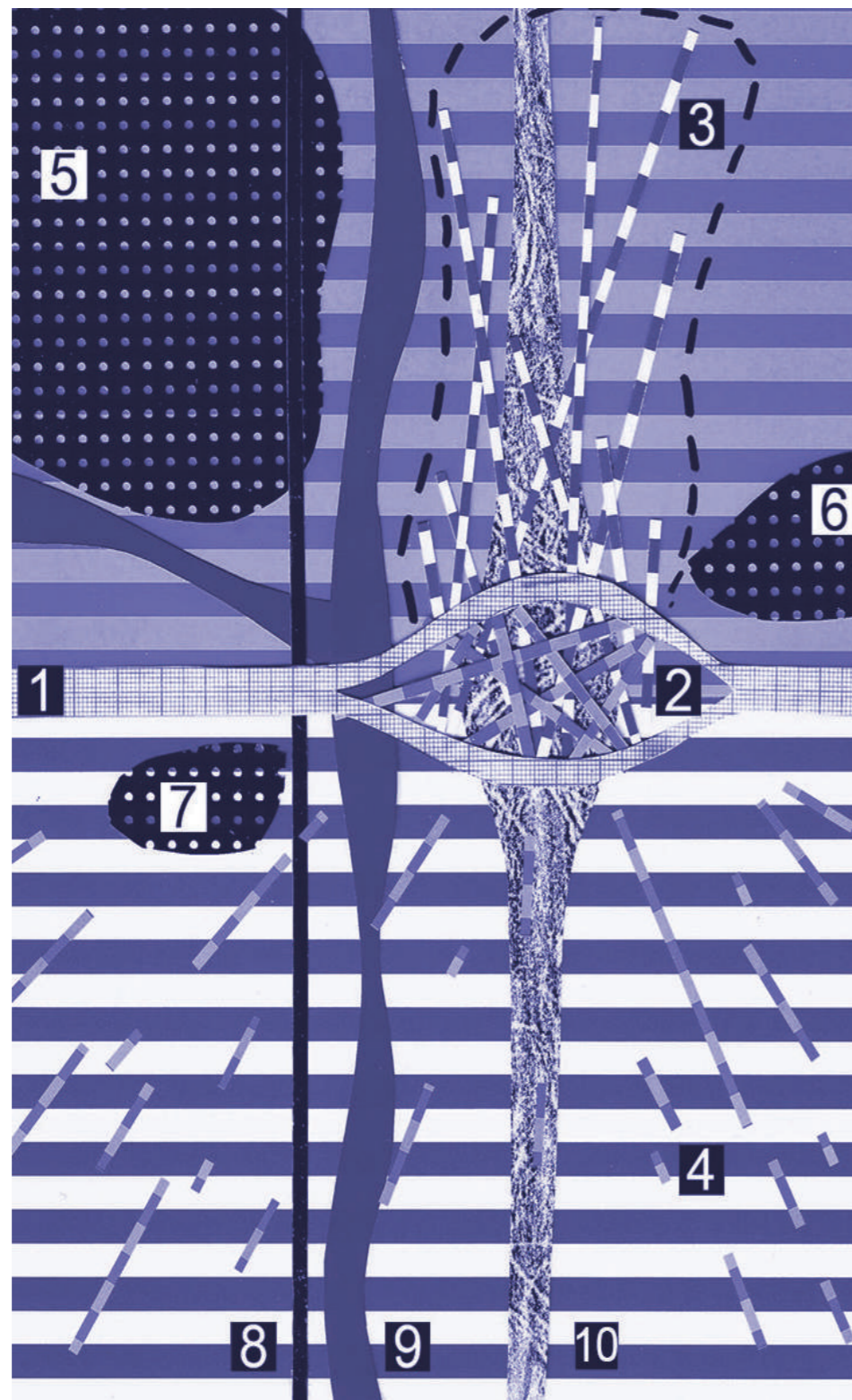


Fig.11. - The Metastatic and Dilated Threshold beginning right after the customs station of North Macedonia but also extending its influence in Greek territory.

1. The Border, 2. Dilated Limit, 3. The Metastatic and Dilated Threshold, 4. The Metastatic and Dilated Threshold as influence on the Greek territory, 5. Gevgelija, 6. Bogorodica, 7. Eidomeni, 8. Railway, 9. River Vardar, 10. E-75 motorway.
Figure by I. Orlis.

The experience of this subject makes us understand that these visits to an environment that has the characteristics of a non-place, for some people become part of their identity.

Crossing the border and gambling in one of the casinos of Gevgelija is considered by those who perform these activities a social-celebratory event. The people examined here form groups and have Ida as a starting point to live that experience. Through the repetition of this trip the members of the group develop bonds between them and with the area and spaces they are travelling to; but they also become familiar with the people who work as staff in these non-places. The environment of the non-place becomes for them more and more familiar and homely. Of course, the full appropriation of this space is not possible or either desired since that would have as a result new responsibilities, deeper bonds and maybe a different temporality and duration of the experience.

Gevgelija's strip is not a utopia where one enters once and never exits because it is perfect, but rather a multi-layered heterotopia that one can enter and exit. The desire for this [non] place could be related to the fact that the stay there is short and there is always the promise for a return as well as a sense of unfulfillment. Time can be perceived as travelling time or as waiting time in the Threshold, as a temporality of Identity, as loss of place and time inside the casino, as speed or slowness, as a state of limbo and a promise of return before someone crosses the border again [collective time-space].

The goal of this transit, this passage to the 'other side', is the avoidance of responsibilities and the pleasure of being in another place, where one can leave behind the identity and role they have at home and temporarily assume a new one that gives them access to a different context where they can feel free to enjoy a life of lavishness. A repetitive circuit is thus formed, as the surplus that is being produced

from the cultivation of the land around Ida is being invested into the growth of Gevgelija's Strip.

The part of the Metastatic and Dilated Threshold that is spatially expressed [in this case Gevgelija's Strip] could be analogous to 'extrastatecraft' as described by Keller Easterling: "a site of multiple, overlapping, or nested forms of sovereignty, where domestic and transnational jurisdictions collide, infrastructure space becomes a medium of what might be called extrastatecraft- a portmanteau describing the often undisclosed activities outside of, in addition to, and sometimes even in partnership with statecraft" (Easterling, 2016, 15).

In accordance with Easterling, indeed infrastructures define the framework into which we co-exist and shape our living environment. This becomes clear through a transition we could name *from fruit trees to fruit* [slot]-machines space, infrastructures sometimes are integrated and assimilated into an existing condition, like the irrigation ditches rooted in Ida, while other times they work autonomously and create their own framework, like the Metastatic and Dilated Threshold of Gevgelija's Strip, where a new type of [non]-city is created next to the already existing one.

Yet, we find that this new formation of the "other [non]-city" is for some people addictively useful, if not indispensable. The position of this assemblage, but also the programmes developed there, make the area a heterotopia of hedonism, a hedonism that comes from activities related to extravagance and luxury. The "other [non]- city" becomes a field for display of phenomena that could not be openly taking place in the local countryside society. As Foucault has described the condition which generates a heterotopia is related to a mental displacement: "it is through the mirror that I discover my absence from the place I occupy, since I see myself from the other side. Starting from that gaze that somehow stares at me, from the depths of

this virtual space, which is from the other side of the glass, I return to myself and begin to return my eyes towards me and begin to reconstitute my presence there where I am." (Foucault, 1986, 4).

A collateral conclusion could be that critical areas like borderlands, when traversed by important connecting infrastructures, have the potential of being designed as generators of opportunities for coexistence. Albeit this coexistence appears as a collateral phenomenon, within the Strip since it consists of 'a detached world' dominated by standardisation in the service of the market economy, we still can trace down connections between places, people, and lifestyles we priorly considered as different or incompatible.

The powerful combination of the border and the motorway forms a threshold, here referred to as Dilated Threshold, and moreover the Metastatic and Dilated Limit which become critical spaces and/or mechanisms allowing for this coexistence to be possible and desirable.

However, from an architectural or planning point of view we are currently unable to detect a relationship of coexistence between Gevgelija's Strip and its context i.e. the countryside. Can this type of quasi-urbanity, Gevgelija's Strip suggests, be the only answer on how can we live out of the city, in the countryside, along with infrastructure and even borders, or is it in fact the result of an architectural uneasiness/anxiety when trying to make suggestions in this context? Could things be different if we tried to think that 'non' of the non-place, or the absence of density, architecture or programme in this or similar areas, not as a lack of something but rather as a creative field for thinking that the countryside confronts us with, contrary to the highly developed reflexes/reflections the city has created for us?

ACKNOWLEDGEMENTS

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NOTES

1. Author¹, I. Orlis originates from and grew up in the Village of Ida.

2. The in situ research was conducted by Author¹.

3. For background information about the Macedonia naming dispute See: NIMETZ, Matthew, 2020, The Macedonian "Name" Dispute: The Macedonian Question—Resolved? *Nationalities Papers*. 2020. Vol. 48, no. 2p.205–214. DOI 10.1017/nps.2020.10.

4. Ibid note 2.

5. S. Marot on Agronica (Branzi), New Babylon (Constant), Agricultural City (Kurokawa): "Although one notices an increasing role given to agriculture and agricultural practices in shaping a hybrid rural and urban environment, each one of those systematised visions still considers the farmed, rural world as basically a backdrop or carpet onto which the urban components -be they solid or transient- act as three dimensional protagonists." See: MAROT, Sebastien. *Taking the country's side: agriculture and architecture*. Lisbon Architecture Triennale, Polígrafa. 2019, pp.71-72.

6. K. Easterling refers to the role that infrastructures play today in shaping the environment we live. According to her: "Infrastructure space has become a medium of information. The information resides in invisible, powerful activities that determine how objects and content are organized and circulated. Infrastructure space with the power and currency of software, is an operating system for shaping the city." See: EASTERLING, Keller. *Extrastatecraft: The Power of infrastructure space*. London, New York: Verso. 2016, pp.13.

7. Author¹ I. Orlis first developed an interest in the concept of the center for the *passers-by* by working on his student project *Κέντρο διερχομένων* [center for the passers-by/ transit center] at the Department of Architecture, University of Thessaly [presented in June 2018] with supervisor visiting Professor Leonidas Papalampropoulos. At some point of the research for the topic presented in the current article the term was also found in the research thesis of Antonios Tsiligiannis for the Dept. of Architecture, National Technical University of Athens titled *Οι Σιδηροδρομικοί Σταθμοί ως Πυκνωτές του Αστικού Ιστού*. [Rail stations as condensers of the urban fabric] with Supervisor Dimitris N. Karidis, presented at winter Semester of academic year 2011-2012. See TSILIGIANNIS, Antonios, *Οι Σιδηροδρομικοί Σταθμοί ως Πυκνωτές του Αστικού Ιστού*. [Rail stations as condensers of the urban fabric] [online] Available at: <https://www.academia.edu>, pp.55 [Accessed on 14th of April 2022].

8. See: VENTURI, Robert. and others. *Learning from Las Vegas: The forgotten symbolism of architectural form*. Cambridge: The MIT Press. 1977, pp.9-18.

9. Since signing the Agreement Greece and North Macedonia "acknowledge that their respective understanding of the terms 'Macedonia' and 'Macedonian' refers to a different historical context and cultural heritage." See: Prespa Agreement [online], available on: <https://www.mfa.gr/images/docs/eidikathemata/agreement.pdf>

The Administrative-Territorial Boundaries Available for a Multiscalar Analysis of EU Port Cities

o abordare metodologică bazată pe rețele
politici urbane și spațiale
politica port-oraș
politica portuară
politica de transport
**a network methodological approach
urban and spatial policies
port-city policy
port policy
transport policy**

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Folosind diversele limite administrativ-teritoriale, locuitorii, și firmele ca noduri, orașele portuare din UE ar putea fi analizate multiscalar printr-o metodologie ce utilizează rețeaua ca instrument de analiză și cele mai importante criterii (transportul, populația, și economia) pentru măsurarea funcțiilor urbane și portuare. Beneficiarii unei astfel de metodologii ar putea fi elaboratorii de politici care pot ajuta municipalitățile să rezolve problemele cu care se confruntă orașele portuare. Astfel că, acest studiu a avut ca scop identificarea politicilor orașelor portuare ce pot fi afectate de o astfel de abordare metodologică și formularea unor recomandări corespunzătoare. Politicile identificate în majoritatea orașelor portuare (politicile portuare, orașului-port, și de transport) au fost consultate și corelate cu cele trei criterii stabilite de metodologie. Concluziile acestui studiu indică faptul că abordarea metodologică propusă poate să aibă un impact asupra configurației interne și externe a politicilor urbane și spațiale. În plus, poate să aibă un impact asupra instrumentelor aferente politicilor, deoarece acestea ar trebui stabilite pe baza stării actuale a orașului portuar analizat.

Using various administrative-territorial boundaries, inhabitants, and businesses as nodes, port cities in the European Union (EU) could be analysed on multiple scales using a network method that takes into account the most important criteria (transport, population, and economy) for measuring the urban and port functions. The possible beneficiaries of such a methodology are policymakers who can aid municipalities in resolving problems in port cities. Thus, this study aimed to pinpoint existing port city policy domains that can be impacted by such a methodology and make corresponding recommendations. The policy domains identified in most port cities (port, port-city, and transportation policies) were matched with the three criteria established by the methodology. Study findings indicate that the proposed network methodological approach can impact upon the internal and external configuration urban and spatial policies. Also, it can impact their related policy instruments because they should be selected in light of the port city's current state.

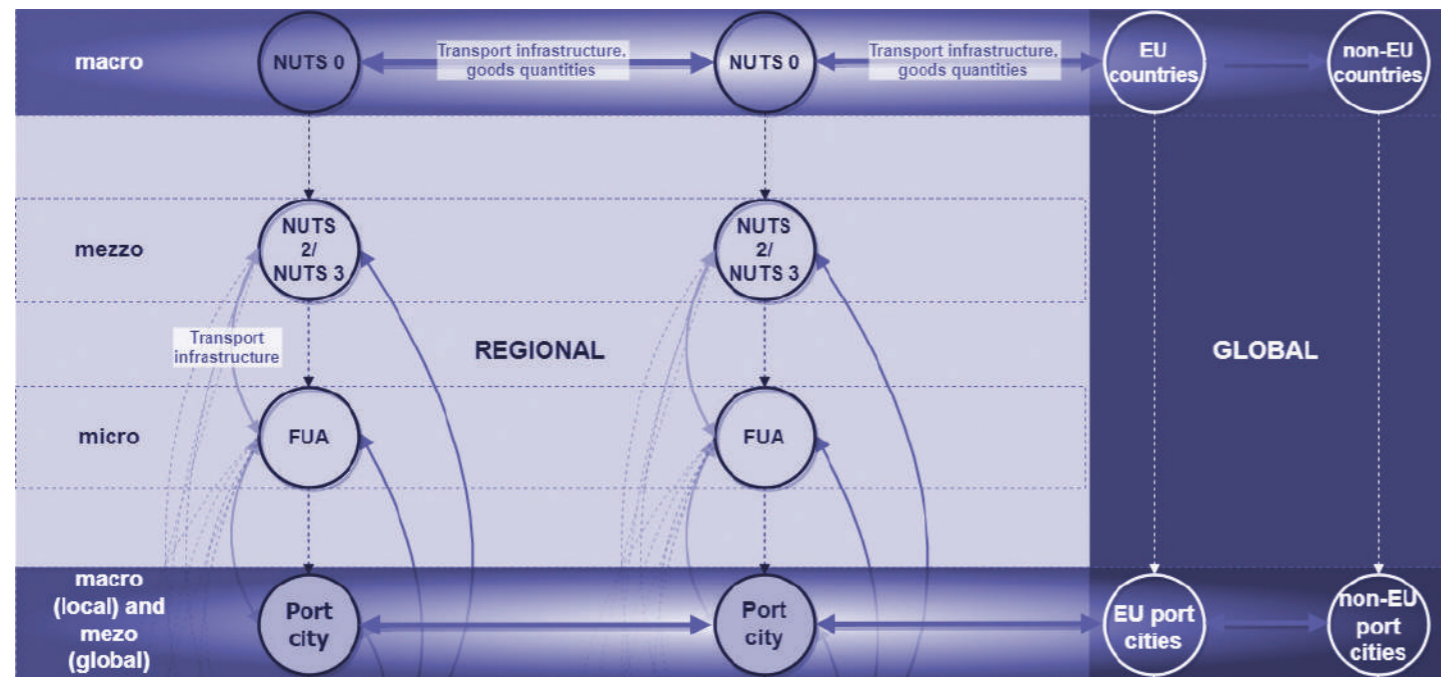


Fig.1. - A multiscalar EU port city analysis model through urban networks - at least two EU port cities (Source: own elaboration).

INTRODUCTION

A proposed network methodological approach for analyzing the EU port cities

This paper contributes to the theme of the current issue because it explores the borders in urbanism, specifically the borders of European port cities. Port cities are very complex, and for a better understanding of them it is necessary to analyse several territorial scales, because port functions exceed city limits. Specifically, this paper explores how European port cities can be analysed with the resources we have, i.e., the administrative-territorial boundaries established at the level of the European Union and their relevant available data (e.g., Eurostat population, firms, and ports data). The conceptual analysis model presented in this article has the potential to be operationalised, not only because of the boundaries and data used but also because of the mathematical tool it uses: the network. Thus, this model can be used in a network analysis software where the nodes and their connections must be precisely defined.

This paper does not indicate how the model can be applied but only presents it at a conceptual level. It also argues why it would be good for the analysis of European port cities and what effects it would have on urban and spatial policies. The operationalisation of the model is carried out using a methodology of multiscalar analysis of European port cities that the author develops in her doctoral thesis. This methodology has the potential to be a common framework for a multiscalar analysis of European port cities.

Because the port city is both intermediary and central, researchers should examine it on multiple scales. First, it is intermediary because its port is a communication node in the global maritime transport network (Pearson, 1998, cited in Ducruet, 2011, 32-48) and connects far-flung regions (Fleming, Hayuth, 1994, 3-18). Second, it is central because it outranks all the urban centres in the region. These respective centres contribute to the port city's economy and rely on it because it serves them through various transport infrastructure and logistics services (Haynes, 2010, Sassen, 2010, cited in Krośnicka and others, 2021, 27-42).

Unfortunately, no spatial model can determine the precise boundaries of the port city region (how far does the

port city's centrality extend across the territory?). This region should probably be delimited based on morphological criteria that would better integrate the city's economic influence, unlike other types of criteria (Savy, 1991, cited in Ducruet and others, 2018, 340-355). Nevertheless, researchers should compare and test various port region delineation methods until they select the optimal one.

For a multiscale analysis of the port city, we can use the current administrative and territorial boundaries, especially those set at the European Union (EU) level (local administrative unit (LAU), functional urban area (FUA), and nomenclature of territorial units for statistics (NUTS)). With Eurostat data, the EU has the most stable regional classification worldwide (EU, 2020). A multiscalar analysis methodology for EU port cities should employ an existing method that involves the operational definition of the urban network's nodes and connections at three levels (micro, mezzo, and macro) and three analysis scales (local, regional, and global) (Rozenblat, Neal, 2021, 2-15) (Figs. 1 and 2). Furthermore, the nodes and connections should be defined in such a way that they can measure both the centrality (a measure of the urban function) (Ducruet, Lee, 2006, 107-122) (Fig.3) and the intermediacy (a measure of

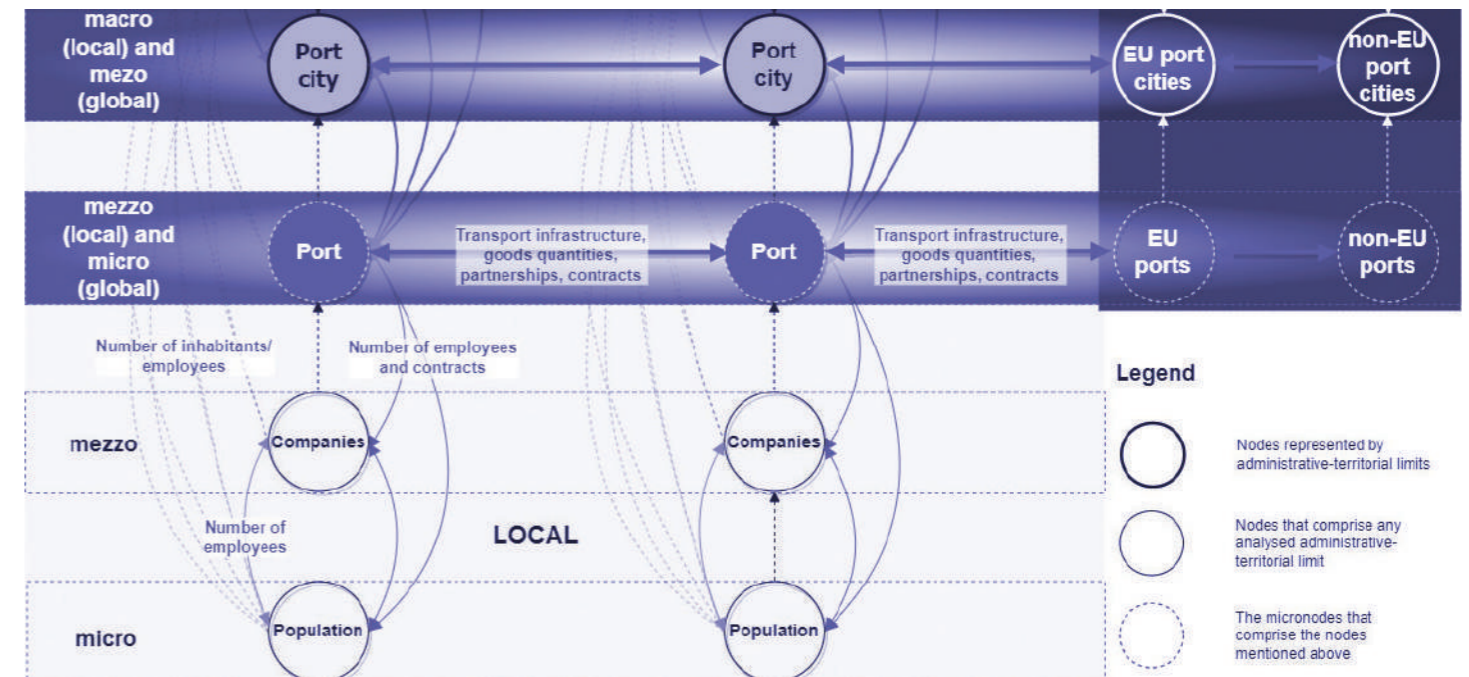


Fig.2. - A multiscalar EU port city analysis model through urban networks: a continuation of Fig.1 (Source: own elaboration).

the port function) (Ducruet, Lee, 2006, 107-122) (Fig.4), utilising the most relevant criteria for port city analysis, namely:

- transport;
- population;
- economy.

This study takes these three criteria into account because most studies that examined port cities calculated indicators related to the

number of inhabitants (Pinho and others, 2002, 567-575; Ducruet, Jeong, 2005, n.p.; Ducruet and others, 2013, 607-627; Veenboer, 2014; Chen, 2015, n.p.; Ducruet and others, 2018, 340-355; Roberts and others, 2021, 530-542), gross domestic product (Ducruet, 2009, 41-54; Luan and others, 2010, 398-405; Ducruet and others, 2013, 607-627; Veenboer, 2014; Chen, 2015, n.p.; Chen, 2017, 216-237), and the number of goods handled

by ports (Pinho and others, 2002, 567-575; Ducruet, Jeong, 2005, n.p.; Ducruet, 2009, 41-54; Ducruet and others, 2013, 607-627; Veenboer, 2014; Chen, 2017, 216-237; Chen, Lam, 2018, 944-961; Roberts and others, 2021, 530-542). The three criteria should, in turn, analyse various sub-criteria in addition to those previously mentioned (i.e., the number of inhabitants, the GDP, and the number of goods handled by ports) (Figs. 3 and 4).

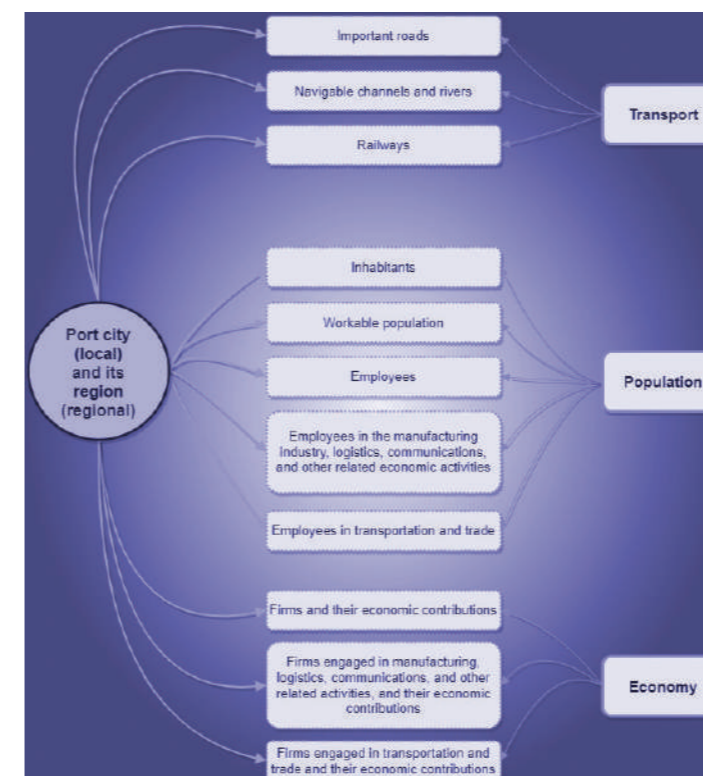


Fig.3. - Relevant sub-criteria for measuring the centrality of port cities: only the local and regional connections between the previously defined nodes (Source: own elaboration).

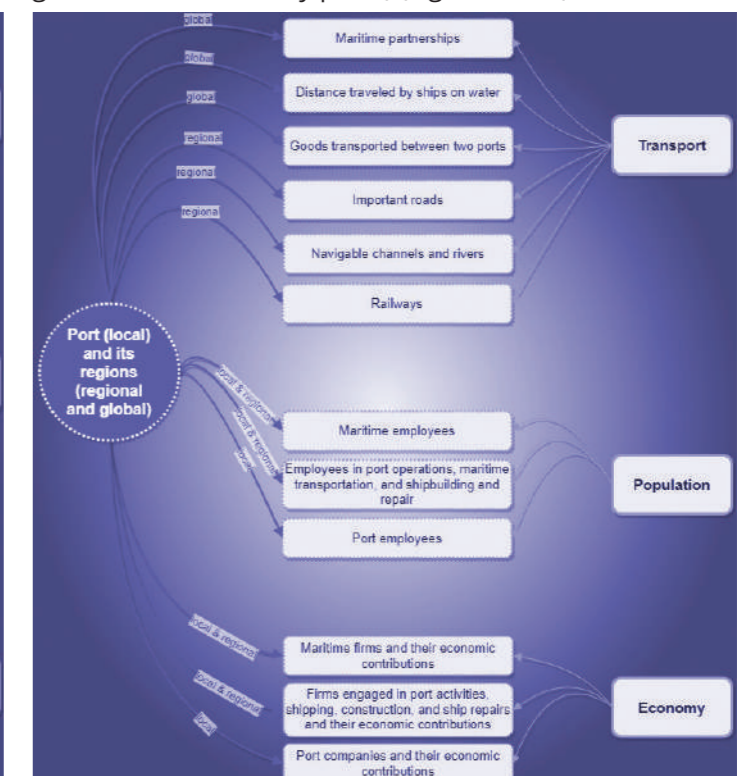


Fig.4. Relevant sub-criteria for measuring the intermediacy of port cities: - the local, regional, and global connections between the port and other ports and its region (Source: own elaboration).

The two figures show the sub-criteria that were chosen from the studies that looked at the port cities. Most of the sub-criteria, especially those that were used moderately in the studies consulted, are described in the paragraphs that follow and can be found on Eurostat. This study recommends the inclusion of several sub-criteria (especially those used rarely in the consulted studies) if a more detailed analysis of a specific port city is desired.

So, the indicators that were used moderately to measure port function were those that were related to the port economy, like the *gross added value (GVA) of port activity* (Luan and others, 2010, 398-405; Pinho and others, 2002, 567-575; Veenboer, 2014; Chen, 2015, n.p.). Also of interest were the labour force and the companies with a direct or indirect connection with the port (Ducruet, Jeong, 2005, n.p.; Pinho and others, 2002, 567-575; Veenboer, 2014; Chen, 2015, n.p.). In general, these indicators were related to the general indicators of the urban function, such as the GVA of economic activities, especially of industrial and logistics activities (Luan and others, 2010, 398-405; Pinho and others, 2002, 567-575; Chen, 2015, n.p.; Chen, 2017, 216-237), number of companies (Ducruet, 2009, 41-54; Luan and others, 2010, 398-405; Pinho and others, 2002, 567-575), the labour force, more specifically the qualified population, or the workable population, aged between 25-64 (Pinho and others, 2002, 567-575; Veenboer, 2014; Chen, Lam, 2018,), the employed (Ducruet and others, 2013; Veenboer, 2014; Chen, 2015; Chen, Lam, 2018, 944-961), and the unemployed (Ducruet, 2009, 41-54; Ducruet and others, 2013, 607-627; Chen, Lam, 2018, 944-961).

These indicators (less the ones referring to the port function) are easily available on Eurostat for various territorial units.

Lastly, the rarely used indicators in the consulted studies were those that, in principle, required the collection of data (including qualitative data) from less accessible

sources, such as local, regional, or national strategic statistics and documentation, interviews, questionnaires, observations, and requests for data from various institutions.

For the port function, the indices and indicators concerned are quality, functionality, hierarchy, type, commercial profile, facilities (Veenboer, 2014), *the number of goods handled by the port depending on the export and import destination* (national, European, and intercontinental market), and port specialisation by commodity type (Ducruet, Jeong, 2005, n.p.; Luan and others, 2010, 398-405; Pinho and others, 2002, 567-575; Ducruet and others, 2013, 607-627; Veenboer, 2014; Chen, 2015, n.p.; Chen, Lam, 2018, 944-961).

Also, the indicators related to the city-port interface were rarely analysed, such as the *regional/national transport infrastructure connecting the port to the territory* (the density of highways/ railways/ canals/ navigable rivers in the region) (Ducruet, Jeong, 2005, n.p.; Pinho and others, 2002, 567-575; Veenboer, 2014), the production capacity of the city (Pinho and others, 2002, 567-575; Chen, 2015, n.p.; Chen, 2017, 216-237), the number of researchers and research patents in the maritime field (Veenboer, 2014; Chen, 2015, n.p.), the vision of the city and the contribution of local public administrations to the development of the port (the vision of local strategies regarding the role of the port in the city / existing programs and projects aimed at the port/ the attitude of public administrations regarding the integration of the port into the city, and investments) (Luan and others, 2010, 398-405; Pinho and others, 2002, 567-575; Chen, 2015, n.p.; Chen, 2017, 216-237).

The scope of the study and its research question

Because, on the one hand, the methodology could represent a common framework due to the availability of common data at the

EU level, and, on the other hand, the methodological approach is sufficiently flexible to permit the incorporation of locally available data, the methodology has the potential to attract a variety of beneficiaries, including:

- Academics in the fields of urban and spatial planning or geography who are interested in studying port cities;

- EU platforms like Eurostat can build live maps of European port cities based on relevant data;

- Municipalities in port cities that want to handle different issues that define the city's present condition, as well as comprehend the sources of the problems and how they will develop if no action is taken to fix them;

- *Policymakers (at the EU, regional, and local scales) who can assist municipalities in solving port city issues.*

The scope of the current study, geared toward policymakers, is to identify current port city policies that can be influenced by such a methodological approach and to propose a series of recommendations for the organisation of these policies. Consequently, this study addresses the following research question: *How might this methodological approach impact spatial and urban policies?*

This article continues the introduction with a section dedicated to the background regarding other similar methodological approaches. In brief, until now, the author of this study has identified only one such methodological approach, tested for Ghent and Amsterdam by Van den Berghe and Daamen (2020, 89-108). Their approach takes only the administrative limits of the port cities and the limits of the port areas into account. In the case of the two authors, the nodes are represented by economic actors in the steel manufacturing sector, between which there are various types of economic relationships that exceed the administrative limits of

the cities where they are located, so the authors also took into account the limits of other nearby cities. Interestingly, the authors believe their methodological approach can be beneficial in policy-making, especially for port, city, and port-city policies. The section continues briefly, presenting the port-city interface concept that has influenced spatial policies over time. Also, within the same section, a problem is identified with most spatial policies that were developed more to solve various symptoms of port cities but did not solve the fundamental causes, so the need for a new approach is clear.

BACKGROUND

Developing a methodology for comprehending port cities through nodes and connections is not novel. Van den Berghe and Daamen (2020, 89-108), for instance, utilised the network because, from their perspective, *three aspects that the network entails are ideally suited for comprehending port cities*, namely:

- the limits of the networks - a

combination of two concepts, on the one hand, *the thematic limits* (e.g., logistic network), and on the other hand, the spatial limits (i.e., the geographical isolation of the networks analysed by other similar networks located in different parts of the world);

- the structure and hierarchy of the analysed network components (i.e., some nodes are more important than others);

- the diversity of the analysed network components (i.e., nodes and connections).

Their methodological network approach serves as *an instrument for understanding and directing or redirecting port policies, city policies, and port city policies*. The authors began with the thought that a researcher who intends to comprehend a port city, particularly its city-port interface, should also *comprehend the city from the standpoint of a policymaker, in addition to that of a researcher*. This premise is highly relevant for studying port cities, especially given that the port area has expanded

significantly over the past three decades due to the bidirectional relationship between local and regional policies and global market preferences (Van den Berghe, Daamen, 2020, 89-108).

In particular, the city-port interface is a concept that has influenced policy decisions over the past 30 years. The main goal is to build long-term relationships between the city and the port. To do this, different international organisations have made policy documents with suggestions and best practices. Thus, port actors are almost forced to follow a double standard set by the international organisations that make global policies, like the OECD (Organisation for Economic Co-operation and Development), the IMO (International Maritime Organization), and the EU. On the one hand, port actors want to improve the efficiency of port logistics operations so they can stay in the global logistics chain and help the economy. On the other hand, port actors must also consider the sustainability paradigm, which imposes a normative objective,

Topics of interest	Port	City	Port-city interface
Economy	Port capacities	Contribution and diversity	Smart development strategies Clusters in the maritime industry
Environment	Limit impacts	Quality of life	Sustainable development
Labor	Efficiency	Employment	Port-related jobs with high value added
Land use	Transportation, manufacturing, and cargo handling	Housing possibilities along the urban waterfront	Mixed development with a place for port-related activities
Structural logic	An enclosed manufacturing hub	Free-flowing systems exhibiting only agglomeration effects	Mixed
Transportation	Freight	Passengers	Reserved freight routes or smart freight-passenger coexistence

Table 1. - Typical port and city policy goals (Source: OECD, 2014, cited in Pape, 2017).

particularly from an environmental standpoint focused on minimising negative externalities. The sustainability paradigm has impacted European, national, and local governance policies and laws (Sánchez, 2019).

There are several spatial policies associated with port cities. For instance, transport, environmental and port relocation policies reduced negative effects like pollution and congestion. It is unclear which policies have worked and to what extent because monitoring of port city-specific policies and instruments is performed infrequently (Merk, 2013, 25-27). In addition, the effects of concrete policies are conditional on the specifics of the location. As a result, to have a successful policy mix, careful balancing is required, as well as building on existing strengths and developing new capacities and assets.

The policy mix that is selected ought to be consistent. However, in the current climate of global shipping, which is driven by the market, there needs to be more wiggle room for public policy. Typically, the objectives that port authorities and municipalities have and their perspectives on the difficulties they face differ. Port authorities concentrate on factors that contribute to the port's competitiveness, such as connections to other ports, the efficiency of port operations, the quality of inputs (labor, machinery, and land), the effectiveness of the organisation, and robust connections to the hinterland (Pape, 2017).

Overall, the problem with all policies is that they tend to treat symptoms instead of diseases. They have focused more on reducing the negative externalities generated by ports than on the role of urban actors who can help make city-port relationships more stable. Thus, *researchers have begun to query the city-port relationship's long-term sustainability and are debating the possibility of a new approach* (Sánchez, 2019).

MATERIALS AND

METHODS

Because the urban and spatial policies targeting port cities can be varied, covering various topics, and because the analysis criteria of the methodology proposed by the present author are only three, this study first looked for the policy domains dedicated to port cities identified and analysed by the OECD (Merk, Dang, 2013) in various port cities. *OECD assessed the effectiveness of port city policies* by comparing policy outcomes with policy instruments for five different policy domains, namely:

- *port*;
- *port-city*;
- *transport*;
- *environment*;
- a final category that includes research and development, spatial development, and communication.

Since the proposed methodology does not cover the last two categories, *the author selected only the port, port city, and transport policy domains*. Second, the study looked for ESPO (2019) recommendations dedicated to the EU that target the three selected policy domains. The author then matched parts of the methodology with parts of the selected policy domains that could be impacted by the methodological approach proposed by the present author.

In the last part of this paper, the author makes a list of recommendations based on what the study found about the relationship between the methodology components and the policy domains. In addition, the recommendations consider another document made at the EU level, developed by ESPON (2019). This document was chosen because it has three key policy recommendations, namely:

- do a pre-planning analysis of the port city;
- use a suitable planning approach;

- use appropriate governance and funding models.

The first recommendation of the document is indispensable in the process of creating a shared vision. In addition, it helps to emphasise the gaps between the vision and the current situation (ESPO, 2019). Therefore, the first policy recommendation may be met by using the proposed methodological approach.

Port, port-city, and transport policies. OECD port city policies study

This section concisely presents the findings from the OECD-led research on port, port-city, and transport policies discovered at the level of global port cities. These results are correlated with elements of the methodology proposed by the current author in Table 2 in the following ways, respectively:

- for *the port policy*, the parts related to the port function are compatible; more specifically, the indicators related to transport and economy;

- for *the port-city policy*, the parts related to both the port function and the urban one are compatible; more precisely, the indicators related to population and economy;

- for *the transport policy*, the parts related to the urban and port function are compatible; more precisely, the indicators related only to transportation.

As expected, at the global level, port policies were present in most seaports analysed by the OECD (Merk, Dang, 2013). As we see in Table 2 (outcome indicators), increases in traffic, the value added by the port, and the effectiveness of operations are some examples of indicators of a busy port. Here it is possible to assess seaports' centrality, diversity, and clustering through connectivity indicators.

Most of these indicators are also suggested by the

Centrality and intermediacy (as shown in Figs. 3 and 4)	Criteria (as shown in Figs. 3 and 4)	Policy domains (Merk, Dang, 2013)	Outcome Indicators (Merk, Dang, 2013)	Sub-criteria (as shown in Figs. 3 and 4)	Policy instruments (Merk, Dang, 2013)	ESPO's vision (2019)
Intermediacy	Transport	Port policies	Port traffic Containers passing through ports Grow port throughput Growth port traffic TEUs Maritime connections (degree of centrality) Maritime connections (clustering coefficient) Diverse marine links Efficiency score	Maritime partnerships Distance traveled by ships Goods transported between two ports	Long-term port strategy Port modernization Port IT Creation of new port functions Labor ties in ports Training port workers	European ports are strategic assets. They are developing autonomous port economies. Ports stimulate economic growth.
	Economy		Value-added port	Maritime firms and their economic contributions Firms engaged in port activities, shipping, construction, and ship repairs and their economic contributions Port companies and their economic contributions		
Centrality	Economy	Port-city policies	GDP per head in metropolitan areas GDP per head growth in metropolitan areas	Firms and their economic contributions Firms engaged in manufacturing, logistics, communications, and other related activities, and their economic contributions Firms engaged in transportation and trade and their economic contributions	Maritime cluster formation Attracting port-related headquarters functions Economic diversity Synergizing port and other clusters Coordinating ports Partnership with neighboring port-cities	Port authorities should show transparency by interacting with local youth and institutions and involving the community to minimize bad effects and enhance environmental performance.
	Population		Metropolitan inhabitants Increases in the populations of metropolitan areas Unemployment	Inhabitants Workable population Employees Employees in the manufacturing		
Intermediacy	Transport	Port policies	Port traffic Containers passing through ports Grow port throughput Growth port traffic TEUs Maritime connections (degree of centrality) Maritime connections (clustering coefficient) Diverse marine links Efficiency score	Maritime partnerships Distance traveled by ships Goods transported between two ports	Long-term port strategy Port modernization Port IT Creation of new port functions Labor ties in ports Training port workers	European ports are strategic assets. They are developing autonomous port economies. Ports stimulate economic growth.
	Economy		Value-added port	Maritime firms and their economic contributions Firms engaged in port activities, shipping, construction, and ship repairs and their economic contributions Port companies and their economic contributions		
Centrality	Economy	Port-city policies	GDP per head in metropolitan areas GDP per head growth in metropolitan areas	Firms and their economic contributions Firms engaged in manufacturing, logistics, communications, and other related activities, and their economic contributions Firms engaged in transportation and trade and their economic contributions	Maritime cluster formation Attracting port-related headquarters functions Economic diversity Synergizing port and other clusters Coordinating ports Partnership with neighboring port-cities	Port authorities should show transparency by interacting with local youth and institutions and involving the community to minimize bad effects and enhance environmental performance.
	Population		Metropolitan inhabitants Increases in the populations of metropolitan areas Unemployment percentage	Inhabitants Workable population Employees Employees in the manufacturing industry, logistics, communications, and other related economic activities Employees in transportation and trade		
Intermediacy	Economy	Port-city policies	Port efficiency (ratio of port-related employment and value-added port)	Maritime firms and their economic contributions Firms engaged in port activities, shipping, construction, and ship repairs and their economic contributions Port companies and their economic contributions	Long-term port strategy Port modernization Port IT Creation of new port functions Labor ties in ports Training port workers	European ports are strategic assets. They are developing autonomous port economies. Ports stimulate economic growth.
	Population		Port-related jobs (direct and indirect port-related employment)	Maritime employees Employees in port operations, maritime transportation, and shipbuilding and repair Port employees		
Centrality	Transport	Transport policies	Highway density Railroad density	Important roads Railways Navigable channels and rivers	Hinterland intermodal access Hinterland traffic shifts Freight lanes/corridors	The main goal of European policy should be to make ports better intermodal transportation hubs. Improved collaboration between the port, its rail network, and the national rail network is needed.
Intermediacy			Important roads that connect the port to the region Railways inside the port area that connect to the region Navigable channels and rivers that connect the port to the region			

Table 2. - Policy domains and corresponding instruments, analysis criteria, and sub-criteria whose data are available for measuring urban function (centrality) and port function (intermediacy) of EU port cities (Source: own elaboration, based on Merk and Dang (2013) and ESPO (2019)).

methodology proposed in the study's introduction, except for the efficiency index. With regard to the appropriate instruments for port policy, these instruments aimed to increase traffic volumes and allow for substantial freight throughput increases.

Among these were improvements to labour relations and skill sets, the planning and execution of long-term strategic development of port sites, and the introduction of new port functions.

Furthermore, most port-city policies focused on enhancing synergies between port activity and the city. Among these were coordinating ports and cooperating with neighbouring port cities, establishing maritime clusters and synergies between port clusters and other clusters, and attracting port-related executive functions. As shown in Table 2 (outcome indicators), when evaluating the city's performance, the unemployment rate, the number of direct and indirect jobs at the port, and the port's labour productivity were relevant indicators considered by the OECD (Merk, Dang, 2013).

In terms of the third policy, improving access to the hinterland, modal shifts, and freight corridors were at the top of the list of port-related transport policies. However, transport policies were more successful in maintaining port activity performance, regardless of the density of transport networks. Still, if traffic congestions are not fixed, infrastructure problems could make it hard for the port to grow (Merk, Dang, 2013).

ESPO's vision of European port city policies

At the EU level, ESPO (2019) says that transport policy needs to be consistent with and coordinated with other policies, such as those for the environment, customs, competition, energy, maritime affairs, and research.

This policy will be more coherent

and effective if its goals and measures are better coordinated. European transport policy should continue to improve ports' position as intermodal hubs in the transport chain, as ports are at the intersection of rail, road, inland rivers, and marine. Furthermore, improved *collaboration between the port, its rail network, and the national rail network* is required. Regarding European rail policy, policymakers should recognize that the rail network in the port frequently serves different requirements than the national rail network and, as a result, can sometimes be handled differently.

Specific to *port policy*, since European ports are composites that continue to blend corporate and public interests, ESPO (2019) has urged European policymakers to take a hard look at *European ports as strategic assets*. European policymakers should also take notice of *the trend toward increasingly autonomous port economies*. Since ports bring in significant revenue, they can continue to expand and stimulate economic growth.

About the *port-city interface*, ESPO (2019) mentioned only that because 91% of European ports are in or near urban areas, the people who live there see ports as the maritime industry's representation of the city. To keep negative effects to a minimum and improve environmental performance, port authorities should be open and talk to local youth and institutions and get the community involved.

DISCUSSION AND CONCLUSIONS

This study matched parts of a proposed methodology for analysing port cities in the EU with parts of the policy domains found in most port cities by the OECD (Merk, Dang, 2013). First, the methodology proposed by the present author started from the idea that port cities are both intermediary, due to the port, and central, due to the city. Secondly, the methodology addresses only EU port cities

because the EU has the a noticeably stable regional classification and good available data.

Thus, the methodology can be used as a common framework for port city analysis because it uses various limits grouped according to three scales and three levels of analysis, according to an existing method of defining urban networks. Van den Berghe and Daamen (2020, 89-108) consider the network a very suitable tool for the multiscale understanding of port cities because it establishes multiple relevant spatial limits, structures and ranks the components of the networks (i.e., their nodes and connections) delimited in the first step, and allows a varied classification of these components.

The limits proposed by the methodology are diverse, such as the spatial ones composed of local micro and mezzo nodes (i.e., population, firms, ports) and those exclusively administratively territorial (i.e., LAU, FUA, NUTS). Thirdly, the methodology uses the data related to these limits, relevant for the multiscale analysis of these types of cities (i.e., transport, population, and economy datasets), most of which are available on Eurostat. On the one hand, some data can be used to measure the port function (i.e., intermediacy); on the other hand, some data can be used to measure the urban function (i.e., centrality).

The criteria selected as the most relevant by the proposed methodology could help direct and redirect port city policies. Therefore, following the literature review, parts of the proposed methodology were found in the port, port-city, and transport policy domains identified by the OECD (Merk, Dang, 2013). Above all, according to the recommendation of ESPO (2019) for the EU, the transport policy should be coherent with and coordinated with other policies to improve ports' position as intermodal hubs in the transport chain, ports being an essential source for stimulating economic growth.

EU port cities can have a range of spatial and urban policies made

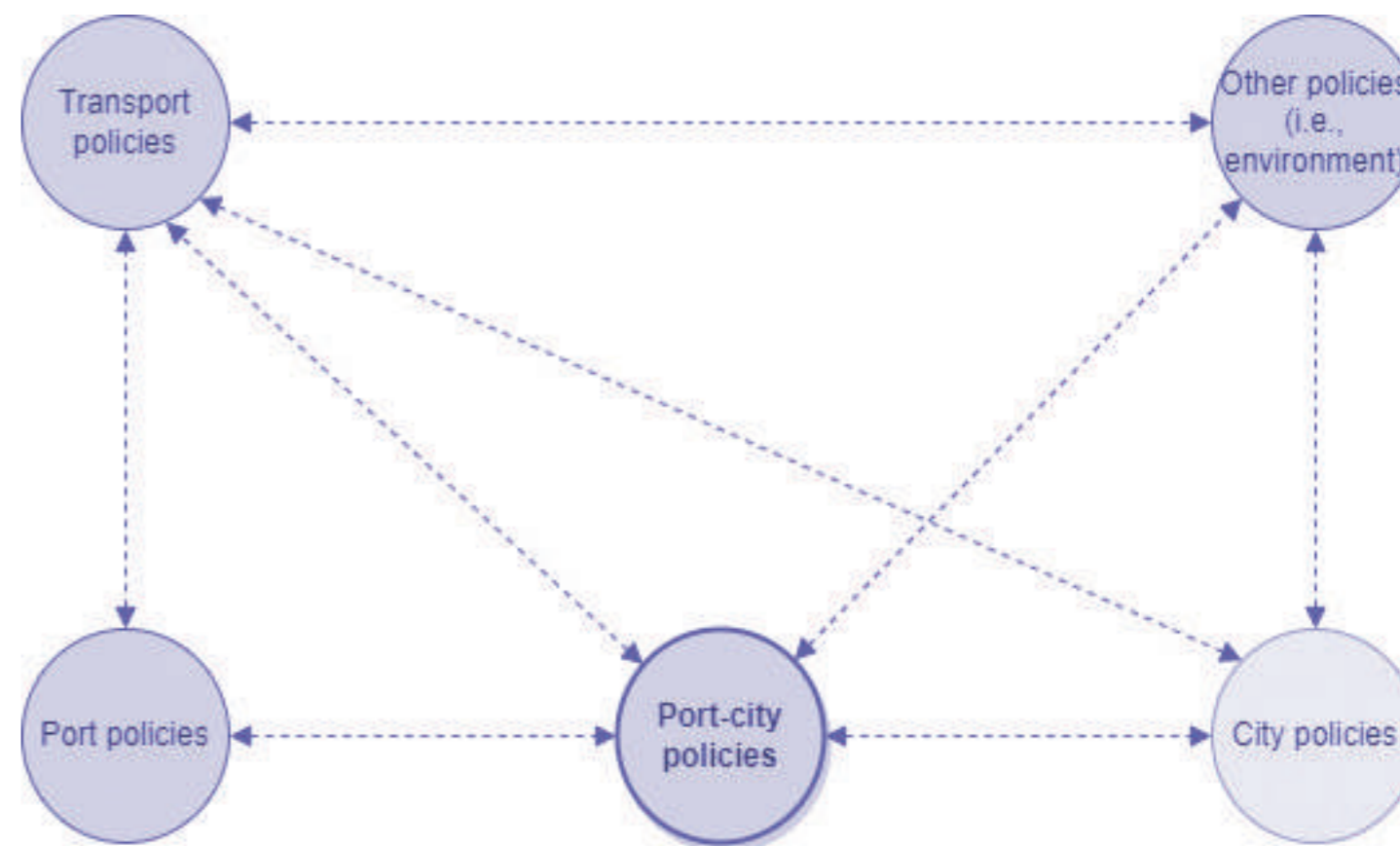


Fig.5. - A simple diagram of the bidirectional relationships that should exist between policies developed at various spatial scales and city policies developed at a local scale (Source: own elaboration)

for them, some of which are closely related to the port and some of which are less so.

However, a methodological approach like the one suggested by this study needs a network of policies that are clearly structured and interconnected. In this context, port city policies should be created as broadly as possible (i.e., global and regional scales) while remaining particular to the port-city interface (i.e., local scales) because the port is an important node at all three spatial scales (local, regional, and global). It can have a beneficial impact not only on its city, which is usually more important at the regional scale (including national, NUTS 0, as shown in Fig.1), but also on the entire European economy (Fig.5).

The methodology can be used as a common framework, and it is also flexible enough to include several important indicators for analysing port cities within the limits of the data that are available at the local level.

Therefore, the study concludes

that the proposed methodological approach can impact the configuration of urban and spatial policies, both in the configuration of a single policy and in the configuration of relations between several complementary policies.

The methodological approach can have an impact on these policies in the sense that, following the multiscale analysis, the intermediacy of the port city might be high and the centrality low, so maybe the proposed policies should focus more on the revitalisation of the city and balance the urban and port functions.

For example, Amsterdam, one of the cities mentioned in the introduction of this paper, is an example of a port city where a large part of the industrial and port area is wanted by the municipality to be converted into a residential area.

However, even if the improvement of the city is desired through this project, this project led to a conflict between the port and city, because Amsterdam's port works well; it is

not an economic activity in decline (Pliakis, 2019, cited in Van den Berghe, Daamen, 2020, 91).

As a result, another conclusion is that the proposed methodological approach can also have an impact on policy instruments. More concretely, policy instruments should be chosen according to the analysis results, that is, according to the current state of the port city, which presents various specific problems that must be solved from case to case.

In this context, the proposed methodology in this study can be applied in the first key policy recommendation proposed by ESPON (2019) (do a pre-planning analysis of the port city), within the following recommended sub-actions:

- assess the current and projected trajectory of the port and city and their relationship;

- examine how the port city is handling identified challenges and opportunities;

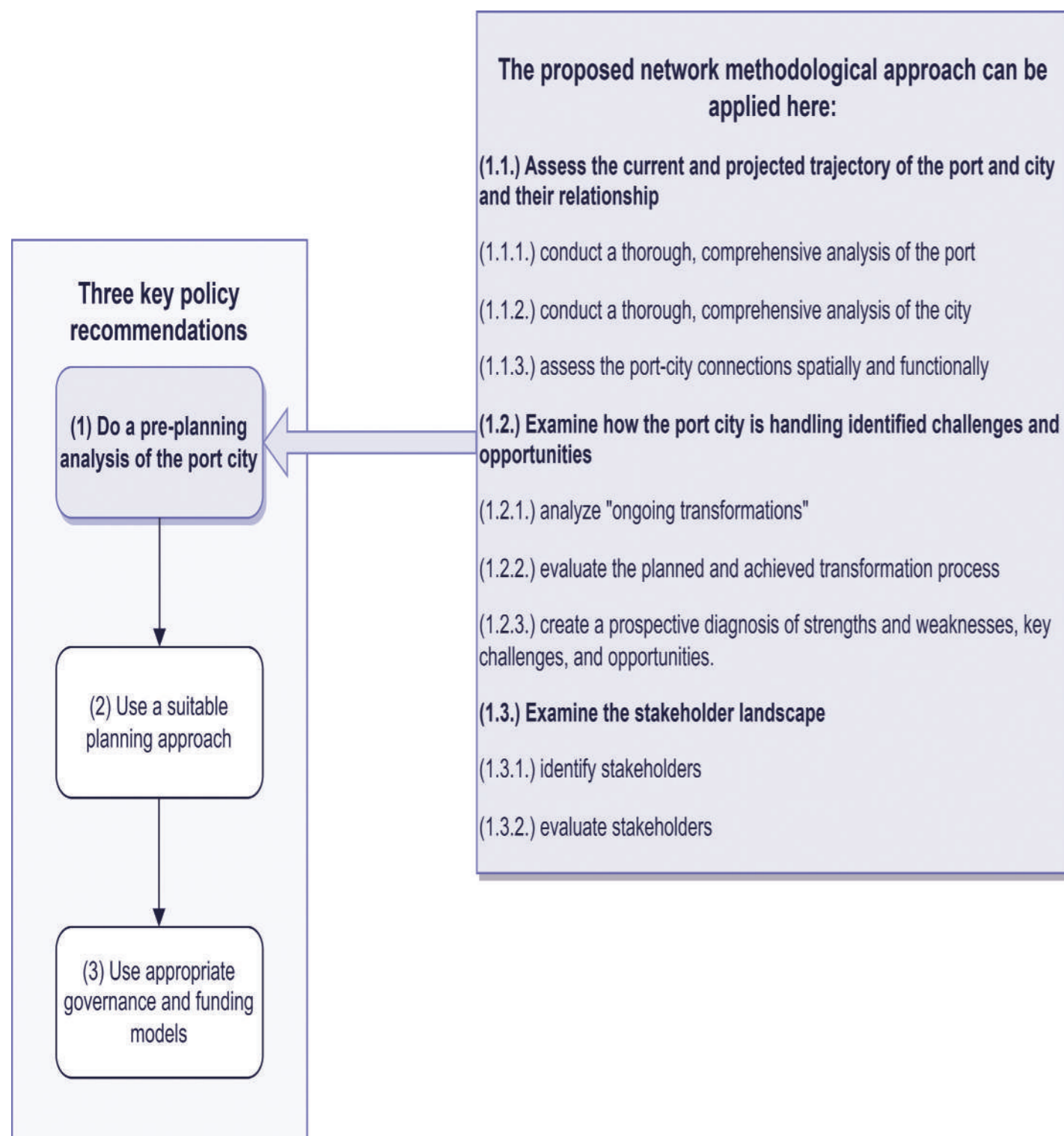


Fig.6. - The application of the proposed methodology within the first key port city policy recommendation (Source: own elaboration, based on ESPON (2019))

- examine the stakeholder landscape (Fig.6).

Following the first sub-action, on the one hand, the current socio-economic function of the port in relation to port operations, growth patterns, and local, regional (including national), and supranational/ global governance settings should be known.

On the other hand, the port city's challenges and opportunities must be outlined. When it comes to the second sub-action, it is important to assess completed or ongoing plans and projects that address challenges and capitalize on opportunities to develop an efficient planning approach that maximizes the utility of possible resources.

Last, in the third sub-action, it is critical to identify and investigate the relevant stakeholders because these individuals either directly participate in the plan or policy or indirectly influence it through their position or the specific resources they possess (ESPON, 2019).

It is highly likely that for the last two sub-actions, it will be necessary to include sub-criteria that are not available on Eurostat, exceeding the nature of the methodology to be a common analysis framework since they will be concentrating on the local scale of the city.

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Exploring metropolitan borderscapes

Social bridges in public spaces of transnational urban conglomerates

paisaje fronterizo
 flujo de ideas
 exploración
 afamiliaridad
 diseño de espacio público
borderscapes
idea-flow
exploration
unfamiliarity
public space design

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Este artículo aborda la interacción de tres situaciones urbanas diferentes: el espacio público, los conglomerados metropolitanos transfronterizos y el concepto de exploración (Pentland, 2014), profundamente vinculado a la idea de afamiliaridad ("unfamiliarity") descrita exhaustivamente por van der Velde et al. (2020). En primer lugar, se define la idea de paisaje fronterizo y se consideran las oportunidades sociales y espaciales de la frontera. A continuación, se describen y analizan los conceptos de flujo de ideas, exploración y afamiliaridad desde un punto de vista sociológico, con la ayuda de la física social y el análisis cuantitativo de datos. La acción de explorar fuera de nuestro ámbito espacial cotidiano conlleva una serie de beneficios, tanto sociales como económicos. Estas posibles ventajas son más relevantes para los ciudadanos con rentas más bajas, que generalmente no acceden a beneficiarse de ellas. El caso particular de los paisajes fronterizos dentro de los conglomerados urbanos transnacionales se presenta como ejemplo paradigmático (y efecto lupa) para comprender la dinámica de exploración de lo desconocido en las ciudades. Desde la perspectiva de la ordenación del territorio, se investigan las posibilidades de los espacios públicos dentro de los paisajes fronterizos como campo para entrar en contacto con lo desconocido. Para mejorar los índices de exploración en los grupos de renta más baja, se examinan las condiciones urbanas necesarias. Éstas guían a los planificadores urbanos sobre las prácticas de diseño espacial que permiten a estos grupos vulnerables mejorar socialmente.

This article deals with the interaction of three different elements: public space, cross-border metropolitan conglomerates and the concept of exploration (Pentland, 2014), profoundly linked to the idea of unfamiliarity comprehensively described by van der Velde et al. (2020). First, the idea of borderscapes is defined, and the social and spatial opportunities of the border are considered. Then, the concepts of idea-flow, exploration and unfamiliarity are described and considered from a sociological point of view- with the assistance of social physics and quantitative big-data studies. The action of exploration outside our daily spatial scope brings a series of benefits, both social and economic. These possible advantages are more relevant for the citizens with the lowest income, who generally do not get access to profit from them. The particular case of borderscapes within transnational urban conglomerates is presented as a paradigmatic example (and magnifying glass) to understand the dynamics of exploring unfamiliarity in cities. From a spatial planning perspective, the possibilities of public areas within borderscapes is investigated as a field to get in contact with the unfamiliar. In order to enhance exploration rates in lower income groups, the necessary urban conditions are examined. These inform urban planners about spatial design practices that allow these vulnerable groups to improve socially.

METROPOLITAN BORDERSCAPES AS A RESOURCE

National borders attract and generate particular forms of urbanity. Often ancient military enclaves, they turn into opportunistic economic and trade nodes, whose spatiality is strongly driven by their situation in relation to the adjacent nation states. The idea of borders is profoundly spatial, even considering the manifold forms of borders, at the same time territorial, functional or even symbolic, that can be considered increasingly dematerialised. From an ecstatic perception, the cartesian idea of border purely separates different zones or states. A topological comprehension of borders brings a certain spatial dynamic to the idea of the border, as it is not dependent on the cartesian distance, but rather on the notion of the relations established between the parts on both (or several) sides.

These multiple interpretations, from a mathematical perspective, are also present in the etymology of the words used in several languages to refer to the border. Many of them appeared in the 12th and 13th Century, and evolved till the 15th century, long time before the idea of nation-states. Anglo-Saxon culture use the words border and boundary. The former, from the French *bordure*, refers to the edge, to the limit of an entity, while the latter comes from Indo-European origins -bind-, meaning the tie, the physical or conceptual force that joins two different parts. A similar pair is to be found in French, with *confin* -the edge- and *frontier*, that derives from Latin *front-is*, the most outbound part, that faces and relates to the otherness: *faire face*. These paradoxical couples, *border-boundary* and *confin-frontier*, signifying the limit that separates and the interface that joins is a constant in the conceptualisation of spatial borderscapes. Both segregating and holding together.

Even before the production of the first cartographies, it is evident

that different social groups were conscient of the idea of borders. It was not necessary to draw on a document to acknowledge their existence and influence, as it is undoubtedly relational (Raffestin, 1974), thus topological. This idea of belonging, social relation and interaction is evident in border regions of the countries of (and around) the European Union. These zones have become true laboratories of transnational integration and cooperation, that test many dynamics that could be exported to the whole cooperational territory. Despite the fact that nowadays many people consider borders steadfast and immovable, it is unquestionable that they are more of an evolving process than a set of coordinates. It is less important where they are located or *what* they are supposed to be, than *how* are they collectively assembled and culturally constructed.

Collectively imagining the border. There have historically been two different approaches for the development of border situations where they have, de facto, almost disappeared (within the European Union, for instance). One, to make the border invisible, and two, to make it present and valuable. The first one looks for an "ideal" integration, in the sense of homogenisation, where the border is "forgotten" during everyday life, which paradoxically causes serious consequences for the consolidation of a common identity; this is the case of "le grand Genève" (Sohn, 2020). This approach impacts negatively the possibilities of exploration, as it tends to unify both sides. The second approach seeks an imaginary 'state' where the border can bring value to the region and create a sense of a place -even if it implies the need to acknowledge differences between both sides. A shared but distinctive future imaginary is created and mobilised through the reformulation of the spaces of the border: a "re-collage" of the border. Social semiotics are a valuable tool to understand the never-finished evolution of the border. This dynamic comprehension of the border, with no final or stable form,

allows all concerned stakeholders to generate new visions through time. Therefore, borderscapes become spatial configurations where the exposure to the otherness and the constant negotiation with it fosters cultural creation of identities and pushes further the unimagined evolutions of society.

How to define what we understand by borderscapes? Borderscapes are certainly not only spatial. Nevertheless, their spatial configuration does not depend on fixed cartesian distances to a line, or are not isotopically delimited on both (or more) sides. They are neither neutral or homogeneous thresholds that enable a soft and comfortable transition between two differentiated entities. Borderscapes are not based on stereotypes, but on evolving differences and links, outlining the constructions of multiple identities. Borderscapes do not try to make the separation invisible, they rather express the difference. Rather more as a network of superposed and diverse cultural constructions than as a blunt binary opposition of sides. Borderscapes are not a problem to be solved, they are rather considered as a resource or even a playground. A celebration of the experimentation of the otherness. *Faire face*, confront what does not belong to our shared ontologies. The front of a battlefield where the war that is being fought has a main aim: experiment then otherness in order to generate an own selfness (Table 1).

Borderscapes like the "Douane de Moillesoulaz" (CH-FR) or the "Place transfrontalière Jaques Delors" (FR-BE) are examples of the transformation of classic borders between nation state towards an integrative public space that serves as connection node and activity vortex of a metropolitan continuum. The profound failure of the square Jaques Delors, between the communes of Halluin (FR) and Menin (BE) leaves nowadays its almost 5,000 square meters to be used as informal parking. Only fast-food imbiß-like shops have been installed, as it was not interesting for any other kind of business.

Borderscapes are...

- spatial.
- topological.
- present and proud.
- multi-faceted.
- a resource.
- a playground.
- celebrative.
- about us and them.

Borderscapes are not...

- only spatial.
- cartesian.
- invisible.
- binary oppositions.
- a concatenation of stereotypes.
- a problem to be solved.
- competitional.
- about us vs. them.

Table 1. - What are borderscapes and what not? Compiled by the author.

People have not managed to appropriate the public space, and no common imaginary is created. Which factors have driven things to this situation? Which possibilities might offer public space in cross-border metropolitan conglomerates to be attractive from both sides of

the border? Had these places the chance to become a destination to explore an unfamiliarity beyond the otherness, an amalgam of "us and them"? How can those sites be a place for exploration? (Fig.1).

Metropolises segregated by a

border, like the conglomerate of Basel (CH), Saint Louis (FR) and Weil am Rhein (DE), or the *Agglomération Franco-Valdo-Genevoise*, called "*Grand Genève*", that comprises several Swiss cantons and French municipalities represent paradigmatical case-

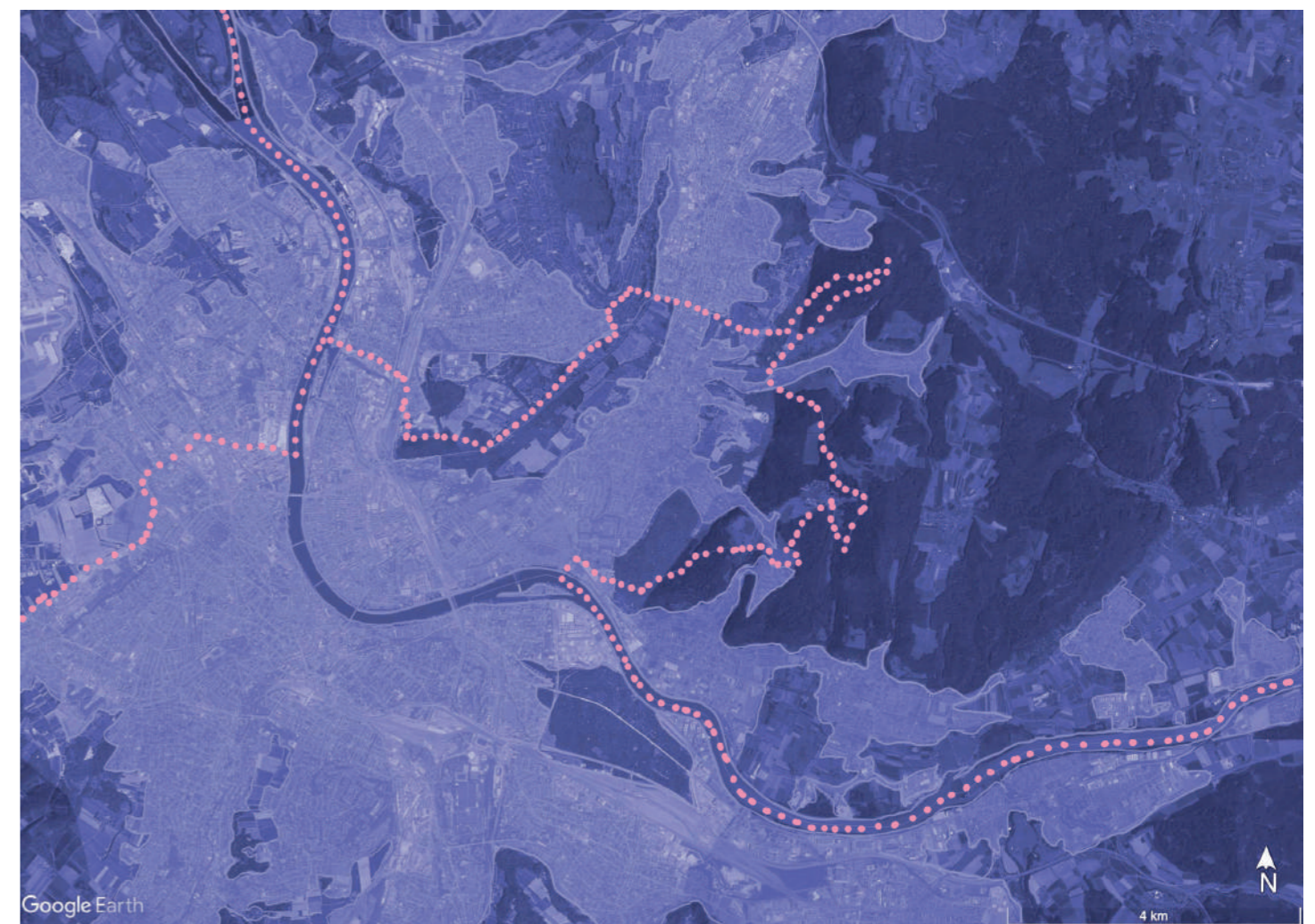


Fig.1. - Metropolitan area of Basel in Germany, France and Switzerland. Google Earth and drawing by the author.

studies for social bridges within different communities. Whereas the latter comprises a central core with an appendix (growing towards Annemasse) and several satellites (St. Julien en Genevois, Archamps...), the Trinational Eurodistrict Basel (TEB) comprises today of extensive areas in each country that compose a certain urban continuum. These EU border regions are test areas for shared policies. Can we consider them as experimental fields for the definition of novel spatial definitions of the future urban commons? The case of TEB is particularly interesting, not because of its doubtful success in the integration of the three countries. It is its urban continuity, that blurs many of the existing administrative borders, what makes this case study particularly similar to many European cities. Urban settlements where different neighbourhoods are different, lively and vibrant. Places worth being discovered.

EXPLORATION AND UNIFAMILIARITY

Commercial dynamics have been key to shaping the form of the world that we live today, and also the borders that we know and their evolution. Nevertheless, Adam Smith's idea of markets is based on a conception of the world of the eighteenth century, where information was centred around a small group of people. In our densely interconnected information society of today, this is not the case anymore. Ideas are, in many cases, quickly shared, contrasted and re-elaborated, which creates a form of shared intelligence. In this sense, some scholars defend a view that we have shifted from a market-driven world to a society where "idea-flow" is the new real driver of the world dynamics (Pentland, 2018).

We learn by imitation, and we modify our habits and adapt to new perspectives through exposure to other's ideas. This "idea-flow" is crucial to avoid populisms and extremisms, while making society move forward and also to generate common cultural grounds. Our habits are shaped by fast thinking

(associative, automatic and parallel), rather than slow thinking (controlled, serial). This means that social influence can even be stronger than our own ideas, rationalisations or personal desires. How do we acquire habits and new ideas, then? When are we exposed to novel concepts? If we rather learn by observation, it is crucial to understand the dynamics of engagement and exploration.

Our everyday life can be predicted quite easily. Using the location data stored in our phones, we could determine with a high precision where would we be most of our time. That is because our life responds to very regular patterns, that correspond spatially to the areas where we spend almost all of our time (Pentland, 2018). It is our community, our regular circles: work, home, supermarkets, coffee shop, our go-to pizza place. These places correspond to the "locus" of our everyday life. In healthy communities, this is the place where engagement within our group happens. But communities that are too closed can generate an echo chamber effect, and may not be as permeable to new ideas. That is why, on top of local engagement, a certain degree of exploration outside our circles is highly beneficial. Exploration could be explained as the wild card where we spend the small percentage of time that is not that easy to predict in our everyday life -because we go to buy a special piece of clothing, or because we want to try an exotic restaurant, or we visit an annual festival. Those are moments where we are most exposed to new ideas, to other forms of life, that we can bring back to our engaged community. This is the perfect environment for idea-flow. This exploration will enhance creativity, and it is documented that neighbourhoods with high idea-flow rates increase their economic prosperity more than those that do not show as much exploration dynamics (Pentland, 2018). That is why people with high rates of exploration are very valuable to the community. They are the social bridges that allow new ideas, habits and cosmologies to enter their closest circles.

Certainly, people with higher income explore more, since they

have their basic necessities easily covered, and they can engage in explorative expeditions. It can also be argued that it is precisely the higher purchase power that allows and increases exploration. Although this is true, it has been proved too, that a higher exploration rate reverts to the wealth of a community, regardless of its wealth (Pentland, 2018). Borderscapes represent here the perfect playground to perform engagement and exploration dynamics, as they host the known and the unknown, the familiar and the unfamiliar in very close distance.

Unfamiliarity. Indifference is identified as one of the drivers of cross-border immobility (van der Velde, 2005). What drives us to investigate the other side of the border? Van der Velde identifies a range of "bandwidth of unfamiliarity" to describe what encourages cross-border shopping, but it definitely could be extended for non-commercial explorations. It is crucial to understand that unfamiliarity is particularly subjective, and it affects different people in radically different degrees.

This idea of the unfamiliar is, of course, interdependent with what is perceived as familiar, and, therefore, to the attachment we feel to a specific place and its culture. How is this sense of belonging generated? And what does it trigger in our exploration rates? Whereas generating a strong sense of belonging to a place can increase commitment with the local community, it may simultaneously enlarge the distance felt to the spaces on the other side of the border. A certain balance between both concepts has to be found in order to stimulate exploration. That is the reason why many cross-border shops offer in their retail experiences a "familiar unfamiliarity". It appears to be attractive for diverse groups of people, fostering cross-border interaction.

In the year 2000, the European Union agreed a common motto: "united in diversity". It signifies how Europeans have come together, in the form of the EU, to work for peace and prosperity, while at the same time being enriched by the

continent's many different cultures, traditions and languages. The idea of exploration encompasses this goal, but raises the question of the meaning of integration. Are two communes on both sides of a border more integrated as they are more similar and uniformed? What builds a shared identity in a cross-border region? Can the attachment to a cross-border region be represented and reinforced by a certain incomprehension, that makes differences explicit? (Durand et al 2018, 2019) Can the awareness of these differences be positive for an integration that does not stand for equalisation or uniformisation?

Social benefits of exploration. As stated before, communities with high idea flow rates, that are locally engaged and take advantage of exploration of non-daily realities show a wide variety of indicators of success: less polarisation and higher integration, innovation and creativity (vital for society of knowledge), economic growth and a fairer distribution of wealth. These contemporary explorers are

active and take part and have a responsibility in shaping the future of the community. As lower income habitants of cities explore less, they do not benefit enough from these advantages. Which urban design practices and approaches foster the exploration rate of this social group?

These principles are not related to a certain "city branding" or urban marketing. They do not try to generate a specific new superficial image for the metropole, but rather serve as a certain infrastructure for lower income inhabitants to increase their exploration rate, and, with it, their life quality. This lecture of exploration of the unfamiliar is therefore diametrically opposed to Richard Florida's "Creative classes" (2002), where "Street level culture" is defined as the stimulation needed by the individualistic way of life of the creative elite, that would seemingly increase the wealth of a city. Furthermore, the creative city policy prescriptions proposed by Florida have proven to exacerbate social and economic inequalities in America (McCaan 2007, Ponzini 2010).

URBAN NECESSARY CONDITIONS

Considering that increasing exploration habits are beneficial to every social group, and knowing that people with the lowest incomes are the least engaged with exploration, the question is therefore clear. How to enhance the exploration rates of this social group? What are the factors that diminish their will to explore, and which ones can enhance it? Is there an opportunity in the design of public space (unexpensive, unprogrammed, open to everybody) to generate a greater attraction for these groups?

Which parameters should these public spaces display in order to allure these social groups? What time and space relationships (Hägerstrand 1975) can guide the design of borderscapes? From an urban planning perspective, it is fundamental to consider three core factors: accessibility, affordability and attractivity (Fig.2).



Fig.2. - The Rhine, Basel's main public space. Photo by the author.

Accessibility. Physically isolated neighbourhoods have worse social outcomes (Smith, Mashadi, and Capra 2013). If the exploration rate of these communities is reduced, its own capacity for development and social improvement is equally reduced. The most common mobility system of these neighbourhoods is public transportation: bus, train, tram.

Therefore, planning transportation networks that promote connectivity allows for an increase in the opportunities of economic and social development. A transport system such as that implemented in the city of Zürich fully corresponds to an infrastructure allowing a balanced combination of engagement and exploration. Nowadays it is easy to collect urban data of transportation in the city that may help us to understand the real everyday fluxes. These data could potentially be used to plan public transportation that promotes more exploration dynamics.

In a cross-border context, spatial mobility and social mobility go along together, much more than in many other contexts. The notion of *"motility"* tries to define the potential of mobility, that is, the possibility of people to go to different spaces (Kaufmann et al. 2004). Three dimensions are crucial to it: access, competences and mobility projects. Access means both contextual (transport offer) as well as personal (reachability to the tools facilitating mobility, as cars, bikes or information and communication technologies).

International motility competences stand for socio-spatial and linguistic competences: cross-border urban agglomerations expose their inhabitants to more frequent confrontation to alterity, and their competences drive the number and the type of explorations. The last dimension, the mobility projects, is addressed from three different angles: the local knowledge, spatial curiosity and the willingness to move or be treated medically on the other side. This idea of spatial curiosity is closely related to Pentland's concept

of "exploration" and Van de Velde's "unfamiliarity".

These three dimensions are used to establish a list of users typologies: the "not very motiles", the "not very interested in space", the "new explorers", the "rooted cosmopolitans" and the "very motiles" (Dubois, 2017). The analyse of the population through the potential of mobility definitely helps to understand the ways of life of cross-border metropolises.

Societies are heading towards a reduced mobility paradigm due to emissions responsible for climate change. It is probable that the social groups that will cut down on "extra" city trips will be those with lowest financial resources, as prices are constantly increasing. This paradoxical situation requires strong urban policies that account simultaneously for the ecological and the social situation.

Affordability. Although many people have genuine interest in what the other side of the border has to offer, like the municipality of St. Louis, that even shows a high identification with the Eurometropole (Dubois, 2017), the fact of the cost of the activities in Basel being much higher than in France, generates an economic border (van der Velde, 2011). Exploration is often identified as a consumer practice: eating out, buying new clothes, going to a concert (Pentland, 2018). This particularly severely affects the groups of society with the lowest income. Those who already take the least advantage of the benefits of exploration. We may infer that the wealthiest parts of the society explore more, which is true, since they do not have to worry about basic needs in their everyday life.

However, it is also true that a higher rate of exploration of a social group is related to an improvement in its economic capacity as a community. A direct impact on specific individuals is more difficult to demonstrate, but the positive evolution of the whole neighbourhood is proven (Pentland, 2018).

In order to understand the manifold forces that shape borderscapes, it is crucial to differentiate in detail the diverse social groups of these regions, beyond the binary distinction of both sides of the border, not only in social classes but also in gender and age groups. These metropolises tend to appeal to a certain cosmopolitanism due to a "natural" international vocation (Adly el Shentenawy 2014) of a city in which no one is a stranger (De Traz 1995). In this sense, the expat communities of metropolises like Basel or Geneva act as a catalyst or a test field, because for them, both sides present the value of exploration. They tend to move through the cross-border metropole as a "post-border" individual, that does not perceive the border as a limit, but as the gate to further and different activities and opportunities. More often than not, their purchasing power is considerable, therefore they have quite different dynamics to the citizens with lower income.

Attractiveness. In order to understand the possibilities to enhance the exploration rate, it is necessary to map the spatial curiosity that drives people to go to other parts of the border, and understand their socio-spatial competences. What is the driver of cross-border visits? From a motivational point of view, there are two main groups, the opportunists and the curious. The former takes advantage of the border to buy cheaper goods, they have a fixed goal and few interactions happen during the visit. Whereas the latter is moved by a curiosity towards a certain exotism, that can be considered as a driver for a shared integration. Both can act as social bridges in different ways and intensities. The opportunistic may have no intention to build up on cultural assemblages. Nevertheless, the sole action of being exposed and confronted with the unfamiliar already generates situations where positions have to be taken, and novel assemblages are generated (Fig.3).

The asymmetry of the interests and explorations has to be taken

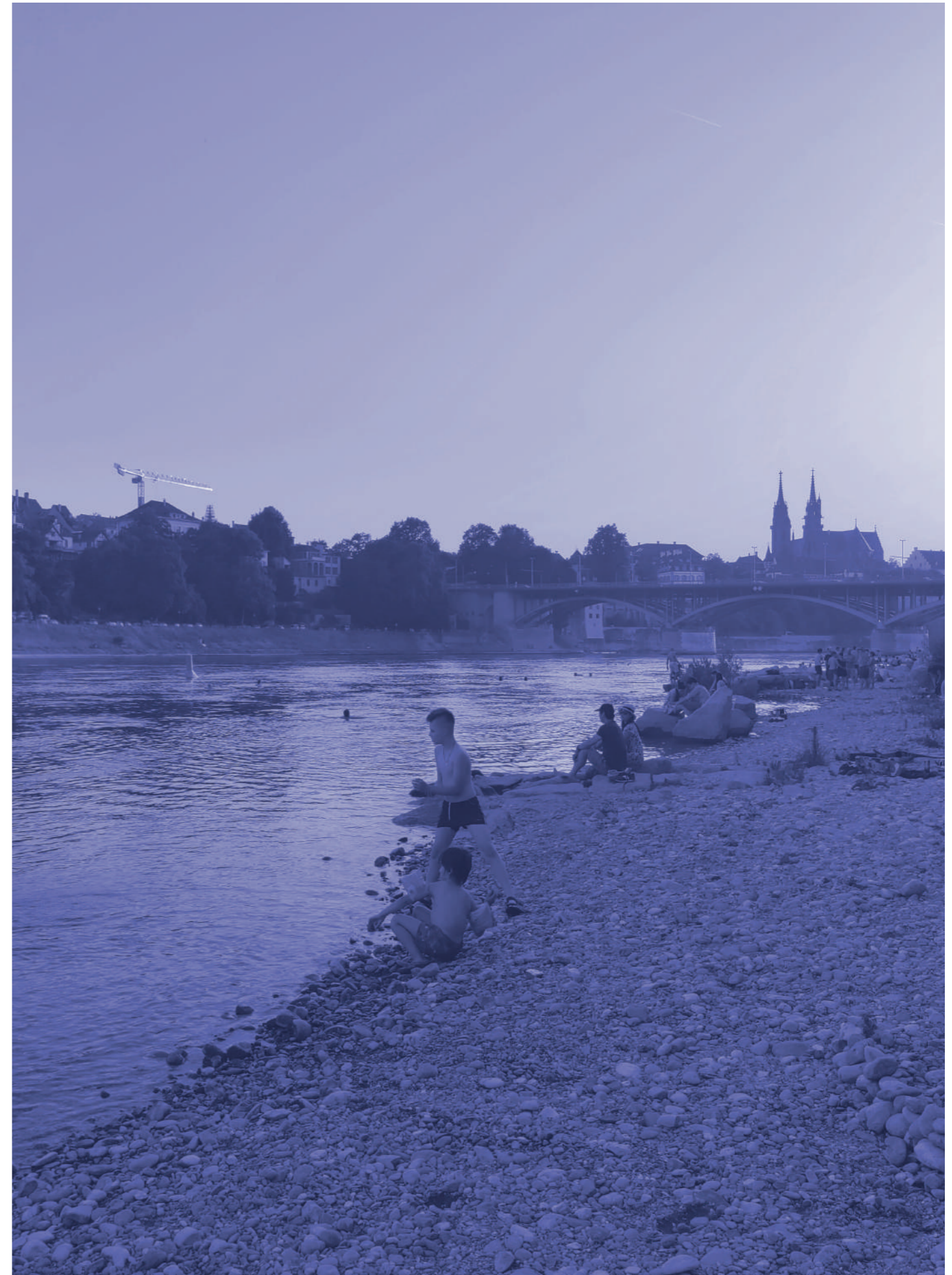


Fig.3. - Basel's borderscape along the Rhine. Photo by the author.

into consideration: they are certainly unequal and are driven by different forces within the three countries of the Basel metropolitan area. In many cases, these forces are modelled by stereotypes and clichés. It is therefore important to find out what is expected from the other side, and how that image was consolidated in their minds. The quest of a shared image of the borderscape is in this case difficult to achieve. Furthermore, it is key to ensure that these places also interesting for all social groups, so that the social mixture is assured.

Space programming. The functional and social specialisation or segregation that follows the Athens Charter can be considered, at the same time, a problem and an opportunity. It leads to a high ecological footprint transportation model, and to a lack of facilities and opportunities for the lower stratus of the population within the neighbourhoods they live in.

Nevertheless, enhancing their socio-spatial competences can lead to exploring experiences that allow a higher idea-flow. The opportunity lies in the specific characterisation of each neighbourhood, in order to become interesting for exploration from the adjacent urban zones. Working with the logic of a densely woven network of neighbourhoods, the attractivity and exchanges between the different communities increase.

Most exploration activities currently take place in a consummation framework. The price of events and activities in Switzerland is one of the drivers for French and German inhabitants not to go to Basel (Dubois, 2017). Public space, like the riverbanks of the Rhine are accessible for almost everybody as they are free of charge.

Nevertheless, a certain activity or event is generally required to be attractive to visitors from other neighbourhoods. This is the case, for example, of Morgenstraich, during the carnival time. A question arises then: how to deal with programming activity in the public space to enhance transnational

explorations? Can the use of public space be reshaped in order to gain the attention of borderscape inhabitants? Could this access and knowledge of superposed cultural approaches guide a new understanding of the urban sphere? As Ábalos and Herreros (1996) perfectly described the nomad sophists:

We could perhaps borrow a historical image, that of the sophists, who were a kind of nomad, and contributed to the transformation of the idea of public space. These pre-Socratic philosophers who travelled from town to town in ancient Greece came to understand that the polis was not the product of natural or cosmic forces, but of treaties and agreements between peoples. Awareness of the contractual basis of society led the citizens of the polis to abandon their myths and to engage in political debate in the agora, which became 'public' space in the fullest sense of the word. This new way of thinking, however, required teaching and training in rhetoric, and the sophists were thus provided with the means of earning an income. Gradually they transformed a region that was geographically and politically fragmented into a cohesive territory unified by a new cosmopolitan culture.

ÁBALOS Iñaki, HERREROS Juan 1996. Areas of impunity and vectorial spaces.

Could contemporary borderscapes-inhabitants and practices be able to reinterpretate the use of public space, as the nomad sophists did? Are they the social bridges that are equally engaged with the local community curious to the exotism of the neighbour and therefore exploring their urban realities? What lessons can we learn about the new definition of these transnational subjects? How should public spaces be designed in order to encourage explorations from other parts of the city? Are the results of a cross-border urban conglomerate exportable to other metropolis?

DISCUSSION AND CONCLUSION

Transnational metropolises often showcase high inequity. Understanding borderscapes as a zone of opportunity to investigate how exploration happens in cities is key for urban planners. In these areas, the design of public space is crucial to promote affordable, accessible and attractive poles that stimulate interaction between different social groups. An inclusive design of public space necessary entails creating appealing explorative destinations for the neighbourhoods with lowest idea-flow ratio. A better comprehension of these processes in borderscapes facilitates a better comprehension of the exploration dynamics of any city with strong differentiated neighbourhoods, as cross-border metropolises can be understood as a magnifying glass of the exploration dynamics of every city.

Cities like London, Berlin or any metropolis that counts itself as having strong and differentiated neighbourhoods present certain similarities to the case-study of Basel. The multi-national context of the latter is surely not present in the former, but the exploration dynamics that foster an increase in wealth operate in a similar manner.

In fact, these cities that are not considered borderscapes are the main object of study for exploration. What could those cities then learn of multinational urban conglomerates? In metropolises like Basel, many actions are taken to enhance exchange and a certain level of integration that does not mean dissolution of identities.

The special attention paid to accessibility, affordability and programming of the public urban spaces reveals mechanics and processes that every city could take advantage of.

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Crossing gender and biogeography to rethink the habitat of a fluvial community in Ecuador

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Este trabajo es una mirada sociocrítica ambiental a la realidad de ciertas comunidades en un ecosistema fluvial latinoamericano. Es un camino que he iniciado como arquitecta, paisajista y geógrafa, a través de múltiples experiencias en diversas comunidades del continente. Las fronteras naturales determinan cómo se diseñan las comunidades rurales porque las personas dependen de los bienes y servicios de los recursos naturales para sobrevivir. Sin embargo, el diseño incluye múltiples dimensiones de relaciones sociales y culturales de una comunidad afrodescendiente. Esta investigación quiere desvelar las capas de poder ocultas en el diseño y fue realizada en una pequeña comunidad de 300 habitantes en la Isla Santa Rosa en los manglares del norte de Ecuador y reflejan una mirada especial sobre el territorio de esta comunidad pesquera. Los manglares constituyen un límite particular entre el mar y el territorio habitado y al mismo tiempo, da origen al establecimiento de un ecosistema económico social patriarcal que funciona con claras fronteras invisibles profundizando desigualdades sociales y de género. Los resultados muestran que una propuesta educativa que aborde la biopolítica del hábitat desde la igualdad de género y la investigación acción participativa contribuirá a través del empoderamiento de las mujeres a mejorar sus lugares de vida y brindará una contribución efectiva sobre los ecosistemas sociales y naturales.

This work is an environmental sociocritical view of the reality of certain communities in a Latin American river ecosystem. It is a journey that I have started as an architect, a landscape designer and a geographer, through multiple experiences in various communities in the continent. Natural borders determine how rural communities are designed because people depend on the goods and services of the natural resources for survival. However, the design involves multiple dimensions of social and cultural relations in an Afro-descendant community. This research focusses on the power layers that were hidden in design, and it was conducted in a small community of 300 inhabitants at Santa Rosa Island in the northern mangroves in Ecuador and reflects a special look at the territory of this fishing community. Mangroves constitute a special limit between the sea and the inhabited territory and, at the same time, give rise to the establishment of a patriarchal social economic ecosystem that works with clear invisible borders, deepening gender and social inequalities. Results show that an educational proposal that addresses the biopolitics of the habitat from gender equality and participatory action research will contribute through the empowerment of women to improve their places of living and to enhance an effective contribution on social and natural ecosystems.

MUTANT LANDSCAPES

The object of this research is to explore the inhabited spaces through the fictions that shape female subjectivities in the rural space of the Cayapas Mataje Mangrove Reserve at the northern part of Ecuador. First of all, it was necessary to understand how a particular landscape is built by nature, the second objective is to know how and why people in communities used those landscapes. This territorial occupation process is the same used on the Pacific coasts of Colombia, Ecuador and northern Peru, where the environmental services of the mangrove ecosystem are essential for survival and the floodplains are the spaces used for the construction of towns and houses.

Architecture is a techno-living process where interpretation and techno-cultural production of landscapes are previously internalised. It is projected onto a territory from a textual and sensory narrative strongly determined by the visual and lived experiences that reproduce a way of living. These narratives are fulfilled with meanings not always clearly visible. On the other hand, even in a participatory design process it is not possible for people to describe these meanings that unveiled patriarchal power strategies display. Moreover, many times, as designers, it is possible to interrupt some of those unknown

meanings that could provoke undesirable consequences in the community-power relationships. The specificity of the narrative will lead to the success or failure of a proposed project.

I have focused my study on the representations involved in the production of domestic and community space as visible strategies that claim their own production of discourse and participation. I transit the biopolitics of the habitat, through the spaces of power recorded in the language of the bodies and the expressions of subjectivities. The complexity of the task also addresses an urgency, that of linking academic knowledge to practice and has led me to introduce visions and methodologies from various disciplines, community strategies and to in-inhabit the territories sharing daily life with the communities for more than 10 years. This supposes a new look in the understanding of the social dynamics and the ways of social construction of space for architecture, landscape and planning. This process gave me new meaning to the strategies conceived by women, in an attempt to approach the complex networks of invisible power. In this way, I registered particular modes of negotiation that question the subjectivity of the poor and Latin American minority women, within a highly normative patriarchal society.

The habitat built in fluvial contexts, both in

the domestic sphere and in the community sphere, evidences the uniqueness and indivisibility of the ecological, environmental, relational and cultural systems that constitute ecologies, which merge into *natures-culture* and confront the use of dichotomies such as architecture-nature, built-unbuilt environment established by various discourses in the last decades (Braidotti, 2013). During the Capitalocene, genocide, extinction of resources, division of the world, evictions, territorial dispossession and any action that favours the extraction of resources from life systems is consented and consciously assists the extractive process, reaffirming representations and an idea of the world (Haraway, 2012). Donna Haraway urges us to rethink the minimum unit of the system, *natures-culture* as the indivisible unit that we inhabit. The dualities of nature and culture, man and woman, poor and rich, all dichotomies that have divided the thought of this era and invites us to deconstruct them in each exercise of thought.

These questions began around the birth of the 21st century. Despite the need for housing and safe environments for the thousands of people that inhabit Latin America and the Caribbean, the urban-architectural projects that were built in safe areas and with some minimal comfort, be it drinking water, electrical and sanitary service, do not

receive acceptance by the users. New developments generate serious negative impacts, such as gender violence and violence against children, neglect of the elderly, social fragmentation and other impacts due to the relocation of people, when neighbourhood projects are proposed in places outside of a consolidated city, with difficulties of accessibility or long journeys to the areas where people cannot access health services, education and jobs. The evicted people have refused to inhabit them and if they have done so, it is due to the extreme need for a shelter, and they hope to return to inhabit the place of origin as soon as possible or rent the place to more disadvantaged people. These collective houses deteriorate very quickly, contributing to the slum condition of the habitat built with state funds. For this reason, the words of Habermas become relevant, "*the cynical recognition of an unjust world situation does not point to a deficit of knowledge but to a corruption of will. Those who could best know do not want to understand*" (Habermas, 2002).

THE NATURAL COMPONENT: A MANGROVE ECOSYSTEM

Safeguarding wetlands is a task that cannot be postponed. The future water and food security of 600 million inhabitants depends on the governmental decisions of LAC (Latin American and Caribbean),

in each of the countries of the region. Water is one of the critical components of wetland ecosystems that provide environmental services and contribute to reducing the impacts of greenhouse gases (GHG), and among others, to protect the coasts from tsunamis in mangroves forest or floods in the delta, to provide habitat for a great variety of species, transportation of products and food to the communities.

However, there is a general consensus that the issues of biodiversity and natural resources, even when they are considered in the Sustainable Development Goals (SDGs) developed by the United Nations, and enunciated and adopted in 2015 by the countries of the region, are insufficiently positioned given the structural inequality in LAC, a state of play which sustains the production of asymmetric relations from the State, privileging regional or national power groups.

I have started this research by looking to identify the specific, the essence of the landscape, and the ways in which human habitability is built. However, in the expanded journey of situated knowledge I have found the power structures that are built in social relations. They are the ones that determine the idiosyncrasies and the act of design in domestic and community life. For this, I have analysed the behaviour of certain tangible and intangible critical components of the habitability of fluvial spaces, identifying the ecological

processes that enable and determine the production of fluvial landscapes.

The most recent evidence from the scientific community that studies climate (IPCC, 2013, 2020; Nagy et al., 2019), strongly shows that climate change will produce an average increase in the temperature of the planet's atmosphere between 2 and 3 degrees by the year 2050, having a direct impact on the food security of the poorest countries. This situation will change the rainfall regimes in many regions, producing severe droughts and lack of food, a situation that we are experiencing in LAC in 2020 (IPCC, 2020). There is a general consensus that biodiversity issues are undervalued in development planning and in decision-making about unsustainable investments. Considering that current food security strategies are deficient and governments fail to comply with their commitments to protect natural resources and therefore the human population, it is foreseeable that this transition towards a dangerously hotter planet is set to continue.

For this reason, it is highly important for designers to know how to prevent serious changes in landscape formation. It could be said that fluvial landscapes are the geographical spaces that contain the areas of influence of a river or flow of water, that include its hydro-period. Habitability in fluvial spaces is determined by the particular dynamics that depend on

water and two daily tides with two maximum points of the water level that condition the daily activities of the communities (Kandus et al., 2010).

The region recognised as the biogeographic Chocó is a corridor that extends from Tumbes in northern Peru to Chocó Magdalena in the south of Panama in the Darién region, to the coast of the Pacific Ocean and inland bordering the western foothills of the Andes Mountains. The corridor covers an area of 200,000 km² and includes fluvial-marine plains, alluvial plains, humid and very humid forests on the Pacific coast of Colombia, the province of Esmeraldas and the dry forests of the province of Manabí, both in Ecuador, constituting a clear region of coastal edge of mangroves.

The climate is of high rainfall from 13,000mm to 3,000mm per year, with tropical temperatures with averages above 18°C with isolation from the Amazon basin by the Andes mountain range, and it houses a great biological diversity. A high variety of species lives in this region, especially vascular plants (9,000 endemic species), birds (830 species, 10.2% endemic), mammals (235 species, 25.5% endemic) and amphibians (350 species, 60% endemic). The inhabitants of the area are mostly Afro-descendants, mestizos and indigenous nationalities. Due to the importance of endemic species (Rangel, 2004), 6.3% of the biogeographic Chocó is protected by Ecological

Reserves and National Parks.

Within the Chocó region is the Cayapas Mataje Mangroves Ecological Reserve (REMACAM) in Ecuador. The case study of Santa Rosa Island is part of the reserve inhabited by Afro-descendant families who maintain their cultural heritage along with other islanders of the Pacific coast. In Ecuador, mangroves are located on the coast of several provinces like Esmeraldas, El Oro, Guayas, Santa Elena, and Manabí, and the total surface extends to 161,835 hectares (MAE, 2014), where social, economic and political factors are directly related to mangroves.

The study area is a flat fluvial-marine plain, close to the sea, with recent alluvial deposits. It is located at the mouth of several rivers, including Cayapas and Mataje, which are the limits of the reserve that are intersected by islands with a maximum height of 3 m. separated by sinuous marine channels where the mangroves settle. Towards the interior of the islands, swampy depressions are found as closed units with a lower level than in the mangrove edges that are exposed to the influence of the tides (MAE, 2014).

The most widely dispersed mangrove species are the red mangrove, *Rhizophora mangle*, and the white mangrove, *Laguncularia racemosa*. They form mangroves with persistent leaves that grow in the mixture of river and sea water with physiological

adaptations to salinity variations. Mangroves are halophytic plants that generate a horizontal network of roots for their stability and absorption of nutrients that come from both the sea and rivers, and are deposited on the surface of fine sandy soils. The islanders say that mangroves are trees that walk, due to the way they reproduce, since it is a pioneer plant that develops a large number of shoots that grow around it, and allows the habitat of various species to be generated under its crown and roots.

They have lance-shaped seeds that stick to muddy beaches and are washed away by the tides. The mangrove adapts to the cycles of the tides, which is why the roots are cyclically covered with water or exposed to sunlight. Some of their adaptation mechanisms for times of flooding are having aerial roots from the upper part of the crown that join an important network of roots and in other cases, such as mangroves that are found in primarily saline waters, develop roots that grow upwards, sticking out of the water. These adaptations prevent anoxia or lack of oxygen in the submerged parts and facilitate the removal of excess salts (Rangel, 2004).

Mangroves are a type of forest that grow at the interface between the sea (saltwater) and a riverine system (freshwater). Moreover, mangroves (Fig.1) are wetlands considered



Fig.1 – Mangroves, Ecuador, 2021. Author source.

as important carbon sinks, because of their high carbon sequestration services. Mangroves fix carbon dioxide (CO₂) from the atmosphere, into biomass and saturated soil, transforming them into organic carbon through the process of photosynthesis. The saturation of water in the wetlands helps to the accumulation of carbon since it decreases the rate of decomposition of organic matter (Hernández, 2010).

Indeed, the dynamics of wetlands is based on allowing a permanence of water in the soil, considering that each wetland has a specific hydro-period. The importance lies in the presence of water for long periods of time that can lead to permanent or semi-permanent saturation of the soil (Kandus et al., 2010). Consequently, it will present an adapted flora (mangroves) and fauna, which lives in saturated soils, since they require a temporal habitat with both terrestrial and aquatic characteristics to complete their life cycle (Barbault, 2011; Quintana, 2010).

In recent years, the Ministry of the Environment and Water of Ecuador has taken the initiative of granting 'use zones' within the mangrove to the communities in exchange for protection of the mangrove reserve through the "Agreements for Sustainable Use and Custody of the Mangrove to Ancestral Users". This situation has come about since the national government does not recognize the

ownership of the land to the ancestral inhabitants. Although the initiative is a governmental advance of the Ministry of the Environment and Water, it has not been possible to materialise it, since it is not possible for the communities that live below the poverty level and without institutional support to protect the mangroves from deforestation or from the illegal activities that take place in this border area with Colombia. The agreements are generated to promote positive management actions from the communities, to maintain a sustainable fishery, but without possible practical implementation in the territories.

THE SOCIAL COMPONENT AND MANGROVE AS A SOCIAL SPACE FOR FREEDOM

In the 18th century, the southern area of Chocó became the largest slave economy in the Viceroyalty of Nueva Granada south of Colombia, with the extraction of gold for the owners of Cali and Popayán, where the population became mostly black with the intensification of slavery. The population numbers show for 1710 the number of 1,350 slaves and for the beginning of 1800 the number of 15,000 slaves (Leal León, 2016; Rangel, 2004).

According to population studies carried out by Almarío García (2009), since the 17th century, the Nuevo Reino de Granada was one of the

greatest centres of mining exploitation having rivers that formed the axis of the Spanish civilisation. Black slaves were brought from Africa from the west coast countries like Congo, Angola, the Ivory Coast, and Guinea. The coast of west Africa has plenty of mangroves, a similar ecosystem to that existing in the Chocó-Darién region (Rangel, 2004).

The rivers of the region are born in the western Cordillera and descend towards the Pacific Ocean. On its margins, alluvial mining settlements became consolidated. In river's upper part, called monte, new settlers organised agricultural spaces and the extraction of rubber and tagua (seeds of a tree palm), and in the lower part, up to the outlet to the sea, settlements of fishermen and shell and crustacean collectors. Although separated from their families and having different languages and cultures, the slaves quickly adapted to the warm tropical forest areas of the Pacific coast and became a new cultural group in America. At the first period of the slave system, "the miners had to feed their slaves and provided them with a diet of salted meat, panela, honey and brandy, which were produced in the Cauca Valley area" (Almarío García, 2009, p.10). The diet is complemented with plantains, corn and forest products. Later on, the slaves grouped into little communities and started to provide their own resources for living.

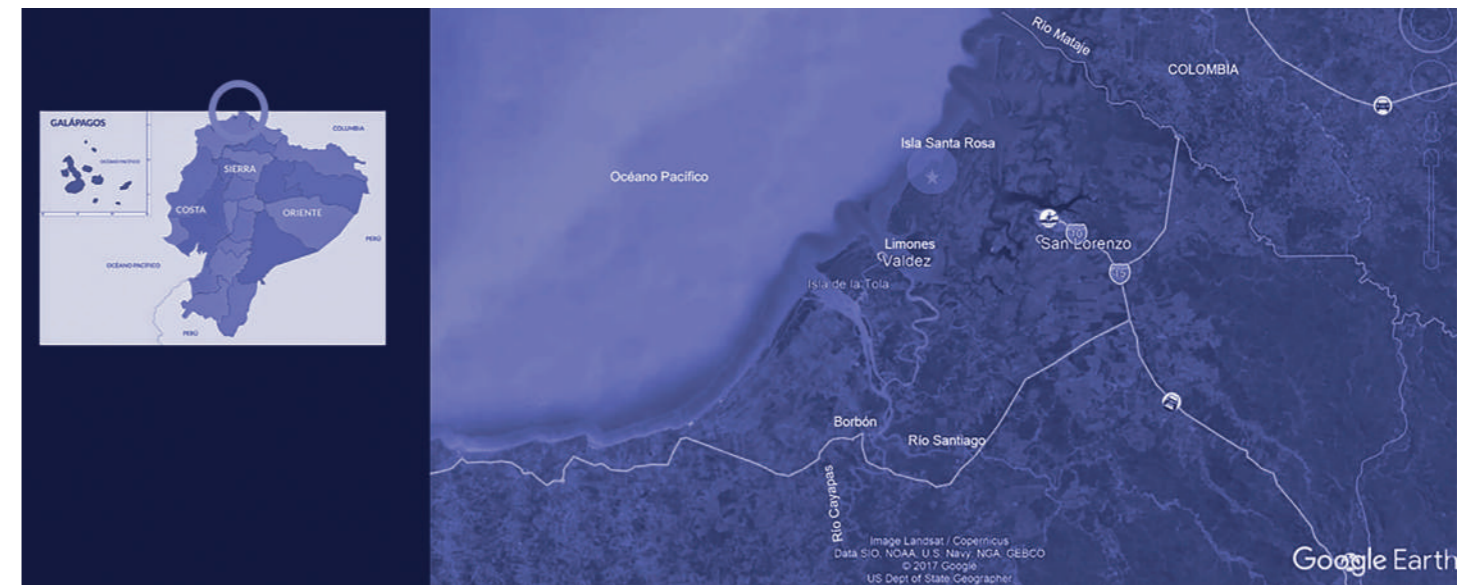


Fig.2 – Santa Rosa Island location. Ecuador. Source Google Earth.

From the colony, many slaves were able to escape to these areas with a great capacity for survival, while others bought their freedom with the gold obtained in the mines. The abolition of slavery in Colombia and Ecuador was promulgated in 1851. Slaves and free people conquered the rivers, due to their ability to live in the network of rivers and estuaries, and of the tropical forest which other people less trained did not access due to its dangerous nature. The Spanish expeditions in the mangrove territories failed many times because the swampy shores prevented them from disembarking and constituted an important defensive mechanism. In fact, it is very risky to walk on swamps or climb the slippery mangle roots. Indeed, the conquest of the rivers, from their headwaters to the outlet to the sea, and the skills developed for survival in the territory, made the first African communities create the conditions for habitability in a new social space of freedom.

The importance of the rivers in the settlement of the Chocó is evident in the specialisation of the productive activities that were carried out on its banks. Along the rivers, communities were established and territories were shared between the local indigenous groups and the free slaves or runaways who escaped from the mines (Lapierre Robles and Aguasantas, 2018). There were indigenous ethnic groups in this area, however their record is lost in the history of the region due to the intensive form of settlement of the Afro culture, with a reproduction system that greatly exceeded the number of the indigenous population. The mixture between Afrodescendants and indigenous people was called *zambos*, especially in the territory of the Cayapas river, and their percentage is markedly lower in relation to the afro community.

The Chocó area is inhabited mostly by Afro-descendant families (Fig.2). This culture has had since its arrival in the American territory, the

strategy of increasing the number of people in their communities to achieve group survival. This strategy allowed their supremacy in the region. Men performed the hardest and riskiest jobs, and women were excluded from these jobs as a mechanism to optimize the protection of their children and women. Likewise, women were assigned the role of reproductive and caretaker of the family group that prevails from colonial slavery (UNDP, 2011; Cortés, 2012).

Later, in the second half of the 19th century, the black communities established themselves on the coasts of the Pacific Ocean, at the port of Buenaventura and Tumaco and they extended in the domain of the sea to Guayaquil in Ecuador, towards the south of the Mataje river. The settlement had the same characteristics along the coast, small fishing villages in the mangrove islands. Consequently, the spaces of the river, the estuaries and the sea were associated with the masculine realm,

while women stayed in the family home facing the river. Fishermen considered that establishing oneself in a place meant bringing a woman to take care of the domestic spaces, the kitchen and some small crops, but especially for reproduction and family care.

Nowadays, the region is crossed by an infinite network of estuaries of various flows that run between the tropical mangrove forests and although there is a high degree of deforestation, the density of the forests is highly significant (Oslender, 2004). It is difficult to live in these areas. The way to communicate between islands is through the rivers. The aquatic space (Oslender 2017, 2004, 2002), is built and takes on meaning due to the influence that high rainfall between 3000 and 6000 mm per year has on life, tides that can rise daily up to 4.5m above the level of the rivers, and the periodic floods that mark the tempo of life in the communities. A substantial advantage was added by the climate and abundance of food.

The strip of the tropics where the temperature does not vary throughout the year is a favorable environment for the development of a great variety of animals, trees and plants, which means that these spaces can provide themselves with abundant and permanent food. The resource extraction system, mining, rubber, tagua, did not greatly affect the forests or the fauna and flora. Artisanal alluvial mining or

the collection of black rubber, did not significantly affect the forest. Once the mine was abandoned the vegetation cover grew again, and since rubber trees grow sparsely, the damage is less, with the same subsequent recovery, as well as in the case of the tagua palm, from which the seeds were collected in clusters and it was not necessary to cut it (Leal León, 2016).

The communities deepened their knowledge of food and medicinal plants for daily food and symbolic, magical-religious and healing uses, emerging in the communities the mediators between nature and the community, such as healers, herbalists who knew the tradition. The river and the tropical forest will give rise to oral traditions, myths and legends of the area. Indeed, Afro-Ecuadorian culture has a strong relationship with its geographical environment, and generally remained in warmer areas closer to the rivers.

SANTA ROSA ISLAND AND THE POWER ECOSYSTEM

A territory is the place of exercise of power. From the social and political point of view, a territory is administered and communities establish a form of organisation which rules community life. It is where the territory joins another concept, accessibility (Gottman, 1973). At present, it is common to observe the notion of territory associate

with belonging, managing, inhabiting and moving through a territory. Entry into a specific territory is restricted or limited and in this case, a new limit is conceived by the timeline of the water.

Since my first interaction with the community, I realised that life in mangroves depends on the timeframe of the hydro-period (Fig.3 and 4). It establishes the first and most important living condition and frames the economic and domestic life. Life plays around the hydro-period (Dazzini Langdon y Viola, 2020).

In Santa Rosa island, the community is coordinated by the association of women collectors of bio-aquatic products. River communities push their survival strategies to the extreme to face the challenges of inhabiting a place in, on, and with water (Fernández, 2012). However, the human being transcends the space-sphere of the individual sensations perceived by the body, installing the space that questions the mind, memory and the psyche. All these spaces shape their space, and are also, fundamentally sealed with affective relationships between people with the place where these relationships are acted, which leads human beings to build memories linked to the place (Tuan, 1974, 1979, 2018). The women's own space is the river (Fig.5) and the memories that the river bring.

In the fluvial communities, the water, the river, the



Fig.3 - Life in Santa Rosa at high tide. Author source.



Fig.4 - Life in Santa Rosa at low tide. Author source.



Fig.5 - Women returning after a long day of shelf collection. Author source.

estuaries, constitute the essence of daily life (Dazzini Langdon, 2020). The rhythm of the tides marks the tempo of everyday life. River communities make up a system interconnected by water that escapes all categories. The events that take place in these edge-spaces, margin-spaces, make possible the adaptation to the place with a greater permanence in their agency (Stavrídes, 2016).

The anthropologist Victor Turner (1980), developed the idea of marginal phase in Zambian ritual systems. In his research, he has determined that the spatialised social organisation is made between fixed structures of specialised spaces and spaces of passage or transition (Stavrídes, 2016). These passing or intermediate spaces are where precise functions and spatialities become blurred and facilitate the transition to a new state. The space of passage or transition is the river and these nomadic communities settle according to the arrival of their inhabitants. The community is structured through family social relations and spaces of production. The informal market of shell collection and artisanal fishing generate spaces with diverse temporary uses. These are heterotopic spaces that are woven and consolidated on daily tasks.

In the river communities of the region, as well as at Santa Rosa island, access to natural resources is differentiated by gender, women are mainly shell collectors and men



Fig.6 – Typical house. Author source.

are in charge of artisanal fishing. A sexual division of labour exists. The supplies needed for women tasks of recollection are one canoe, and buckets, instead, fishermen need a motor boat, gasoline, and nets. The economic and power asymmetry arises when the money obtained from the sale of fishing is greater since it is sold in the nearest market. Women, on the other hand, use what was collected during the day for daily family food, and sell the surplus of their production on the same island at a lower price. The task of the women of Santa Rosa island is mainly the care economy for the assistance of the family.

Every day, women leave their houses when the tide begins to go down, and arrive at their working areas at low tide. This allows the shells to be easily removed. The tides

let only five hours for the collection of shells and when the water rises again, they return to the community. The harvesting task is carried out among the mangrove roots, where women climb under the bite of gnats, barefoot and with minimal protection. It is an extremely arduous task. Women carry the 6 metres long canoes by hand, over their heads through the small paths of the town just to the front door of their houses. There, they unload and clean the shells on terraces outside their homes.

Houses are of minimum dimensions approximately 10m x 10m (33 x 33 ft), built with a mangrove wood structure that withstand the daily tide well, cement blocks or wood on the walls and aluminum sheet roof (Fig.6). They do not use traditional materials such as guadua cane because they do not

resist high humidity or the deterioration caused by salt water. Inside there is a large living-dining-kitchen area where breakfast and lunch are prepared daily with the extended family in the elderly person's house. These areas have furniture to sit and rest as well as hammocks hanging from the roof (Fig.6).

When studying these dynamics, I have been able to observe that women use a differentiated path to go in and out of the settlement when they carry out their daily productive tasks. The material limits of the town of Santa Rosa are mangroves and rivers (Fig.7).

The image taken with a drone (Fig.8) shows the community of Santa Rosa island. It attempts to point out, the paths and social dynamics of the community identified by gender. The line in pink shows the path



Fig.7 – The town of Santa Rosa is surrounded by mangroves and rivers. Author source.

preferred by men who use the main roads and organise their activities from the pier (Number 1), which is their meeting space. At this place, fishermen share the news of the day, and wait for the tide to return from fishing. From the pier, it is possible to dominate the view of the Santa Rosa estuary on the left of the image. At this point, the movement of the boats that sail in the estuary is monitored, and at the same time, they can observe the activities within the settlement.

The pink line shows the daily route of the fishermen, who are in charge of the productive tasks of fishing from the dock where they

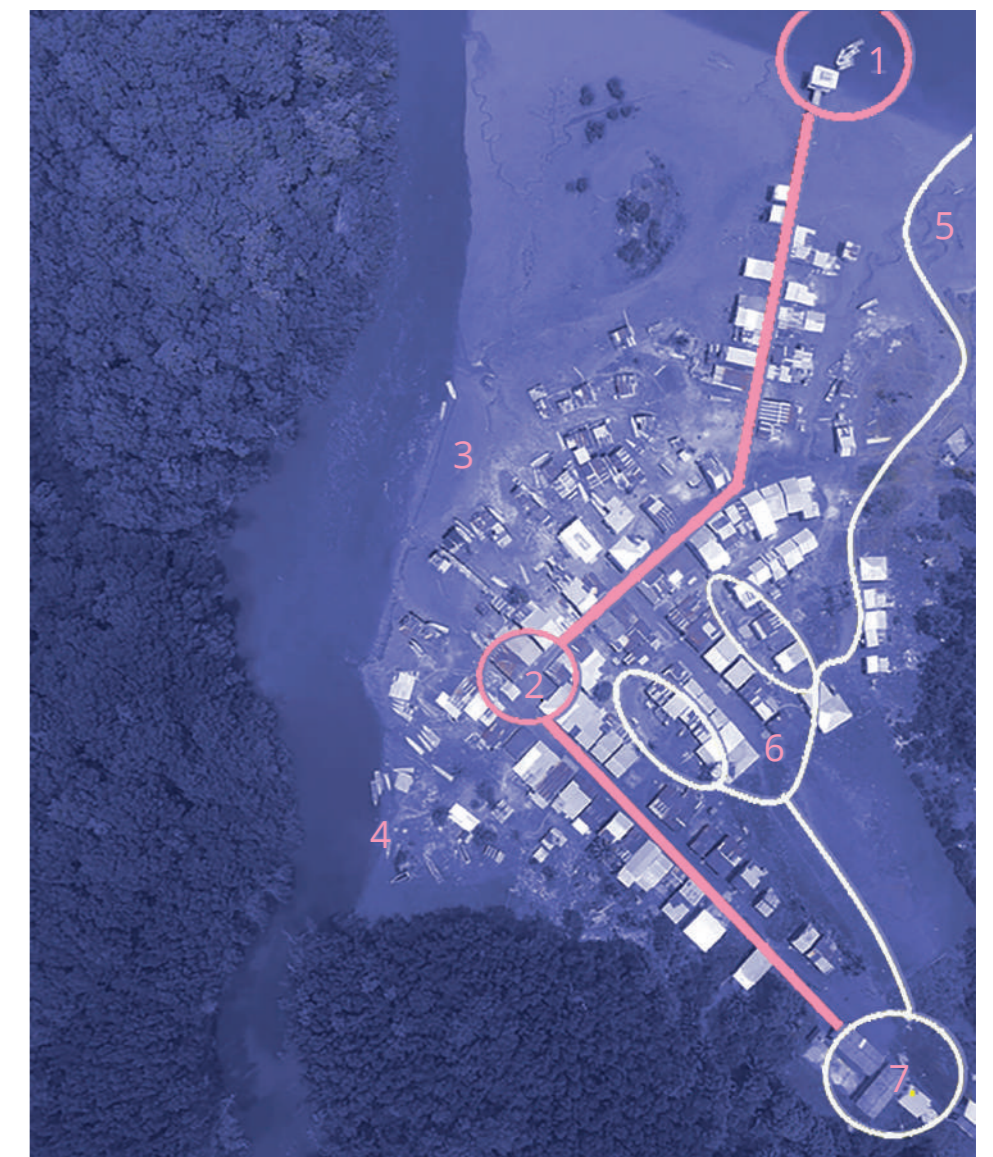


Fig.8. 1) Pier, male space, 2) Semi-covered meeting area, male space, 3) Roof area for repairing nets, male space, 4) Area for repairing boats, male space. 5) Entry of canoes, female space, 6) Terraces and backyards of houses, female space, 7) Public school and community rainwater collection tank, female space (Author source).

have visibility and control of the boats that come to the island. They have also a clear visibility to the meeting area in the middle of the community (Number 2), to the interior of the community and the public school (Number 7). On the other hand, the white line shows the daily path of women, who move through the interior of the community with the canoes that are left next to the houses. Every day, they take them out by walking towards the estuary. Children of the community are cared by the elders, and used to walk without a particular path differentiation. In the afternoon, they play in the estuary and between the houses.

In the community, houses are arranged on stilts at an approximate height of 1 metre above ground level. They are built with wooden planks with a mangrove structure and a gabled roof. At Number 2, there is another surveillance and male control point, which leads to the secondary entrance of boats, used when the tide is very low. From this point, the view opens up to the end of the settlement. Number 3 indicates a series of small semi-covered spaces or rooftops, with a structure on stilts, where men untangle and repair nets. At Number 4, there is a motor boat fibreglass repairer, in direct communication with the secondary entrance. As can be seen, male spaces are arranged in direct relation to the water, so supporting the productive activity of

artisanal fishing. However, the dock and the meeting place are used during rest hours awaiting the rise of tides, and at the same time, to survey the activities of all the inhabitants of the community.

At point Number 5 is the entry area for women's canoes. From that place women leave the estuary to go to their collection areas, and from there they return home. Number 6, are backyards where they clean and count the shells, and Number 7 is the public school. The constructed subjectivity is distinguished in areas of production clearly differentiated by gender.

DISCUSSION

In the case of Santa Rosa Island, the location of Afro-Ecuadorian fishing families is structured from a tissue of blood kinship that inscribes and determines territorial spatiality. Invisible gender frontiers have to be recognized by designers. Certainly, it is necessary to continue research to identify the spaces of meaning for women in the communities. From a prescriptive point of view, the methodology applied leads to identifying the productive and reproductive tasks separated by gender within the community.

Decoding the forms of occupation by gender, identifying the spaces of territorialised power of women, can direct the gaze to strengthen and optimise female ecosystems and

promote gender visibility and equality. As a second point, it is necessary to identify the spatiality of human encounters, the crossing paths and the timeline of those moments. Indeed, to ask some questions like when is the encounter, who participates and how to find the main objective of that encounter?

Going deeper into the relationships that human beings weave with the territory, I was searching to give form to a different scheme that can explain how human relationships work, close to Deleuze's rhizome thought. Socio-environmental ecologies are mutants, they are permanently transformed and constitute a system that is activated like the neurons of the brain in the process of synapses. The meaning of this term, together firmly, was the key to recognise and represent the changing experiences between the domestic and public sphere. From the case analysed, the islanders' strategies go beyond the category of housing as the minimum unit of domestic space (Dazzini Langdon, 2020). The sustainability of human habitat depends not only on the house unit, but also on the common social space which forms an indivisible bond.

The situation of Santa Rosa island is an example of lifestyle developed by the Afro-Ecuadorian community of Santa Rosa island on the Pacific coast of Ecuador. A series of islands make up the

mangrove reserve and the situation extends to all the islands of the reserve, clearly linked to the family activity of artisanal fishing and collecting bivalves. The mangrove is not only a biogeographic border, but it is a social and productive border that contributes to the survival of the Afro-descendant peoples of the coast. Human geography and gender have to be tied together as a tool for understanding the lifestyle of the rural and urban communities.

Domestic life and the construction of habitat correspond directly to this activity differentiated by gender. Thus, housing and community designs are closely linked to the economic activity that takes place in the communities. The understanding of this social, cultural and economic relationship should be a way to recognise the motivations that lead to a particular design in coastal areas, either in Ecuador or in similar regions of the continent. New strategies for participatory planning may restore social justice and recognition of women's spaces.

Moreover, an educational proposal that addresses the biopolitics of living from gender equality and participatory action research will contribute through the empowerment of women to improve their places of meanings to address an effective contribution to social and natural ecosystems survival.

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Fluid boundaries: architectural tool kits for water-lands

**water-lands
boundaries
emergency architecture**

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This article is a commentary on natural border conditions between land and water, on how they and communities associated with them are affected by behavioural changes of the weather and how groups of architecture students responded to the challenge of conceiving ways to minimise, alleviate and even harness the effects of deluges.

The historic dependence on water of human civilisation is making us vulnerable to the impact of the intensification and rise in frequency of climatic or other natural events. Lack of planning, regulation, strategies are in some cases responsible for an increase in the severity of damage caused by adjacency to water. The groups of students engaged in the project analysed different site conditions across the globe, investigating extreme cases reported in the media or of personal interest. Their proposals are based on material, social, cultural research into the affected communities and demonstrate the future architects' awareness and their responsible, professional engagement with contemporary issues.

As a pedagogical exercise, the project demonstrated the students' ability to construct effective groups in a short time to propose solutions ranging from long term visions to pragmatic immediate solutions.

PROLOGUE

Lao-tzu 'there is nothing softer and weaker than water, and yet there is nothing better for attacking hard and strong things'.

In 1Q84 Haruki Murakami (Murakami, 2012) conceives two parallel worlds to allow a slowly unravelling love story to become what it needed to be. The narrative is densely phenomenological: Janáček's Sinfonietta fills a Toyota Crown Royal saloon taxi fitted with especially comfortable seats, expensive trims and an enhanced audio system. Immobilised in an uncharacteristic traffic jam on Tokyo's Expressway Number 3, it feels claustrophobic to Aomame - the protagonist, clad in a Junko Shimada light wool suit, Charles Jourdan heels and Ray Ban sunglasses - who very soon is revealed as not being what she seems. Sensorial details root the reader in a known, familiar world, at once universal as well as of its place.

It is however a piece of infrastructure that is used as the device to mark the passage between the two worlds: Aomame clammers down a metal service staircase, cold to the touch and strictly functional. The uncomfortable descent through this narrow staircase is the unlikely liminal space that allows the movement between the *real* world and the *other* one: as two temporal planes, these worlds are signified by two physical planes: the expressway (high z) and the city (low z).

Portals imply boundaries and in Murakami's novel, it is this lack of definition of the boundary which maintains the mystery. Chasing this ambiguity makes the story. This paper is about undefined or unexpectedly undefinable boundaries in *real life*, a state without mystery apart from its suddenness, that can have catastrophic effects.

BORDERS

Borders divide. Some things are kept on one (in)side, the rest on the other. In or out. As a commentary on man-made borders, Christo



Hokusai's Great Wave. Photograph: British Museum.



Fig.1 - Christo and Jeanne-Claude, Running Fence, 1972-76, woven nylon, steel cables, steel poles, guide wires, hooks, earth anchors, 18' x 24 1/2 miles. Photos: Wolfgang Volz.

and Jeanne-Claude's installation 'The running fence' was a 40km of 5.5m tall nylon cloth running over Sonoma and Marin farmland in California, USA. With a few gaps to allow roads through, for two weeks it blocked views of the landscape and stopped the roaming of humans and cattle across their ancestral farmland (Fig.1). It was a mammoth self-funded project, finally up in September 1976, after almost 4 years in the making. Interestingly, Chamberlain (2017) remembers it as an exemplar for gaining public support and engagement, through sustained dialogue, from an unlikely American political demographic - farmers, landowners and small-town dwellers - who were the most affected, but who became the most ardent supporters of the project.

Christo and Jeanne-Claude created a border that unified.

Luis Camnitzer's open letter to Donald Trump in 2016 was a reminder of the installation's success, as well as political satire: "Dear President Donald Trump: Please use this golden opportunity to commission US artist Christo with the creation of a new version of his Running Fence to separate the US from Mexico. His first project in Sonoma was completed in 1976 with great success. Though only 24.5 miles long then, in full-length today it would transform a racist project into a public art event and help improve the image of the US with an increasingly needed cultural veneer" (Boucher, 2017).

Boundaries are about control, which is not necessarily about coercion - it might be about

governance and safety. The ancient Greeks developed geomorphic architecture which responded to nature and enhanced nature (Moholy-Nagy, 1968). Greek cities - their location, size and therefore boundaries - were about the ability to defend themselves and to conduct their affairs of state: 'in the Greek type of democracy all the citizens could listen to a series of orators and vote directly on questions of legislation. Hence their philosophers held that a small city was the largest possible democratic state' (Haldane, 1956, p.962-967).

When human-created, borders are constructs - physical (fortifications, moats, walls) or graphical (determined by geo-politics)- and imply gateways, as a way to move from the sides divided, protected, or rejected by the border. Gateways or portals or thresholds are special conditions, they mark the transition between worlds, they are 'near-universal expressions of social transformation, boundaries and liminality' (Eriksen, 2013 p.187). Gateways, thresholds, portals have the double function of *separating* and *connecting*. The most banal example in architecture is the door. Doors are 'hole-walls' hybrids. One can argue that the door is a precondition for architecture - in other words architecture cannot exist without doors (Johnson, 1988). If architecture is defined as the organisation and enclosure of space and if space is encapsulated by a continuous solid, impenetrable skin, without any punctures in it, there would be no way in or out: these structures would be tombs or mausoleums. Where there is a door, there is potential for architecture. In terms of semiotics, not having a door in architecture is a powerful message and the process of finding the entrance, without which the building would be unusable, is the start of decoding what its doorlessness signals. Libeskind's Jewish Museum in Berlin does just that: it does not have its own door, the access into it is through the old museum, from where visitors need to descend through the dramatic Entry Void. The new Jewish Museum is inextricably linked to the existing one but distinct, one cannot exist

without the other, signifying that the history of Berlin cannot be understood without taking into account the intellectual, economic and cultural contribution made by its Jewish citizens and that it is necessary to integrate physically and spiritually the meaning of the Holocaust into the consciousness and memory of the city of Berlin. Only by acknowledging and incorporating this erasure and void could Berlin and Europe have a future (Libeskind, 1999).

Natural, topographical borders tend to be different. They are mostly gradual, diffused, rarely clean cut, like walls or cliff edges. Even apparently clear-cut boundaries can be a matter of perception; often they can become non-borders when challenged by human need, ambition, ingenuity, endeavour. Many a daringly improbable escape succeeded and many a battle was won by the crossing of uncrossable rivers, insurmountable mountains, un-sailable seas, indefinite deserts. Thus, the gateways in natural boundaries are usually weaknesses in the quality which makes them a boundary, an anomaly in their physical characteristics or physics (solidity, dimensions, sheerness, velocity). Transitions between the two sides of the boundary are discrete, not obvious, sometimes un-repeatable.

THE BRIEF: Before me, the deluge

How do we deal with borders that are amorphous or even aleatory? Like those of the seas that give Lemuel Gulliver (Swift, 1726) the unexpected experience of being at the extremes of a magnitude scale game, as if part of a *Power of ten* exercise (Eames, 1977). What if the transition space is undefined? Švejk (Hašek, 2005) wanders the lands of the Austro-Hungarian empire during the first world war, crossing new and old borders, which for good soldiers meant nothing in their relentless march to the slaughter and search for the next food ration. Before, during and after wars, borders are like tidemarks, continuously elastic, challenged,

dangerously liminal.

Man-made conflicts that result in ever-changing boundaries, defined and re-defined, are not too dissimilar to natural violence which at times tests or even ravages edges, be they liminal or clear-cut.

The discussion here considers the water-land edge and our relationship with it. Water is life's alma mater, we are around 60% water, the development of our civilisation depended on access to water and so on. As architects, we have a meaningful relationship with it, in all its states, because water needs to be kept in the right place, on the right side of our detailing: vapours should not traverse the vapour barrier in walls, precipitation needs to be guided to flow diligently, be collected and evacuated in a predetermined way, water raising from below has to be prevented from its natural disposition of finding fissures and porosities, while snow or ice ought to be counteracted so that they do not destroy roofs, materials. These are instances we know and have been planning for since the beginning of building, and Vitruvius was one of the first to codify engineering and architectural solutions (Vitruvius, 1998). However, water becomes devastatingly destructive, un-bridleable, in deluge mode, as sudden, unexpected, large quantities are ushered by movement, gravity, aeolian or seismic energy.

Are we, with our professional knowledge and understanding, able to do anything about such instances? This being a universal problem, albeit with local conditions: environmental, social, economic, cultural. Such was the question posed to two cohorts of UOU students in 2022 and 2023. The brief, *Before me, the deluge*, was a reference to the expression "After me, the deluge" (*Après moi, le déluge*) attributed to the French king Louis XV. His words referred to the biblical flood thought to be caused by the Hayley comet which, as a keen astronomer, Louis knew was approaching earth again, at a time when the French state

affairs were already in turmoil. The expression has been adopted in common use as representing a nihilistic attitude of indifference to what happens after one is gone, a disregard of potentially destructive consequences of one's actions. Karl Marx's thought it represented the defining, selfish, attitude of the capitalist society. However, the brief *Before me, the deluge* drew attention to the fact that we can see the literal deluge which might be caused by our inaction, selfishness (?), and we would do well to start thinking about solutions, as architects-thinkers-activists-world careers.

The brief suggested several potential conditions or site typologies for developing ideas:

_terra firma – land that can get flooded by abundant precipitation (rising water, land not draining fast enough).

_edge [limen = threshold] (e.g. rivers that burst their banks, coastal sites, etc.).

_island - natural or artificial.

_open water.

The pedagogical value of the challenge proved not to be limited to the quality and ingeniousness of the student imaginings, it was also manifested in their approach to the brief, in their critical appraisal of its terms and guidelines. At one end of the spectrum was the idea that the four site conditions could be the same spot metamorphosed by biblical floods - from terra firma to open water. Others considered that it is simply the boundary between land and water that was the subject of enquiry, troublesome for not being constant, predictable, manageable. Where this boundary was - flooded terra firma, edge of river, sea or island etc - had no importance. This approach made the choice of site to be led by research into communities which have become vulnerable because of their proximity to water.

All great early civilisations emerged around historic rivers - the Yellow River, Tigris, Euphrates, Indus, Nile - which stimulated

human ingenuity to ensure survival. On one hand the rivers helped make the land fertile, on the other they needed management – dykes, dams, banks, canals being some of the first forms of engineering (Toynbee, 1934). The planning of great river cities also relied on waterways for defence and transport, from Babylon to fortified capitals such as Vienna.

Rivers also had a metaphysical dimension. When the Nile flooded, annually, the elastic, modified boundary between water and land was a welcome reassurance in the divine order. Ganges is still of religious significance, waterside temples engage visually and physically with the transition between land and water as ritual enablers.

However, the historical dependence of human settlements on water is making them vulnerable today, when changes in weather behaviour means that ancestral wisdoms, habits, rituals of dealing with this adjacency are made ineffective, overridden by the magnitude of the effects.

Energetic System for City

By installing hydraulic turbines down the streets that has an important slope. And provide that the water enter into this infrastructure. In that way we may wear a big % of water from the street and reuse it. Each tourbin has a proper filter, and depending on the necessary we'll take a water after 2 or 4 turbines. And do not forget we are generating the energy at the same time.



Fig.2 - Hydraulic turbines for high volume water management as part of surface water drainage system.

Energetic System for City

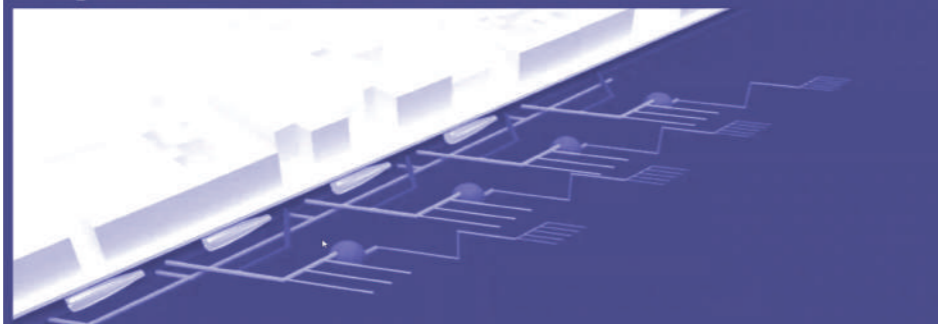


Fig.3 - Dendritic network with filter for water harvesting.

PROJECTS:

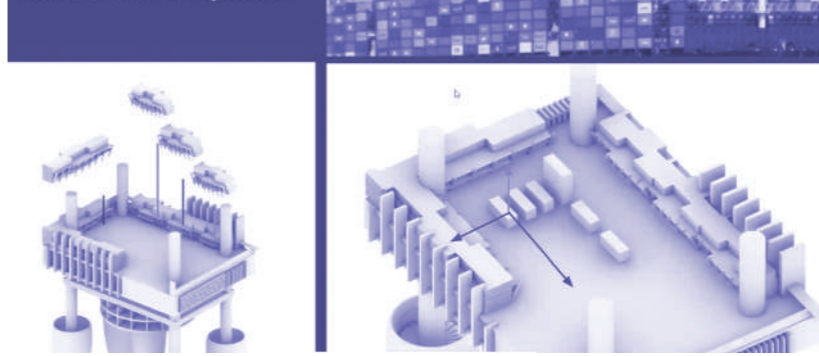
THE POWER OF WATER

Igor Stepanov, Anhelina Budyk.

The vision of this project was bold because its starting point was to take the brief to one of its potential logical conclusions: deluge, welcome! The proposal was thought out, admirably for a two-week design endeavour, firstly at strategic and urban scale and secondly, at the more detailed level of an off-shore living concept.

In the first instance, the project took into account the kinetic energy of water at high velocity with the intention of harnessing it through sophisticated infrastructure and highly engineered gadgetry (Fig.2). A series of hydraulic turbines installed alongside road drainage systems, turbo-drained heavy precipitation to produce electricity, after which it fed it into a dendritic parallel network for filtering. This hidden complex circuit was conceived as an intelligent safety valve which took charge of high volumes of water to produce energy and harvest and recycle it (Fig.3).

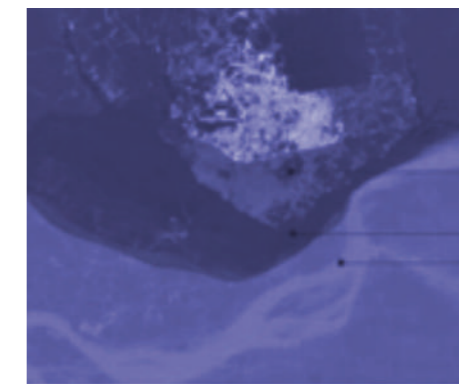
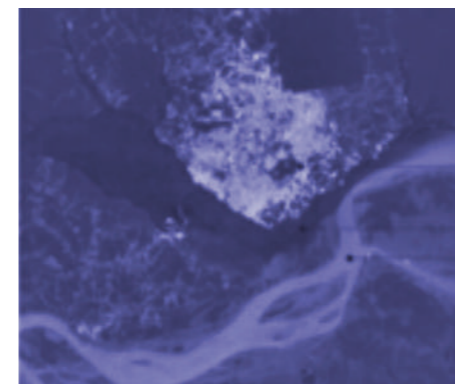
Platform development



The proposal was also a commentary on the potential for more investment into hydropower, which comprised 15% of the world's total electric energy generation in 2008 (REN, 2009) and more specifically into *runoff (-river) power plants*. Their model acknowledged that climate change impacts on runoff in its quantity and seasonality – compared to *reservoir hydropower* plants whose production is more robust to climate variability due to the possibility of adaptation in storage management strategy.

Overwhelming, infinite availability of water was considered by their second proposal, which was about further climatic extremes, biblical floods, when only modern-day arks could provide relief. The blueprints used here were again hi-tech typologies, proposing a symbiosis between maritime oil rigs and shipping containers (Fig.4), powered by wave-activated turbines.

The group's proposed peninsula was reminiscent of Victorian piers, its skeleton providing the framework for crustacean-like containers which attached themselves and grew in response



to need. The brevity of the project curtailed their study, but the students began considering what the social structures and behavioural implications might be, how the isolated community might function or malfunction over time, with references to Ballardian dystopias.

FLOATING CITY

Pierpaolo Visca, M.A., T.P.

This project looked at the potential an established city could have to adapt when affected by flooding. Their chosen site was Manaus, in Brazil, a metropolis in the Amazonian rainforest, situated at the confluence of the Negro and Solimoes rivers (Fig.5a). The group researched low-tech construction techniques, prefabrication, and standardisation of components to be used by the community. Their solution for the increasingly frequent floods was based on vernacular architecture, with a twist, deferential towards traditional materials and building techniques (the *visible*) while raising awareness of current environmental issues (the *hidden*). The visible, was the living quarters, to be built



Fig.5 - a (left) Manaus affected by floods and b (right) Research into local materials and construction techniques.

Platform

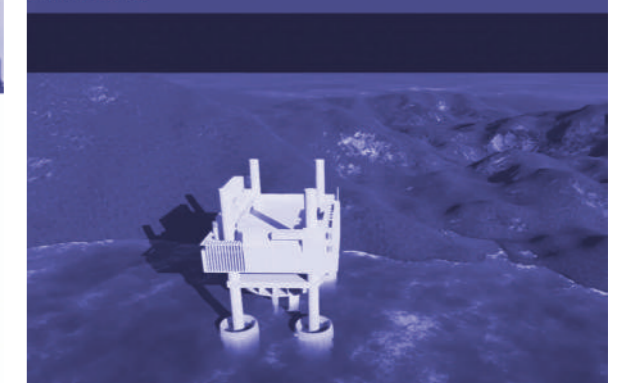


Fig.4 - Platform development and overview.

out of light, fast-growing natural materials, which had tactile, visual qualities, suitable for a domestic environment; using local materials relied on local knowledge and skills and by proposing modular systems, the project suggested that the wider community could participate in the construction (Fig.5b). The hidden, the infrastructure on which these light dwellings were installed, addressed the newest environmental threat to the Amazonian region: the plague of plastics.

Amazon ranks now as the second most polluted river in the world, in terms of plastic, only behind China's Yangtze River (Lebreton et al., 2017). The lack of urban planning and efficient waste management (Becker, 2005), combined with frequent and severe floods, result in the Amazon discharging in the Atlantic a lot of debris across its plume of 1500 km - it is estimated that 10% of plastics found in the oceans originate in the Amazon (Giarrizzo, 2017).

By using the qualities of plastics (impermeability, longevity, buoyancy) to create a floating

3 The project

Before me the deluge W3a

The idea covers the buildings as well as walkways between them, making a net of connections.

Living units and roads are placed on special construction of recycled plastic tanks.

Thanks to this, the city floats on the water.

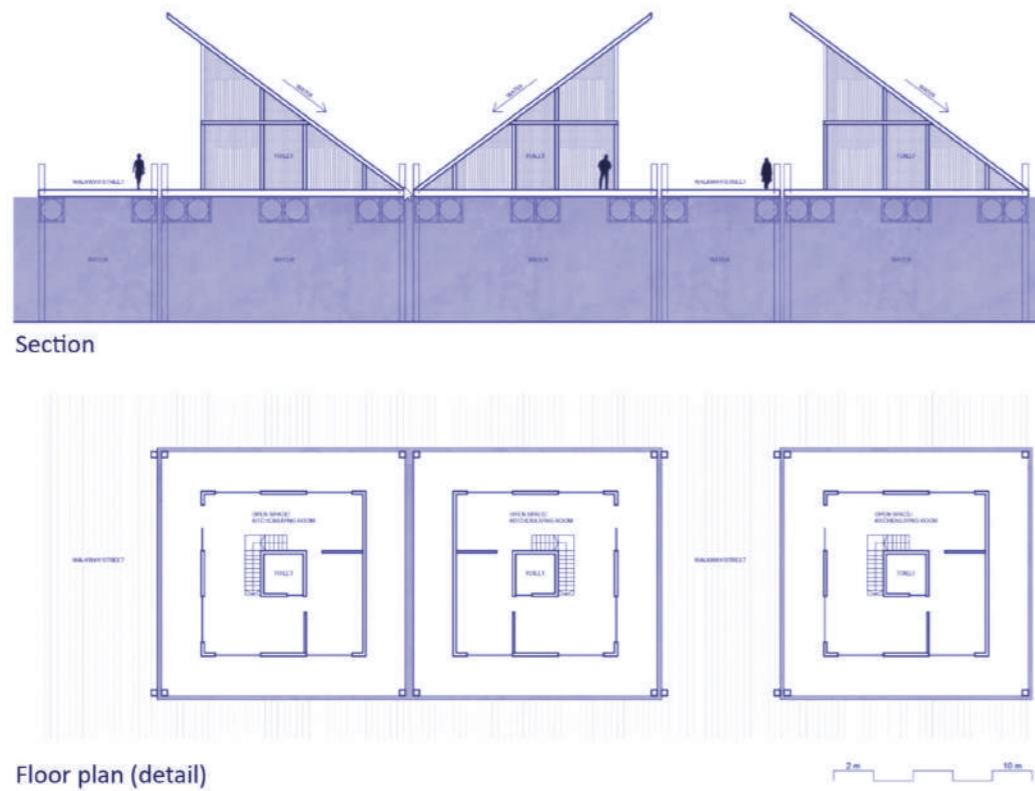


Fig.6 - The floating city.

platform, the problem of plastics infestation becomes, literally, the base of the project, as its unseen foundation (Fig.6). The platforms allowed for private, as well as public spaces.

ANCA

Sofia Paya, Sergio Cabanyes, Mia Konjikusic, Jhoan Pena.

This project had a ludic approach to the brief. It started from the premise that the four site typologies, offered as potential starting points, were not mutually exclusive. On the contrary, they could have been one and the same place, what was different was the severity of the apocalyptic deluge that affected it (Fig.7a).

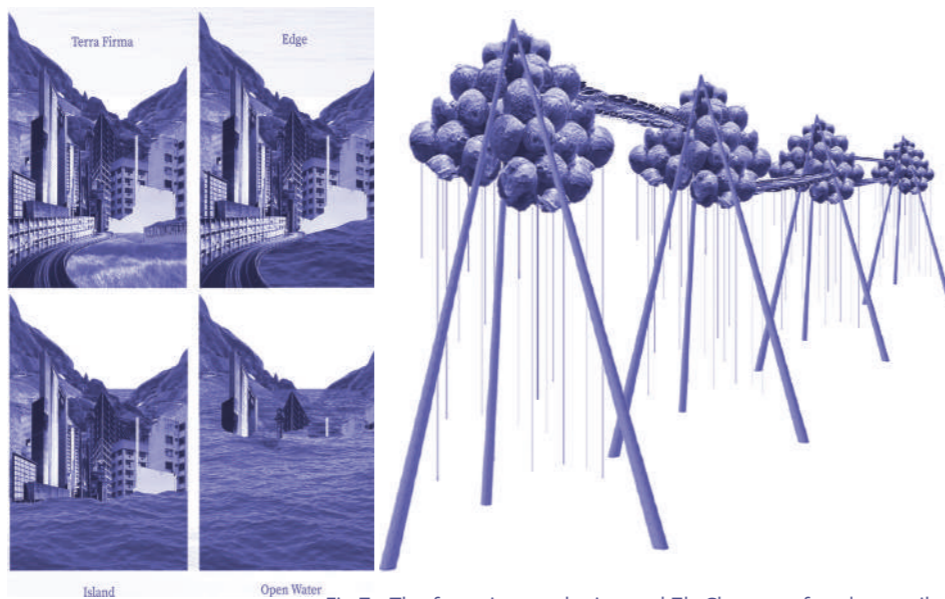


Fig.7a-The four site typologies and 7b-Clusters of pods on stilts.

suspended on stilts or parasitically perched on pillars (Fig.8a, b). The pod designs were eclectic, suggesting individualism resulted from makeshiftness or stylistic purposefulness. Biomimicry characterised the morphology of the pods, their materiality, physical qualities (Fig.8b). This imaginative project pays homage to visionaries such as Jules Verne – one can easily imagine captain Nemo and his precious library encapsulated in one of the shell-like pods (Verne, 1992). ANCA might also be a continuation of the Archigram Cities series, *The*

amphibious city, perhaps?

The measured drawings in the project reflect the original conceptual commentary: it is the section we are looking at, and the condition is the same, only the line demarcating the border water/air changes and the system adapts to it (Fig.9).

This is a strong statement as a reflection on the original question, saying that whatever we propose, needs to be continuously adaptable to be resilient.



Fig.8a – Parasitic pods on stilts and 8b – Suspended pods.

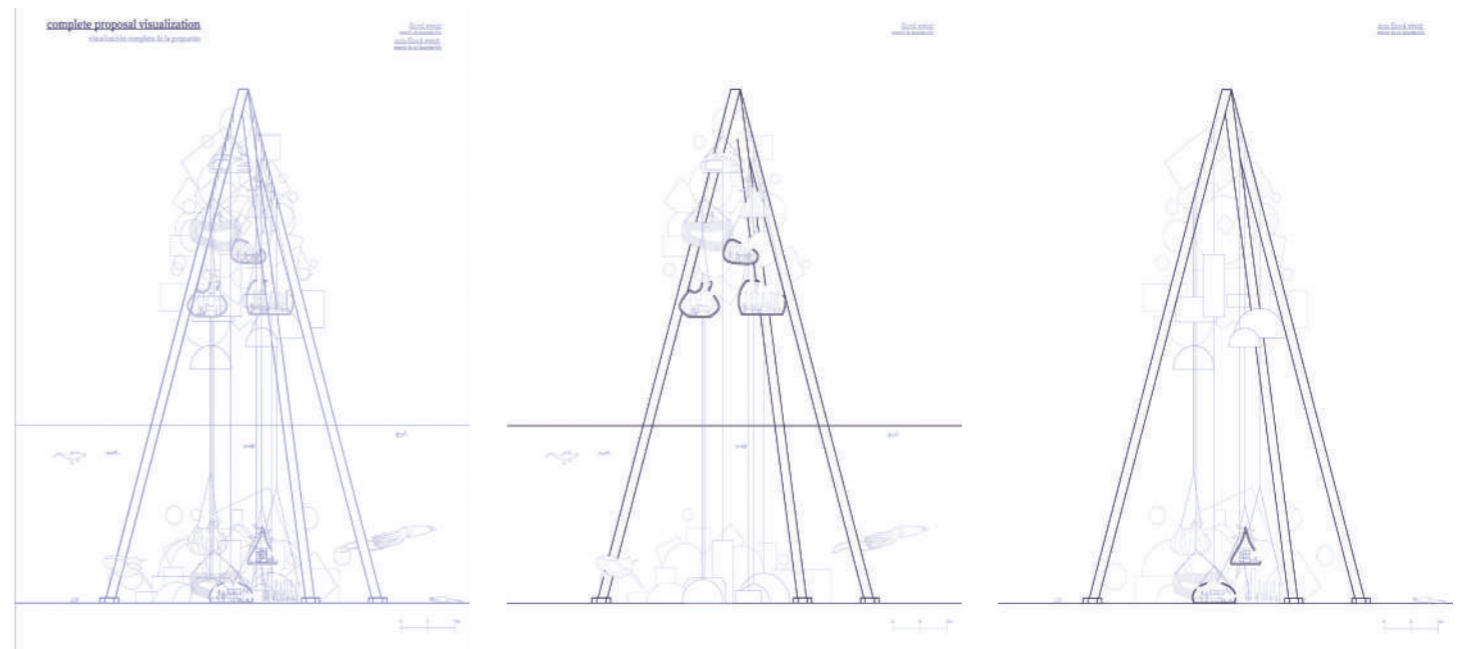


Fig.9 - System responding to variable water line.



Fig.10a – Advancement of sea in Orłowo (opposite Hel Peninsula), Poland and 10b – Proposal.
<https://noizz.pl/ekologia/baltyk-porwal-plaze-kolo-ustki-brakuje-piasku-do-naturalnej-odbudowy/03hvhv37>

MULTIPLIED

Anna Borkowska, Marcin Kasprzak.

A look at the threats to water-edged Polish lands gave this project a personal understanding of issues and their urgency. The starting point was the reality of coastal towns on the Baltic Sea and more specifically around the Hel Peninsula (Fig.10a), vulnerable to raising sea levels. BACCII (2015), the most comprehensive assessment of climate change in the Baltic Sea basin, acknowledges that predictions are difficult, given the past climatic variations in the area, but it postulates trends derived from empirical data. Scenarios, supported by recent research, show that the increase in air temperature results in the reduction of sea-ice cover and a rise in storm surges. This coupled with recorded rises of sea-levels causes the deterioration of the edging land. Land erosion and submersion are not exclusively due to climate change, disequilibrium between harsher hydrodynamics and weaker nearshore sediments are seen as factors for the accelerated decay (Różyński and Lin, 2021).

The first proposal of this project addressed this particular need to protect coastal edges, with full awareness that wave energy may be displaced in the process, as noted after 2015, when shore defences were constructed in and around Ustka. The design was of a modular system which could be multiplied as necessary (Fig.10b).

The team also considered inland

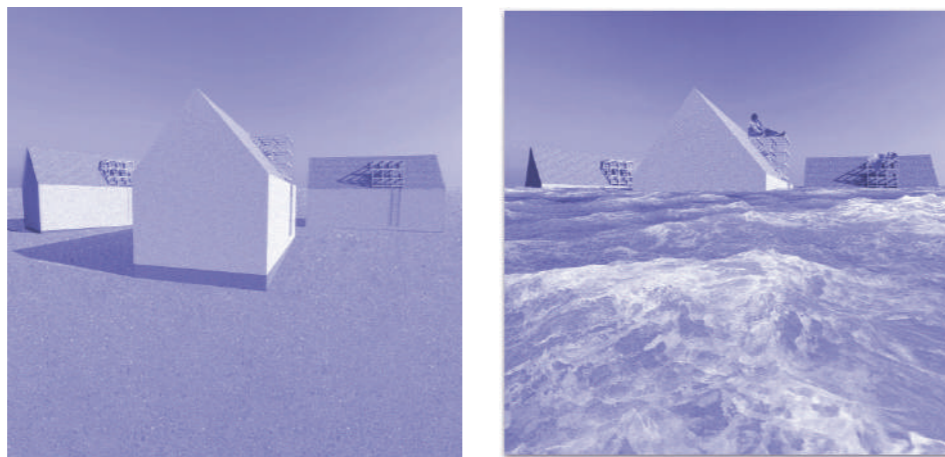


Fig.11 - Roof escape-rafts.

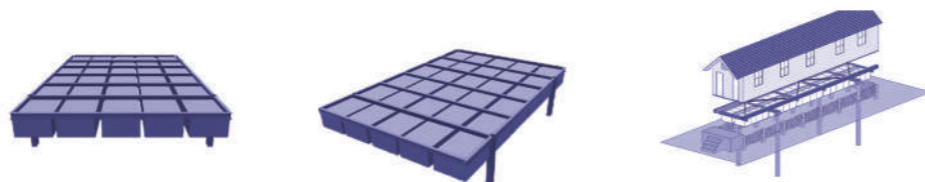


Fig.12 - Steel frame, floatation device and island house.

regions affected by rivers bursting their banks, taking the 1997 Central European flood as point of reference, because it submerged vast areas across three countries, causing a lot of damage. This time their design focused on saving lives. The launch pad attached to roofs was like a flipped venetian dock, as a just-in-case security measure, whose modularity allowed it to be multiplied (Fig.11).

The Multiplied proposal was at an embryonic conceptual stage, but the design of the 'roof dock' had the potential to be developed further into a dual purpose device: a balcony/attic amenity during normal times and a life-saving detachable raft in deluge mode.

ISLAND ON LAND

Laura Oblak, Britt Lamein, Tom Smit and Jure Polanc.

The premise of the island house is once again ingenious: what if the house took off as soon as the raised water levels lifted it off the ground. The ability to do that relied on a buoyant raft base as shown in Fig.12. The team investigated technologies that could make their proposal feasible: a steel support frame as a base, a flotation device using expanded polystyrene EPS reclaimed from rivers and oceans and plastic bottles - all supporting the house in readiness to be lifted safely on guiding posts. Similar technologies have been used in realised projects, for instance in

the Amphibious House by BACA Architects (2019), but the idea of letting it float away on its own island (Fig.13) has references to the realities of the chosen site, Lokoja, on the Niger River. Researchers into the effects of the Nigerian seasonal flooding, which lately is more severe, note that most strategic actions are reactive, with little or no preparedness or mitigation and studies on exposure and vulnerability are rarely conducted with the participation of communities affected (Buba, 2021).

The group's own findings showed that on their chosen site, new local infrastructure work impeded the natural drainage of the land which, combined with climate change, made hydrologic events unmanageable, with floods so extreme that only the roofs of houses are left visible. Again, the students' appropriateness of response was a proof of their critical approach to research and understanding of their investigations.

ADAPTING TO NATURE/GIVE MORE THAN TAKE

Zora Bogárová, Amber Breed, Francesco de Pretto, Hana Vyležíková.

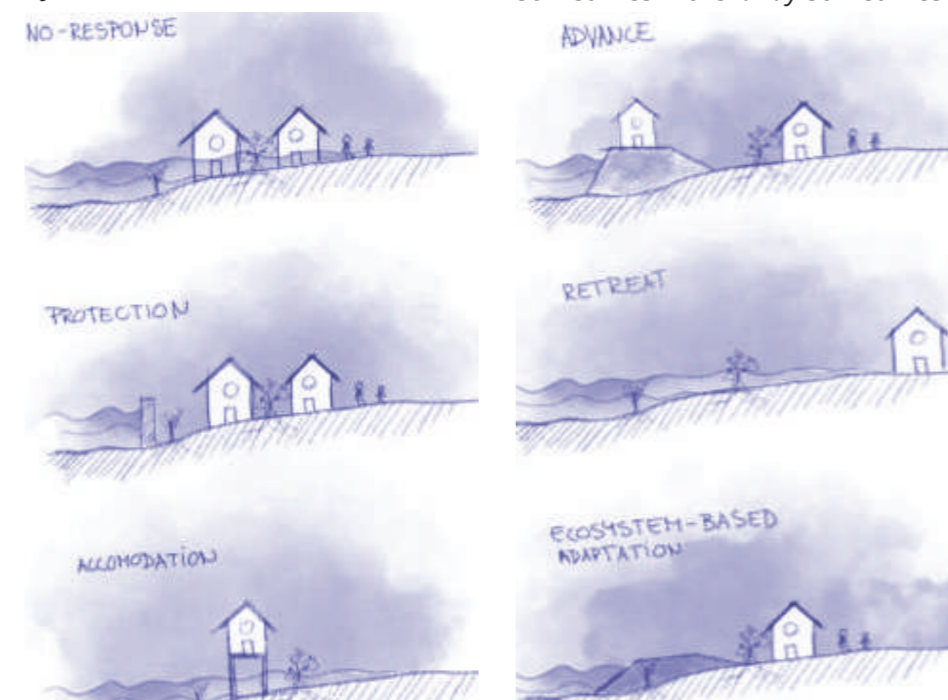


Fig.14 a, b – Analysis of water/land edge condition and 14c – Lake Baringo, Kenya, with surface in 2013 defined by red line, compared to extent of lake in 2020 (based on: <https://www.digitalearthafrika.org/media-center/blog/rising-lakes-rift-valley-kenya>).

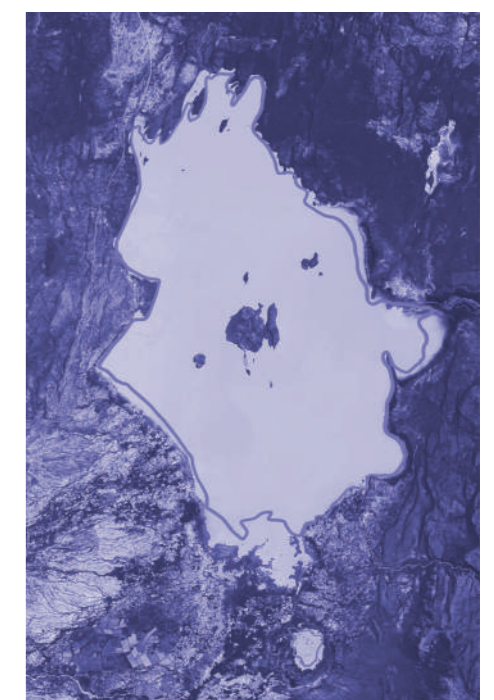


Fig.13 - Island house

The interrogation of the four suggested site typologies, resulted in the group becoming intrigued by *the edge* and the liminal condition of it. What we consider an *edge* between water and land, seen as a boundary, a topographical feature on maps, clear line, is in reality more ambiguous. The students' question was: where is the *boundary* or what is the boundary, can we actually define it with precision? Is the boundary the elastic limit of the water, advancing and retracting, is it a median line between these oscillations? The section (Fig.14a) reveals the flimsiness of the edge construct: water and land coexist, sometimes more *landy* sometimes

more watery, with a wide tolerance. The group was interested in this liminal condition, which must have a special habitat, with a symbiotic relationship, where neither land nor water is supreme.

This thought process gave the group their concept (last sketch Fig.14b). Lake Baringo, Kenya, became their site of interest, because it illustrated the imprecision and unpredictability of topographical boundaries (Fig.14c). For this project, the site, *edge*, was areal rather than linear. The solution proposed was to work with water and land simultaneously, treated as an ecosystem, with



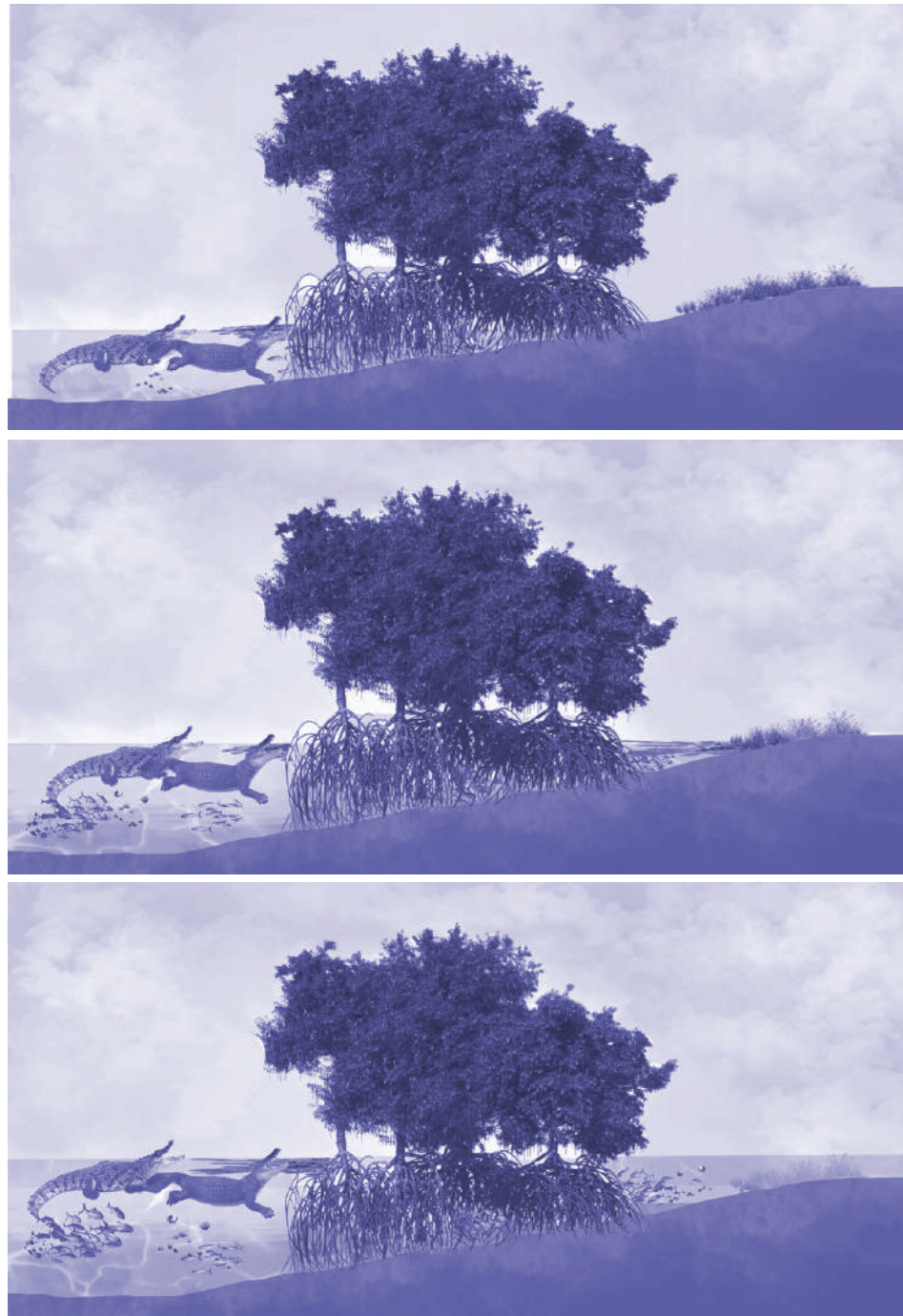


Fig.15. Amphibious mangrove-type planting forms a barrier between potentially dangerous fauna and habitable land, on which adaptable buildings can be developed.

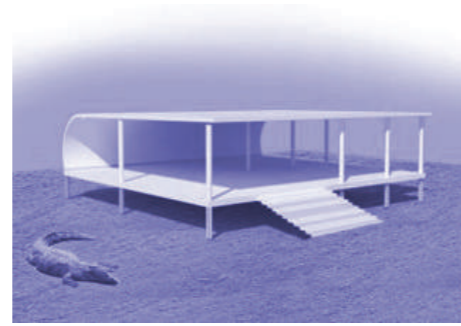
human interventions that learned from both, to achieve adaptations intended to thrive in a liminal environment.

To avoid inherent, potentially dangerous, transgressions (crocodiles versus humans!) banks of flora, of both land and water, were proposed as a protective intervention for the transitional, liminal territory (Fig.15).

The scheme was also mangrove-like, adaptability being its most important attribute (Fig.16).

EPILOGUE

Educational theorists believe that complex problems require input from different disciplines and collaborative models have been adopted at all levels in education (Trist, 1983). Architecture is, intrinsically, a profession that relies on good working relationships between interdisciplinary teams, that is why the ability to be a good team member is a skill like all others, that needs to be taught and learned and honed (Homan and Poel, 1999).



SECTION AND MATERIALS



Fig.16 - Amphibious.

For an educator, leading the UOU workshops/projects is simultaneously business as usual, as well as uncharted territory: the interaction with students relies on the international, common language of architecture; what is unknown is the groups' performance, reliant on the mixture of value systems coming from different educational institutions across Europe.

The UOU experience confirms what the majority of current pedagogic research indicates: That group work strategies promote greater academic success through

strengthened social interaction, because students are placed in situations where they must cooperate with one another (Johnson and Johnson, 1991; Baloché, 1994).

The challenge posed by this brief could be read simply: are you ready for what is happening and what do you think about it? - as an individual and most importantly as an architect-citizen of the Spaceship Earth. The students' responses to the first iteration of the workshop (2021-22) clarified that the original ambition, for the brief to result in physical models for material testing, was not practical within the frugal timeline of the project. What emerged instead were imaginative propositions, decidedly pro-active conceptual frameworks based on research. This outcome was surprising, but according to Dewey, reflection starts with vexation and doubt, these are 'key moments for learning; we can reflect on these problems to solve the perplexity and learn from it' (Dewey, 1910, p.10). Reflection on the previous year's students' approach resulted in a revised brief proposed this year (2022-23), because in action and pedagogic research, evaluative practice alternates between action (setting briefs, teaching) and critical reflection (O'Leary 2004, p.140 cited in McGlinn 2009, p.34). The focus of the brief shifted to the edge condition between water and land, this *borderline* as a place: a historical prerequisite for civilisation -found, known, benign or, if not, managed- which has become so vulnerable. The intention was to encourage invention in response to extreme events, as this was something students found stimulating. Their responses this year were well judged, appropriate to the magnitude of disruption caused by broken patterns of weather behaviour, the projects acknowledging that the effects on the land/water border were substantive in such crises. Under normal conditions, transgressions -land on water or water on land- are negotiated through discrete, artificial interventions (bridges, piers, banks, dams, sea-walls, dykes) which, students discovered,

could be relied upon only as proto-typologies to inspire much more robust devices for deluge-mode. Natural or artificial borders are meaningful only when an understanding is being observed - in nature and diplomacy. Nature (like politics) in disarray results in new conditions for adjacencies: our physical constructs and rules are overridden, any response to ensure survival must start from the premise of a new reality and this is precisely what the projects shown here reflect.

The resulting schemes are not only testimonies of students' abilities as practitioners, but also of their criticality as thinkers. The work produced for '*Before me, the deluge*' brief answered my question: if the teams, with a large number of itinerant Erasmus students, thrust into the demanding activity of working together, have the time, skill and motivation to work through the stages of forming, norming, storming and performing (Mutch, 1998), considered essential for effective teamwork.

Having worked together, in the spirit of architects without frontiers, the answer is *yes*, they did.

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Borders, the architecture of street

strada
spazio pubblico
movimento
città
periferia
vuoto
street
road
public space
movement
city
suburb
void

Il disegno del vuoto ha assunto sempre maggiore rilevanza nella pratica progettuale contemporanea. Il tema di grande attualità è la difficile identificazione tra spazio aperto, il vuoto, e spazio pubblico. Difficoltà cioè nell'attribuire un nuovo significato, e dunque una nuova forma, agli spazi indecisi che i processi della vita urbana contemporanea producono come scarto, come spazio residuale. Lavorare sul vuoto, nel tentativo di definirne forma e significato, non significa lavorare sulla superficie delle cose. Quantomeno non solo. Riconoscere, da un punto di vista urbano e morfologico, lo spazio vuoto delle nostre città come un tema sensibile, una diffusa rete di aree in attesa di progetto, è una delle principali sfide che la disciplina architettonica deve affrontare con gli strumenti che le sono propri, eludendo facili soluzioni di arredo, attrezzature e abbellimento dello spazio.

The design of the void has become increasingly important in contemporary design practice. The highly topical issue covers the difficult of identification between open space, the void, and public space. That difficulty is in providing a new meaning, and therefore a new form, for the undecided spaces that the processes of contemporary urban life produce as waste, as residual space. Working on the void, in an attempt to define its form and meaning, does not mean working on the surface of things. At least not only. Recognising through an urban and morphological perspective the empty space of our cities as a sensitive issue, a widespread network of areas awaiting design, is one of the main challenges that the discipline of architecture must face with its own tools, avoiding the easy solutions of furnishing, equipment and embellishment of space.

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INTRODUCTION

In architecture, working on the theme of limit implies a double register of actions: on the one hand design terminology separates the space, attributing different, often antinomic, meanings to the elements. For example public and private, indoor and outdoor, natural and built space, etc. On the other hand, the work on the limit is based on the need to connect the different spaces, acting as a hinge, filter and threshold between the parts. Think, for example, of the meaning of the threshold that, through openings and passages, introduces visual and conceptual communication between two spaces separated by a limit. In this context, the street is the urban space that assumes this ambivalent role as an ontological meaning. It divides the built mass of the city, defining its parts and making possible the perception of the full and, at the same time, connects the individual buildings, urban blocks, neighbourhoods, cities and landscapes in an infinite sequence of crossings.

The development of our cities has seen a progressive disintegration of the image of the street: the void, and consequently the public space of the city, remains devoid of architectural definition. The street loses its formal autonomy and becomes an un-built space, an urban waste devoid of shape and recognisability. The city thus produces marginal spaces, residual voids that do not collaborate in defining the shape of the city and instead contribute to the degradation of public space.

Never before has the street claimed its role as a public space, where the lives of individuals happen and where the *civitas* is represented. Still alive in our memory are surreal images of streets during the long Covid-19 pandemic, first deserted and then increasingly crowded by citizens who wanted to move freely, meeting in safety and re-appropriating social life by moving through public space.

On the one hand, the renewed attention to the issue of public

space design appears important in the experimentation of new ideas and forms of living and building the city, on the other, on many occasions, this attention seems to have stopped at a superficial rediscovery of the value of the road, without having deepened the ability of the road to build virtuous relationships with the urban landscape. It therefore seems more necessary than ever to broaden the disciplinary reflection towards the search for possible ways in which the road, understood as a filter space that generates urban spatial relations, can take on the value of a real urban place.

In relation to the general picture just described, this contribution proposes a reflection on the specific theme of the road as a compositional issue. The shape, the relationship between the layout and the spatiality made up of porosity, limits and facades, are elements that build up the value of the road, that can be understood as a field of architectural experimentation.

It is from these considerations that the first part of the contribution outlines the problematic background from which the research moves on, explaining the main issues related to the theme of the road. In particular, the construction of the general context has required the defining of a *state of the art* on the subject and a comparison with some of the research that, in recent decades, have dealt with the theme of the road.

What we want to investigate is the value of the road as a complex element of construction of the inhabited space, as a generator of urban redevelopments that radiate around the city space and as a means for the narration of space, starting from an awareness that the road is not simply a technical artifact that allows the connection between distant places, but is at the same time a place and space of movement. As Jackson observes, in fact, "the streets do not simply lead to places; they are places. And as such they play two fundamental roles: as growth and dispersion

promoters and as magnets around which new types of development can be experienced. In the contemporary landscape, no other space is so versatile" (Jackson, 1994, 190-191). Moving, then, from the conviction that the streets are real places, the research hypothesises that these can be considered as artifacts of architecture, able to build relationships with the contexts being encountered, as tools for urban and formal reorganisation. In this sense, it is not only the formal quality of the street architecture that takes on importance but also the quality of the relationships that it is able to establish with the surrounding urban fabric.

Before investigating the formal matrices that the street has and has had in urban dynamics, the research defines, in the third part, *The drawing of the void. Crossing, perceiving, signifying* the ontological meaning of the road as empty, as space of movement. The road, in fact, constitutes the founding sign of the construction of the landscape by man, which can be interpreted as a condensing of a vacuum towards the full (Simmel, 1970). The road finds its archetype in the trace, an act of foundation and knowledge of the landscape, both natural and urban. The city is founded on its streets and it is from the reciprocal interaction between the void of the road network and the completeness of the built that the city takes shape.

In the development of the city, the street took on different forms and meanings. In the fourth part, *From place to residue*, the research traces the salient stages through which the road, originally defined by a clear and bi-uniqueness relationship between complete and empty becomes, especially in the contemporary passages of our cities, a marginal, residual space. Loosing completely the value of form generator element and public space, the road today only embodies the space of mobility, a simple collector for car traffic.

Breaking the technical and functionalist paradigm with which the theme of the street in the contemporary city has been

addressed, what role can the street then play in the city of tomorrow? As a fundamental device of urban space, the street is considered as a central figure in the definition of new images for the contemporary city, identifying possible strategies that can guide the project.

These issues are developed through both the presentation of selected project experiences and in the concluding notes. The contribution presents some results of experimental research on the post-war Italian city (University of Bologna, Department of Architecture) that address the theme of the re-qualification of urban portions of the margin, through typological morphological and perceptive surveys on the tissue and structure of public space. The humanistic and design approach to the theme identifies a complementary field of investigation to the known literature that is mainly focused on the technical and functional aspects of the issue. The outcome of the examples examined, in particular, is compared to three major themes that refer to different ways of categorising the relationship between the road and city/ landscape, in terms of the different contexts and the different scales with which the projects are examined: the road inside the historical nucleus, the road that connects two centres and the road as limit of the coastal landscape. The educational project, presented as a case study, is an original contribution to understanding, in which the theoretical component is the background onto which some possible strategies of design intervention in the existing condition are suggested through methods of research and experimentation that confront increasingly topical issues and problems.

LITERATURE REVIEW

Around the issue of public urban space the architectural debate in recent decades has nourished an ever increasing interest, exploring its value from multiple points of view. The publications dealing with city and public space are aimed primarily at investigating the unbuilt

urban space and the role that the void takes in the construction of the image of the city. These aspects are addressed through conferences, monographs publications on specific constructed projects and critical essays published in the main specialized journals that comment on the broad spectrum of experimentation and research on the subject.

The role of the street as a fundamental component of contemporary urban space is a relatively little explored theme in this extensive literature on public space which mainly focuses on the investigation of specific aspects that touch on issues related to the different scales of mobility, the technical and functional investigation of the road as infrastructure.

Very few studies deal with the road as a matter of architectural composition, that is to discover the genesis, the spatial structure and the relationship between forms and meaning. A first approach of the research of the last decades sees as a primary point of view a historical and architectural analysis of the dynamics of transformation of the road space in relation to urban development. In this regard, during the 1908s, Vittorio Gregotti repeatedly stressed the importance for the discipline of architecture to return to the road as a subject, enhancing the role of artifact and track, rediscovering its value as an architectural object and as a component of the landscape (Gregotti, 1987). This means looking at the street as a founding figure of the urban system, a sign of the conquest of new spaces, multiple and collective construction, three-dimensional as well as two-dimensional (Maffioletti, Sordina, 2009).

Gregotti's words on the role of the road published in Casabella are paradigmatic of the boundaries of the issue. The themes of context and change, the issues of abandoned industrial areas and urban voids, large infrastructure, the design of open spaces are addressed from two points of view,

that of the architect and that of the urban planner. The centrality of the instances related to urban design is demonstrated both by the frequency with which, on the pages of the magazine, appear thematic contributions, and by the topics covered in the special issues of the magazine, which often reflect on the public space of the city, including the special issue entitled *On the Road*. To confirm, the fact that the street, as an open and collective urban space, is an autonomous architecture, Gregotti writes: "There is no need to bother the history of ancient architecture or William Morris's thesis that everything physical that exists in the built environment belongs to the domain of architecture, in order to claim for our discipline an important task in the area of the design and development of the suburban road, in its autonomy as an artefact, as well as in the importance of the design of its layout, both as a perspective on the landscape and as a component of it" (Gregotti, 1987, 3).¹

A further approach of the recent research on street architecture is represented by a series of contributions that deal mainly with investigating the shape of the urban void and in particular of the street, as a design object. Some contributions focus on experiences that literally investigate the formal surface of the issue. *Strade urbane. Architettura e arredo*², for example, tells of a cross-section of contemporary urban road projects, both as a new route and as a redevelopment of the existing network. The research direction, which this publication represents as an example but not an exhaustive one, presents design areas focused on the design of public urban space and the definition of public use scenarios of the street as an innovative and attractive place. The approach of the book *L'architettura Della Strada: Forme Immagini Valori* (Secchi 2020) is different because it addresses the theme of the street design as a problem of architecture through the construction of an atlas of images from antiquity to the present day. A great importance is attributed to the shape of the

road, to the relationship between its layout and the space delimited by sections and elevations, as an important expression of the spirit of time, of the dominant urban culture and also of the specific figurative cultures.

THE DRAWING OF THE VOID. TO CROSS, TO PERCEIVE, TO SIGNIFY

As architects, drawing the void implies the recognition of its profound value. That is, to understand both its absolute intrinsic meaning, as an autonomous entity, and relative to that, with respect to the relations it establishes with the context and, reciprocally, how the context intertwines with it.

Emptiness has always allowed man to move, to cross space, to walk. The history of humanity is in fact a history of mobility, of migration: in fact, if we looked in the mirror, we could not deny that our anatomy responds to this tension for movement. "There will be a reason, after all, if at the bottom of our legs we have feet: not roots to anchor us to the ground, not underground rhizomes where to accumulate our food reserves, not filaments of byssus with which to weld to a rock, not cirrus or tendrils to cling to a wall or a plant, not peduncles, not suckers, like certain symbionts and parasites, nor spike proteins like those that make up the coronavirus crown, allowing it to engage the receptors of our cells" (Allievi, 2021, 27-28). The act of walking, as a tool to investigate the relationship between man and environment, has been addressed in a transversal way by many disciplines, from geographers, sociologists, urban planners, anthropologists etc. It is by walking that man began to build the natural landscape that surrounds him.

But what did this action on the landscape entail? From the activity of walking through the landscape derives a first mapping of space as well as that attribution of the

symbolic and aesthetic values of the territory that will lead to the birth of landscape architecture and the urban landscape (Careri, 2006). Man draws the landscape through points, references, destinations, cities to reach, to cross and from which to start again. But also by lines, trajectories, paths and roads. Roads that inevitably discover, recognise, and then connect, the conspicuous points in the landscape, marking out in turn our existence, in a complex circularity of cause and effect. Oscillating between nomadic tensions and sedentary needs, between walking and being, between road and city, our history is marked by a constant motion.

What emerges from these considerations is the ontological nature of the meaning of emptiness understood as the possibility of movement, in terms of how it has to do with man's way of inhabiting space. It must however be specified that by movement, in this writing, we mean a conscious crossing of space, which is expressed in a symbiotic relationship with it, not a mere transit.

Often today the empty space of cities and landscape, and specifically streets, appear more like free spaces for the transit of people and vehicles, or a movement indifferent to the surrounding context and one that does not contribute to the reading of the built mass that is being crossed. The road, in its deepest meaning, is not space for a movement-transit but for a movement-crossing.

Thus the act of walking is intrinsic to human nature, and emptiness is that entity-absence that makes the manifestation of this act possible.

That is, it allows man to build the landscape, drawing traces and tracks. Having demonstrated the relationship between man, emptiness and movement, it is necessary to add another piece of reasoning and investigate the relationship between emptiness and fullness, that is, between open space and city.

In fact, walking is not just a physical activity, a crossing. Not

just a wandering. Walking is a critical tool, the most natural and automatic way of humans to look at and experience the landscape, understood in its dimension both natural and urban.

It is also a tool for investigating the landscape and the city that develops the ability to perceive, read, and then produce, the transformations of space and the ways in which humans inhabit the world.

Walking is therefore an action that defines the individual with respect to the environment, characterising the space lived in by humans. According to this vision, the vacuum we are discussing is not so much what opposes architecture to the landscape, but is an element in symbiosis and complementary with the complete.

As Gregotti writes, the space that surrounds us, namely the city, the landscape, the territory, is: "a succession of large interiors of which the built, compact city or single building, are elements of its very constitution. In the same way squares, streets, urban greens are the great interiors of the city whose parts are formed by the frontages of the built, by the remoteness of the concatenations, by being parts of a sequence that is traversed on a ground and also modelled as a real front, indeed as the main connecting plane of the open spaces of the city" (Gregotti, 1993, 4) (author's translation).

The city is therefore a synthesis of full and empty places in sequence. The void would not exist without the full and vice versa. Indeed, it is precisely thanks to the void that it is possible to have perception and experience of the full. Emptiness becomes a place of modification when it reveals a new way of seeing and perceiving constructed reality.

Walking through the streets and squares of our historic cities we realise that we are not only in an empty space but in a place, by virtue of the reciprocal relationship between emptiness and the system of buildings that define it. The facades of buildings not only draw the floor plan of the streets,

but characterise it: the fullness of buildings qualifies the void of urban space, and vice versa. This compositional unit regulates not only the design of open spaces but also the arrangement of solids and their aggregation.

Drawing the void, then, compared to what has been said so far, is a possible action only if one recognises the void not as absence, but as potential. Crossing the open space and perceiving the indissoluble bond between empty and full are the first two unavoidable steps of the design process. The third is the attribution to the void of the value of public space. In this way the vacuum is not only a unit that allows the existence of the full and makes it perceive form and quality. Emptiness, as the space of collective life, is itself an architecture. Jackson writes that "the city, where we become citizens, and can be seen, begins just outside our door, where the street symbolises public life" (Jackson, 1994, p.190).

The void within the existing city becomes the material of the urban composition, as form, as volume, as artifact. Able to contain and at the same time to be contained, it is a strategic place for transformations and expansions. "The road is not an area but a volume. It cannot exist in a vacuum; it is inseparable from its environment. In short, it is no better than the company of houses it frequents. The street is the matrix: urban chamber, fertile soil and place of hatching. Its vitality depends on the right kind of architecture as well as the right kind of humanity" (Rudofsky, 1981, 91).

FROM PLACE TO RESIDUE

Going to any Italian or European city it is clear that it is a collage of fragments, of urban pieces even deeply different from each other and built in different historical moments as a product of the culture of their time (Fig.1).

Faced with a morphological approach, the development of the city focuses on the relationship between home and empty space,



Fig.1 - City as a collage of images.

that is, the elements that build the city, such as the street, the square, the inner courtyard of the urban block.

The rules of urban composition dictate the relationship between built volume and free space, according to issues of formal proportions of architectural composition of the urban scenery, functional or hygienic nature, the

best conditions with respect to orientation, light and air.

Working on the empty space of the city, as an occasion for defining public space, imposes on us to search for the meaning of the formal origin of every single part of the city.

The traditional city, the compact and densely constructed historic



Fig.2 - Ravenna, historic city centre, © Beatrice Mazzoti, Camilla Pomarici.

city, has a clear relationship between full and empty. The buildings collaborate in defining the public space of the city, defining its size, proportion and properties.

In the space of the road the perspective vision of the city is created as a scenography, in which architecture can be placed, measured and recognised in the sequence of the road that, winding or straight, unravels in the built mass of the city.

In the historic city architecture exhibits an intimate connection with the road: the full defines the shape of the void and the void allows the crossing and the perception of the full (Fig.2).

The traditional rules of city composition are consolidated in the nineteenth-century urban structure, which marks the rhythms of the built city and open spaces, attributing to them a general and unified design.

All the theories of the modern city find in the street the central theme through which to find the compositional and spatial matrix of the new urban models.

The nineteenth-century city identifies the street, organized in orthogonal pathways, the founding principle of urban expansion.

Public space and the house are determined by an indissoluble relationship between a formal

and spatial nature that defines its architecture in which the road network, the block and the residencies become compositional elements that synergistically define the spatial and original module of urban growth.

The continuous succession of streets of the traditional city triggers the rhythmic and geometric scanning of urban blocks.

The link between the street as public space and architecture as a formal development of space continues to characterise the experiences of the early twentieth century, despite the modern image of the street contrasting sharply with that of the consolidated historical city.

The architecture of public housing represents the main theme for the design of the modern city.

In the fervent debate on this subject, the research of Jacobus Johannes Pieter Oud (1890-1963) represents a significant line of thought.

Oud, through his project experience on housing in the Netherlands, investigates the issue of housing, not with respect to the structure of the individual dwelling, but with respect to the volume of dwellings obtained by the aggregation of individual units, considered as an architectural phenomenon of the modern city. The street is recognised as an autonomous design unit that plays a major role in defining the shape of the modern city.

The theme is dealt with by the author in the first issue of the periodical *De Stijl* in which the essay "The monumental image of the city" is published, where Oud writes: "Architecture is plastic art: the art of determining space, which finds its most general expression

in the image of the city, in the single building and in the reciprocal conjunction of buildings. The picture of the city is generally determined by two factors: street and square. The street as a continuous set of houses; the square as the center of streets" (Oud, 1917, 39).

If the focus is to control and change the image of the city, the modern architect must work on the image of the street, giving the block the urban shape of an architectural unit.

The question arises then of the treatment of the road-wall as a unit: that is, the fronts of the blocks facing each other on the same road should have a unitary character. In this way the road takes on its own identity character. Oud treats the road-wall as a strictly and purely architectural matter: the road is not only a path to control in plan, but becomes space and volume, to read and design in section. Becoming space, the road needs a spatial and formal characterisation (Fig.3).

Since the 1930s, with the CIAM contribution to the debate, new

canons of urban design have been identified, which aspire to a scientific re-foundation of research on housing and the city.

The built mass of the city is detached from the empty space: it changes the way of thinking about the form of living and, therefore, changes the shape of the city.

Starting from the analysis of the main needs of living, urban theories want to determine the ideal type of human settlement, that is, they theorise in an abstract and conceptual way about the characteristics of the contemporary city.

The cultural debate reads with critical eyes the structure of the historic city, where infrastructure, air, light and green are not enough to meet the needs of humans.

The building-road relationship is distorted: the large fast-flowing streets remain on the edges, while within the city buildings can stand independently and take on a plurality of forms. Isolated residential blocks become the only rule for the construction of the



Fig.3 - J.J.P. Oud. Hoek van Holland, Rotterdam 1924.



Fig.4 - E. May, Westhausen, Francoforte 1929-31.

city, interrupting the centuries-old collaboration with the open space.

The buildings are arranged on the ground in a repeated way to infinity, perfectly equidistant from each other and without any relationship with the road, but arranged on a homogeneous green plane.

The emptiness and public space of the city lose their architectural definition. It no longer has formal autonomy but becomes a non-constructed, residual space without recognisability (Fig.4).

The breaking of the block and the removal of the building from the street have profoundly affected the structure and shape of urban expansions, constituting the design bases of most contemporary suburbs.

In the contemporary city the built disperses in every direction, including inside empty spaces that, completely devoid of form, become marginal.

Since the '50s and '60s we have witnessed a considerable growth of cities, totally devoid of a rule of land use and guided exclusively by a speculative and quantitative approach, in order to take advantage of the available land.

Small and medium-sized towns in particular have suffered the consequences of a development without rules. On the margins of the consolidated historical centres, new pieces of disconnected, 'foreign' cities have arisen, consisting of low-value residential construction.

In the following years, these urban areas have been subject to rapid and unacceptable degradation, not only architectural and urban, but also social and cultural. In the suburbs public spaces have no architectural significance, they are not defined by volumetric elements, but they lack form. Or they coincide with closed spaces with commercial or specialised functions: large conference halls, exhibition centres, shopping centres.

These residual spaces lack a defined name and careful design of the surrounding environment. These are undecided areas that, in the absence of real compositional rules or if waiting for a new use, have been formed without a specific role (Fig.5 and 6). According to Clement's words "if you stop looking at the landscape as the object of human activity, you immediately discover [...] a quantity of spaces that are undecided, devoid of function, to which it is difficult to give a name. This group belongs neither to the territory of shadow nor to that of light. It is situated on the margins." (Clément, 2018, 16).

INSIDE THE ROAD

The research³, conducted through a morphological, typological and perceptive lens on the road-space, clearly describes how the city can be perceived as a narrative that unfolds over time, through a multiplicity of forms, looks and sensations (Ricoeur, 2013).

The streets cross, narrate and build the city and the landscape. The effectiveness of the role of the street as a public space depends, as we have seen substantially, on the architectural definition of its formal structure, on the close relationship with the urban fabric and the contexts crossed. In a word, from an 'intertextuality' with the urban phenomenon (Ricoeur, 2013).

Research shows that this relationship has weakened in the contemporary world. The space of the road has become progressively more and more destined to be used for practical purposes, that is a sectoral infrastructure, monofunctional and not generating shape and meaning. The road has become residual urban space.

The reinstatement of the meaning of the street as autonomous architecture that generates form and organisation of space, within a landscape as discontinuous and fragmented as the contemporary one, implies, therefore, that the street project is no longer a simple answer to a technical problem, but an opportunity to define new urban architecture.

The theme of the street as architecture has a transformative potential not yet fully investigated but full of repercussions compared to the study of the shape of the city and the landscape. For this reason we have chosen to describe some design experiments useful for renewing the way of thinking about the existing street network as an architectural system.

The hypotheses formulated here, are not intended to propose easily reproducible, specific or quick design solutions, that can suggest idea for a new way of living and designing the public space. This would be a methodological mistake considering the complexity of the issues that feeds the problem. Rather, we investigate some possibilities, partially and not conclusively, through which to transform the urban void from being the object to being the subject of the issue, an autonomous unit capable of defining a new quality of the built.

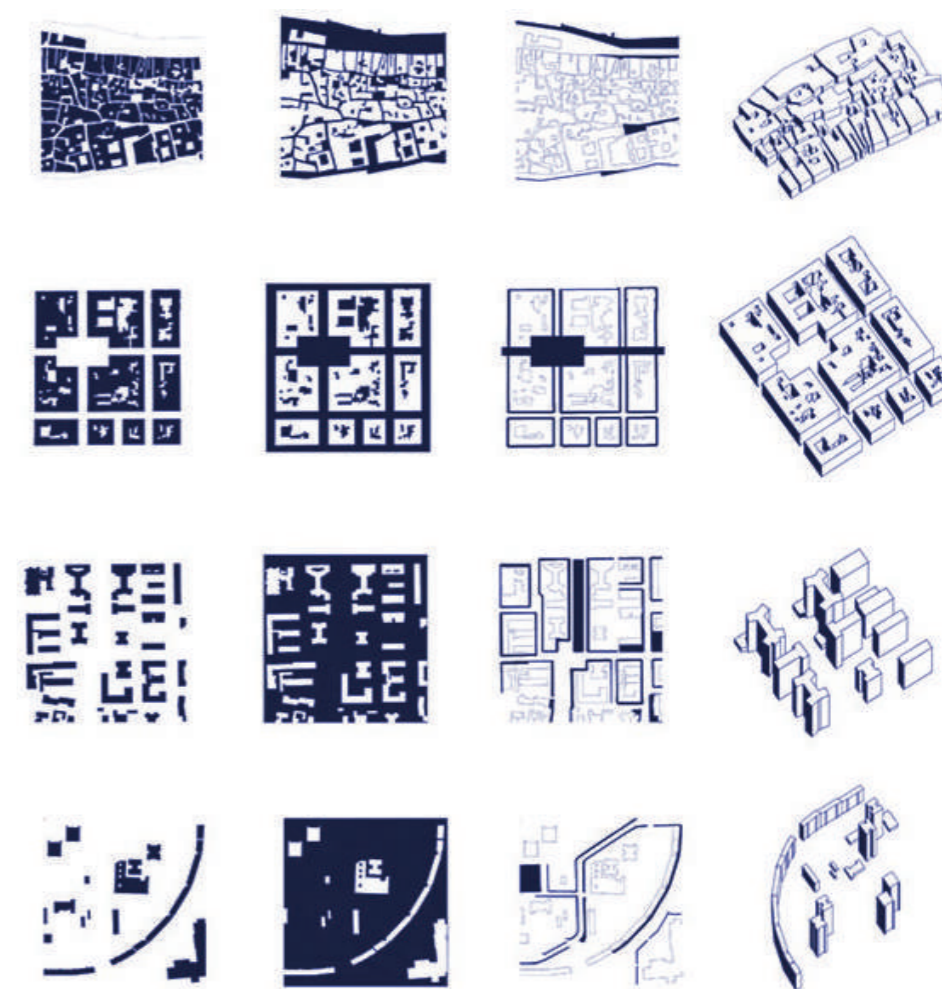


Fig.5 - Urban fabrics and public space.

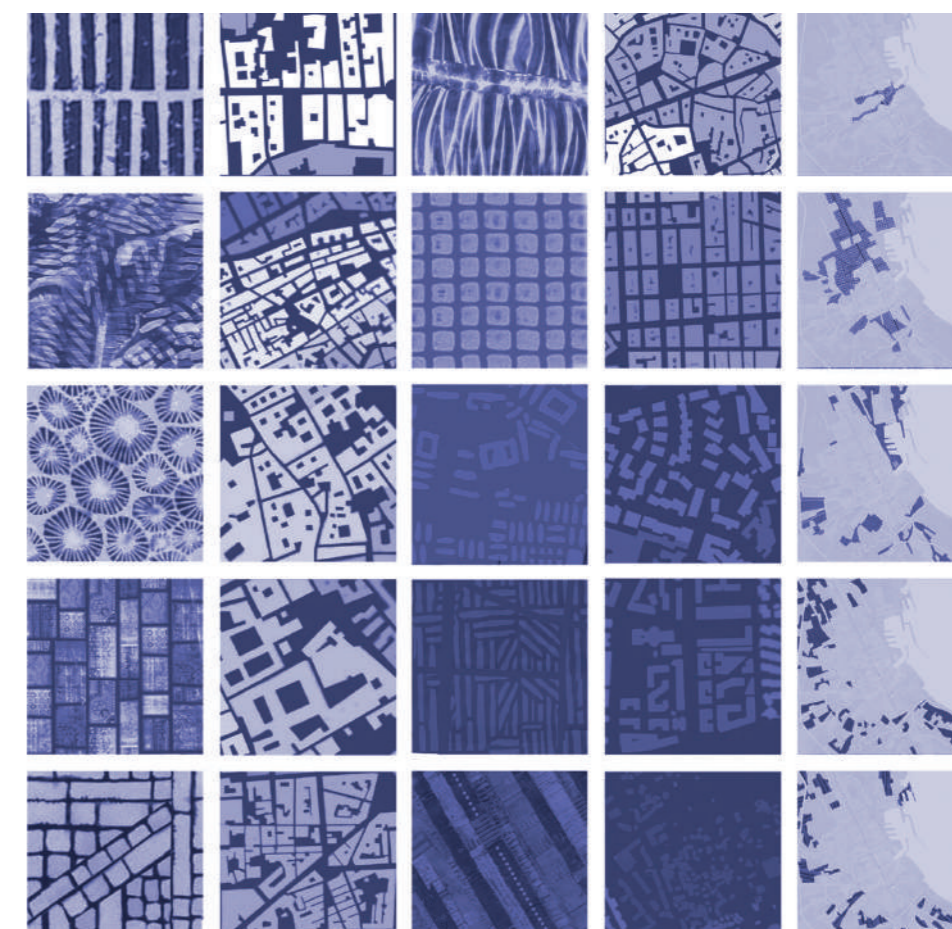


Fig.6 - Palermo, urban fabrics. © Chiara Ceroni, Giulia Tamarri, 2020.

Recognising the street as the founding urban element of public space and as an architectural product is the necessary premise for imagining the street as a space for autonomous design experimentation.

If it is true that in the contemporary city the space of the street appears as a confused mix of heterogeneous fragments, forcing it to undergo multiple projects to improve its understanding as, a preparatory tool to possible future transformations.

The Via di Roma in Ravenna, the Via Messina Marine in Palermo and the connecting road between the historic centre of Urbino and the Piantata district are some examples of fragmented urban spaces that cannot encapsulate, in a recognizable form, their relationship with the surrounding fabric and the landscape. Although roads are characterised by completely different historical, urban and landscape contexts, and despite being generated by different urban dynamics, they represent an opportunity to experiment with new ways of research, towards an idea of redevelopment of the existing city through public space projects. The streets, currently undefined and characterised by marginal spaces, are read as a unitary system. They are capable of contributing to redeveloping entire parts of the city by defining a form and a recognisable architecture. These projects deal with many themes but always centred on living and building public space.

In Ravenna, Via di Roma is a characteristic feature of the city. A commercial place since the Roman period, linking Rimini, to the south and Venice to the north. Its current condition sees it deprived of the urban role it has had over the centuries reduced to a fragmented road from the point of view of both viability and image (Fig.7).

Valued only for the portion that crosses the historic centre, from Porta Nuova to Porta Serrata, Via di Roma is divided into three segments: on one hand the historical part and, on the other



Fig.7 - Palermo, urban fabrics. © Chiara Ceroni, Giulia Tamarri, 2020.

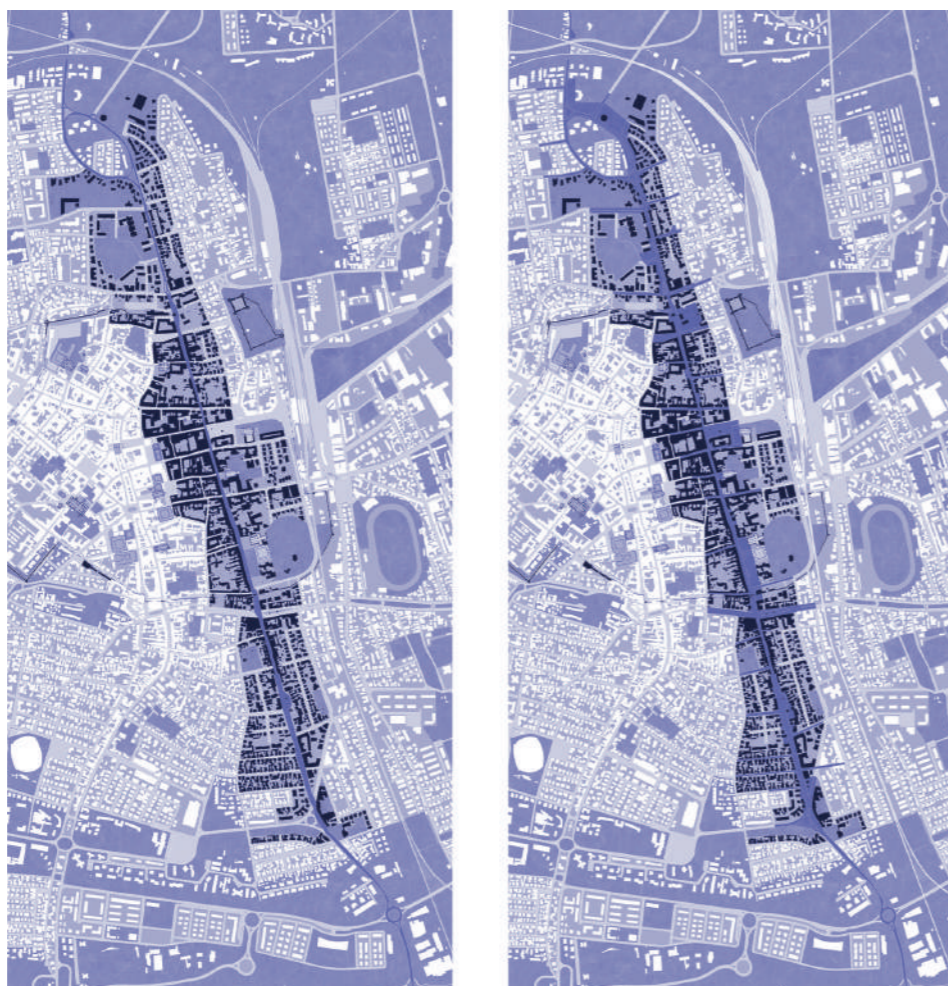


Fig.8 - Ravenna, space and perception of Via di Roma, © Beatrice Mazzotti, Camilla Pomarici, 2019.

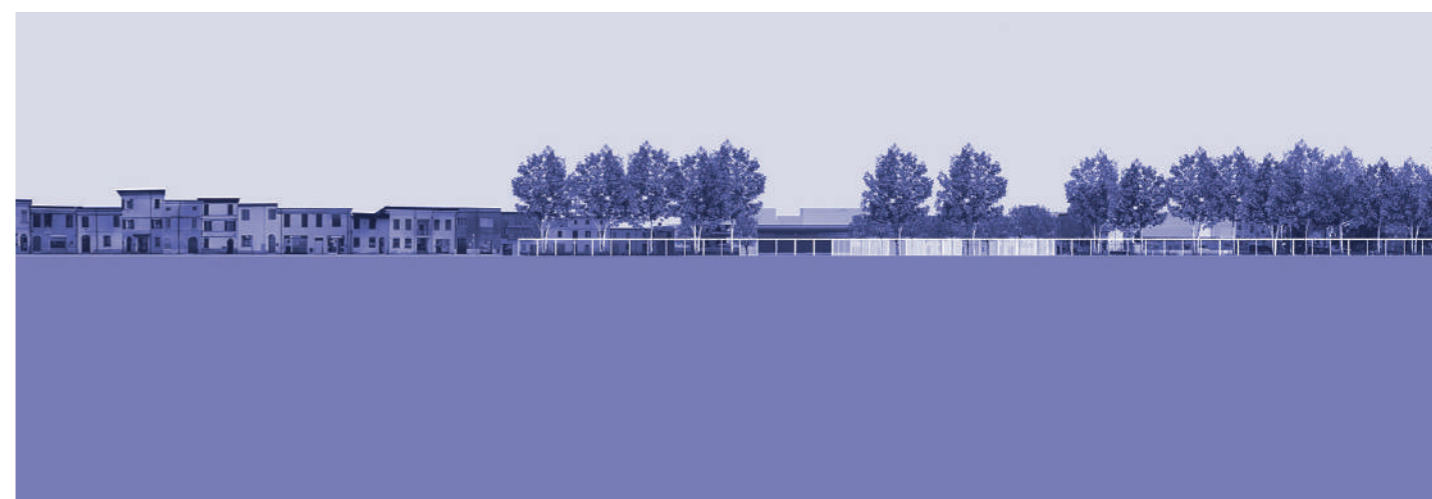


Fig.9 - Inside the street. Renovation of Via di Roma, © Beatrice Mazzotti, Camilla Pomarici, 2019.

hand, the portions to the north and south have an urban design style of the 60s-'70, characterized by building speculation and with a common residential fabric. The crossing of different contexts and the uneven shape of the empty space, both from a morphological and perceptive point of view, make this road a heterogeneous urban margin without recognisability and quality (Fig.8).

The same marginality and unevenness characterises the road

that connects the historic centre of Urbino to the popular district La Piantata, built in the 80s and located north of the historic city as described by Benevolo. The road is just that, only a road system, completely losing the compositional and scenic value that characterises the original core of Urbino. A functional road without any architectural quality that crosses a hilly landscape of great potential (Fig.9).

The South Coast of Palermo,

which extends from Piazza Sant'Erasmus to the Water of the Corsairs, originally an agricultural territory dotted with water towers around which the inhabited centres were joined, underwent a radical transformation in the 1930s. Along via Messina Marine there are numerous bathing establishments and production facilities. Because of the continued depositing of debris, the coast progresses towards the sea producing a radical change in the geography and orography of the city. Today the south coast of

Palermo is a decomposed whole, made of social housing and remains of industrial architecture, despite the great landscape value of coastal margin of the area (Fig.10).

Here projects can transform the road. They study the diversity of the contexts the road crosses and become the generators of a new form of space.

The road becomes a unitary system with a recognisable

architecture: sometimes it becomes a linear garden defined by an urban facade that follows the ancient road, sometimes it is equipped with new urban parking spaces and new public architectures.

The interest of the project is not only in the formal outcome of the proposed results, but also in the method they seek to outline, giving possibilities for new methods of intervention on the city and landscape.

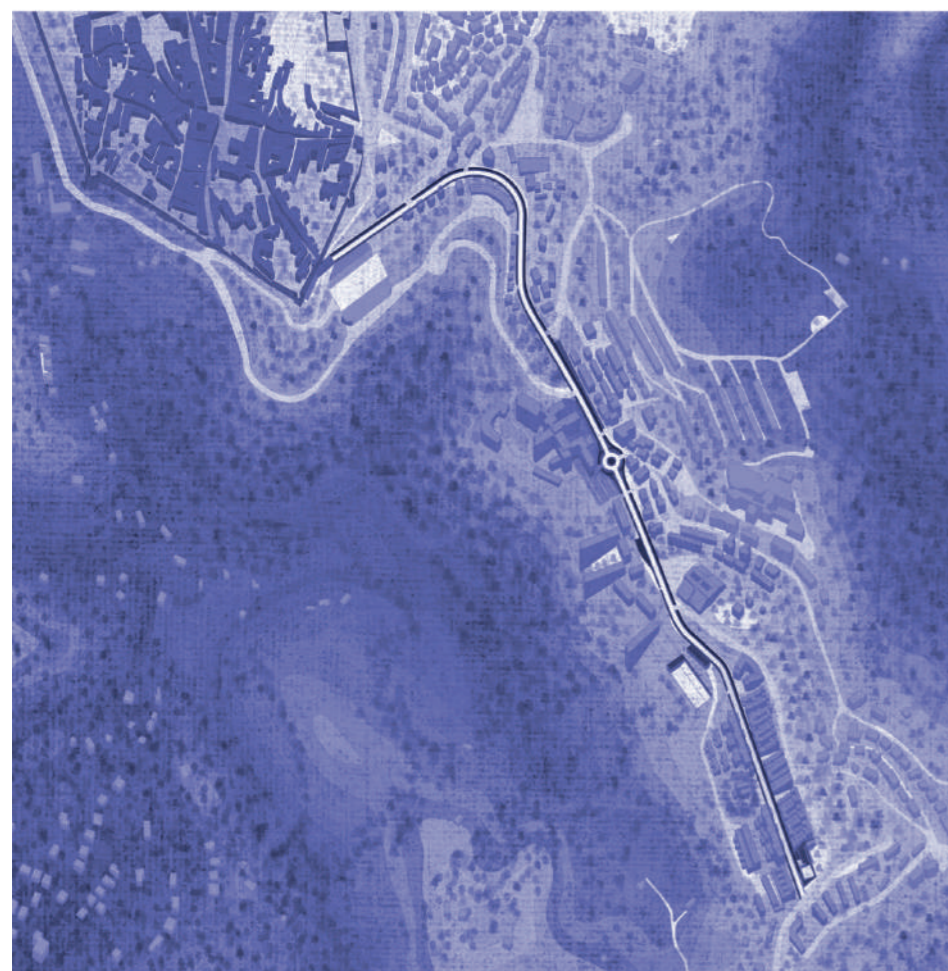


Fig.10 - Urbino, street as urban place between historic city and suburbs, © Diego Croceri, Noemi Irimi, 20.

CONCLUSIONS AND FUTURE DEVELOPMENTS

The purpose of this article is to bring out the contradictions and criticalities of the spaces described by describing the current urban condition of contemporary cities, looking for ideas for new designs of public urban space, and proposing possible future design research.

The premise that the road has an architectural value and should be interpreted as a real product is not a new aspect in the disciplinary debate on this issue.

The new interpretation that the research proposes is in the recognition of the void as a 'concrete' constituent of urban form. The objective is to attribute a new condition to the residual voids that the city, especially the contemporary one, has produced over time. In pursuit of this objective, the research proposes to consider the street space as a place for experimenting with autonomous design, worthy of formal and urban reflection. The design of public space is a field of research consolidated in different scales ranging from the definition of uses to materials and equipment, such as urban furniture, which make the urban space interesting for new activities along with social and economic relations. However, with regard to the new possibilities of research, the redevelopment of public space, and in particular of the street, requires a theoretical structure on which to base future experiments, instead of using design approaches that refer to 'decorative' aspects of space.

Following these guidelines, this study aims to stimulate a new design approach that combines reflection on the shape of the void and the urban and social role of the road. So the contemporary road will return to be a place that is able to contain and stimulate the development of the daily life of individuals as a vehicle of reconsidering entire parts of the built urban fabric.

By widening the scope, it is possible to examine the constellation of urban spatialities adjacent to the street in order to generate urban regeneration processes through an osmotic and capillary process. The use of the proposed paradigm allows for a wide applicability to multiple and dynamic situations, whether urban, landscape or architectural, public or private.

The enormity of the networks –road networks in particular – represents an extraordinary resource for urban regeneration, for which today the potential is not fully exploited, given that in Europe about 40% of the urbanised area is occupied by roads (Secchi, Bochicchio, 2020).

The urban transformations of the future, stimulated by the new environmental and social climate challenges, should use road space as a field of experimentation. However, the design actions should bring into play new materials and new shapes that leave a mark beyond the surface of the space. The architectural project should rather start from the ontological and formal meaning of the street, working on the architectural value of public urban space.

Perhaps we should start considering the road not only as an infrastructure network but above all as a collective architectural artifact. Today, after recent crises, it is even more urgent to redevelop these urban spaces, starting from the meaning and the role that public space can assume in the process of redevelopment of the urban landscape.

The redevelopment of street architecture is a current field of research, capable of starting off effective dialogues between communities and policymakers: we can consider, for example, the impressive number of architecture competitions that in recently years have dealt with the theme of urban regeneration of degraded public spaces. The application of research certainly represents one of the most important opportunities for the near future.

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NOTES

1. The magazine *Casabella* in fact, promoter and at the same time witness of the international architectural and theoretical debate, systematically addresses the issues related to the relationship between urban architecture and the city, thanks to the fundamental contribution of Bernardo Secchi, the main theme of the magazine under the direction of Gregotti (1982-1996).

2. FAVOLE, Paolo. *Strade urbane. Architettura e arredo*. Milano: Tecniche Nuove, 2007.

3. The research was carried out in the Laboratory "Requalifying the post-war city" created by the Department of Architecture of the University of Bologna. The laboratory is committed to studying the urban phenomenon through public space and practices for a conscious urban redevelopment. The complexity of the theme has made it necessary a transdisciplinary structure of the laboratory. The course, coordinated by prof. Antonio Esposito, is based on various disciplinary contributions, such as History of Italian Architecture of the Second Century, Aesthetics of the landscape, Architectural and urban composition and Architecture and urban landscape.

THE URBAN BORDER

The secret life of urban margins

(Un)released and (in)formal relations between borders and urban margins peopled by Rom communities

disuguaglianze urbane
marginari urbani
slums
città multiculturale
città aperta
comunità romani
urban inequalities
urban margins
slums
multicultural city
open city
Romani community

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Nel sistema urbano planetario in cui viviamo, le città si configurano come punti di accumulazione, producendo spazialità in riferimento all'*alterità*. Con gli effetti della mondializzazione, che vedono il configurarsi di *città-mondo* e *mondo-città* (Augé 2007) si può "osservare" una proliferazione di marginalità urbane e sociali.

Il presente contributo intende esplorare una specifica marginalità, quella della popolazione Rom, che in parte, rappresenta l'emergere in Europa del fenomeno planetario degli esclusi (Careri e Romito 2016, 80) e vive la realtà dell'encampment. Quest'ultima consta di due configurazioni spaziali – l'insediamento informale e il campo – che traducono in modo diverso il concetto di *margin* e di *confine*; il primo autocostruito e dinamico all'interno del quale si possono osservare abilità nel saper utilizzare le aree al confine con l'ordine stabilito, mentre il secondo fisso e imposto come dispositivo di controllo. E sono proprio gli spazi marginali urbani, che accolgono questi insediamenti più o meno di transizione e che spesso attivano meccanismi paradossali di fare città. Il campo tende a diventare insediamento e l'insediamento tende ad essere città, rileggendo in modo inedito le condizioni presenti.

Entrambi portano al configurarsi di realtà urbane assimilabili alle baraccopoli del sud del mondo indagate dalla maggior parte della letteratura scientifica e da cui il nord del mondo non è immune.

Nell'orizzonte teorico della città aperta e multiculturale e dell'informal urbanism – che vede nello slum un concetto spaziale utile a pensare nuovi paradigmi di progettazione (Brillembourg) – si propone una lettura, parte di una ricerca dottorale in itinere, sul carattere dei margini urbani, per un ripensamento degli stessi come luogo di sperimentazione e di superamento delle dicotomie che dominano tanto il dibattito contemporaneo quanto le realtà urbane.

In the urban system in which we live, cities are shaped as points of accumulation, generating spatiality in relation to *otherness*. With the effects of globalisation, whereby the *city-world* and the *world-city* take shape (Augé 2007), it is possible to "observe" a proliferation of urban and social marginalities.

This paper aims to explore a specific marginality, that of the Rom population, which partially represents the arising in Europe of the phenomenon of the outcasts (Careri and Romito 2016, 80) and experience of the encampment. This latter consists of two spatial configurations – the informal settlement and the encampment – that transpose the concept of *margin* and *border* in different ways; the former appears self-constructed and dynamic in which abilities can be observed in being able to use areas on the border with the established order, while the latter is fixed and imposed as a control device. And it is precisely the marginal urban spaces that accommodate these roughly transitional settlements that often activate paradoxical mechanisms of city-making. The camp becomes settlement, and the settlement becomes city, giving an unprecedented reinterpretation of the present conditions.

Both lead to the configuration of urban realities similar to the slums of the Global South explored by the majority of scientific literature and from which the Global North is not exempt.

Within the theoretical horizon of the open and multicultural city and of informal urbanism – which considers the slum as a spatial concept useful to conceive new design paradigms (Brillembourg) – we propose an interpretation, part of a doctoral research in progress, on the character of the urban margins, in order to reimagine them as a place for experimentation and for overcoming the dichotomies that dominate both the contemporary debate and urban realities.



Fig.1 – Author's collage, another way of looking at borders.

BETWEEN THE BORDERS

In the last few years, there has been a proliferation of artistic images, installations and situationists attempting to work within the concept of the border as a paradox; making it clear that this is “the place where it is easy to come across the unexpected and move, often blindly, in discomfort” (Zanini 1997, 8).

The images of the *Teeter-Totter*

Wall by Ronald Rael and Virginia San Fratello and the *Kikito* installation from JR, both on the border between Mexico and the United States, are representative of the relational power that a physical or situational device can bring to a specific border.

The construction of unprecedented forms of relationship invites those who deal with space (and not solely) to look from other perspectives at that line, which is always a two-faced space. In these two installations, there are

visible material and immaterial, formal and informal relationships between the two sides of the border - through the pink swings - and the urge to look at it from another perspective, which JR delegates to *Kikito*: a child who leans out from the wall and looks at that table that opens up an (im)material gap in the slats of the physical dividing line (Fig.1).

Here, art clarifies the need to look at the things before our eyes in another way, in order to better understand the complexity of the

contemporary world, to explore the chaos of cities and to open up a gateway into them (Agier).

Complexity and chaos are all present within the city, this has always been the place in which to read the spatialisation of human history and the machinery of union and separation, in which social inequalities become spatial, as theorised by Bernardo Secchi in his famous text *The city of the rich and the city of the poor*. Moreover, as the world's population becomes urban (UN Habitat), cities seem to take shape precisely as accumulation points of the global system, continuously producing spatiality in reference to otherness¹. The otherness, from the urban point of view, is often linked to the urban exclusion that modifies cities and shows up in the spaces of the not-yet-citizens or those who are passers-by, forgotten spaces (by planning, design, disused spaces, etc.) for those “wasted lives” that Bauman defines in his 2007 text and that shape a systemic margin (Sassen 2015).

This paper explores a precise and specific marginality, that of the Rom community, which, partially, represents the emergence in Europe of the global phenomenon of the excluded (Stalker 2016, 80) and experiences the reality of encampment in its different specifications: the informal settlement and the camp. These configurations, in different ways, translate the concept of margin and border; both lead to the configuration of urban realities comparable to the Global South's slums, investigated by most scientific literature, from which the Global North is not immune, in its marginal urban spaces.

The article presents part of a doctoral thesis still in progress - as part of the doctorate in architecture at the University of Naples Federico II, with tutor Professor Paola Scala - which aims to learn about informal settlements inhabited by rom communities, from an urban perspective and the development of a project methodology for the areas under study.

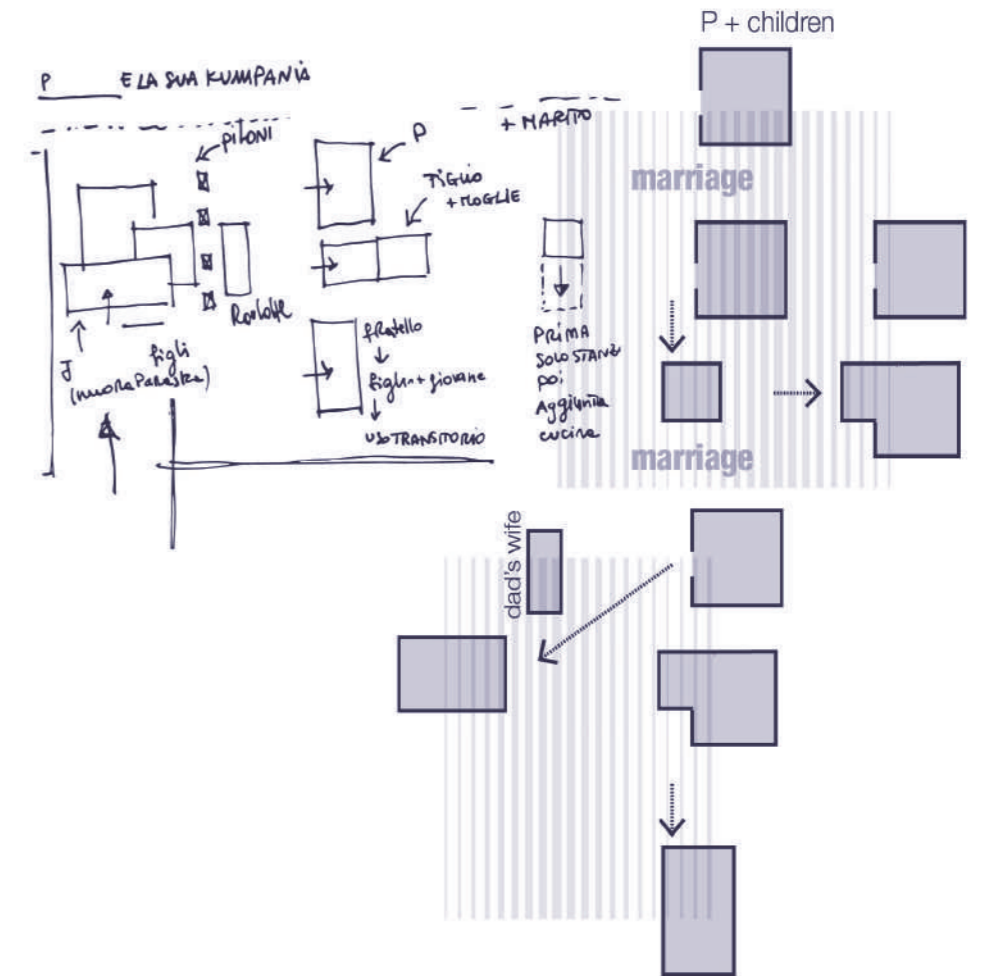


Fig.2 – Author's diagram of informal household arrangements and notes of the camp.

The research question aims to verify if and how the architectural project can learn from the informal city, in order to intervene in specific contemporary urban spaces of the European city where we observe informal living practices. Also the research work interrogate the role of the project - as device/ infrastructure - in the broader questions of the right to the city, of the disconnect between project and reality. The hypotheses on which the research is based focusses on other communities, as actors capable of interpreting a space by design, proposing alternative models of living and uses, adhering to the character of the non-places in which they settle or to which they are confined.

This hypothesis becomes concrete in the theories that envisage the transformation of a geometric space into a place in the anthropological sense, through use and by developing a social territoriality. With rom communities,

this becomes evident in the spatialization of family networks and the separation between different groups that are forced to share parts of the city (Fig.2).

The specificity of the rom issue makes it possible to contribute to the academic discussion on sustainable urban regeneration and on the bidonville. Slums represent one of humanity's greatest challenges and, according to Yona Friedman “they are the laboratories of the future, for a world sliding towards generalised poverty [...] they are social inventions” (2009, 99).

In the European context and space, they develop between the dominant folds of the contemporary city constructing another city, intermediate, residual, undecided and restless spaces which have exploded quantitatively and qualitatively, becoming one of the characteristic features of urban realities. In the context of this contribution, we return a part, not

complete, of a precise research tool - the observatory - built through the mapping and identification of case studies through which we work on make visible specific (in)visible and (in)formal urban conditions. More precisely, the first observed invariants are returned and also the initial criticism through the concept of margin.

It is, in fact, an experiment with the project as a tool of knowledge, which is important in order to confront (in)edited design problems [...] and the need to construct complex answers that, apart from specific issues such as housing, apply to possible and multiple future communities (Stalker 2016, 130). Moreover, it is hard not to agree on the urge to confront the project with global challenges, on the significance of the practice of architecture as caring, and in reducing, inequalities (Boano 2020).

THE MARGIN BETWEEN WORD-CITY AND CITY-WORD

The investigation is part of informal and social urbanism research line which - among others - gathers a series of design experiments that give a key role to the project that works in informal and marginal conditions, and that can generate other conditions and possibilities, without needing to consider a tabula rasa.

The slum is perceived as "an organising urban logic [...] a design problem by definition but also a research problem - it is in fact an issue that is simultaneously one of design and research." (Rao 2010, 10). We look at marginal areas because they are understood as those spaces where the 'soggetti della mente locale' ('subjects of the local mind') can fully exercise their activity, margins that can become laboratories from where we can rethink our places (La Cecla ed. 2020, 13).

The most recent architecture biennials have helped a focus on the role of design in the complex processes that dominate the now

out-of-control urban development. *Report from the front* first and then *How we can live together*, have marked contemporary research perspectives that question the connection between exclusion, social marginality and spatial structures. They show the possible role of the architectural project in the construction of multicultural and inclusive cities; reiterating that among human practices, architecture is the one that exerts the greatest responsibility for the quality of life.

In 2007, Marc Augé wrote about the effects of urbanisation and the contradictions that endlessly multiply within urban systems. He coined two terms that, almost twenty years later, are still relevant for the description, reading and interpretation of contemporary conditions, with their spatial and social implications. These are the configurations of world-city - in which there is violence, exclusion, ghettos, youth and old, different generations, immigrants, illegal immigrants: in a word, all the complexity and inequality present in the world - and world-city, which conversely incarnates all the contradictions and historical tensions generated by this system. Indeed, it is the (hyper, mega, post, no more...) city, the place where all these issues are channeled (Augé 2007, 10-12) and where human and urban changes increasingly intersect. These arguments have been reworked by many authors by rediscovering Henri Lefebvre's *Right to the City*, which identifies the city as a "superior form of right, as a right to freedom, to individualisation in socialisation, to habitat and habitation" (2014, 11), and contextualising the reasons and developments of the complex urban and housing crisis to the present time. While, in terms of form, the city grows to the point of losing its measure, the phenomena of spatialisation and re-spatialisation on a global scale involve an ongoing reconfiguration of spaces within the city. In this process of growth (and implosion), "a multitude of residual segments, grey zones [...] take shape, in which ethnic and religious minorities, new poverties,

immigrants, the marginalised and excluded sometimes settle [...]. Urban margins in uncertain expansion [...]. It is the walls of the city that become the walls in the city" (Settis 2017, 70-75). This image of walls in the city recalls that of the proliferation of margins and borders that mark the earth's surface and "produce serious inequalities between nations, regions, cities and between classes and ethnic groups", as one of the introductory panels of the last Biennale stated. The exhibition, therefore, invited to transcend borders through design.

Multiplicity and mutability express different and contradictory needs, confronting the project with new challenges. Moreover, even if contemporary phenomena concern different domains, some of them - such as migratory waves, multiculturalism, the right to the city and the sustainable urban regeneration of some degraded parts of cities where complex conditions of discard are summed up - are held together by relegation to the margin. So, the margin is a complex semiotic object that intersects many levels of reading and interpretation. It reinvents or rewrites the concept of the outskirts, no longer just as a geographical condition but as a place that becomes a space of segregation and rebellion, of exclusion and defence but also of potential redemption.

The "new" outskirts, rising on the margins of dominant systems, are made up of "out-of-place, placed on the edges or limits of the normal order of things [...] marked by confinement and a certain extraterritoriality" (Agier 2020, 102): these are informal settlements and refugee camps. A landscape of exclusion and housing crisis for subjects banned from economic, social and political circuits, self-excluded or pushed into urban marginality. On the one hand are, the excluded confined to "residential structures" on the margins of the city; on the other, those not yet absorbed by the metabolism of the generic city, who informally respond to the need for housing.

THE MARGIN AS A SPACE OF THE POTENTIAL

Paraphrasing Andrea Staid, in the introduction to his book *Abitare illegale* (2017) he writes that: The margins, which I have tried to investigate both bibliographically and ethnographically are many and different from each other. The first major distinction [...] is between those who live in the margins by choice and create, redefine their spaces and those who are forced into the margins and enact rituals of resistance [...]. In both cases one can pause, and he does so in the text, to understand the possibilities of informal living.

For those dealing with space, this renewed perspective opens up otherwise unexplored possibilities. Within the architectural and urban discipline, the possibilities of informal living are described by A. Brillembourg², who defines informality from three points of view: human as it implies conditions of poverty and discomfort; theoretical by attempting to analyse informality as a complex system that can change in relation to certain factors; and finally from the point of view of the project by considering it as an opportunity to create an urban laboratory able to identify hypotheses for intervention in these contexts. It is about reading, describing and interpreting the thickening of the urban margins where something happens. To obtain a complete reading of the urban margins, it is necessary to incorporate a literature of the social margins, but the physical description is only the starting point that then expands to gather news, stories, reports, anthropological research, inspections, interviews, etc... To do this, the observatory has worked with a specific cases-study, and it is made up of two parts, a first one providing complex descriptions and a second one, the first results of which are presented here, which constitutes an initial inventory of invariants and variations.

The cases were elaborated with a multi layering approach that

discretises the eclectic description and circumscribes the framework within which the research moves, the urban one. Also referring to the latter, the layers of knowledge overlap and, for this paper, the specific reading of the margin - as a "physical and symbolic space of transition: space that surrounds something, that happens at its end, that is in-between; space that filters and allows the passage from one state to another, from one place to another; space that triggers or can trigger relations" (Amore 2020, p.120) - is a first invariant and is linked to urban (in)relations. Thus, we "narrate" the inhabitation of the margins on the margins of rom communities, both as zenithal as well as the flaneur's vision.

Crossing points of view, the paradoxes of the margins are made evident through the iconographic apparatus. This is composed by photographic manipulations, collages and diagrams that simultaneously become tools for thoughts and descriptions. The construction of the observation brings together different tools that make up the eclectic gaze: remote mapping, explorations with Google Earth, bibliographic explorations, breaking news, inspections and dialogues with inhabitants or privileged interlocutors. It traces its theoretical origins back to the season of eclectic atlases: "investigation tools of the relationship between space and society, made up of heterogeneous materials which reveal new relationships within the elements of physical space and refer to unusual words, terms often unrelated to those proper to the disciplinary tradition but capable of referring to more effective images in the description and interpretation of the phenomena observed" (Scala 2021). The proposed results relate to the field of knowledge from the architect's point of view and aim to fill the information gap of spatial thinking, albeit partially.

A clarification must be made: all the conditions being described today are obviously 'of the moment' and could change as this is being written because in informal

morphologies there is a strong temporal dimension concerning the processes of incremental adaptation to the small scale.

THE MARGIN AS A SPACE OF THE ROM MISCONCEPTION

"There is a paradox of a proliferation of borders, material and immaterial, physical and symbolic. Boundaries break down, become heterogeneous and mobile and are rebuilt everywhere. [...] for the future of cities: identities, cultural differences, citizenships, forms of coexistence. Within these spaces, there is a new articulation of cultural, ethnic and national identities. In this context, cities provide the space in which emerging forms of citizenship are experienced. The city can generate a material and symbolic sense of belonging [...]. Here it becomes possible to exert the right to the city, the possibility for citizens to take control of urban space, understood in its material and immaterial, relational and symbolic dimensions." - F. Careri.

Generally speaking, marginality can be described as a condition in which a subject/group/territory is close to the limit of the system to which it belongs. Roma marginality is emblematic of this definition, and we deal with these communities and their settlements because they are paradigmatic of the denial of the right to the city and of urban expulsions, just think of the notices issued in cities to get such people out of the walls.

They are a population that defies the concept of the nation-state, and despite extreme difficulties, resists, planning and enacting survival strategies, the spatial configurations of which we can observe in informal settlements, in the occupations of abandoned factories, etc. Investigating the rom issue involves coming to terms with the uncertainty of quantitative data.

Information is very elusive and much of the phenomenon is invisible numerically, while it

becomes (roughly) visible in urban reality. While it is true that there is a lack of data, an important gap in knowledge is to be found above all in the spatial aspects of living conditions that have persisted in specific urban transects for several decades and which are suggested here through the interpretative key of the limit and the margin.

Exclusion and marginalisation can be observed in the construction of ghettos in Bucharest, in the anti-rom walls in Slovakia, in the expulsions from historical centres in Romania, in informal settlements and in the Italian "Rom issue". In Europe, in particular, the proliferation of bidonvilles depends on the migration crisis and the concrete reality experienced by rom people in most European countries tells of a paradox: that of a people who are not allowed to settle down and who are instead forced to live in the waste (spaces) of non-nomadic citizens (Orta 2010). While they were considered nomads, they were migrants, refugees and, in some cases, stateless. Thus, Rom are migrants who have built bidonvilles, with a longer persistence than the short-lived migrants from other countries and different conditions. Slums became highly visible in the local political debate of the early 2000s to the point of triggering the Rom emergency³. The emergency attempted to give a formal response to the slums, instead what happened was the dislocated creation of camps. Often ignored, rendered invisible or left to live in a tolerated manner in the name of housing cultures that relegated them to the margins; when considered, they were more enclosed and excluded from urban systems. Emblematic of this is the case of Rome, which relocated entire communities outside the GRA ring road and replaced parts of the self-built city with inhuman, fenced and guarded camps (Fig.3).

Among informal shanty towns and authorised camps, Italy was named *Country of the Camps by the European Roma Rights Centre*, as it had invested more than any other country in the creation of camps, which excluded and marginalised.



Fig.3 - Author's expulsions.

Regarding this, it should be pointed out that generally in dealing with the issue of "spaces for the excluded", architecture and the urban dimension were not taken into account for several years, while today, as the latest strategy document⁴ testifies, there is a re-evaluation of the housing questions. In particular, there is reference to the possibility of reflecting on a "wide range of housing solutions. [...] Favouring the coexistence of different, complementary and multiple solutions [...] considering [...] the need to provide meeting and temporary living spaces for certain groups on occasion. There is a need to experiment with coexistence, different and multiple solutions considering the requirements of the inhabitants". This new project questions that and suggests the possibility of reinterpreting what exists and takes place in marginal spaces. Instability and uncertainty, exclusion from the social fabric and the impossibility of integration, have brought about a transformation of "certain corners of the city, often hidden, almost invisible to the gaze of passers-by (which) are gradually transformed, until they become stable points of reference. Nurtured and cared for by their inhabitants, dwellings in their own right" (Staid 2017, 9) (Fig.4).

INHABITING THE MARGIN ON THE EDGE

"The Athens Charter has progressively been replaced by the Charter of Survival [...] when in town, do as the slum dwellers do" with these statements, Y. Friedman (2009) seems to anticipate contemporary conditions.

As a matter of fact, the Rom slums are just a fragment of the universe of camps that populate our planet: camp-institutions - political devices - and informal settlements that structure themselves by self-organising and referring to the *familje*, shaping adaptive, flexible systems that we could define as open. Both are associated with being on the social and urban margin and, as F. Floris (2011) explains, "entering a slum is not easy, it is not easy in Africa or Brazil but not even in Italy. Over there it is the colour that blocks you, here it is the place itself: its barriers, its abandonment, its geographical marginality, but that is not all."

We present the different conditions of inhabiting the margin on the edge in relation to rom communities through the



Fig.4 - Photographic frames 2022.



Fig.5 - Author's diagram from camp to settlement to city.

metropolitan city of Naples.

The rom population in the metropolitan city of Naples has been present for quite some time and is, as in the rest of Italy, around 0.22-23% of the local population. However, these are only approximate assumptions; the only more plausible information dates back to 2008 when the Berlusconi government issued emergency ordinances in Campania, Lazio and Lombardia. At that time, the prefectures organised a census of the rom camps, complete with fingerprinting. It was clear from the data collected that these were not real numbers, as all those who feared fingerprinting did not turn up. The metropolitan city of Naples "hosts" several emblematic conditions of living on the margin: the camp (administrative solution), the camp verging on becoming a settlement, the informal settlement tending to become a city, and the occupation of a disused industrial enclosure (Fig.5).

And if "a border is a line but also a paradox and an element of ongoing change" (Granata 2012, 49), the different urban characters and (in)edited relations are explored through the investigation of the (in)tra/visible cities⁵.

It swings between two poles, architecture without architecture and architecture without architects, but the least common denominator remains the construction of invisibility that happens across borders.

"The border is the place of antinomy: it both divides and unites, separates and retains, aggregates and distances, assigns a dwelling and establishes otherness, distinguishes and is a front of meanings. Borders represent the actual condition of our existences, the place where our identities find expression and verification. Inhabiting a place requires the experience and experience of borders, of margins. At the same time, borders are the ground where antagonisms and conflicts originate. They either lead to separations or to encounters with otherness. Borders keep the other out of our space, at the same time they allow relationships to open up" (Granata 2012, 51).

Although the intravisible is a construct shared by all forms of encampment, the two poles - camp and settlement - originate with two totally different logics, the settlement makes itself invisible to ensure its enduring existence, while

the camp is made invisible by urban expulsion.

The orderly collection of samples (campionario) is needed to identify possible design themes for the interaction between parts of the city and communities that coexist in the complex contemporary urban system.

As far as the urban scale is concerned, the (in)tra/visible cities are structured in transects in which different levels of criticality and hazard follow one another and overlap. The spaces in which these spatial conditions are embedded can be defined through the concept of borderlands: frontier areas where different spheres are activated and interact (Sassen 2006). The definitions and viewpoints for focusing on these fragments of the urban landscape are provided to us by a substantial literature on marginal spaces associated with a theoretical exploration of other spaces - *heterotopias* of crisis and deviation (Foucault ed. 2011, 25).

Many terms have been coined in the last decades to describe these "kind of spaces": non-places (Augé 1992), terrain vague (Solà-Morales 1996), junk space (Koolhaas 2006), third landscape (Clément 2004), waste land and drosscape

(Berger 2006)... For an exhaustive examination of the authors' key interpretations, please refer to the individual definitions, but what is fascinating is the reasoning on marginal spaces, now also defined as intermediate spaces, catalysts for change (Kamalipour), useful to identify the unprecedented possibilities of interpretation and design. However, in order to understand and design marginal places, it is necessary [...] to develop tools to read residual spaces (Marini 2010). Whether they are called marginal areas, urban fringes, boundary landscapes, these spaces that are not easily accessible, take on a singular significance due to their ambiguous nature of separation, encounter and regulation of mechanisms of exchange and their visibility in relation to the rest of the city.

The (non)relationship with the rest of the city is defined, at a basic level, by urban relations, proximity to other spaces and distance to city services (Fig.6).

In relation to the sample of cases taken into consideration, we identify:

- The proximity to infrastructures, especially to elevated roads and infrastructural which, as in the cases of Cupa Perillo, Cantariello and the recent Barra settlements, which are used as elements of shelter and reference for the settlement. The linear development of the infrastructure element allows an "arrangement" of the dwellings below the viaduct, redefining and reinterpreting that otherwise blank space. The thickness of the viaduct and the of the pylons allow for the settlement of extended families and the construction of a certain invisibility. Furthermore portions of the viaducts are positioned at the margins of city edges, along the arteries connecting different urban centres. Moreover, the settlements connect the differences that exist on either side of the infrastructural "line", metabolising them within the informal configuration. In contrast, in the case of Secondigliano and Mastellone, the road axes configure the urban repelling limits. Especially

in Secondigliano, the high-speed road is added to the presence of the camp wall, thus configuring a double condition of exclusion that distances the inside of the camp from everything that is city.

- The proximity to decommissioned (and not) specialized territories, such as at Cupa Perillo for the former milk plant that may never have come into operation, or at Cantariello with its nearness to several commercial districts. Again, in Giugliano, the proximity to the ASI area also worsens the already severely compromised environmental conditions. These dislocations are the urban metaphor of the margins; where the dislocated twentieth-century city functions and where housing conditions outside the city centre are added to the mix.

- The proximity to other heterotopias of the city as in Via del Riposo where to the already enclosed cemetery, is added an administration camp which generates enclaves that seem to repel each other through walls and changes in altitude - even at Cantariello which is located in the same district as the cemetery of the municipality of Casoria, and again at Secondigliano where the municipal camp is placed in close proximity to the Poggioreale prison. To the places of twentieth-century expulsions - prisons, cemeteries, asylums, etc. - are added those of contemporary expulsions.

Apart from Via del Riposo, which is embedded in a highly urbanised context even though it is on the edge of the historic city, the others graft on where the city is squeezed along the edges between conurbations. The case of Cinquevie is indicative of this condition; it is only visible when travelling along a provincial road that connects Afragola to Caivano as far as Caserta. Cut off from any neighbouring urban centre, grafted into the agricultural fabric between Caivano, Afragola and Acerra. These conditions of confinement, marginality and proximity to other conditions are configured as invariants and are also present in other cities where these "shanty

towns under our homes" proliferate, such as in Rome, Milan and Turin. This identifies the urge, therefore, to introduce reasoning at a larger scale that takes into account entire urban transects.

In addition to the scale of urban (non)relations, other invariants are identified that particularly reduce the difference between border and margin.

From field to settlement, the boundary line seems increasingly thickened. The time variant, especially with regard to the settlements, leads to a continuous reconfiguration of the margins. For example, reconstructing the Cupa Perillo's morphogenesis: the settlement first occupied the space available under the viaduct that dominates the area between Scampia and Mugnano. As the number of people and families grew, the settlement moved towards the free margins and towards the road that leads from Scampia's centre to Cupa Perillo, but always maintaining a certain distance from the latter and from the urban system. It has, therefore, occupied the buffer zone of the elevated road while maintaining a certain distance from the limits that would have been more visible. The Mastellone's morphogenesis also implies a similar logic. The settlement developed close to the motorway and pushed towards some farmland. The first nucleus settled at the furthest point from the motorway, and only when it had to expand, did it achieve visibility from the infrastructural axis and also built an elevation (Fig.7).

The strong, constructed border of the camp. The camp, born as a control device, is a space cut off from the city system, sometimes even being inside it as in the case of Via del Riposo. It is hence surrounded by a wall, a reinforced concrete fence that regulates the exchange with the city through a single opening. The camp archetype is a fenced-in military camp, for the rom it has been configured as a space of organised exclusion. The fence works to separate what is inside and outside, between us and

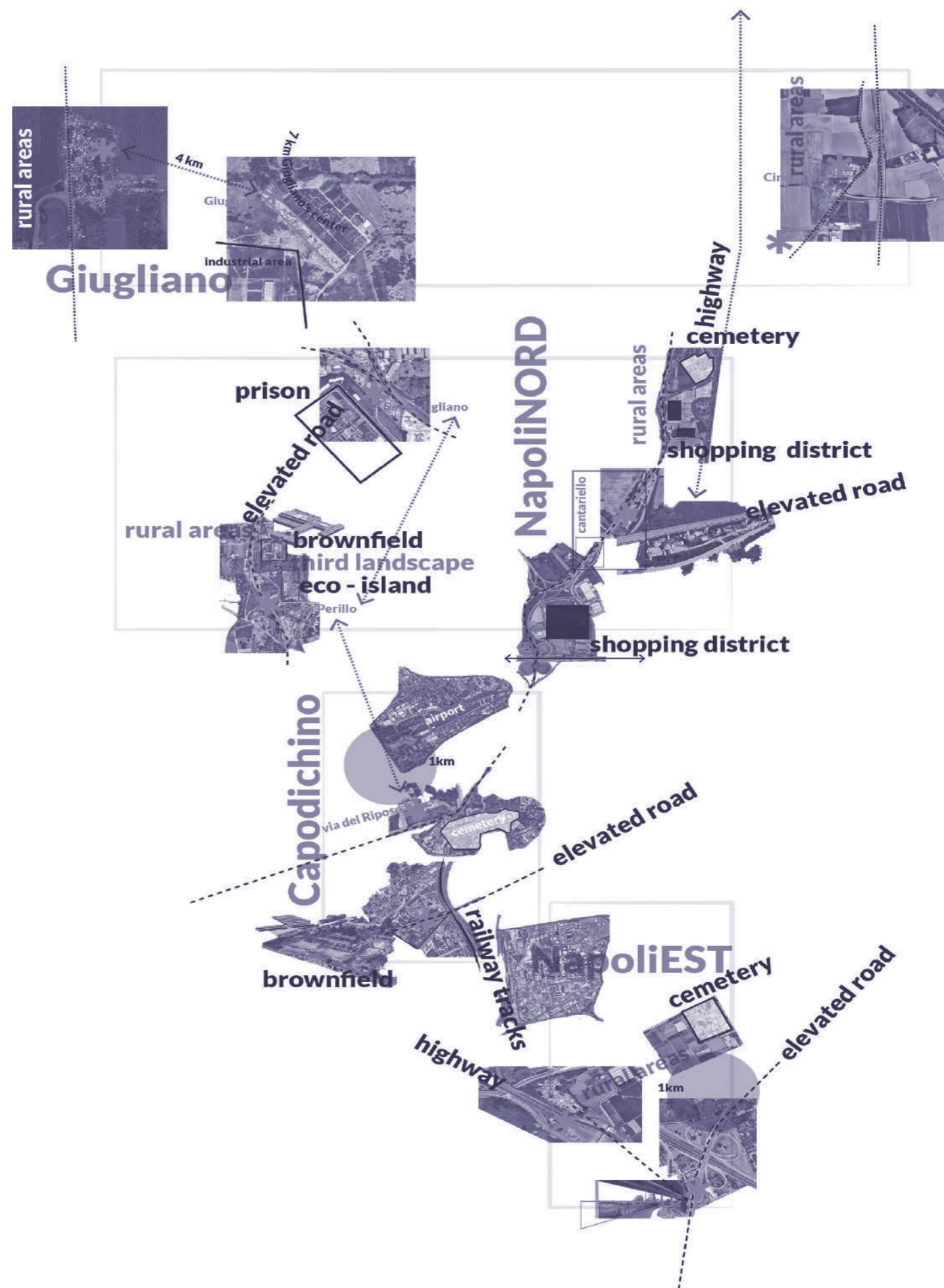


Fig.6 - Author's map with places and spaces of proximity.

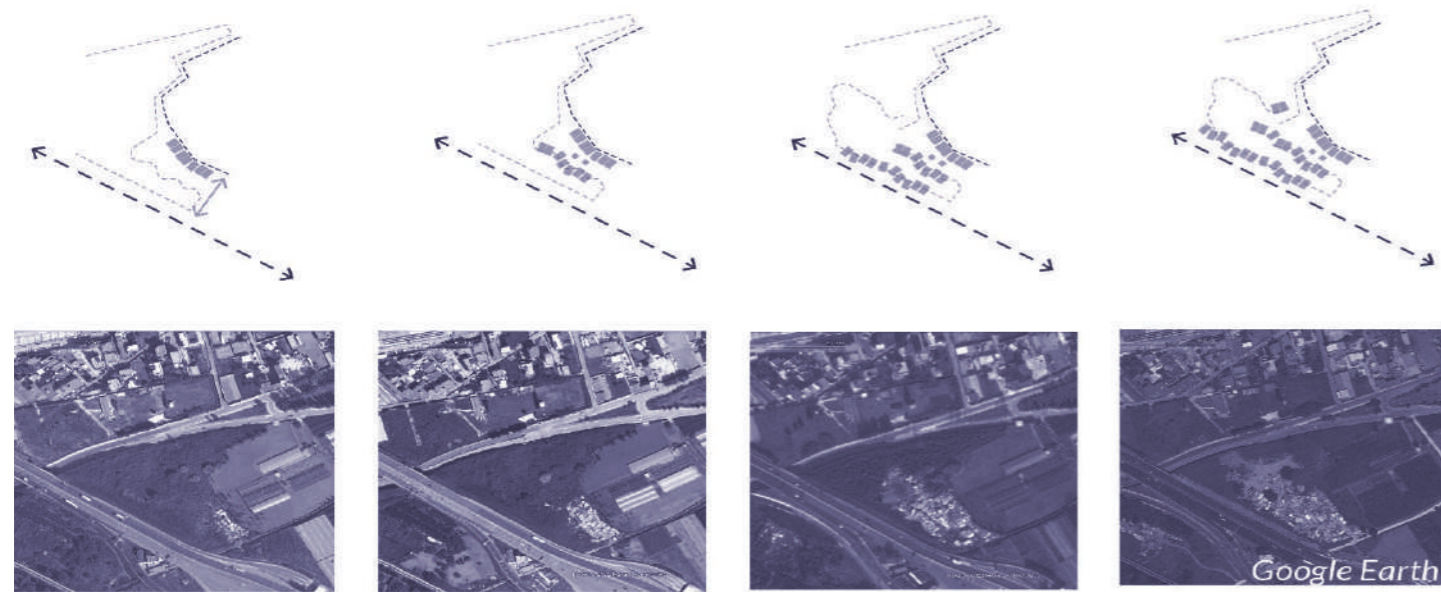


Fig.7 - Author's morphogenesis diagram and picture.

others. The strong line of the border refers to the construction of mental, cultural, religious, ideological, normative, sexual fences. Each with its own possible and concrete spatial projection. Thinking about a border and building a fence means inventing a sphere and enclosing it, circumscribing it through elements that highlight its dimension, its form, its functions. (Zanini 1997, 75). Frequently, as in the case of Secondigliano, the enclosure of the camp is further isolated through the succession of other fences such as at the elevated road and the Secondigliano prison. Islands surrounded by walls where relative points are absent; even in Via del Riposo, the camp's wall comes close to the presence of the cemetery's borders and, walking past, there is no perception of life within those walls. In Giugliano, as in Cinquevie, the fence rises in vacant lands, already marginal spaces compared to the development of urban centres; an unnecessary enclosure in which a specific community is relegated.

In the first case it is impossible to see it from the driveway that serves the circulation inside the city, in the second case it is outside any anthropised system, in a strongly rural context with only one connecting artery. Both the authorised camps in Giugliano and Cinquevie - which are surrounded by a strong line - have informal satellites outside the wall. Probably the very nature of vacant land has allowed the development of self-built settlements that look like the beginning of a possible new city. In Giugliano, in the area of the fenced and authorised camp (in which no inspections have yet been carried out), micro-family 'grafts' are being set up, living without any kind of service or connection with other urban forms. The buffer zone between the camp fence and the ASI zone has been reconfigured as the space "of the latter", those expelled from the large informal settlement nearby and those who have not had access to the space inside the fence. In Cinquevie, on the other hand, along the road axis that serves the camp, family units have

grafted themselves onto the road and repurposed some agricultural land by proposing the clustered occupation of these plots; they have pushed as far as the motorway that passes through Caserta and Naples, making themselves invisible to a watchful eye. When the field goes over the wall, new intermediate spaces are constructed, between what is formal and what is not, between the fence and the settlement, between the settlement and the road, etc (Fig.8).

In the camps' surroundings, rigid configurations are proposed, and over time there is a process of the humanization of spaces and of manipulation to re-construct relational spaces of family ties, spaces that separate and prevent the cohabitation of different *famiglie*. Moreover, the dimensions of the containers are manipulated as they are not designed to accommodate families that on average comprise 6-8 people. The space of the camp does not take into account the spatial construction of the extended family, the spaces of community

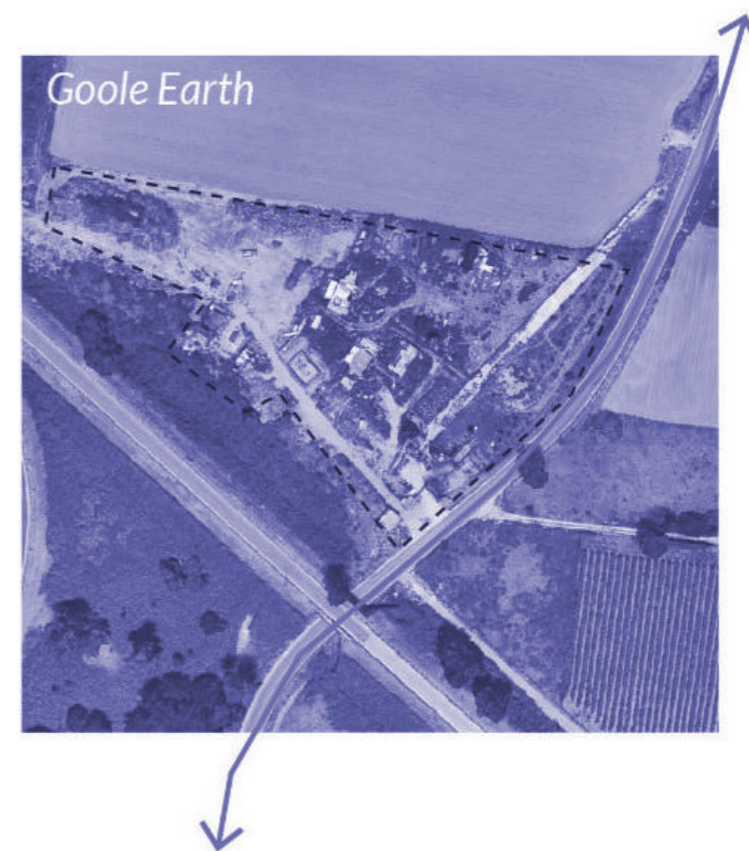


Fig.8 - Author's diagrams with fences and trespassing.

and relationship with the rest of the city.

The enclosure can rarely be manipulated. Friedman (2003,106) suggests how it can be “exclusively reserved for one person who uses it for various purposes; meant to be open to many; reserved for only one kind of object or equipment”. The camp tends to become a settlement, as witnessed by the emblematic case of Calais, where in-formal life took possession of the space in an anti-geometric manner, adapting to the orographic features and the landscape.

The settlements’ margins have a much more porous character and dilate. The line becomes a thickness that hosts relationships’ and defines levels of visibility.

An informal configuration inhabits a marginal space leaving a built, infrastructural or natural edge. These margins, however, are all configured as strong, that is, not only visually prominent but also continuous in form and impenetrable in crossing (Lynch, 1960). In the case of Cantariello, the margin is an intersection of infrastructural bundles; in fact, between an elevated road, a junction and several connecting roads, the settlement has been located there for about thirty years, totally embedded into waste spaces and buffer strips. In Cupa Perillo, on the other hand, the margins are of varying thickness and, although they are built, natural and infrastructural, together they define the settlement’s lack of relationship with the road. A complete perception of the dwellings, in fact, only occurs when one is at a point that is already inside the settlement. The accesses along the edges regulate the mechanisms of exchange. In fact the main road, Viale della Resistenza becomes the axis from which more capillary routes that serve each cluster unwind. In the case of Mastellone, on the other hand, the edges have strongly modified with the evolution of the settlement. Besides the motorway, which clearly remains stationary, the first configuration of the settlement was surrounded

by greenery and green spaces that, in fact, defined its margins. As the settlement expanded, the houses consumed the margins which, as far as possible, remained as a buffer with the motorway. And whilst the borders are rigid lines where manipulation can take place within or over the wall, the margins of the settlements are more spasmodic and accommodate the evolution of the slum.

Within an informal settlement, in fact, the margin, as a device, is configured at different scales and takes on different roles in its development; in a slum it is also a privileged position where different conditions meet. In the slums, the public dimension is given to the space that is not home. In a settlement such as a favela this results in streets and interstitial spaces that remain empty. In the Rom slums what is not home returns various levels of publicness, managed with the presence of margins, baffles and borders. The outermost elements define the degrees of visibility; once inside, the most defined boundaries are those between different *kumpanie*, the streets between family enclosures become everyone’s and, therefore, no-one’s spaces, so they also become spaces of conflict.

Crossing a family border, there is an intermediate, semi-public space that functions as a living border between the family’s outside and inside. From this space the houses are entered, guests are welcomed and the thresholds of the houses are intertwined. The threshold space in front of each house, a baffle between inside and outside, is marked by a carpet, a different flooring, a canopy or a piece of furniture; it establishes the osmosis between the living area of the house and the outside, which, in fact, during the day is all one. Between borders, thresholds and edges... all the way down to the final separation of living and sleeping areas of houses, the architecture of survival takes shape. Settlements take root, welcome different communities and become pieces of the city, or better said, paradoxical mechanisms of city-making.

The Casilino 900’s case in Rome is significant because looking at it from above, it appeared to be a piece of the city, born with different logics that responded flexibly to the needs of the inhabitants, it was a 40-year-old piece of the city, then replaced with containers... This is also what happens in Calais where, at some point, a real temporary city is set up with “neighbourhoods”, streets, services and collective spaces. It is the settlement that becomes a city.

The camp and the settlement can be traced back to the concepts of Deleuze and Guattari in the opposition between smooth and striped space, between nomadic and sedentary space, and challenge the limits of architectural and urban design.

URBAN MARGINS’ SECRET LIFE AND PERSPECTIVE

This research work investigates and unveils the secret life of the urban margins. It has involved stumbling upon a complex concatenation of short-circuits related to being in reality. What we try to focus on is the project’s possibility of having a relationship with social, economic, political factors etc... without which the work would have no real dimension. There are many invisible threads for Rom communities, legal, administrative, legislative and urban planning issues, which are outside the remit of urban design. However, this does not preclude the emergence of design research questions. If, for different criteria, including invisibility, some families do not have the requirements to qualify for social housing, can architecture’s answer only be the camp? Or can we imagine a public infrastructure for living that would accommodate unforeseen uses, different communities? The study of invariants enables precisely the identification of design themes and the understanding of what the informal city suggests. Architects have been interested in the world’s shantytowns, starting with Turner, Friedman, Constant... and

in recent years this theme has acquired a new urgency due to the urbanisation of the planet and the migrations that resettle people and bring out new design questions. Teddy Cruz demonstrates through *Living at the Border* that it is possible to build a multifunctional urban space according to the needs of the population. Flexible dwellings shared communal places and spaces that catalyse new possibilities for the neighborhood.

For the specificity of the Neapolitan case study, even if one imagines a relocation in economic and social housing, with the criteria on which this is based, where are the spaces for the extended family located? Or spaces for rituals, meetings, occasions and, in general, the uses that different communities can have? Can we perhaps learn from informal configurations? In the “Housing - Paraisopolis” project, in having to plan the relocation of a number of communities living in a portion of favelas under severe conditions of housing emergency, C. Kerez recognises and reinterprets the characteristics of a favela and re-proposes them in the project. While, on the scale of the European city, “La Balba cooperative housing” from Lacol and LaBoquería, constructs a bridge building for families involved in a process of social integration and does so by articulating flexible and extendable housing and proximity spaces.

The project, in reading and interpreting existing configurations can, therefore, work on the dual physical and social edge, providing... through catalysing elements, meeting spaces and “inventing” ways of making the city for all.

Awareness of these settlement patterns makes it possible to identify new possible architectural devices that shift the project’s objective from a purely formal outcome to an open strategy that stems from a reading of contexts. We can image work around borders and using informal settlement as a project’s reference. Questions remain open, one among them, how do we ‘inhabit’ the short-circuit between formal and informal?

In asking these questions, the project focuses on the possibilities of the project with respect to real issues and their observation and description, then interpretation.

“The life of multiple and changing communities, expressing different and often contradictory needs, has confronted design with new challenges. Architecture as infrastructure is the one that seeks new spaces of benefit, more closely adapted to contemporary conditions, with the total awareness that the scope of these possible utilities is, and always will be, above all political and that it is therefore necessary to assume responsibility for them. [...] can architecture, in short, effectively be an infrastructure for living? Can it, that is, learn to grasp, as the Chinese tacticians did, the potential of the situation in order to build the conditions for other things to be born, to grow, to live? (Pone 2021, 27).

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NOTES

1. The anthropological tradition has related the matter of otherness to that of space, because the processes of symbolisation implemented by social groups needed to understand and dominate space in order to understand and organise themselves. Otherness in an era in which nomads are forced into the sedentary way of life and in which rural dwellers are transformed into the suburbs, it is precisely the category of place that blurs and that makes it more difficult to conceive of the other; today the category of the other has become confused, unable to think of the other, one constructs the stranger.
2. Alfred Brillembourg is co-founder of U-TT (Urban Think Tank), an interdisciplinary architectural and urban design group founded in 1993 in Caracas. They develop projects and research on architecture and urbanism, focusing in particular on the interaction between the formal and informal spheres of the city.
3. In 2008, the Italian government headed by Romano Prodi declared a ‘state of emergency in relation to the settlements of nomadic communities in the territory of the regions of Campania, Lazio and Lombardy’.
4. National Strategy for Rom and Sinti Equality, Inclusion and Participation 2021-30.
5. By n (in)tra/visible cities of Naples, we refer to those of which we are so far aware and which are known as follows: Cupa Perillo, Cantariello, Campo Secondigliano, Via del riposo, Campo and settlement Cinquevie, settlement Mastellone (now destroyed), the new satellites of Barra and the four camps of Giugliano. The names are deliberately generic and not always referable to specific parts of the city.

Makeshift borders in Porte de la Chapelle

Strategies of imperfect inhabitation across Paris' Boulevard Périphérique

Parigi
teoria urbana
informalità
confini
Paris
urban theory
makeshift
borders

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L'articolo indaga i luoghi della migrazione e l'abitare lungo il confine del Boulevard Périphérique di Parigi, identificando quanto tale infrastruttura materiale generi spazi di soglia e incontro tra l'urgenza di resistenza e la violenza politica del rifiuto.

Ai confini parigini, le costanti pratiche di contenimento e controllo coesistono con la produzione di resistenze collettive e luoghi di solidarietà. Lo testimoniano le molteplici esperienze di abitazioni informali nel corso degli anni, come La Zone e le bidonvilles della periferia nord-orientale, nonché l'attuale sistema disperso di campi di persone in transito che proliferano dal 2015. Queste dinamiche testimoniano l'ambivalente prossimità che permea tali geografie come simultaneamente controllate, esclusive e protettive, attraverso opache liminalità che fungono da terreno fertile per corpi altrettanto opachi.

L'articolo nasce da una ricerca sul campo sviluppata tra settembre 2021 e settembre 2022 nella Grand Paris, in collaborazione con associazioni locali a sostegno di persone in movimento, persone richiedenti asilo e rifugiati all'interno dei campi del confine parigino. Lo studio mirava a rendere visibili modelli plurali di produzione dello spazio urbano, trascurati dalla città contemporanea neoliberista e securitizzata, promuovendo nuove forme di abitare. Sulla base di ciò, la ricerca mirava a decifrare nuove categorie di pianificazione urbana che testimoniano il gigantesco potere delle pratiche autonome contro la negligenza degli Stati e delle organizzazioni internazionali. Approfondendo tali dinamiche di resistenza e strategie imperfette di abitare l'inabitabile, l'articolo guarda ai confini come occasioni per mettere in atto progetti minori in grado di mantenere vive quelle aree in cui forme plurali di vita trovano gradi di protezione e legittimità nella loro espressione spaziale.

The paper investigates spaces of displacement and makeshift inhabitations along the border of Paris' Boulevard Périphérique, identifying how such a material infrastructure generates thresholds and encounters between the urgency of resistance and the political violence of rejection.

At Parisian borders, ongoing practices of containment and control coexist with the production of collective resistance and solidarity. This is testified by the multiple experiences of makeshift dwellings over the years, such as La Zone and the bidonvilles of the northeastern periphery, as well as the current dispersed system of makeshift camps that have been proliferating since 2015. These dynamics testify to the ambivalent proximity that permeates such geographies as simultaneously controlled, exclusive, and protective, through opaque liminalities that serve as fertile ground for equally opaque bodies.

The paper stems from field-based research developed between September 2021 and September 2022 in Greater Paris, collaborating with local associations supporting people on the move and refugees inside Parisian border makeshift camps. The study attempted to make visible plural patterns of urban space production, neglected by the contemporary neoliberal and securitised city, and promote new forms of inhabitation. Based on that, the research aimed at deciphering new categories of urban planning that testify to the gigantic power of autonomous practices against the negligence of states and international organisations alike. By delving into such dynamics of resistance and imperfect strategies of inhabiting the uninhabitable, the paper looks at borders as occasions to enact weak and minor projects able to keep alive those areas in which plural lives find degrees of protection and legitimacy in their spatial expression.

INTRODUCTION

Since 2015, thousands of refugees, people on the move and people seeking asylum have transited through Greater Paris either to seek refuge in France or continue their journey to the United Kingdom. Several makeshift camps and other types of informal shelters have proliferated in the French capital since then, in the form of temporary settlements, through more or less dispersed tents or precarious cardboard boxes in public spaces, as well as through the occupation of vacant buildings.

Owing to the extreme temporary nature of such camps, unfinished migrations or the consequence of the inefficiency of the system of reception and accommodation of people seeking asylum in France, many of these settlements are either situated near the main railway stations (Babels, 2017), or along Paris' borders, along what locals call 'intra-muros', distinctly marked by the circular outline of the *Périphérique*.

In the years from 2015 to 2017, considered to be the apex of the so-called European "migration crisis", the city saw the development of makeshift camps, shelters, and squats capable of accommodating thousands of people, as a fix to address the inertia and incapability of governments and international organisations to provide decent protection and support.

Until now, the neighbourhood of Porte de la Chapelle, on the border between the XVIII arrondissement of Paris (intra-muros) and the municipality of Saint Denis (extra-muros), has been an emblematic space of transit and refuge. Despite the ongoing police evacuations¹ and public hostility, the district has remained a favoured place for makeshift inhabitation and solidarity since 2015.

As an administrative borderland between two prefectures and municipalities, characterised by the massive presence of transport infrastructures, the area has served both as a liminal territory of

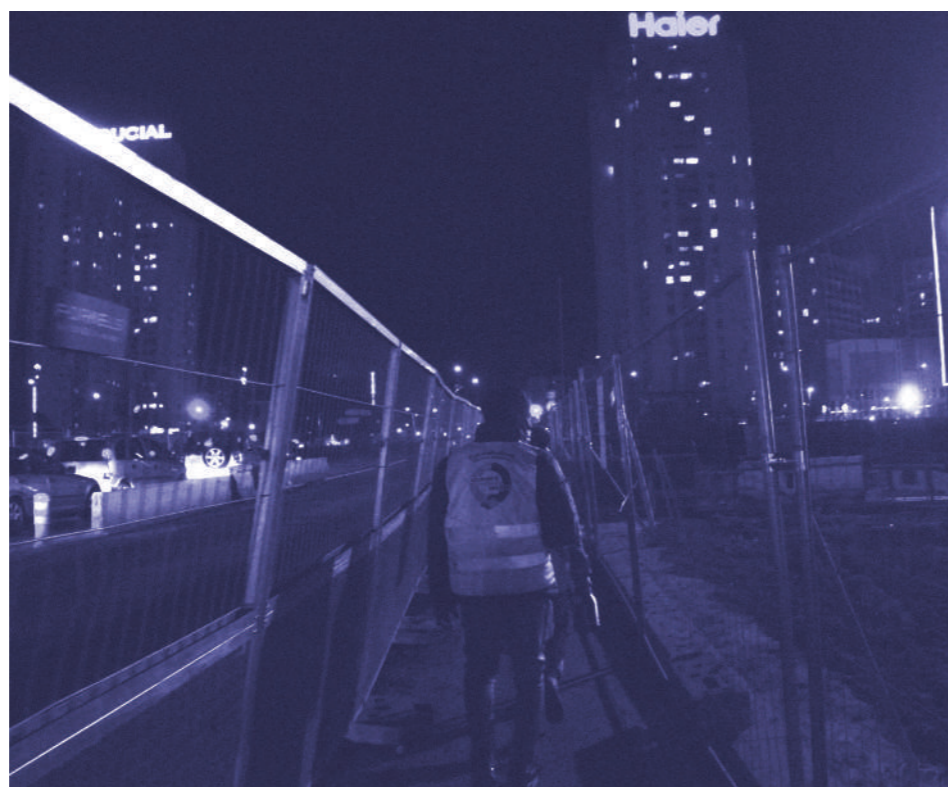


Fig.1 - Night maraude of Wilson in Porte de la Chapelle (S. Mastromarino, 2022).



Fig.2 - Breakfast maraude near Porte de la Chapelle (S. Mastromarino, 2022).

marginalisation as well as serving as a pretext to keep the undesirables (Ager, 2016) in their invisible makeshift roofs of exclusion and make them stranded within such spaces of blurred authority.

Here, at the same time, the municipality of Paris, together with the association "Emmaus solidarité", opened up the humanitarian camp

of Porte de la Chapelle in November 2016, with a capacity of 400 places, intended to host first migratory arrivals.

Even after the humanitarian camp was dismantled, Porte de la Chapelle continued being one of the main places of transit and refuge for most people on the move arriving in the capital, with makeshift

camps settling every week and local associations distributing aid through daily "maraudes"² (Fig.1 and Fig.2).

This paper investigates how borders are inhabited and politicised, and how marginalised bodies and spaces coexist in the contemporary European neoliberal city, constantly bordered, and zoned to conform to common perceptions of renewal and security.

By delving into spaces in which new patterns of imperfect inhabitation are constantly renegotiated to guarantee the existence of fragile and common lives, our aim is to analyse the border as a medium to promote new categories of architectural and urban planning. This spatial inquiry restores the ephemeral and ongoing taxonomies of border infrastructures, as continuously repositioned, reconsidered and reactivated by different means.

Barriers, infrastructures of connection, makeshift camps and spaces of solidarity are different yet contiguous sequences of a common infrastructure of holding that find fertile ground at the border. Not only are such conditions kept marginal and concurrently pushed outside and inside in an eternal state of opacity, but it is exactly through such opacity that borders embody and people's right to space becomes visible and manifested as an autonomous resistive act of their own legitimacy.

It is a means of separation between "us" and "them", a "vague and undetermined place created by the emotional residue of an unnatural boundary" and it is therefore "in a constant state of transition" (Anzaldúa, 1987: 3). Borders reflect the equally ongoing temporary and marginalised condition of racialized bodies in transit. Accepting the assumption that borders are multifaceted, ideological, and imagined spaces that raise new conceptions of sovereignty (Longo, 2019) and institutional material dispositifs that allow a silent reproduction of policies of segregation as well as forced displacement by governments and municipalities, we

propose to shift the epistemological foci to the experiences of the 'bordered people' that survive such dynamics of dispossession yet find new ways to "live with this trouble" (Haraway, 2016) by dwelling beyond the shelter.

With this paper, we claim to define and represent not only the power of the often marginalised in resettling and dismantling borders as an occasion of inhabitation but also to take these experiences as a reference to question the relation between urbanity and the makeshift.

Based on that, the research questions the possibility to theorise a series of margins that sustain the power of marginalised autonomies and reframe new patterns of a subaltern urbanism (Roy, 2011), destructuring the monist criteria that classify public space inhabitation as (il)legal, (il)legitimate, (im)mobile.

How do urban borders reflect the dynamics of holding people on the move as a concurrent act of ongoing reception and rejection? How do makeshift camps and people's network of solidarity reshape – and resist – the urban borders, zoning, and plans of the gentrified urban renewal of Paris? Can these strategies of imperfect inhabitation and resistance provide references to decipher new emergency practices of dwelling beyond the shelter?

Drawing on the encounters between vulnerability and resistance (Butler et alii, 2016) at Porte de la Chapelle, we aim at making visible and legitimate the power of minor and autonomous voices in architectural and urban planning across borders and cities.

This means understanding the threshold that lies between 'projecting' and 'separating', so restoring the responsibility of urban planning and policies to create spaces of coexistence and difference (Di Campli and Bianchetti, 2019) that refuse practices of differential inclusion.

The paper stems from empirical observations carried out throughout

one year of field-based research on spaces of migration and refuge in France.³

Longitudinal data have been collected from testimonies and experiences of displacement from people on the move and from supporting actors through participatory observation, by collaborating with local associations supporting people on the move through weekly aid distributions and informal sheltering. Semi-structured and in-depth interviews have been coded and cross-compared to identify contingencies and genealogies in Porte de la Chapelle. Newspapers and national and local reports allowed us to gather information about evictions and violence at the border and represent them through spatial and textual counter-narratives of displacement in the area.

The research has used cartographic analyses, photography, and statistical and territorial data. Other than studying the territory through a multi-scale approach, the convergence of ethnographic research and architectural inspection permitted drawing on the analysed spaces as spatial dispositifs to acknowledge urban theories and philosophical inquiries.

The mapping of makeshift camps, spaces of support and practices of hostility has been overlaid to identify common spaces of vulnerability and holding. In fact, the research aimed at highlighting the ambivalent status of control and care towards refugees, people seeking asylum and people on the move, as a result of the concurrent practices of rejection and solidarity.

Displacement and encampments have long been at the forefront of policy and planning agendas for states and international organisations, across internal frontiers and urban areas. The thousands of people that transited through Paris and inhabited temporarily across the border of the *Périphérique* have soon faced the inefficiency of its system of reception and the hostility of law enforcement, and local citizens as well as urban projects

of regeneration and renewal. By recounting the stories of the dispossession of people on the move and local associations, the research looked at those tactics that resist such politics of exclusion by reactivating the marginal.

It stressed the urgency to rethink the threshold and planning visions by including makeshift shelters as decolonial and non-dominant transit shelters.

The research was finalised into a project that attempted to restore degrees of protection to such radical places of resistance on borders. It aimed at encompassing those minor voices, weak and fragile infrastructures of life (Bianchetti and Boano, 2022) as a catalyst for new categories of planning and design.

As a result, the observed situations of resistance on borders were analysed and re-questioned with local associations to collaboratively design prototypes of makeshift reception and protection, such as pop-up kitchens, public furniture, as well as essential facilities to endow people on the move and supporting actors inhabiting shelters and public spaces.

The first part of this paper will analyse Paris through the historical socio-economic, and political mechanisms at the origins of a scattered social and material borderland. We will provide of the Périphérique as an example of ongoing infrastructure of differential exclusion, concurrently softening and enhancing its boundaries to keep unhoused people and people on the move in their continual dispossessed and placeless status. By exploring the case of Porte de la Chapelle, the paper aims at providing material examples of how borders attract subaltern patterns of urban space production through convulsive mechanisms of exclusion as well as opaque infrastructures of protection and care.

By recounting the ambivalent history of solidarity and control at the Parisian outskirts, as well as the attempts and future objectives

of institutional urban planning and policies to shelter yet preserve a common perception of urban renewal, Porte de la Chapelle will highlight such ambiguous contingencies of care and control at urban borders.

Finally, we conclude by analysing possible encounters between urbanity, borders, and the makeshift practices of resistance by people on the move and supporting actors.

We aim at making visible such radical infrastructures in which one can see the gigantic power of marginalised autonomies against the negligence of states, the strategies elaborated by people left at the border to inhabit the marginal and manifest new legitimacies and identities of urbanity.

GREATER PARIS: BORDERS AS CATALYSTS OF MAKESHIFT DWELLING

Genealogy of Parisian borders

The territory of Greater Paris represents an emblematic case of spatial inequality, where the conflictual relationship of bodies and spaces inhabiting the neoliberal contemporary city, has radically transformed the city of passages into a territory in which spatial and social borders have cancelled out any possible condition of porosity (Viganò et al., 2018).

It is a material borderland, where the massive presence of infrastructures of production and mobility define margins of contrasting spaces and methods of adaptation; a social borderland, where wealth, poverty and vulnerability are able to encounter each other and, at the same time, are made visibly distant (Secchi, 2013).

On the one hand were the densely constructed, nineteenth century Haussmannian Paris and the

business districts of the western luxury residential banlieues of the prefecture of Hauts-de-Seine; on the other hand, were the industries, immigrant hubs and former bidonvilles of the “quatre-ving-treize”, the prefecture of Seine Saint Denis.

In the common imagination, the city of the rich is in the south-west, in the VII or XVI arrondissements of the large Haussmannian parks and palaces.

The city of the poor is near the north-eastern borders and ‘extra-muros’, around the municipalities of Saint-Denis, Aubervilliers and La Courneuve (Fig.3).

While on one side, the causes of this division are to be found in a plurality of stories of industrial and financial planning, immigration, and common perception, on the other, their origins respond to the unique strategy of separation and zoning at the centre of the urbanisation of capitalist societies, of which the French capital is an emblematic catalyst example (Dear and Scott, 1981).

The new asset of the city created during Haussmann’s time is already spatially strategical by virtue of overcoming sanitarian and production crises through to the recodification of zones, and the connections between dynamic centres of activity, all perceived to systematically generate capital (Harvey, 2003).

Throughout the entire nineteenth and twentieth centuries, the production of the city was driven by the intention of generating a new collective image of social order under the pressure of progress and innovation. Its erratic course is to be found in the conflictual relationship between this strategy and the acts of resistance and support towards vulnerable classes, progressively made distant or invisible.

Paris, as a scenario of modernity inhabited by conflictual classes (Benjamin, 1935), recalls the generation of collective resistance, the socialistic utopias, and most importantly, the elaboration of

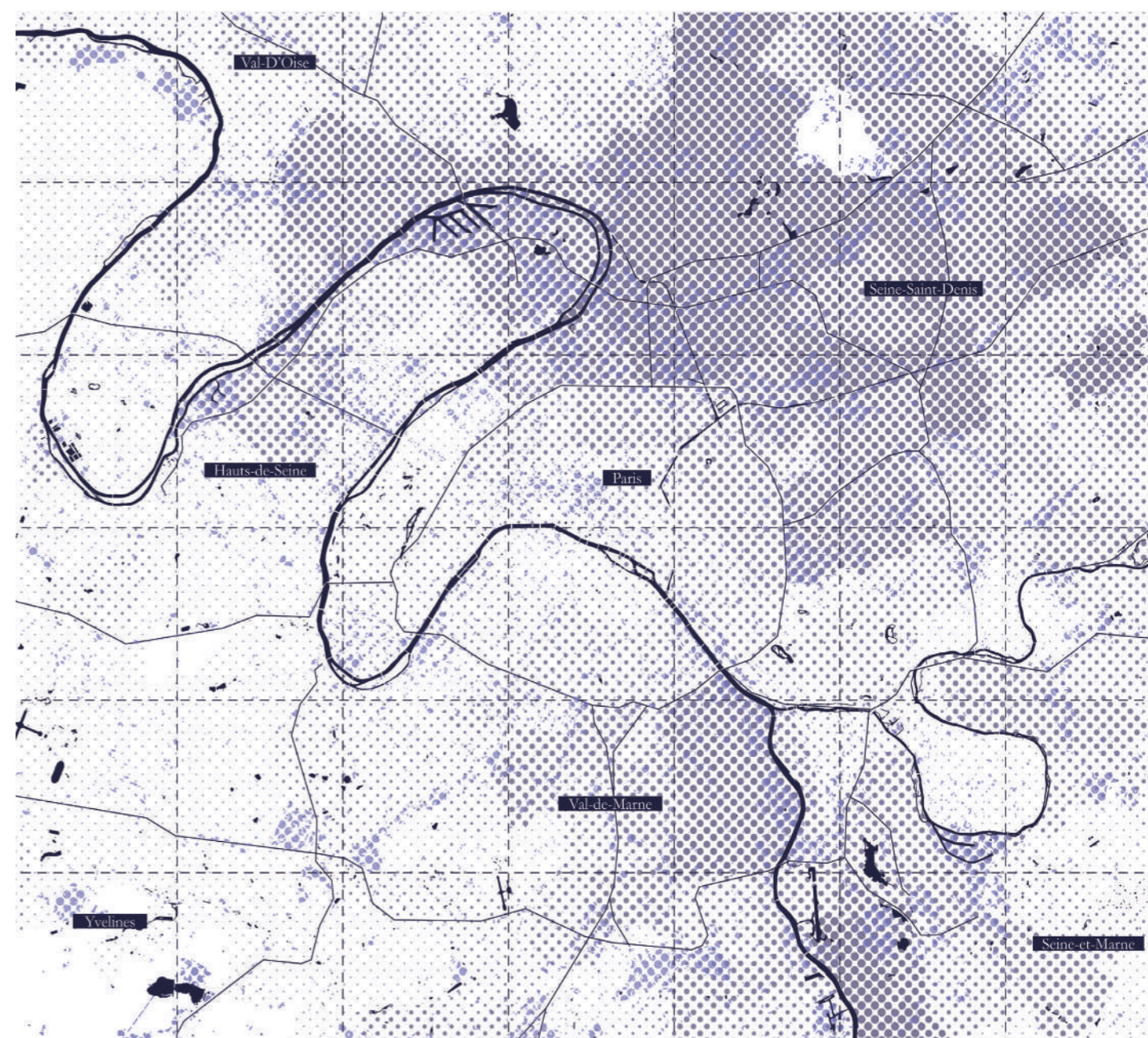


Fig.3 Industrial areas (blue) and percentage of people living in low-income (black, greater by intensity) in Greater Paris (S. Mastromarino, 2022).

new forms of self-organisation and occupation of spaces and practices of refuge.

Multiple experiences have followed this ambivalence throughout the years, such as the development of La Zone, the area of slums and informal dwellings that proliferated to occupy the voids left by the deconstruction of the Enceinte de Thiers (the outer wall of Paris); the bidonvilles of the industrial areas around Nanterre or Saint-Denis, responding to the urge of housing for the labour force; the porous system of squats and shelters; and nowadays, the makeshift camps of people seeking asylum and people on the move of

the north-eastern arrondissements of the city and in neighbouring municipalities.

Peculiarly, all these new forms of subaltern urbanisation (Roy, 2011) mainly occurred and keep orbiting around the material and administrative border of the Périphérique, pushed by repulsive forces and spatial opportunities of take informal action both inside and outside on the outskirts of the French capital. To counter-act these phenomena, the efforts of urban public policies from the 1970s onwards were aimed precisely at including these areas into the bigger conurbation of Paris, which in some ways culminated into the current

conformation of the area of Grand Paris. However, obsessed with what Secchi defines as a “quantitative theory of the production of building market” (Secchi, 1984) – that is basically the idea that it was enough to build houses to solve the “problem of integration” – housing and public projects then followed the necessity to separate and divide, enhancing the border and the progressive reproduction of nuclei of wealth and security, leaving behind the dimension of a possible collective coexistence.

Transferring this historical analysis to the twenty-first century and across the spectrum of spaces of displacement and refuge the

question of collective lives – in contrast to differential inclusivity and progressive borderisation – remains unsolved. In the context of the Grand Paris, such spaces of displacement remain anchored to the need to delimit, separate, move away, to open and to close. Urban planning becomes a dispositif of control for the creation of a collective idea of safety and order.

Based on that, public policies, covered under the spectrum of urban regeneration, are justified to exercise their dominant power to separate and force established forms of local practices and identities.

At the same time, those forcibly displaced by these acts of exclusion through inclusion, are pushed to find makeshift solutions to subvert these processes, forging new strategies to inhabit the systematised uninhabitability of certain spaces.

Residual voids, vacant buildings, and wastelands are some of the spaces that have become, on the one hand, the result of the zoned contemporary city and, on the other, the shelter for the undesired bodies from the space of ordinariness. Critically reading the territory through these places of difference permits deciphering practices of adaptation and sharing that generate the need for movement and coexistence between black bodies in a white space (Mbembe, 2019).

Looking at the methods and dispositifs used by refugees, people seeking asylum and people on the move to subvert established local identities and claim their right to space is fundamental to interpreting unsettled urban and architectural patterns of imperfect inhabitation on the edge.

Porte de la Chapelle

Based on participatory observation carried out through volunteering assistance to people in transit between September 2021 and August 2022 in Paris, we present the case of Porte de la Chapelle as a fragment of

such infrastructure of concurrent dynamics of care and control (Tazzioli, 2018; Sharpe, 2016; Derrida, 2000) at urban borders. Porte de la Chapelle serves to represent the complex and often conflictual approaches to addressing the spatial legitimacy of marginalised communities in urban areas, as well as people's autonomous power of claiming a right to space.

Through longitudinal analysis of the area, we have been able to recount the evolutions and current conformations of border inhabitation in the area, in order to understand such strategies of imperfect dwelling and their function as a generator of legitimate patterns of urban infrastructures of lives.

Porte de la Chapelle is a neighbourhood in the XVIII arrondissement at the edges of the capital, bordering the city of Saint-Denis. As the name suggests, it is part of the 17 gates of the city, situated on the old Enceinte de Thiers (outer wall) replaced by the Boulevard Périphérique.

The area is recognised by the massive presence of infrastructure, being it the intersections of various local and national roads and motorways commencing from this gate and creating an important and massive transport hub. Given the peripheric and industrial nature, the presence of important infrastructures, and notably the historical establishment of informal dwellings and bidonvilles, Porte de la Chapelle represents specific urban and social properties in the collective imagination of the inhabitants – those linked with immigration, clandestine, precarious, and unsafe activities.

The bordering infrastructure shapes a territory composed of a series of liminal spaces with unspecified functions or management: a patchwork of different yet equally undefined spaces that blur the dichotomy between what is public and private or their accessibility (Fig.4).

In this context, Porte de la

Chapelle becomes an active space of migration and refuge in the city, providing opaque spaces that allow the presence of equally opaque bodies. From 2015 and with the progressive evacuation of the Calais jungle, makeshift camps started to establish in the northeastern periphery of the capital, especially in the neighbourhood of La Chapelle. Starting from La Chapelle and Stalingrad, people in transit and refugees have been progressively displaced and pushed outside of the city.

Pushing displaced persons from Paris and from the neighbouring departments soon made the border the privileged and densest space of refuge, keeping people in a constant stateless status marked by the opacity of the spaces they inhabited.

With the presence of such a vulnerable and dispossessed population, the reputation of the neighbourhood develops further as the setting of many other situations of precarity, such as prostitution, drug dealing, and different kinds of criminality.

In fact, institutional support and law enforcement have been mainly oriented on preserving the boundaries between local communities and the unsafe conditions in the camps, defending the safety of residents by constantly evacuating and displacing the unhoused people. Despite the perpetual evacuations and rejection of displaced persons in Porte de la Chapelle over time, the neighbourhood is also home to one of the main dispositifs of reception put into action in 2016 by the municipality of Paris.

The Centre Humanitaire de Porte de la Chapelle, commissioned by the nation and managed by the capital city and Emmaus Solidarité, was conceived by the architect Julien Beller in the form of what has been nicknamed "the bubble" (Fig.5).

The project continues, with the objective to create temporary dwellings for first arrivals, thus with the consequent aim to curtail the situation of people living in the streets and makeshift camps.

Other than promoting a new critical place of categorisation and concentration (Katz, 2022), a visibly overstretched reception with biometric recognition upon entrance (Agier and Le Courant, 2022), the centre has often not been enough to host arrivals, enabling the proliferation of dispersed makeshift camps in its proximities, made of people waiting to be located in the centre, unwilling to enter it or refused for lack of available places. Both for its physical configurations and for the ambivalent concurrency of practices of rejection and reception to which it was subjected, Porte de la Chapelle might probably be considered the main space of displacement in the capital since 2015, with frequent forced evacuations, often consisting of thousands of people.

At the same time, the area is at the centre of processes of renewal initiated in 2002 by the city of Paris. The municipality is gradually putting into action the propositions of the Grand Projet de Renouveau Urbain (GPRU), an operation of redesignation of areas of primary intervention, through projects intended to tackle the unfavourable living condition of its inhabitants, and promoting economic development and access to services and public spaces. The main interventions in Porte de la Chapelle include the research centre of Campus Condorcet or the ZAC Gare des Mines-Fillettes. This is a project extended on either side of the ring road aiming at promoting social inclusion by dismantling the threshold of the Périphérique. In addition to the already established process of gentrification and therefore protracted displacement of refugees and people on the move in areas to be reconsidered, the Olympic Games to be held in Paris in 2024 have been imagined as a way to give a new prosperous life to the neighbourhoods of the Parisian periphery and the department of Seine-Saint-Denis.

Based on that, Saint-Denis, right on the outskirts of Porte de la Chapelle, would become the location of the majority of Olympic sites and Porte de la Chapelle a



Fig.4 - Residual spaces and inhabitants under the Périphérique, Porte de la Chapelle (S. Mastromarino, 2022).



Fig.5 - Former humanitarian camp "the Bubble", now the construction site of the Campus Condorcet (S. Mastromarino, 2022).

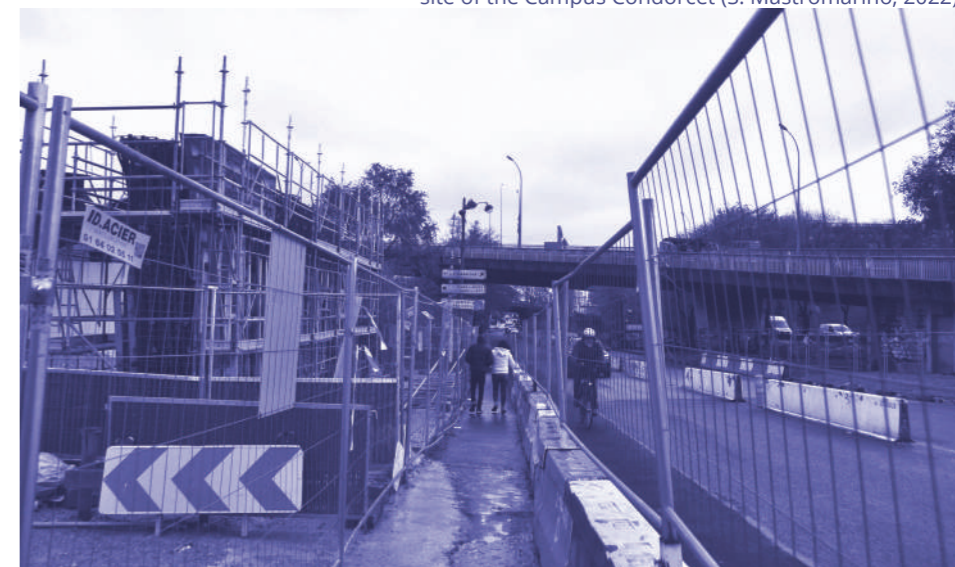


Fig.6 - Crossings and Olympic Games 2024 construction sites in Porte de la Chapelle. (S. Mastromarino, 2022).

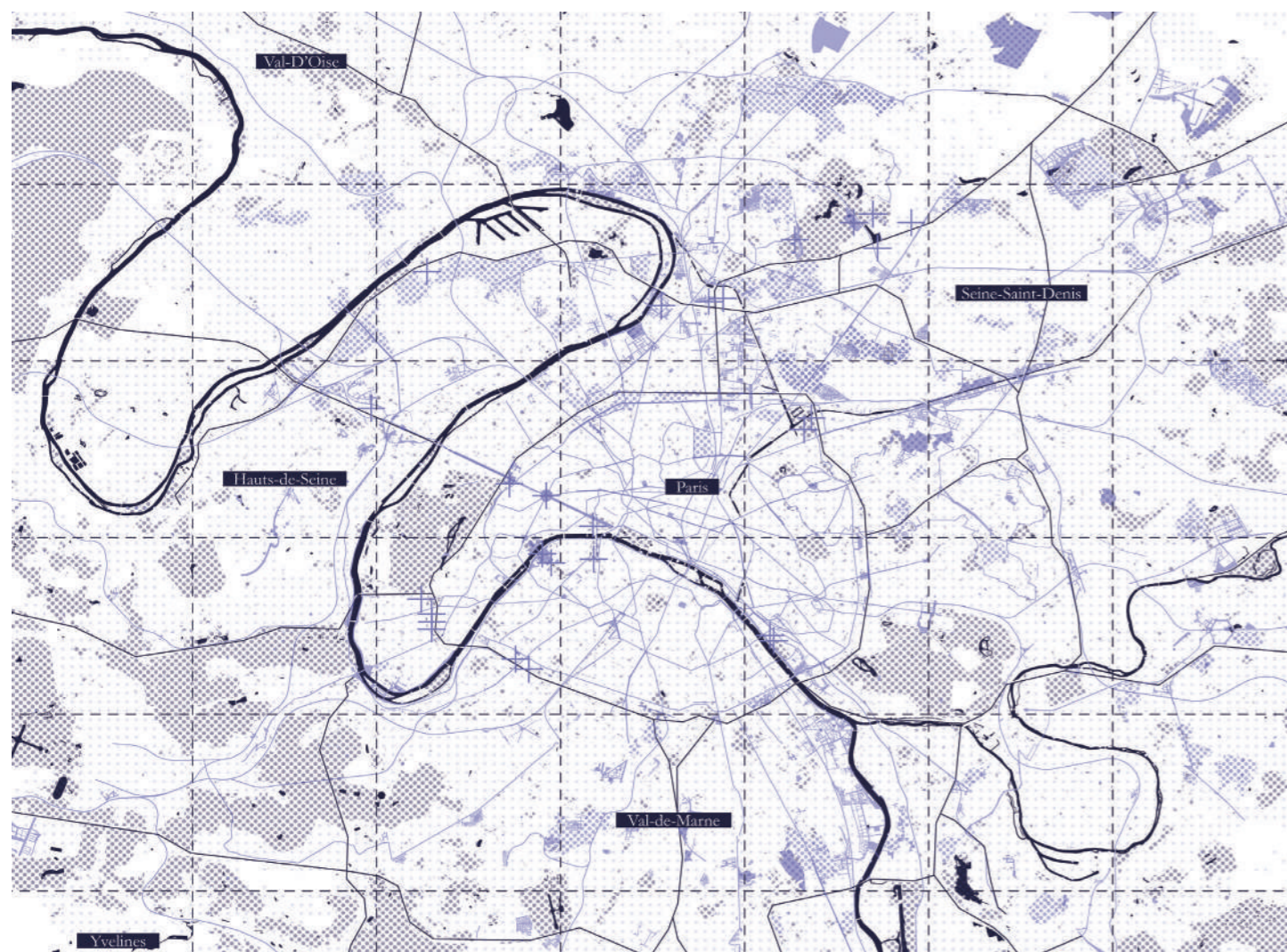


Fig.7 - Main areas of urban renewal (blue) and JO2024 sites (crosses) (S. Mastromarino, 2022).

great new hub of touristic and sporting attractions with the construction of the Paris Arena II (Fig.6 and Fig.7).

This decision provoked a big reaction among activists and researchers (Wolfe, 2023), especially those with concerns around the increased potential phenomena of gentrification and additional dispersion of the unhoused and vulnerable populations inhabiting these places.

This is progressively testified by the operations of the municipality in the first months of 2023, such as the recurrent police harassments and evacuations of refugees in the area⁴. Once again, people are forcibly displaced into a limbo of opaque assistance, while their spaces of resistance become ruins of solidarity, making visible their ambivalent state on hold.

CONCLUSION: BORDER URBANISM Borders to hold the marginal

The current situation at Porte de la Chapelle, analysed throughout the field-based research in 2021 and 2022, as well as through ongoing observation of the actions of volunteers and activists in the area, shows a sensibly less dense presence of people on the move and people seeking asylum, with makeshift camps that appear more as an archipelago of tents and informal dwellings distributed within and across the existing infrastructure.

Compared to past years, the people transiting here are progressively confronted with the spatial violence of planning agendas and evictions, through interventions

of renewal, gentrification and touristification driven by the upcoming architectural interventions of the Campus Condorcet and/or the Olympic Arena.

Nonetheless, the strong attachment of displaced persons to the place, either for the presence of support or for the already established multiculturalism of this neighbourhood, makes it still highly frequented daily and a perpetual space of people's makeshift inhabitation. Based on this context, understanding the ambivalent dynamics of reception and rejection across the Périphérique requires questioning the role of borders in reshaping the social continuous reconfiguration of neoliberal cities. The empirical research promotes the urge for a paradigm shift in urban planning, especially when related to those liminal and dividing areas where marginalised

communities are displaced. By destructuring the conceptual and material representation of the borderland, we attempt to interrogate the role of the urban and architectural project in keeping alive those areas in which loss, multiplicity and difference find spatial legitimacy.

To begin with, the border itself constitutes a spatial dimension, not a mere line, but a borderland constituted by an infinity of punctual elements characterised by the interconnection and conflict between the two localities and identities of the bordering territories.

As a buffer zone, the border space takes its form from its separating elements, implying that its material and social characteristics are defined and made spatial through its relationship with the neighbouring and the outside (Febvre, 1988).

What crosses this liminality is then somehow equally separate, categorised, simultaneously inside and outside the physical space and its normativity. The border itself changes depending on who traverses it. It is an "interactive biopolitical architecture" that constructs and deconstructs itself depending on the relationships between individuals and state, a "regulating device that mediates between birth and nationhood" (Petti et al., 2007: 77). Consequently, the border space is the epistemic element – or, citing Sassen (2007), "heuristic space" –, a generator of the multiple and subjective gazes through which the territory can be perceived.

It is precisely through this controversial reflection that the border space, be it the national frontier, the urban/rural separation or the urban liminalities of unsolved legacies, is positioned at the backbone of the practices of differential inclusion that enable ambivalent dynamics of hostility and solidarity towards the marginalised and undesirables (Agier, 2008).

Placing these assumptions in the urban environment, the concept of the right to the city emerges, as

well as the ambivalent boundary between the citizen and the inhabitant.

Referring to the "right to the city", Lefebvre questions if inhabitants have the same right to the city as citizens. He argues that it is not the citizenship, but "the everyday experience of inhabiting the city that entitles one to a right to the city", being it the "set in motion when inhabitants decide to rise up and reclaim space in the city, when they assert use value over exchange value, encounter over consumption, interaction over segregation, free activity and play over work" (Lefebvre, 1996). Based on that, people who transit, by settling and unsettling through imperfect and resistive acts of habitation, claim their right to space and the equal legitimacy of those who have the privilege to call themselves a citizen.

However, despite the conceptual validity of this assertion, the real scenario is made up of people constantly trying to find new ways to protect themselves from police eviction and public hostility, in a context of differential inclusion triggered by the progressive privatisation of public spaces and gentrified urban renewal. Being deprived of the political space, yet present in the physical one, refugees and people on the move themselves are therefore forced to find strategies to inhabit the city and imperfectly dwell in their spaces.

"Building uninhabitable places," Boano and Astolfo argue, "is the negation of the historical a priori of architecture: to inhabit" (Boano and Astolfo, 2020: 556) that finds some degree of flexibility and opacity at borders, in their urban, rural, or political connotation, as a liminal space of blurred autonomy, ownership and control.

Within this, displacement, among other forms of marginality and exclusion, plays a remarkable role in reshaping the social map of the city, as defined by Lefebvre, especially if we refer to the contemporary European neoliberal city, as a transnational hub of connections and political implication.

Displacement defines new patterns in an entrenched transnational urban system, through sociocultural and political processes and spaces by which actors forge connections between localities across (often) national frontiers.

These dynamics coexist, on the one hand, with the uncertain and opaque marginalisation of the displaced people, and, on the other, with a spatial system created and regulated by boundaries and geopolitical liminalities.

The imaginaries of the contemporary city, often described as an archipelago of fluid spaces, crossed by constant flows and primary representation of the transnational space, implode when those spaces and relations do not function as intended, plunging into crisis, and revealing their flaws (Hilal and Petti, 2019).

This is the case of most of the makeshift camps and spaces of refuge analysed in the Greater Paris area. Porte de la Chapelle is an administrative border and infrastructural hub, an encounter of different mobility systems and a crossing point for a great number of daily commuters, passing through for a couple of minutes a day. It is a place of different levels, passages and surfaces which accordingly generate a series of liminalities and wastelands that remain unsolved in the calculated and zoned system of the city. It embodies the property of the urban border as a space not initially conceived to be inhabited, but rather to be traversed, where the efforts of planning were focused on transport and systems of connections.

This place falls into crisis when people are forced to inhabit it, deconstructing its primary function as a space of transit, and reassembling it as a space of shelter and support – as maintained by the several associations that act in these liminal areas of the city.

Delphine Seyrig, Porte d'Aubervilliers, Cheval Noir or La Marseillaise⁵ are several other examples of makeshift places

of dwelling and refuge where borders have enacted such forms of displaced urbanity, reacting to the differential exclusion that public spaces embody in the neoliberal European city. Hence, through different practices of appropriation of space across the border, the inhabitants are building the public space, subverting norms and limitations and reshaping the apparent selective uninhabitability of the city (Simone, 2016). At the same time, this ambivalent condition is mostly reflected in such public and accessible border areas where refugees, people on the move and unhoused people find shelters to set up their refuge. Bridges, infrastructures, and wastelands are turned from public areas into shelters, subverting in some ways what right to space entitles, deconstructing the monist dimensions of legal and illegal, accessible and inaccessible or “us” and “them” that such separations create both in the urban ground and collective imaginaries.

The border as a weak project of imperfect dwelling

This paper looks at the border as an attempt to rethink paradigms of planning that stem from the recognition of plural lives and plural urban spaces that coexist in the western contemporary city and have not sufficiently been made visible and legitimate. Porte de la Chapelle raises questions about the deep-seated connections and ancestral lineages formed by displacement in urban areas. It demonstrates the strong correlation between the placeless status of people seeking asylum, people on the move, and the spaces they are compelled to inhabit.

This condition is enhanced spatially by places characterised by the massive presence of infrastructures, ambiguous boundaries, undefined wastelands, and marginality resulting from displacement, epitomising

the blurry threshold between accessibility, legality, private and public.

It represents the spatial manifestations of the enduring state on hold that displaced persons embody. At the same time, Porte de la Chapelle forms part of an assemblage of makeshift shelters within the city, challenging its norms, identity, and apparent uninhabitability, and establishing new forms of legitimacy through displacement. Against the negligence of states, new patterns of space reproduction emerge, supporting informal practices of resistance, embracing the voids, the marginal and the unfinished.

The acts of solidarity in Porte de la Chapelle are architectures in transit, lifelines (Boano and Bianchetti, 2022) that create new spaces of maintenance and coexistence among vulnerable lives kept marginal at borders (Fig.8).

They are not solutions of reception, yet they allow one to “live

with the trouble” (Haraway, 2016) and guarantee the endurance of rejected lives in transit. This paper is not a direct critique of current planning agendas along Paris’ borders, nor does it claim to depict possible solutions of reception in the territory under investigation, although it stems from a clear political standpoint.

By showing the ongoing dynamics of holding and the subsequent network of solidarity, the makeshift inhabiting at borders suggests a critical paradigm shift in the built environment, towards the protection of minor (Boano, 2021) and autonomous voices and the preservation of their ongoing state of latency.

Postcolonial scholarship points out how life on earth is undergoing processes of ‘extraction’ and ‘exhaustion’ that produce “frontier bodies” (Mbembe, 2020), of ‘expulsions’ by contributing to the generation of “choking subjects” (Tazzioli, 2021), “shattered zones” (Stoler, 2022) and wasted populations (Armiero, 2022).

Marginalised people and ecosystems are being constantly displaced or removed from the possibility of a future, making life inextricably intertwined with the promise of death, police and disappearance: the impossibility of inhabitation (Boano, 2021; Boano and Astolfo, 2020).

Porte de la Chapelle, and more widely the whole Parisian Périphérique and the makeshift inhabitations that have proliferated around it, make clear how borders enact simultaneously ambivalent dynamics of exclusion and inclusion that control marginalised bodies yet permit some degrees of protection and existence.

This situation calls for the development of new diagnostic mechanisms as well as new design gestures to confront injustices and to imagine unthinkable futures and different ways of living.

This requires asserting that design is conjugated in the gerund, not in the past nor in the future, but

in an indefinite verbal mode that indicates an ongoing process, an operative time, but inoperative intentionality.

Paraphrasing Agamben, only by seeking this form of a project without end can we disable the dispositif of the project.

For Agamben, resistance to violence is not another “violence”, rather, “it is a violence that denies the self as it denies the other; it awakens a consciousness of the death of the self, even as it visits death from the other” (Agamben, 2009).

The deactivation of such a “marking” of violence implies a rethinking of the relationship between potential and actual, the affirmation of ongoing production and, finally, the construction of an ontology of modality through the notion of inoperative practice. What is rendered inoperative is an action towards a function, in order to open to new uses and forms that do not abolish the old, but rather display it in an unstable continuity.

Such an action, that “returns to the potentiality in the form of inoperativeness and ineffectiveness” (Agamben, 2011; 251) is the way to deactivate the inherited violence of exclusion.

Such a project requires both to understand and to reconstruct the threshold, materially and conceptually. It urges rethinking the threshold that surrounds the makeshift camps and informal inhabitation not only in its spatial and territorial configuration at the border, but also in the opaque and ambivalent significance between what is outside and inside, legal and illegal, or us and them.

Looking at these thresholds enables us to encompass the possibility of potentially enclosing or opening them, guaranteeing the

opaque space, or making these practices visible; equally, decide whether to keep people apart or elaborate strategies of living together. Based on that, the project of the border is an infrastructure that rejects overdetermination, as

it would be a system of control, but rather supports relations and axialities among different potential and multiple scenarios. It is not inexistent, thin, or ephemeral; it is not a temporal urbanism, or a tactical move, it is rather a minor infrastructure that refuses to conceive spaces and the people inhabiting them, but still allows some degree of protection.

The search for an inoperative project for urban and architectural design is in fact the search for a minor voice, to counter the nature of urban and architectural design as operational, practical, masculine, concrete, tangible, and problem-solving oriented action. The search for a minor project (Boano, 2021) is not to be confused with contemplative quietism detached from reality in its scholarly academic version, or of banal disciplinary neglect; rather, it is to be located as a paradox of practice, situated in praxis as other than poiesis, which does not produce something other than itself.

It is an interrupted, inferred, inward-oriented design action – not because it is dysfunctional or destructive, but because from the beginning it is devoid of any telos, any task. Not a counter-hegemonic project – another major language – another historical project or a renewed humanistic discourse or a new manifesto of action, but rather Bartleby’s powerful “I prefer not to” voice (Melville, 2021). Thus, the inoperative project is not exhausted, it remains in potency; a potential that, instead of passing into reality, remains pure potential. Despite and precisely because of its precariousness and elusiveness, the minor project sustains not the space as such but the space of variation, difference (Di Campli and Bianchetti, 2019), rendering the mainstream and formal arrogance inoperative.

To think of such a project as inoperative is thus to put the minor critique of the present back at the centre, resisting, and reversing the arrogant anticipation of what is yet to come. Minor is an adjective that qualifies an action, a tone. Resistant and at the same time immanent.

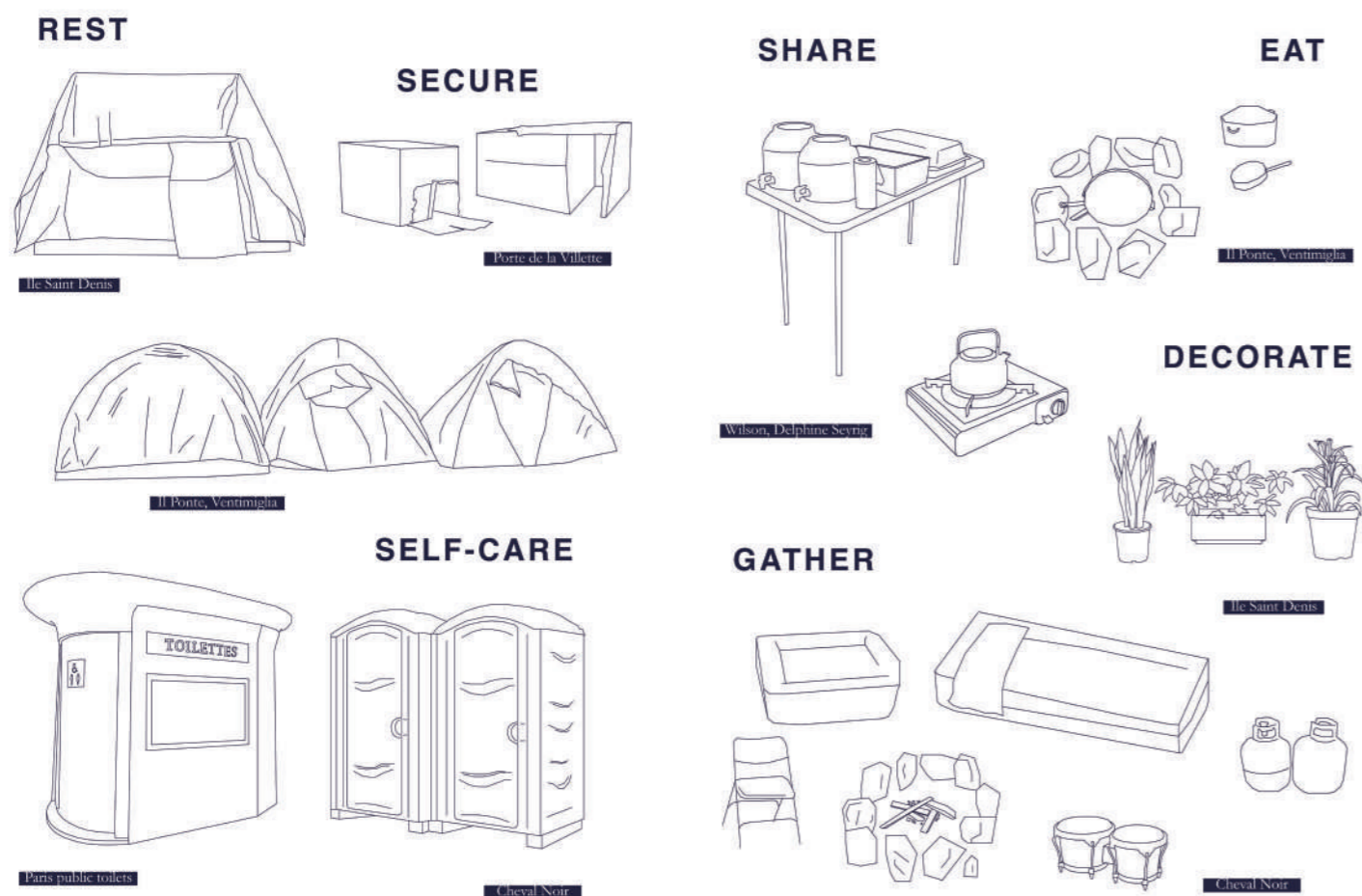


Fig.8 - Makeshift dispositifs of inhabitation across camps, squats, and informal shelters, observed and analysed in Greater Paris and at the French-Italian border (S. Mastromarino, 2022).

Resistant to the request to abandon thought, and theoretical criticism in order to throw oneself into a concrete doing, but also immanent in giving back a propositional flexion, not only destructive; to become a proposal, vision and 'non-projecting imagination' (Glissant, 1997). Based on these assumptions and the experiences of continuous deconstruction and reconstruction of borders by the makeshift dwelling by people on the move, the minor project looks at such practices and builds a counter-narrative. It restores the power of autonomy and the legitimacy of imperfectly inhabiting and resisting. As such, disabled from its own productivity, it reaffirms the centrality of destitute possibility.

In earlier works, the minor project had been reinterpreted by looking at the acts of resistance and subversion operated by supporting actors and people on the move (Mastromarino, 2022).

Thus, makeshift camps, dispersed tents, itinerant distributions, squats, or other informal spaces of reception served to identify material and social infrastructures at borders. The inoperative project has its origins from the recollection of these practices as makeshift dispositifs to rest, gather, self-care and collective care, and shared boundaries. Consequently, interactions with the local network of support highlight possible scenarios of coexistence: maraudes, outreach and close contact with people on the move are crucial to decipher the conceptual prospects of such a project.

The minor project here is unfolding existing dynamics of resistance, claiming new identities, autonomies, and imperfect modes of inhabitation. It refuses overdetermination and is therefore weak, fragile, constantly reconstructing uses and interactions. Dispositifs to gather,

eat, rest, and protect as temporary and ephemeral dwellings built and managed with the network of assistance may represent an abacus of makeshift tools that attempt at enhancing protection, degrees of coexistence and transit in the camps, in the host communities or in the territories of transit, of which the Parisian Périphérique is an essential example.

They promote new modes of inhabitation that could be transient and ephemeral, movable and adaptable to spaces, and concurrently produce new uses and legacies. They serve as a setting for a plurality of spaces where practices of the makeshift, support and hostility converge and seek recognition in the wider urban theory, determining new platforms of an imperfect, transient weak and ambivalent infrastructure of holding.

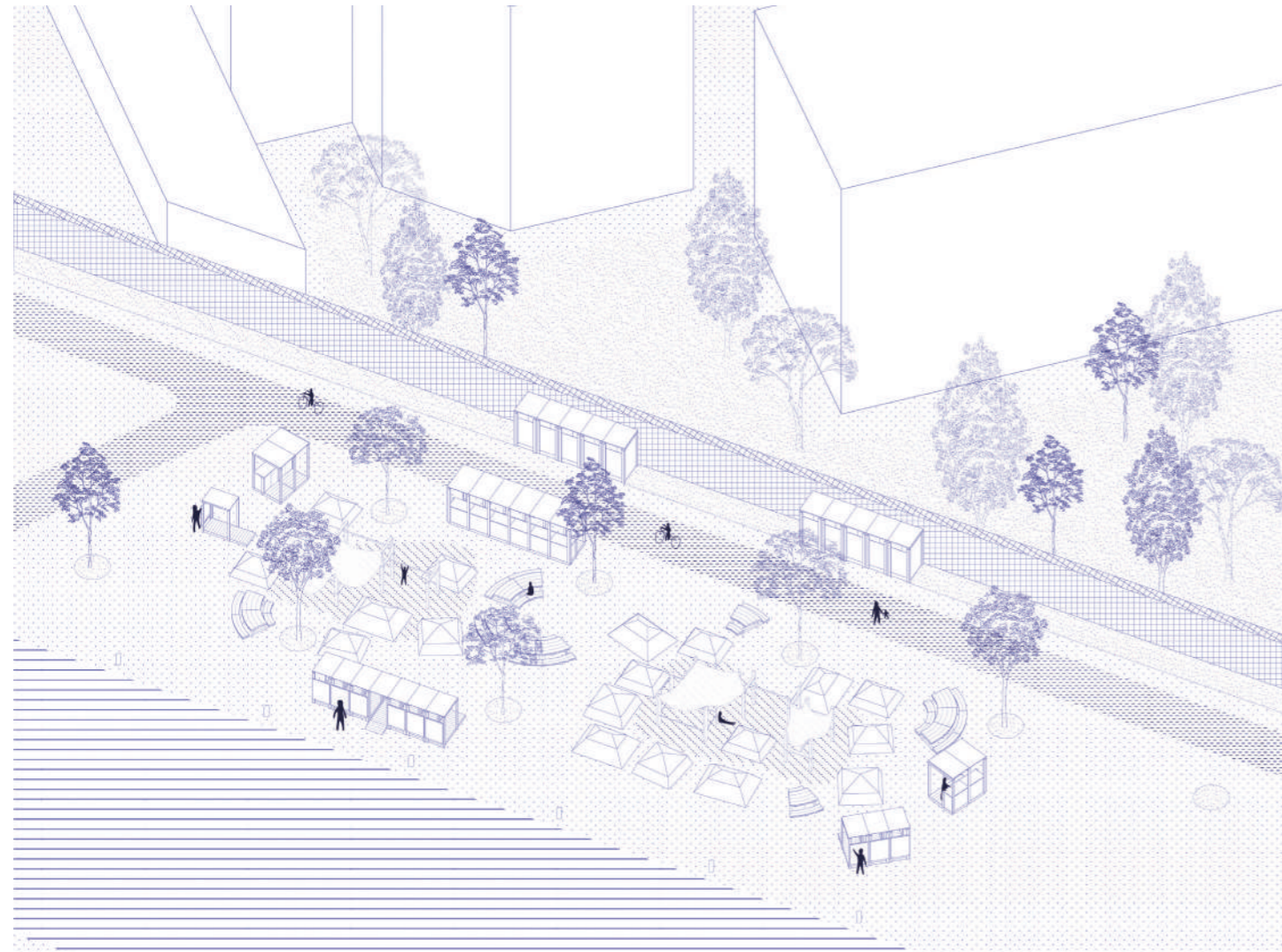


Fig.9 - Proposal of makeshift dispositifs of protection and assistance in the camps along the Périphérique (S. Mastromarino, 2022).

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NOTES

1. Among the major evacuations: on 7th of July 2017, more than 2.700 people were evacuated from camps along the *Boulevard Ney*; on 18th of August 2017, some 2.500 people evacuated and displaced; on the 7th of November 2019, around 3.000 people evacuated from the Avenue Wilson.

2. *Maraude* is the French term used among activists and volunteers to define food distributions and outreach to people on the move and unhoused people in cities. Based on volunteer support with the association Solidarité Migrants Wilson, maraudes are usually divided in itinerant or fixed (maraudes à pieds/poignes fixes) and involve food distributions, tents and clothes when needed, as well as outreach and information.

3. This study is part of the thesis research "Inhabiting spaces of holding" (Mastromarino, 2022), morphed in a collective research with Camillo Boano, framed around the Lifelines project at the Polytechnic University of Turin (Boano and Bianchetti, 2022).

4. In mid-April 2023, Solidarité Migrants Wilson denounced the police violence towards volunteers and people on the move during distributions in Porte de la Chapelle. According to them, violence is progressively increasing along the "requalification" of Porte de la Chapelle and Saint-Denis. On the 26th of April 2023, an extensive eviction of almost 500 people on the move was conducted on Île-Saint-Denis to evacuate the Unibéton squat, situated a few steps from a forthcoming Olympic village.

5. These are makeshift camps that have been analysed by the authors between September 2021 and September 2022. Delphine Seyrig (evacuated in December 2021 and January 2022) was a makeshift camp of about 200 people at the border between Pantin and Paris. Cheval Noir (evacuated in May 2022) settled between Pantin and Bobigny. Porte d'Aubervilliers comprised a dispersed system of makeshift dwellings between Paris and Aubervilliers. La Marseillaise (evacuated in June 2022) was a makeshift camp on a wasteland at the Paris/Pantin border.

THE BORDER AND THE BUILDING

Border conditions of transitional housing: centering the lived experience of residents

Reflections on social innovation from a UK case study

architecture
social innovation
housing
comfort
edge conditions

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Local governments in the UK are experimenting with innovative modular housing solutions as a way to provide transitional accommodation for the most vulnerable amidst an unending housing crisis. Praised as a quick if not temporary fix, such solutions are often appraised for their sustainability performance, yet their impact on residents' lives and socio-technical legacy remains unclear. This paper is envisaged as a first step in unpacking residents' perceptions of comfort in the transitional setting - at the frontier of housing precarity - across boundaries of outdoor and indoor spaces. A conceptual contribution, it focuses on the relationship between expectations of design and delivery, dignity and resilience for end-users; with research methods involving two phases of discovery and reflection.

The initial phase was based on narrative methods that explored perceptions of comfort involving eight residents living in a modern methods of construction (MMC) development built in 2020 in England. The second phase involved recorded dialogues and reflections between the authors on the socio-political dimensions embodied within the research insights gained in phase one. Through a dialectical exchange, and co-analysis of an assemblage of concepts in literature review and in the field, a set of reflections emerged. The outcomes of both phases led to two key findings. First, the research helps articulate expectations of comfort as embodied between diverse social boundary transitions experienced through different spatial scales (outdoor and indoor, macro and micro). So far literature on perceptions of comfort has tended to focus on specific settings - indoor or outdoor with transitions and boundaries viewed mainly through a physiological rather than social lens. Second, the paper emphasises the need for qualitative indicators, to appraise social innovation in the built environment, beyond performative examples.

1. BACKGROUND

Globally, municipalities are struggling to provide adequate housing solutions for the most vulnerable (Madden and Marcuse, 2016). In the UK many are increasingly developing rapid solutions that take advantage of innovative construction and modular techniques. Such innovations in the social sector sit within a broader field of what has been described as “compensatory” homemaking to have emerged in the post 2008 context that includes micro-living and co-living; often prefabricated, temporary and mobile accommodation offered to homeless and vulnerable families by local governments (Harris et al., 2019). While these homes have been praised as a quick fix to home vulnerable citizens in lieu of more permanent housing solutions, they lay bare the fragile nature of housing supports, and fragmentation of societal housing infrastructure in the wake of the neoliberal turn in new public administration that has set the system in a state of permanent crisis (Harris et al., 2019). Inconsistencies in the provision of social housing across UK municipalities create situations for dwelling at the frontiers of society; where remnants of public land are sites for testing new types of housing construction and provision. This paper considers the border situation of a transitional housing development rapidly constructed at the margins of a public car park – taking cautious steps to reveal insights based on the lived experience of residents in this edge condition.

The housing crisis in Britain represents the biggest single barrier to young people in accessing the housing security needed to start long-term relationships and families, particularly impacting key workers in precarious sectors. Harris and Nowicki (2020) note that while housing trends may be responding to the increase in single adults, this is also driven by the housing crisis. The growth of micro-living and related transitional housing as sustainable solutions to the crisis overlooks the significance

of social dimensions of such concepts - and their ability to impact the long-term security and comfort of inhabitants - even in light of their often good environmental performance on sustainability measures. Through a two phased qualitative approach, this study attempts to shed light on the lived experience of inhabitants and their experience of comfort in their homes. Positioned as innovative solutions to the housing crisis, how do these homespaces impact individuals’ well-being and sense of belonging; comfort and control; dignity and resilience; and do they offer a sufficient basis for residents to develop sustainable long-term pathways for living that allow for necessary accrual of social capital? When considered alongside extant literature on neoliberalism and the housing crisis, important questions are raised about comfort and dignity in societal housing, and the nature of sustainable developments for vulnerable communities at risk of homelessness.

This paper focuses on a housing development in England, seen to take an innovative housing approach to forming a healthy, sustainable, self-managing community in which individual young people can thrive. The development that acts as a case study, was built according to modern methods of construction (MMC), and located at a councilowned car park. It consists of affordable and low-carbon, modern design apartments, installed as a (semi)permanent living space for young workers and vulnerable households (at risk of homelessness). Lovell understands (2012) modern methods of construction (MMC) as a process that involves off-site manufacture of components for house building in a bespoke factory. MMC typically refers to two main product areas; panels (ready-made walls, floors, and roofs often produced with wiring and plumbing inside) and modules or pods (comprising ready-made rooms, that can be pieced together, where fittings already added in the factory). While prefabricated housing has been used in the United

Kingdom since the postwar period, problems arose over the quality of building materials and poor workmanship, leading to negative public perceptions. Lovell (2012) notes that many of the benefits of contemporary MMC for housing are as yet unproven or contentious. Green (2022) notes the ambiguity in definitions for MMC, noting its relationship to earlier forms of prefabrication and industrialisation in the production of mass housing, how that it is only through critique that the label can be properly defined and its limits exposed. That author cautions however, that decisions made in the name of MMC have long-lasting material consequences for building users.

The findings of this study shed light on the need for meaningful and ongoing investment in the housing sector, and question the value of sustainability - where focus is placed mainly on environmental, economic or technical aspects, overlooking dimensions of social sustainability and related performance of such developments in affecting the resilience of individuals at risk of, or experiencing homelessness.

2. NEOLIBERALISM AND HOUSING CRISIS. BUILDING ASSEMBLAGES OF HOME

2.1 Homelessness and Dignity: housing vulnerable populations

Public health officials have found that trends in homelessness remain stubbornly high despite policy initiatives to end homelessness, necessitating a complex systems perspective in research that can provide insights into the dynamics underlying coordinated responses to homelessness (Fowler et al. (2019). In order to achieve broad and sustainable reductions in housing insecurity, homelessness prevention must be fully integrated

into existing service networks through prevention-oriented policies that extend the housing first philosophy. Indeed the authors note how rights-based housing policies provide the most conducive framework for broad-scale prevention, citing duty to assist legislation enacted in Wales that ensures households seeking housing supports receive best effort responses, which include counselling plus short-term housing only if necessary (Mackie, 2015). For Fowler et al., (2019) homelessness represents a global public health challenge, in which opportunities for prevention are missed due to an overwhelming pressure on the service system. They found that feedback processes challenge efficient service delivery, and proposed a system dynamics model that tests assumptions of policy interventions for ending homelessness.

In an ecological survey of families in transitional housing, Teo and Chiu (2016) note how the home is not just a physical dwelling as it influences one’s feelings and relationships, while at the same time, the feelings and activities occurring in that lived space make it a home. Following other researchers, they see homelessness as a psycho-social-spatial entity. They note how the experience of homelessness can be described as a lack of comfort, freedom, privacy, independence, and control over one’s daily activities. Findings from a Canadian study on associations between perceived quality of living spaces among homeless and vulnerably housed individuals indicate that housing policy should prioritise access to high-quality housing that takes into consideration individuals’ subjective experience of their living spaces, in addition to their health care needs and the physical conditions of their living spaces (Magee et al., 2019). In a longitudinal study, Magee et al.’s (2019) key finding was that, over time, both higher mental and physical quality of life were associated with more positive perceptions of one’s living spaces, as reported by a sample of individuals who were homeless and vulnerably

housed at baseline. Perceived social and physical qualities of living spaces vary, meaning that someone who is homeless may have more positive perceptions of their living spaces compared to someone who is housed. The authors explain how a homeless person living in a tent city may feel safer and more socially connected compared to someone living in a single room occupancy hotel or rooming house, suggesting a focus on housing an individual with a greater consideration of quality of life and subjective experience (Magee et al., 2019).

Indeed embedded stigmatisation of homelessness and the acuteness of the housing crisis has led to widespread criticism of systems of housing production - associated with calls for more dignified solutions. In a paper on new organisations for housing justice in neoliberal Sweden, Listerborn et al., (2020) frame the resistance of housing deprivation as a cry for dignity, citing an earlier contribution from bell Hooks (1991) on the importance of understanding the sites of resistance, seeing ‘homeplaces’ as sources of dignity, agency, and solidarity from which resistance can be conceptualised and organised. Listerborn et al. (2020) emphasise the equally important meaning of place and

social relations that are forgotten in the act of displacement, recalling Davidson (2009) on the spatial re/dislocation of individuals in literature on gentrification. For those authors, the concept of homeplace refers to a site of comfort, safety, and grounding, but also of dignity. “Reinforced by structural economic, social, and political inequalities and power relations, people are exploited, marginalised, and denied dignity and respect by the dominant culture” (Listerborn et al., 2020:125). As a basis for more socially innovative housing policy, they note health research demonstrating that marginalised populations experiencing a cumulative lack of dignity suffer from poorer health, citing Jacobson et al.’s belief (2009) that a geography of dignity can be mapped onto every urban geography.

An important aspect to consider when approaching this research was equally the location of the modular solution examined in the borderlands of a car park, notions of situated dignity, and in this case the capacity for the development to be integrated in a community setting. For Rabello Lyra (2021) a dignified home embraces the emotional dimension of a healthy structured neighbourhood and

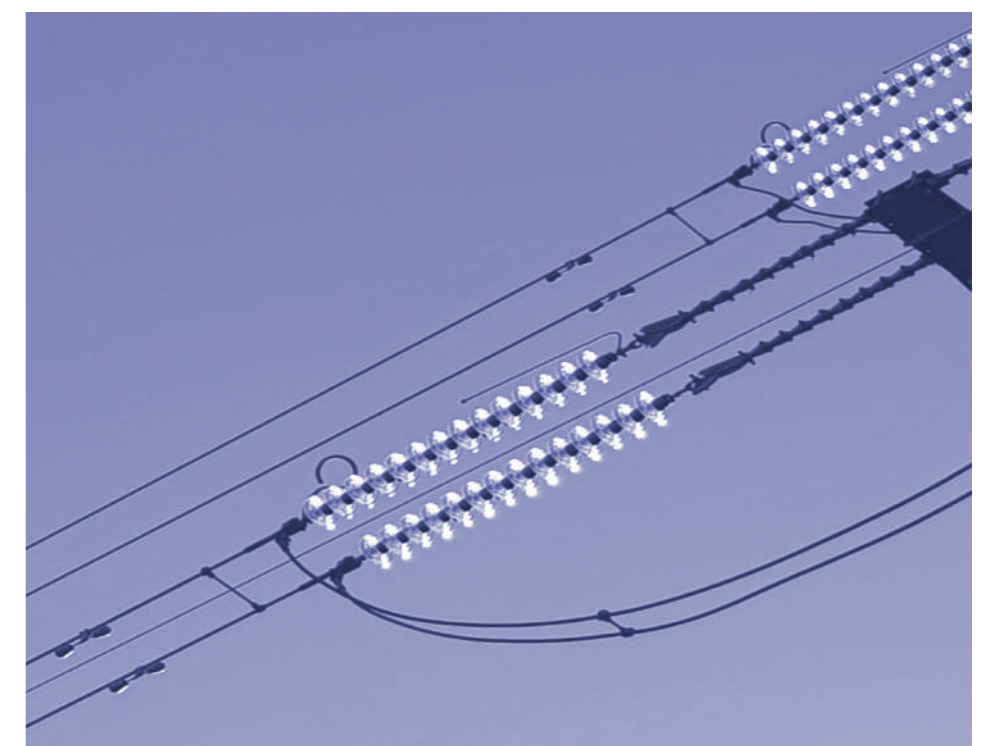


Fig.1 - Border connect - disconnect.

house altogether: the family needs in the framework of a neighbourhood context matter for the emotional wellbeing of a place people can call home (Alexander and Davis, 1985). She raises important questions regarding social aspects that define home within the urban dignity design search of social housing, particularly how can the needs of socially vulnerable families be translated to their neighbourhood morphology; and how can that scenario assure them a sense of community and pride they can call home? Rabello Lyra (2021) proposes design in which physical characteristics imply empathy as an emotional space (Van Liere and Dunlap, 1981). In fact homelessness and trauma can be interconnected among people who have experienced long-term homelessness: because the incidence of previous trauma among homeless individuals is very high; and the experience of long-term homelessness itself can be traumatic due to the inherent dangers of sleeping unsheltered and the risks of victimisation (Bollo and Donofrio, 2022). Trauma among people who have experienced long-term homelessness is endemic, and has brought about a set of Trauma-Informed Design (TID) principles, the first known set coming from

the Committee on Temporary Shelter (COTS) (Farrell, 2018). The principles include recommendations to: reduce or remove known adverse stimuli; reduce or remove environmental stressors; engage the individual actively in a dynamic, multi-sensory environment; provide ways for the individual to exhibit their self-reliance; provide and promote connectedness to the natural world; separate the individual from others who may be in distress; reinforce the individual's sense of personal identity; and promote the opportunity for choice while balancing programme needs and the safety/ comfort of the majority.

In a study on architectural design characteristics in permanent supportive housing McLane and Pable (2020) looked to apply TID principles, including safety, trustworthiness and transparency, peer support, empowerment, and choice, in spatial design. They note a growing realisation that the built environment is critical to the healing experience: that affirmative relationships developed within the designed settings of transitional housing may play a role in countering negative tendencies; and that spatial analytics can provide an understanding of how specific interior spaces,

key to the recovery process, might be improved. McLane and Pable (2020:35) promote design principles that acknowledge that *"the effects of strife and adversity in a person's life significantly shape their perceptions and actions concerning homelessness and its attendant issues"*, as they reject "top-down, authoritarian approaches to social support and reemphasises physical, psychological, and emotional safety". Following (McCracken, 1989), hominess can manifest through the architectural design of home, and mediates relationships between an individual and society by empowering the individual to select or refuse cultural meanings and social roles. McLane and Pable (2020) add that hominess is associated with cleanliness, citing research on how perceived cleanliness affects the sense of dignity and self-esteem for persons who have experienced homelessness. The inability to remain clean is closely linked to stigmatisation of those experiencing vulnerable housing situations, and is understood to perpetuate a feeling of inferiority and social exclusion. They cite research which suggests that cleanliness denotes whether individuals have a sense of a personal stake in a place or not. Importantly, McLane and Pable's (2020) work on trauma-informed design indicates that personalisation is key to a person emotionally investing in a place and creating a sense of ownership. They propose that personalisation in the context of transitional housing might imply unique art, decorative objects, clocks, or policies that make allow residents a sense of control; feeling less restricted in a transitional (liminal) setting.

2.2 Comfort, choice and control: independent living

Comfort and its social and environmental perceptions in domestic indoor environments have been widely studied. There have also been studies of comfort in outdoor environments as well as transitions between both,

however, mostly from a technical or physiological perspective. Whilst literature on perceptions of comfort is comprehensive and valuable, for the purposes of this paper, discussion below focuses primarily on boundaries and scales of comfort as examined in social studies of domestic environments. Previous studies identified various boundary factors influencing occupants' perception of comfort, adaptation, and the performance of buildings. Age of occupants, number, and gender are important factors influencing how people evaluate the performance of buildings (Spataru, Gilliot, and Hall 2010). Also, level of income (Preiser 1994), impact of the building on the environment (such as materials used for construction), interest of occupants, energy consumption, and costs (Spataru et al., 2010) can influence how occupants perceive comfort, adaptation, and performance of a building. Comfort has also traditionally been studied from the perspective of the physics of the environment and the physiology of the occupant, in terms of four factors: thermal comfort, acoustical quality, air quality, and visual quality (Ortony et al., 2005). There are numerous disciplinary definitions of comfort from the perspective of healthcare, ergonomics, IEQ amongst others. For the purposes of this study the definition suggested by Heijs and Stringer (1987) is drawn upon. They suggest a definition of comfort particular to the domestic context highlighting the need for understanding comfort as perceptual, interactive and personalised related to the context that enables inhabitants to give meaning to their home.

In contemplating energy use in the home, sociologists such as Elizabeth Shove have conceptualised comfort (and its relationship to cleanliness) using everyday practices as a way to categorise how individuals experience comfort. A theory of co-evolution of comfort, informed by three scales that delineate socio-technical drivers and the interplay between them (Shove, 2003). For Shove (2003), there is more to comfort than space heating and cooling - while these two processes

account for the majority of domestic energy consumption. Her research identified a gap in literature on how domestic technologies and products *"cohere, sociotechnically and symbolically, in shaping the meaning of what it is to be comfortable or to keep oneself and one's clothes appropriately clean"* (Shove, 2003:397). For those in semi-permanent or otherwise vulnerable housing situations, Shove's (2003) work emphasise the role of individual motivations and choices, shaped by sociological processes at the micro-meso-macro level within society. Following Crowley (2001), Shove (2003) identifies a relationship between comfort and a self-conscious satisfaction between body and physical environment, providing a descriptor for food, furniture, climate, clothing and other conveniences. She reminds us that in the built environment, new construction is typically designed to provide a narrow band of scientifically determined, resource intensive "comfort conditions". Shove warns that there are definite commercial interests engaged in advancing a particular standard of comfort; and interests inclined on further optimising conditions for productivity - maximising opportunities for refinement, adjustment, and control. As there are no fixed measures of comfort, cleanliness, or convenience, future concepts can be less environmentally demanding than those of the past (Shove, 2003).

In a study looking at the influence of long-term thermal history on thermal comfort and preference, Jowkar et al. (2020) found that overall, when exposed to the same thermal environment, participants with a warmer thermal history felt cooler compared to their counterparts in the similar-to and colder-than-UK thermal history groups. The study confirms that long-term thermal history influenced perceptions of thermal comfort, with cold thermal dissatisfaction was experienced at lower indoor operative temperatures for the cooler climatic background group compared to the warmer climatic background subjects. Heightened sensitivity

to cool and warm conditions was also confirmed in this work for the warmer and similar/cooler climatic background groups, respectively. For the purposes of this research it was important to side step the significant literature on comfort in the home, and to use assemblage thinking (established in qualitative studies on dwelling) to focus more on the lived experience of residents - and the contribution of the housing actors and infrastructure involved to their resilience and general well-being. Thereby, the following section discusses the appraisal of such infrastructures and approaches taken to social innovation solutions.

2.3 Infrastructure and appraisal of social innovation solutions

Writing on the hotelisation of the housing crisis and the experiences of family homelessness in Dublin hotels, Nowicki et al. (2019) argue that the housing of homeless families in hotels exposes how they are made to feel out of place in the city, even in the spaces allocated to house them - and provides an important lens with which to understand the experience of those in such precarious housing situations. Through qualitative interviews the research shares the devastating physical and mental health implications for homeless families living in hotels. While assumed to be politically neutral sites, hotels are increasingly entering public consciousness in relation to housing and housing crises (Lee, 2016). Writing on hotelisation, Nowicki et al. (2019) demonstrate the ways in which those living in insecure, inappropriate accommodation, are rejected and designed out of societal structures - and how public infrastructure is increasingly celebrated for "designing out" what are deemed to be anti-social behaviours of homelessness (Mitchell, 1997; Petty, 2016). Nowicki et al. (2019) found that the exclusion of homeless people from spaces to which they are considered not



Fig.2 - Within and across the comfortable.

to belong can also occur within the very spaces in which they are housed, in this case the hotel. The study informs on one mother's defiant act of putting on bedsheets that were not standard issue from the hotel constituted its own rupturing and resistive performance - and attempts to create home. *"The determination to strive for a sense of home, even in emotionally destructive and precarious situations, reflects the importance of the banal and everyday in continued resistance against marginalisation and the maintenance of dignity and sense of self (...). For homeless families, then, hotels are experienced as disruptive, a rupturing, rather than restorative, break from the everyday routines and rituals that help to ground familial life and identity"* (Nowicki et al., 2019:318).

Increased reliance on hotels in the provision of emergency accommodation is a consequence of decades of neoliberal intervention in housing markets - where housing is understood as a source of profitability and economic productivity rather than a pathway to provision of secure homes. Such narratives are enabled through decades of neoliberalism's positioning as a normative condition, rather than a particular ideology and reveal the politics of spatial production in addressing 'wicked problems' in contemporary society (Horgan and Dimitrijević, 2020). In this and other research, Nowicki et al. (2019) follow Tyler and Slater (2018) in arguing that in order to analyse and challenge the stigmatisation of people experiencing homelessness (PEH), its role in productions of power, stigmatisation must be understood as constructed by, and in the interests of, institutions and states. The research on hotels highlights the importance of engaging in research that brings to the fore the lived experiences of homelessness and life in hotel accommodation. This case study seeks to add to further illuminate the experiences of end-users - who themselves remain largely absent from public discourse (Nowicki et al., 2019). Building on other research, they note that to improve the treatment of homeless families, the only

longterm, truly adequate solution lies in increasing the construction of genuinely affordable social housing (Harris et al., 2019).

Elsewhere, collaborating researchers have used assemblage theory to consider aspects of comfort and home (un)making in temporary accommodation in London's Lewisham (Harris et al, 2020). Their paper looks at life in PLACE/Ladywell, a "popup" social housing scheme providing temporary accommodation for homeless families: housed there for a maximum of two years, after successfully bidding for permanent social housing (Harris et al. 2019). In response to a temporary accommodation emergency, Lewisham Council has been using prefabricated construction methods to build cheaply and at speed (Harris et al. 2019). The stories of families in PLACE/Ladywell reveal how a lack of control over the fixtures and fittings needed to "make home" does significant damage to people's sense of self. Using assemblage thinking to interrogate the micro space-times of everyday life; the authors consider how through interactions with objects, or indeed, their absence, residents experience instability (McFarlane, 2011). *"Despite residents' attempts to fix assemblages of home into stable configurations, the senses of home they manage to create remain precarious (...). that this is due to a politicised, ideologically driven distribution and governance of materials that deprives people in temporary accommodation of their capacities to make home effectively"* (Harris et al, 2020:1306).

The study found that certain objects constituted vital elements in negotiations between fixity and impermanence in temporary accommodation: the absence of door locks reduces privacy; restrictions on hanging pictures and other measures must be circumvented by the use of wall stickers, and other decorative accessories to build a sense of home in a temporary setting. The use of assemblage thinking to understand homemaking under these time-limited and constrained

circumstances - fixture and fitting - offers reflections on their status as vital elements in negotiations between fixity and impermanence in temporary accommodation (Harris et al, 2020).

3. METHODOLOGY

3.1 Context for research

Taking a two-phased methodological approach (Tracy, 2019), this study seeks to build on the themes raised in literature review in order to achieve a more holistic understanding of perceptions of comfort for residents in rapid developments of transitional housing built by modern methods of construction (MMC). Phase one involved study of residents' perceptions of comfort drawing on visual techniques. Perceptions are viewed as the subjective process of acquiring, interpreting and organising sensory information (Lavrakas 2008). Informed by phase 1 insights as well as key studies identified in literature review, phase two approach to analysis uses assemblage thinking to attribute meaning to objects; architectural components; fixtures and fittings (McFarlane, 2011; Harris et al., 2020).

3.1.1 Case study: Realisation of a MMC transitional housing project in England

Bent Flyvberg (2006, 2011) has written extensively on the importance of the case study, noting their value when combined with statistical methods and quantitative research. The setting for the research involves an innovative low carbon modern methods of construction housing development built in England in 2020/21. The development consists of one or two bed pods with 13 residents built upon an operational Council owned carpark within a metropolitan urban context. The homes are promoted to be optimised for energy efficiency with the lowest possible running

costs including solar panels to generate renewable electricity in the day, quiet running micro air-source heat pumps for low-energy heating, controlled ventilation which recovers usable heat from inside the building whilst bringing in fresh air, triple glazing, LED lighting and energy efficient appliances. The ambition for the development that involved multiple partners including the local authority was for the one-bedroom homes to be allocated to mix of young people (18-35) and the two bed properties to 'community builders'. 'Community Builders' (individuals recruited by a civic-society partner into a voluntary community-cohesion role) or allocated to individuals committed to the values of the development.

Assessment of the performance of the modular housing solution has been positive, focusing on the novelty of the construction methods and public private partnership. The purpose of our research is to illuminate perceptions of comfort based on the lived experience of residents, and to narrow down on relevant themes for future research in this area (focused more on social performance or impact).

3.2 Data collection

A key data collection method in this project is participant-led photography (Shortt and Warren, 2020) since the focus lies with participants' perceptions and experiences of comfort. Also the method offers the participants an opportunity to both engage and explore the less tangible 'aspects of everyday living.

Participants were asked to share via email 2-3 photos that for them captures what a comfortable home is to them, how comfort is experienced in their current home and what is most important for a home to be comfortable.

Following sharing of the photos, photo-interviews were held with the contents of the images guiding the questioning. Examples of the questions used in a photo-interview were grouped under key themes including:

- Seasonal Comfort perceptions (included questions on what their home was like in winter and summer months, how heating or ventilation was adjusted and what awareness/information they may have had on knowing how to operate their home).

- Perceptions of a comfortable home (in this instance participants were asked to talk through photos submitted explaining what a comfortable home looks like to them/why certain photos were selected/what it meant to them).

- Making your home comfortable (included discussion on what participants did to make their homes comfortable/what part of their home they enjoyed the most and what they find least comfortable).

In total 13 participants were contacted - and 8 took part in the study. Out of those 4 participants shared images and photos in advance of the interview (See also Table 1). Some of the participants also had additional 'community building' roles in the development.

ROLE	HOME TYPE
PARTICIPANT 1	POD 1 bed
PARTICIPANT 2	POD 1 bed
PARTICIPANT 3	POD 1 bed
PARTICIPANT 4	POD 1 bed
PARTICIPANT 5	POD 2 bed
PARTICIPANT 6	POD 2 bed
PARTICIPANT 7	POD 2 bed
PARTICIPANT 8	POD 1 bed

Table 1 Data Collection Sampling.

3.3 Data analysis

Once all the interviews were completed and transcribed, the analysis focused on rereading the interview accounts to gain an understanding of all the key issues and developments. Thematic analysis is the process of identifying patterns or themes within qualitative data Braun & Clarke (2006). Braun & Clarke (2006:84) distinguish between two levels of themes: semantic and latent. Semantic themes *'...within the explicit or surface meanings of the data and the analyst is not looking for anything beyond what a participant has said or what has been written'*. Scales of comfort, as offered by Shove (2003) and outlined in literature review above, can be helpful when seeking to understand have

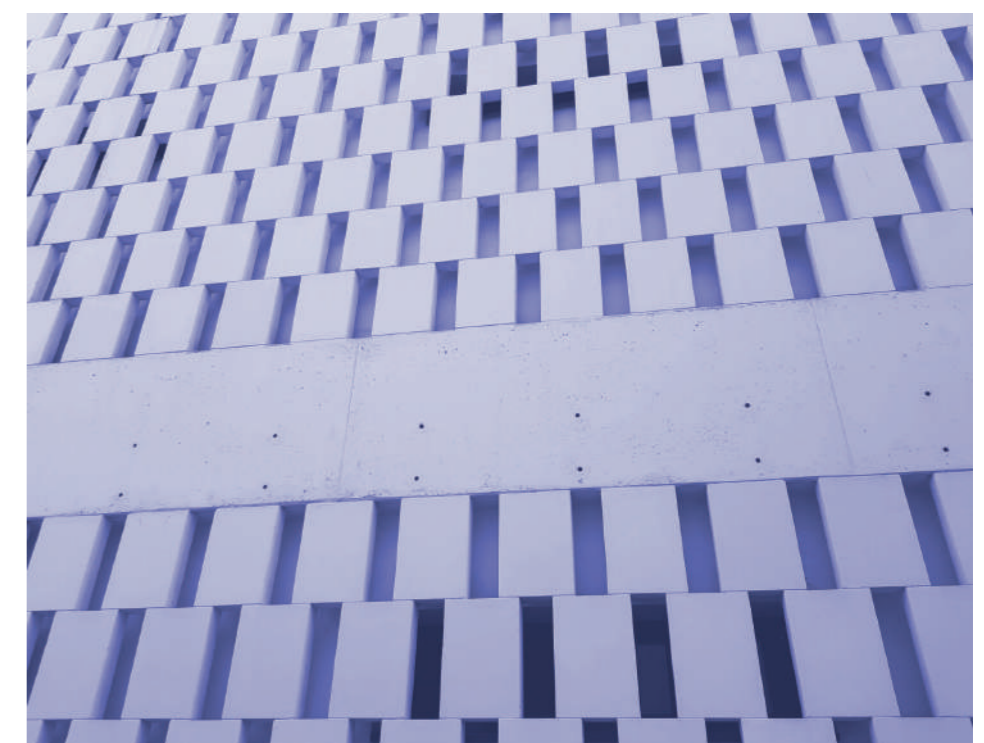


Fig.3 - Modularity - singularity?

comfort is perceived within the home, neighbourhood and wider city. The literature review confirms the relationship between comfort and cleanliness etc., and when considered in the context of those with vulnerable housing situations, new meaning is conveyed. In this research, we only begin to deconstruct how these might influence perceptions of residents in transitional housing.

Emerging points of discussion raised in the initial exchange between authors focused on the boundaries involved in the journey of arrival and living, centering a dialogue on whether or not the rapid construction solution represents a dignified solution. Informed by a process taken by others in other studies (Nowicki et al 2019, referenced above), a process of assemblage took place sifting through the qualitative findings to consider residents engagement with architectural and spatial elements such as the car park; the kitchen sink, cabinet drawers and oven; bedroom window that can't be opened; tomato plants; meters, gates and other interfaces. The photographs shared by participants to support the discussion (of how comfortable their home feels) were deemed to revealing of the context to include in this article.

Overall, 2 key themes were found related to residents' perceptions of comfort. When asked to discuss their arrival on site, their experience or knowledge of the development and their expectations of their new home, most participants discussed wider issues related mostly to the wider development location and appearance. This theme conveys comfort at the macro scale and consists of several subthemes including: circumstances/family/site overall/first impressions/life experiences. A number of participants discussed their circumstances as informing or in some way shaping their expectations of their new home.

Circumstances/ Family/Life experiences

Some of the participants conveyed their past experiences and circumstances of not having a stable home environment and needing to move a lot as shaping their initial feel of the site.

'I've been in nice well-kept houses. I've been in gross houses that have fallen apart. And you know, I think that it's more about how you feel. And I don't think I could ever say what matters because I've never really like had a home. I've moved around a lot' Participant 2.

For others their circumstances and past experiences were often brought up as a way to discuss expectations of a home as not being what is inside a home but rather how they feel about a place. Participant 4 discussed how for them a 'comfortable home' was not based on a home and not based on what is inside but rather something one feels.

'I'm not that materialistic; you know when you watch a film and see that's a brilliant home- you kind of want that feeling; it's just what it (the home) says to you.' Participant 4.

Participant 5 conveyed their constant home moving as informing much of what a home felt like to them – unsafe and insecure. Moving to the development felt exciting as it meant a place of safety and less moving on.

'It was really exciting; I moved house 5 times last year- to know I was coming into a place that I don't have to move out very soon; that was really exciting' Participant 5.

Site overall/First impressions

When asked to describe their initial impressions of the site, many participants conveyed a sense of initial perceived positivity and warmth when arriving.

'It was kind of like, there should be more of them around I, I was, I'd say I was because of how fast they managed to kind of, you know, build it and prepare it and how colourful it looked. It looked very inviting. Like, it was kind of a staple piece of

the area that we always use, but it's going it's still neat. Yeah, I was I was, it was good. It was a good thing to see.' Participant 3.

For participant 4 moving to the development meant less worry – having viewed many houses in the past they felt all the basics were in place and there was less to think about.

When asked to describe living in their new home, how warm or cold it felt, what they did to make it comfortable and what space felt most or least comfortable, most participants discussed micro scale factors. This theme consists of several subtheme including Spatial arrangements/Connectivity/Views out/Control/Adaptability/Inner self.

Spatial arrangements/ Adaptability/Control

For all participants the kitchen was discussed as a key space around which everything revolved. For many the kitchen spatial arrangement and lack of workspace as well as storage was found to impact on their sense of comfort overall and in some instances their impression of the development and attitudes towards them. Participant 3 discusses their love of cooking and needing to have cooking equipment

'Without having to... without without having to kind of you know, I can't get anything cooked because I can't eat cooked food in that new space. That's why I'm currently struggling with this...right now that I can't afford to get started. I like to cook...I want to be able to have like, a decent amount of space in the kitchen so...I don't have to keep packing away. I want I just want more space in the kitchen.' Participant 3.

Other describe cooking dinner and not being able to do this simply due to lack of hobs; similarly not being able to wash pots and pans in the sink. Participant 1 discusses how the design of the sink in the kitchen has been particularly upsetting referring to this as not being considered 'from a perspective of a person'.

'I feel like a lot of people that have worked on this project to set the tone of 'it's not about the people that actually live here'. And, yeah, that's what makes me so upset, because all of the people here are really invested in building the community. And, you know, there's so many issues and problems and things that I wouldn't expect.' We know what regular houses look like, you know, what a regular kitchen looks like. And it would be nice to see that reflected in the build... even though it's so modern, I feel like they've pushed the way of going super modern and forgotten about the fundamentals.' Participant 1.

Adaptability was also found to be important in addition to spatial arrangements of particular activities in the home such as cooking as above. For many being able to decorate their home and paint the walls was found to be important. Having white walls was found by some to be uncomfortable and a constant reminder of their lack of control over decorating their home.

'Yeah, me I kind of want to be greeted, I want to... I want to kind of have a sense, like, it's like a warm, you know, it's kind of fulfilling, when you have kind of like (your own space). All blank white, it tends to kind of take on kind of muddy environments, like, you know, if you're cooking stuff. But I feel like if we had like a darker colour, it will you will, it's still kind of fresh and kind of, you know, vibrant. As opposed to just having like a big white blank space.' Participant 3.

When asked to describe if their homes felt too hot or cold, there was variability in participants' responses. Those living in the 2bed pods described being very cold at times and having to rely on having the oven on to keep warm. Those living in the 1bed pods described feeling too hot and stuffy and not having sufficient windows to be able to control or

'Well, so, when it gets hot upstairs, there's not really any way to sort of relieve that apart from a small skylight and it doesn't open up that much. And then when there's a tiny bit of sun, the whole house is

buoyant.' Participant 8.

Participant 4 notes how they could safely open in the bathroom and that whilst having the balcony door, they did not feel safe leaving it open so often relied on keeping the bathroom window open all year round.

'You can't open the windows that much; I have my bathroom window open all the time- the only other actual window in the house is the skylight - if I open it it will rain in my bedroom.' Participant 4.

Connectivity/Views out/Inner self

For many views and connection with outdoor environment was reflected upon as critical. For some their bedroom window was seen as a sanctuary and providing calm. Participant 4 discusses their bedroom as their most comfortable space- as one to retreat to and be 'nourished'. For other the lack of windows and connection to outside especially the nearby park, was seen as critical.

'I would have preferred it if the actual view we had was on the other side; it makes no sense to me- we just look at the main road its not very nice. A view makes a difference because they could do it- you could switch it around and see the park because it nice, greener and more entertaining.' Participant 4.

For some the lack of separation between the living and bedroom area was seen as problematic – whilst separated by different levels the lack of doors separating the spaces was viewed as difficult to manage.

'The bedroom is the same space as the living room- there is no separation - its all connected.' Participant 2.

Whilst discussing the importance of views and connection to the outside, many reflected upon it making a difference to challenges faced during the Pandemic- for some this meant working at home in challenging circumstances

without support or necessary equipment – noise separation was also seen as problematic with the open plan arrangements especially when working from home. When considered alongside concepts identified in literature review, a number of themes present, which warrant further consideration in discussion, and which could be useful in structuring a framework for subsequent research.

4. DISCUSSION

The discussion contained within this article represents a first attempt to develop an approach with which to better understand socially innovative qualities of contemporary housing solutions, delivered in response to the acute housing crisis. It situates important lines of inquiry related to the architectural and spatial design of spaces of transition – tracing the borders of the housing crisis, and frontier conditions to which vulnerable citizens are regulated. Questions of scale, boundary, and transition abound when thinking of these peripheral housing conditions, their relationship to comfort, dignity and resilience - and the social outcomes for residents of these spaces.

Findings from literature review, suggest wide variations in which concepts of comfort, home and homeliness are understood, and reveal the relation between perceptions and previous experience. Research on comfort and housing has recognised for some time that residents' ways of life in addition to material, spatial and thermal standards influence energy use and perceptions of comfort (Hagbert 2016). Issues of scale, however, have not been brought to the forefront of research in housing and comfort. Yarker's (2017) study offers a theoretical framework for the analysis of belonging in local communities, drawing attention to the importance of neighbourhood and build scales. Yarker (2017) argues the point that experiences of local belonging (or otherwise) are related to a person's sense of comfort is a persuasive one, though current

conceptualisations do not always adequately reflect this contention. Yarker (2017) presents an empirical examination of comfort and local belonging amongst residents of a social housing estate in the North-east of England, and explores comfort as it is expressed through acts of confidence, commitment and irony.

Built environment literature on comfort is vast and valuable to our contribution of understanding of technical performance of buildings. Shifting attention to more anthropological readings of comfort, the notion of comfort, and of being comfortable, is strongly associated, in the wider literature with feelings of belonging. Here, comfort manifests itself as a sense of familiarity rooted in long periods of residence, safety, security and an ability to identify with those around you. Although useful, these existing conceptualisations of comfort afford only a limited understanding of the nature of belonging. They do not necessarily provide us with a way of understanding belonging in the context of mobility, change and diversity – factors which have come to characterised contemporary society. They also give us little appreciation of how residents may experience comfort in homes built often in a unitised approach such as MMC paying close attention to buildability, cost, pace and function of each unit, with less attention devoted to their placement next to each other and within a neighbourhood and site. A wide set of literature has engaged in comfort from a social perspective - but not at different scales. Social practice theory excludes notion of scales, but as residents' reflections reveal, perceptions of inside-outside-threshold-transitions - and indeed of the liminality or sense of belonging inherent within these spatial conditions are closely aligned to comfort. Further research therefore could focus on how residents perceive comfort at various scales and settings (informed by historical experience); but also what architectural devices at each scale facilitate independence or control for residents - or not (as the case may be). Both literature review

and qualitative findings reveal that perceptions of comfort are relative - often based on individual previous experience or encounters with notions of home. Home can be experienced as a feeling psycho-socio-spatial, meaning that for those with negative experiences of home (homelessness, vulnerability and displacement), home can be associated with damaging personal experiences, situations and psychogeographies.

Emerging research proposed integrating trauma informed design principles into the design and planning process of transitional housing solutions for vulnerable people, recognising the importance of sense of control and ownership, and how these might help create a sense of comfort. Qualitative findings described kitchen facilities designed without consideration of "the perspective of a person", not large enough for cooking to accommodate appropriate cooking utensils. In this case, residents need to "keep packing away" their belongings, suggesting a suspended period of settlement, meaning that despite being accommodated in semi-temporary accommodation, residents feel that they have "not fully arrived".

In the academic discussion, the authors reflected on whether the innovative building design was truly user-centred: whether the needs of vulnerable individuals have been adequately considered over those of the municipality, contractors and developers; or whether the end user is valued as a worthy client (or if they should simply be happy what they get in terms of a societal housing offer)? Importantly, residents interviewed for this research were quick to remind researchers that they, "know what a real house looks like", and therefore would easily differentiate between a quick-fix solution of inferior quality and a market turn-key solution built for profit. The placement of this project development close to a park was seen by many residents as a place of retreat and safety, however, the lack of windows opening up to the park was problematic and difficult to appreciate leading

in some instances to feelings of 'not belonging' and 'not being considered'. The lack of windows also led to feelings of loss of control, being unable to adapt their home environment when feeling too hot or stuffy. At the scale of the development, past experiences and circumstances tended to shape expectations of arrival and welcome with many participants conveying excitement and hope. At the scale of their home, a micro level of reflections tended to occupy the discussion with much focus placed on the kitchen lack of storage, or sink placement or number of hobs.

Reviewing perceptions of the solution in the interviews, we notice qualitative aspects at three scales of Macro - Meso and Micro - that can act as determinants of comfort (Shove, 2003). At the macro level, these concern the placement of the building within the carpark, access and integration with the wider neighbourhood, aspect and views from and onto the site. At this neighbourhood scale residents questioned why the residents overlooked a main road, and why they had not been afforded a view to a park opposite - which would have required the building being flipped. Other residents felt unsettled due to issues with parking their own vehicles on site - itself a local authority car park. At the meso scale, that of the building itself issues presented with noise relating to interior partitions that were defined by the modular design, and thus ineffective. Concerns regarding the inability to control heating or ventilation would appear contrary to trauma-informed design principles, while a lack of spaces for socialisation provoked discussion among researchers as to the effectiveness of the building as one to support sustainable transitional life pathways for vulnerable citizens. At the micro, personal scale of the unit itself, qualitative findings again encouraged discussion as to the nature of control and adaptability - and the how the lack of capacity for personalisation within the building could impact perceptions of comfort. Reminded of the Harris et al.'s (2019) Lewisham study, the inability to paint white walls

or add other decoration inhibits sense of ownership, and potentially stimulates a psycho-social-spatial experience of instability, prolonged transition and liminality. Similar to the related findings on hotel accommodation, the perceived lack of spacious cooking facilities may also prevent residents from making comfortable home. Harris et al. (2020) follow Speer's (2018:11) understanding of homelessness as the condition of having "no fixed location and being continually forced to move between sites", impacting a sense of belonging, comfort and control for those experiencing same. Through their application of assemblage thinking they argue that as a disaster situation homelessness adds, "*heightened sensitivity to the capacities of materials and objects to afford or deny homemaking, as well as to the politicised distribution and governance of those materials by human actors*" (Harris et al., 2020:1289).

Within the context of this research, the notion (and embedded irony) that in this case the municipality is "parking the problem" of the housing crisis in a literal council car park is not lost on the authors of this paper. Ultimately, without long-term sustained investment in housing for key workers, vulnerable citizens and young people locked out of the housing market, off-site solutions are nothing more than a "sticking plaster". Equally, in their appraisal of the Lewisham case (described above), Harris et al., (2019) recognise PLACE/Ladywell as a site of hope, for its temporary inhabitants (and for partners seeking solutions within a seemingly uncontested neoliberal model), their assessment shows how affective experiences of precarity persist for residents, and in fact accumulate around the 'solutions'. The authors describe a setting in for vulnerable persons, "around whom the affective atmospheres of the housing crisis congeal and develop unevenly" (Harris et al., 2019:29). For them, there can be no neoliberal solutions, understanding that the depth of the crisis itself (and lack of sustainable investment in durable

solutions) is proof of the failure of neoliberal social and spatial policies to address it. Reflecting again on the case, further research could focus on whether the building fabric, and rapid construction methods produce a building in which the impermanent response to the housing crisis is laid bare; and if perceptions of comfort are related to same.

Themes of transition and liminality ranging from the experience of those transitional housing itself, to the specific and details of arrival and homemaking occurred frequently during the second phase of authors' discussion, and warrant further examination in more detailed research. These reflections on the housing complex as liminal space - which probe individual notions of outside/inside; stories of arrival, home and home (dis)comforts, views in and views out, caring and not caring, them and us - offer a point of departure for the next stage of inquiry. Glynn and Mayock (2021) use liminality as a framework to understanding the housing transitions of young people leaving care, employing a core theory in youth studies which is used to consider young people's transitions to adulthood. It follows that there are three distinct phases associated with any transition – separation, the liminal phase, and reintegration – at which point an individual is recognised as a full member of society (Furlong et al. 2018). Glynn and Mayock (2021) found that for those young people with vulnerable housing backgrounds, secure and stable housing is essential to their well-being and prospects of a sustainable housing future. Writing on displaced people searching for a home in a liminal space, Perez Murcia (2019) describes how displacement makes the location of home considerably complex for those in transitional housing, home becoming a contested and ambivalent site. Home becomes something which itself can be refashioned on the move, and experienced either as "a state of tension created between the place left behind and current inhabited cultural settings" (Perez Murcia, 2019:1527). As a proposed next

stage, the researcher envisages using these and other precepts to develop a framework for which to approach an even more holistic understanding of experiences of comfort and belonging in transitional housing solutions. These could include looking at themes of comfort and home as they pertain to dignity and resilience in housing, and could accommodate the assemblage of concepts raised in this preliminary study.

A number of authors have published papers on transitional and emergency housing in the wake of the COVID-19 pandemic, having reflected on lessons learned during the global shutdown. Johnson et al. (2023) observed positive housing outcomes as a result of a stabilising and health-affirming temporary accommodation; and that in this case, avoidance hotels provided a sense of security, privacy, comfort, and access - offering a lower-barrier access point to housing for hitherto discouraged by the social experience of congregate emergency shelters. Importantly, innovations in temporary accommodations cannot be successful without the support and alignment of frontline workers, working closely with accommodation staff (Johnson et al., 2023).

The findings of an Australian study that examined interventions during the peak of the pandemic questioned whether more coordinated responses arose out of concern for the health of people experiencing homelessness; or more likely, because their situation increased their risk to the general public (Parsell et al., 2021). The pandemic highlighted the need for urgent systems change, with early studies showing that through cross-sectoral partnerships; increased government support and resources, homelessness can be addressed simply by housing people in safe, dignified settings (Parsell et al., 2021). More detailed investigation could illuminate reasons for why the hotel model worked well in some situations during this period, and provided a more dignified, healthy, quick, and efficient way

to keep people safe in a pandemic (Aitken, 2021; Fitzpatrick et al., 2020). Bringing findings from literature review and qualitative research together, what is clear is that lessons learned during the pandemic are key to understanding how comfortable, dignified and resilient housing solutions for vulnerable populations can offer sustainable scaffolding and support for citizens to live productive lives in the long term; and that parking the problem of homelessness through neoliberal procurement of transitional housing will only displace the systemic issue to future (less-well-resourced generations).

This study whilst limited in sample size presents important insights of the social and structural factors mediating how approaches to 'commit to a place' was experienced differently whilst residing in homes that were identical in spatial arrangements, décor and construction. Future studies could further explore understanding of the scale of the local at both the site boundaries and within the home itself as one of circumstance, adaptability and connectivity at scales within in which people feel 'at home'.

5. CONCLUSION

Using a case study of a modern methods of construction (MMC) project delivering transitional housing for a local-authority site in England, this research considers the innovativeness of rapidly constructed solutions, and their impact on residents' life pathways in the long term. The article is intended as a first step in conceptualising notions of comfort in transitional housing, seeking to unpack the lived experience of the housing solution for residents. While the concept has received praise for its technical novelty, residents' perception reveal that in practice, the units fall short in some respects - in terms of allowing occupants to make home, and are considered to be lacking in terms of their layout, internal arrangements and detailed specification.

Insights from this study

demonstrate that despite the innovative methods of construction and delivery, occupants inhabitation and use of spaces (both macro and micro) are potentially insufficiently well considered in a growing context whereby housing decisions tend to favour ease of assembly over comfortable dwelling. This framing questions the value of the concept in the long term, and whether such quick-fixes provide the necessary housing infrastructure that allow vulnerable citizens to lead sustainable, independent lives in legacy. When viewed alongside extant findings in emergent literature, the perceptions of those housed within the development examined verify a neoliberal policy context which favours populist short-termist investment in pop-up housing solutions, over more meaningful investment in durable infrastructure and policy reform.

This research has demonstrated the importance of bringing together

qualitative data to illuminate the lived experience of residents, alongside other evaluation criteria when considering the innovativeness of contemporary housing solutions. Given the depth of the housing crisis, and the apparent inability of the neoliberal system to accommodate the resultant challenges, social innovations that focus on building resilience within individuals and communities themselves necessitate new appraisal mechanisms and novel quality indicators.

Note: Due to ethical approval conditions set out on the project, the specific location of the development as well as any drawings, further identifying information etc. could not be published to ensure full anonymity of the participants. This was agreed when research was conducted in the field.



Fig.4 - Scales and perceptions within boundaries of comfort.

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Enabling: On the dispersion of the nuclear family model

New parameters of the boundary of living.

custodia compartida
habitar
flexibilidad
infancia
vivienda
shared custody
inhabiting
scattering
flexibility
childhood
housing

Habilitando es una investigación sobre la ruptura de las tradicionales fronteras del habitar. El campo de la vivienda, aún sumergido en los cánones de familia nuclear y repleto de reglas jurídicas, técnicas y económicas, se replantea bajo la óptica de Carmen, una niña que, bajo el régimen de custodia compartida, transita constantemente entre dos modelos de convivencia, entre dos casas.

Desde esta visión primera, desde esta experiencia, la frontera de la casa natal se diluye, el programa de la vivienda se dispersa y el uso de ciertos elementos se resignifica. Existe una ambigüedad válida en la utilización de espacios, mobiliario y objetos que chocan con los estrictos límites de diseño de la vivienda. Existen nuevas necesidades familiares y de relación y, por tanto, esta nueva dimensión de lo doméstico, que ha sobrepasado el límite conceptual de la casa familiar (esa “casa para toda la vida”) nos exige la integración de un diseño más versátil, más humano, en el campo de la vivienda.

Enabling (Habilitar) is an investigation into the breaking of the traditional boundaries of living. The study area of housing, still driven by the norms of a nuclear family and full of legal, technical, and economic rules, is rethought under Carmen’s perspective, a girl who, under the regime of shared custody, constantly moves between two ways of living, between two houses.

From this first vision, from this experience, the boundary of the birthplace is diluted, the housing programme is dispersed and the use of certain elements is reinterpreted. There is a valid ambiguity in the use of spaces, furniture and objects that clash with the strict design limits of the house. There are new family and relationship needs and, therefore, this new dimension of the domestic, which has exceeded the conceptual limit of the family home (the “home for life”) requires a more flexible and versatile, more human based housing design.

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Fig.1 - Traditional depiction of the family.

INTRODUCTION

Our family is the primary context from which we take basic social interaction tools and initiate the process of continuous learning that comprises any human experience. From this, our first palpable experiential framework we record, as children, the characters of a personality in continuous evolution and we are assimilating the basic rules of coexistence (Fig.1).

In this family setting, home does not only represent an architectural space, but follows through and gives a meaning to our family bonds. The house is surrounded by a set of images, memories and experiences, the same way as a sculptor moulds work, and it leaves a mark on us.

Living entails a series of rhythms and, whatever the family context, the primary environment continues to determine the way in which we relate with others, even when the profound social, economic and technological transformations of recent decades destroys the hegemonic concept of traditional nuclear family.

Events such as the increase in life expectancy, the integration of women into work, the increasingly late emancipation of young people, the increase in the number of single-parent and homoparental families, the growing number of marital breakdowns, as well as the increase of technology as a means through which affective-sexual bonds are developed, have led to the rethinking of the traditional family framework.

From this reflection on the models of coexistence caused by the growing number of new family models and the variety of affective relationships, is born, in turn, the reflection of its physical container: the house, the room.

And in recent decades, architects, historians and academics have discussed this question in search of that new physical container, that new frontier.

Traditional domesticity has been questioned from different points of view. Of special interest is, *Architecture and politics: Essays for alternative worlds* by Zaida Muxi and Josep María Montaner where the contemporary vulnerabilities of architecture are analysed from sustainability, participation or gender equality viewpoints. Also of interest is the work of Beatriz Colomina in *Domesticity at War*, as an analysis and critique of domestic parameters and family models prevailing after the Second World War: *"The domestic has always been at war. The battle of the family, the battle of sexuality, the battle for cleanliness, for hygiene..."* (Colomina 2006, p.5).

Toyo Ito, in the book *Tarzans in the Media Forest: Architectural Words 8*, also tells us about this new domestic architecture. In a domestic context surrounded by technological devices and in which the individuality of each human being prevails, Toyo Ito speaks of architecture as a membrane: *"the membrane needs to be soft and flexible, rather than being rigid and dense like a Wall, architecture as*

epidermis must be pliant and supple like our skin and be able to Exchange information with the world outside". (Ito 1997, p.123).

From these words, it seems clear that the dilution of the traditional family concept gives rise to a new experiential frontier. This concept, in the context of the Spanish family, is constituted as the starting point of the research that is then developed further.

Starting from the idea, as Amman asserts, *"that any architecture is a scenario that allows certain behaviours, executory and moral habits individual and in groups"* (Amman 2011, p.53). Led by the word *"habilitar"* - the main title of the project from which this essay is born - the reproduction of the old codes in the field of housing is questioned. *"Habilitar"* means enabling, training and preparing. With this word we wonder if architecture is enabling the development of these social changes.

The stability of housing design codes during the recent decades is linked to economic profitability and the maintenance of its attractiveness as an investment good without considering the experience of the inhabitant.

However, the citizen, in the context of the more recent significant social changes has surpassed the social limits in which traditional family models were founded, transiting in a space to which he demands new ways of thinking and designing.

BACKGROUND

Housing as an investment, has taken the lead role over interest in housing as a living space. Traditionally property price have been a perennial fascination, with rising markets habitually treated as a proxy for a successful economy (Jacobs 2019, p.5).

In recent decades in Spain, and especially during the years of real estate growth that preceded the economic crisis, housing has been considered a trading object at the service of those interested in speculation. The changes introduced in design have been scarce and the housing models have continued to opt for mass production.

From the recovery of the real estate sector that began in 2014 to the present day, we can notice a growing interest in the rental model compared to the purchase model especially among young Spanish people aged 16 to 29, who are precisely those who, to a greater extent, have suffered the impact that the recession has had on labour market conditions. It should be recalled that for workers between 16 and 29 years the unemployment rate reached the maximum of 42.4% in 2013 and a temporary employment ratio of 57.4%, (Alves, Urtasun, 2019).

Moving back to an economic question; while it is possible that

nowadays there is a preference for renting over ownership, this tendency is based mostly on issues of economic power. The analysis of data that considers the Spanish real estate market leads us to think that housing continues to produce an inflexible model and does not allow for the necessary changes to adapt to new social ways of living.

Faced with the rigidity of the construction market which establishes a series of legal and fiscal boundaries, ending in a set of political and social decisions, this research presents several starting points in order to question them. On one hand, a experience to reflect on the family changes that have occurred in recent decades and on the other hand, a set of diverse references of experimentation in the housing sector that question the real way of living, and that explore new forms of creating that personal background - a dispersed and diluted boundary.

CASE STUDY. SHARE CUSTODY

The personal starting point of this research leads us to a social question. At present marriage, free of its symbolic value, becomes a mode of affective conjuality through which spouses - homosexual, transsexual or heterosexual - protect themselves from the outside world to live together for a period of time. More

than a third of these will end in divorce (Amann 2011, p.108). In Spain, in 2021 there were 86,851 divorces, 12.5% more than in the previous year and joint custody was granted in 43.1% of divorce and separation cases of couples with children (INE, 2023). This regime of joint custody is, in the opinion of the current legislation, the desirable scenario. It encourages a responsible exercise of parent-child duties by both parents.

Carmen is a 7 years old girl whose parents have a shared custody regime by mutual agreement. Following the model that most often occurs in this type of agreement, the child has to move from home to home in the periods in which each parent exercises custody - otherwise known as the *'child-suitcase modality'* approach. The week is divided into two or three periods. Normally on Mondays she starts the week at mum's house and on Wednesdays she moves to dad's house. On transfer days, it is usually one of the parents who takes her to school, and the other parent who picks her up. Weekends are usually alternate. The border drawn by the birthplace in Carmen's case is scattered. Although parent's homes are separated by a few tens of kilometres and are in neighbouring towns, our analysis revolves around the child's point of view, and aims to investigate the duplicity produced by a constant pilgrimage between two ways of living (Fig.2).

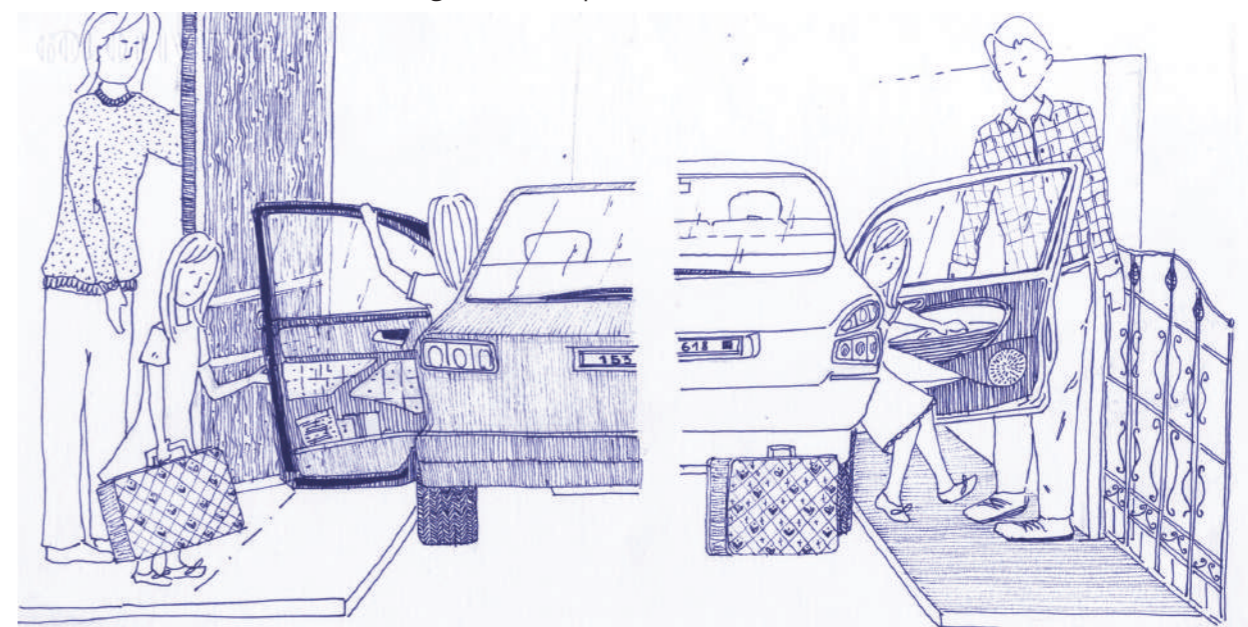


Fig.2 - Drawing. The journey of the child-suitcase..

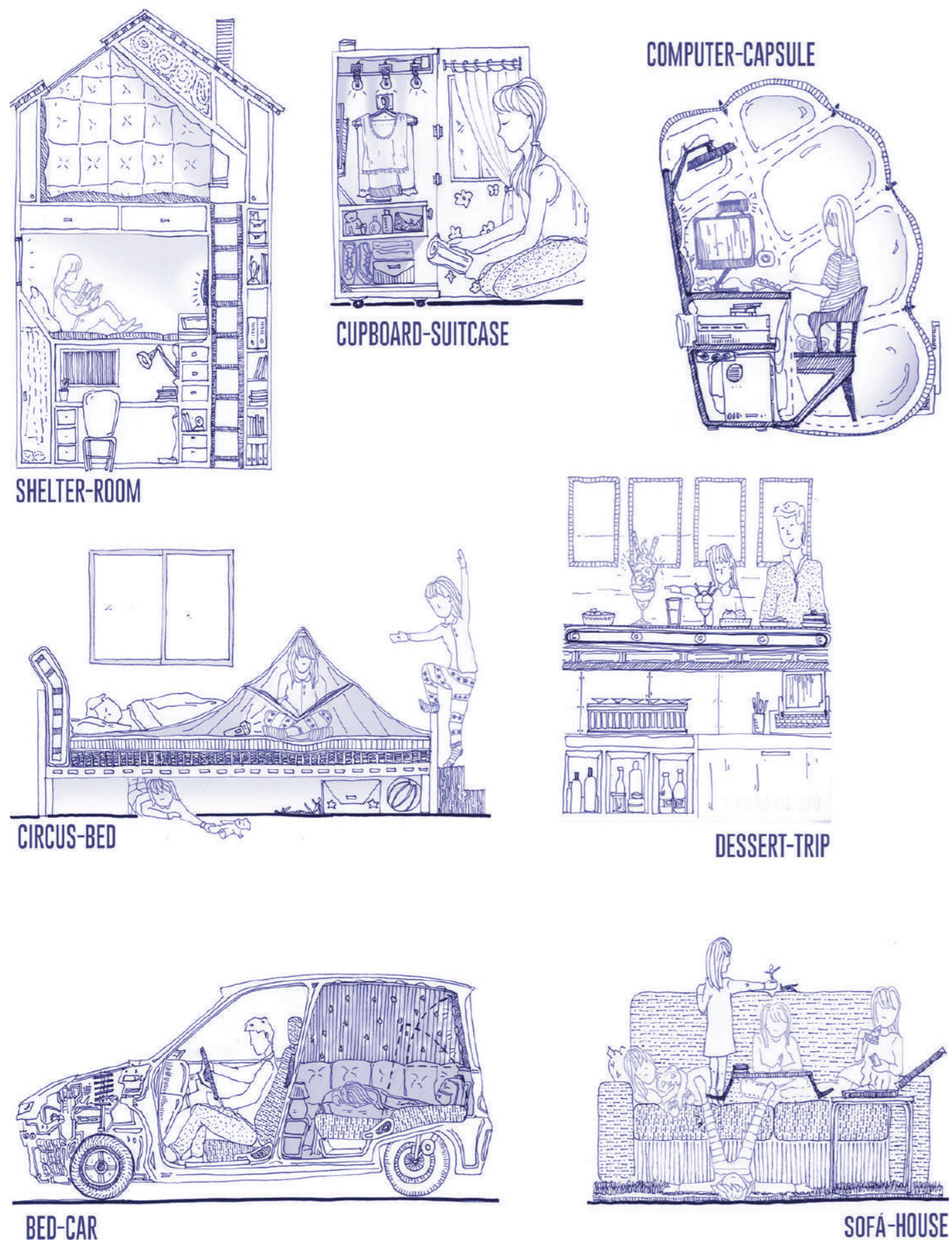


Fig.3 - Carmen's experiences-series of drawings. Own elaboration.

Carmen follows two schedules, inhabits two environments and moves between two models of coexistence. Like any child, play is a primary means of communication and the way in which she uses the different daily items, raises the question about the 'usual' interaction with spaces and objects. What elements form this new experiential boundary? What are the new possible meanings for these items?

In order to represent the way in which the girl experiences the environment around her, a series of images emerge that subvert the sense of certain elements. This re-imagines functions, sometimes basic, on non-normative bases; for example, the car in which the father takes the girl to school every morning has adopted a new use, or the dimension that is given to certain pieces of furniture and also objects changes.

Suddenly, Carmen's backpack is her foundation stone, and every time she changes house, a small trip. The sofa is her most precious property, and her own room an intermittent shelter (Fig.3).

The different rules of father-mother coexistence can provide relaxation in the normative use of certain elements. In addition, there is an uninhibited attitude typical of play. These images arise, then, as an opportunity to establish a new boundary of dispersed domesticity present in this case of shared custody.

VERSATILITY, DISINTEGRATION AND INDETERMINACY

This new domestic boundary is ambiguous, changing and constantly transits between two family models. Housing is no longer a spatial unit, but a mental one (Amann 2011, p.127). The environment experienced by the girl does not follow the same guidelines as the stable environment of a traditional family framework and the search for these new guidelines

leads us to delimit three concepts that sum up the character of this new domesticity of the girl, being *Versatility*, *Disintegration* and *Indeterminacy*.

Talking about *Versatility*, first of all, such as the ability to adapt easily and quickly to various functions, we look for transformable boundary references. In this context, we focus on proposals that integrate interior elements of housing that can be modified according to the needs of the inhabitant, such as the apartments in Fukuoka by Steven Holl (VV.AA, El Croquis, 1996, p.146) or the proposal of social housing for Carabanchel by the architecture firm Aranguren Gallegos (VV. AA, El Croquis, 2004, p.232-247). The design allows adaptability to situations such as the increase or decrease of visitors or tenants in the house or the approach of day-night or winter-summer programmes.

Disintegration, on the other hand, means separating. A dispersed boundary, such as that which characterises the environment of our specific case, externalises certain functions that, in a traditional family model, were all contained within the limits of the house. The house, or one of the two houses that the girl inhabits may not, in fact, contain all the domestic functions, and under this perspective we draw in the experimental proposal of the *Nomad Woman* by Toyo Ito. This proposal shows a displacement from the house to the object. Adding the domestic artifacts, a new experiential boundary is built into the inhabitant: a dispersed border. The inhabitant does not inhabit the house, s/he inhabits the city

and this concept reminds us of the way Carmen lives her day to day, moving between different spaces with, as a central point, the objects that always accompany her. On that trip, dad's car can suddenly be a comfortable bed and the ice cream shop on the corner, the makeshift dining room before going to class.

Moriyama House is another example of disintegration. Disintegration, in this proposal, is not so much translated into artifacts as translated into spatial pieces that serve as support for the different functions of living. This work of Ryue Nishizawa's office consists of 10 independent volumes scattered along a plot. The result is a community space and different partial houses depending on each family situation. In this context, Japanese architecture has led research in the reprogramming of housing for decades and we can find interesting examples that reinterpret western limits, as forceful as the exterior-interior and the private or the public.

Are we facing a fracture of these limits or does the inhabitant prefer that they disappear? Montenys and Fuster (2001, p.46) pointed out "We could ensure that, the greater the specialisation of the pieces of the house and the more indefinite pieces have disappeared, the greater has been the loss of flexibility of this".

In terms of *Indeterminacy* architecture has moved away from ambiguity as the years make people move away from childhood. It is curious to see how the game of any child, as is the case of Carmen's study, follows expansionist rules (Fig.4), handling the indeterminacy

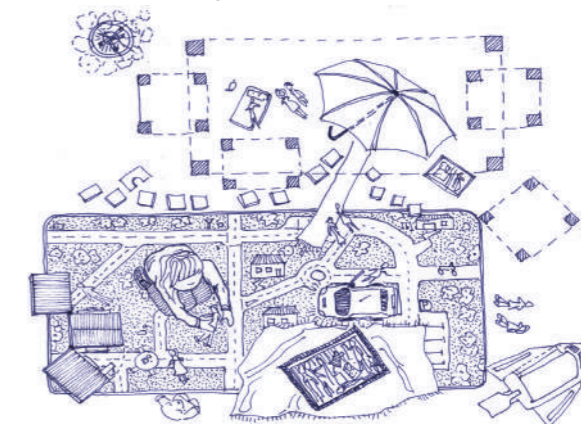


Fig.4 - Carmen's experiences-series of drawings. The game explosion.

of space with much more ease than any adult.

The child builds with fantastic imagination stories without having to guide the space it occupies. To recover that condition of play in the building and apply a valid ambiguity to the domestic is to find humanity in the architecture that surrounds us. From this point of view, we can collect examples such as the student housing of Harquitectes in Sant Cugat del Vallés (2009-2011) or the social housing proposal of *Nemausus* in Nîmes by Jean Nouvel (1985-1987).

The idea of an unfinished building is present in both cases, both from the constructive point of view and from the housing unit's traditional uses and it is useful to consider it in a joint custody case. Could you consider satellite spaces that take on the transitory situation of a family change? Its inhabitants can complete each space and in a situation of change they have room for action. Indeterminacy is, from this point of view, positive. As defended by the architects Bach y Bach (2015, p.88) in relation to the project of the *MO house* by Pablo Oriol and Fernando Rodríguez (FRPO architects): "The spaces of each one should be named only after being occupied". There is, in short, a

broad laboratory of ideas about the limits of housing and its functions. Recognising in its design a corner of freedom similar to the moment when a child draws onto paper, is encouraging and truly human. These references, however, face the strong rules of profitability and reproduction that prevail in the housing sector.

Observing the domestic space, from the freedom of childhood, brings us closer to its essential elements. The philosopher Higinio Marín (2021, p.23), considers that the conceptual border of living is like the beginning - a means to start again. Home reminds us of our origins, in childhood. He points out:

"And that is, it seems to me, the secret that turns a space indoors, at home: there is inside where you can rest in the beginning (...). Hence the four activities that make human inhabitant and space room, home: food, sleep, bath and conversation. Because of that, the interior rooms are bedrooms, bathrooms, kitchens, dining rooms and living rooms. And it does not matter much if they are separated as pieces or as environments, by construction or furniture. Eating, sleeping, bathing or talking are all ways of putting all things back together, of restoring the beginning of life".

MANIFEST

Faced with this question of living the reproduction of models of coexistence are in profound transformation, Carmen's specific case has exposed a daily life that is diluted over different spaces breaking the traditional boundary of the home. Her experience does not understand the harsh property, profitability and technique boundaries, and the optics of childhood bring ambiguity and freedom in the meaning of the spaces that surround us.

"The house, something that for architects is simply part of our work, is for others object of play and veneration" (Montenys, Fuster, 2001). And from that starting point emerges the way in which this research aims to enable housing, not to build it.

What would happen if the girl stops travelling from one home to another home and architecture allowed for this exchange? Which boundaries are broken and which borders are reconfigured when positioning ourselves from the child's perspective of living?

In a first glance of the horizon opened up by these issues a first impulse is to eliminate the elements and pieces that superfluously

delimit the housing programme.

The drawings seek to trace the essential architecture formed by unitary but interchangeable pieces, of similar sizes. These pieces are connected by programming different family situations, seeking to modify this pilgrimage of the girl and positioning her in the centre of the infrastructure (Fig.5).

Some parts of the drawing tell us about that corporal delimitation that supposes the first human frontier and that has its origin in childhood.

The Danish architect Steen Eiler Rasmussen defends the idea that, at a certain age, most children feel like building a shelter. That "cave game" has been able to change in a thousand ways, but the enclosure of the space for the personal use is common to all children (1974, p.37).

Back to the shelter concept, this place is the centre of the point from which to start again. As we pointed out before, this place is the centre of the house and, consequently, the centre of the proposals that are developed below.

MATERIALS AND METHOD

The language used in this research has been freehand drawing. This form of expression, that is born from a direct idea-line connection, has given rise to a free working style, which constantly mixed architecture and human experience.

In the way of self-ethnography as a method of research, I consider hand drawing is like our first forms of expression, similar to the game of childhood, through which we learn to relate to our environment. It allows for gathering together of subjective but informed thinking about a subject.

Carmen's daily life has been drawn, first in objects and later in spaces. The game component has been maintained during the process (Fig.6).

That is why the results of this research have focused on the creation of stories and the formulation of a new perspective of the boundaries of living from the child's point of view, and not so much on the implacable delimitation of a real architecture. Just as a child imagines life stories with a doll's house, the drawing contains the same freedom.

This element, the "doll's house", is an object in "section" that allows the "player" to introduce elements into

each box of domesticity as pursued by the fantastic voyeur played by James Stewart in the Alfred Hitchcock classic *Rear Window*.

Therefore, in the proposals arising from the rethinking of living, the hand drawing will leave aside the zenithal view that prevails in the design of market housing, and instead immerse itself in the understanding of space from the section. There are many examples of architectural drawings that escape the practical floor plan using instead the section or perspective as the renderings of the German architect Helmut Jacoby or the drawings of Tokyo-based architecture firm Atelier Bow-Bow.

Freehand drawing is an essential component of this research. The drawings pierce walls, open rooms, exchange and superimpose pieces without paying attention to the constructive logic of the zenithal plane and to the extent that the ideas are applied in larger spaces, they change scale. The walls open and allow us to know each domestic history and its particularity.

The method, once it has descended to the concrete case of the experience of shared custody and has extracted a series of concepts and design tools, seeks their application on a larger scale

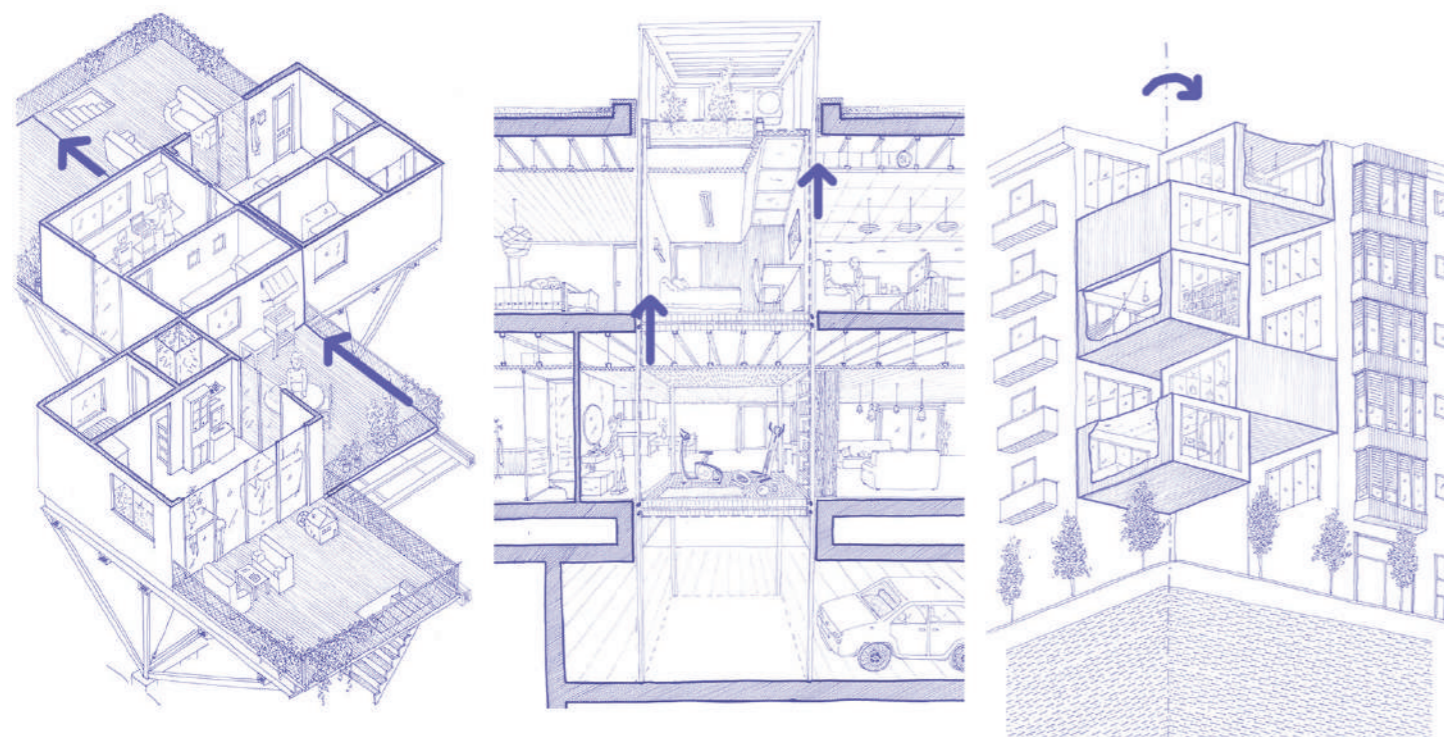


Fig.5 - Mobile room examples.

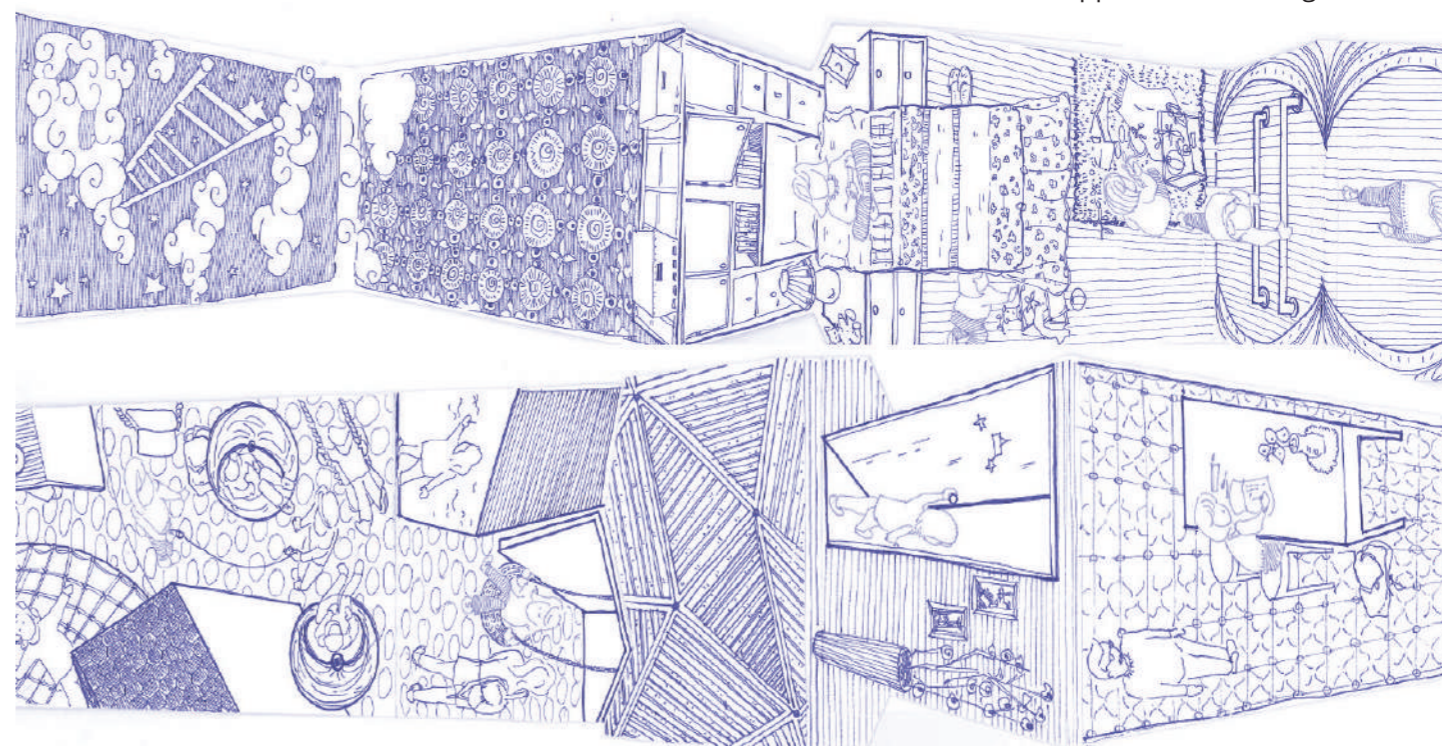


Fig.6 - Imaginary space for the child.

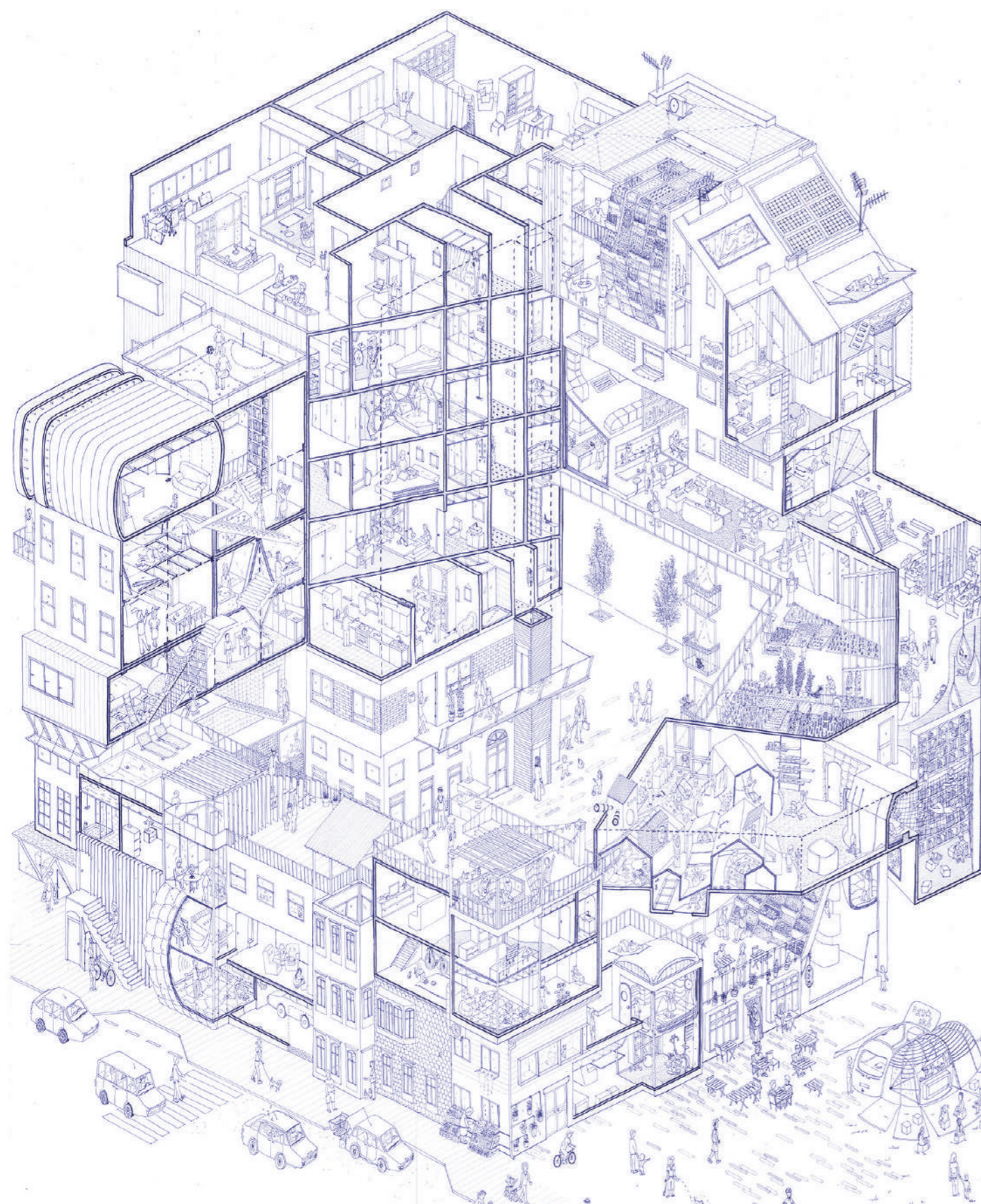


Fig. 7 - Imaginary city of "habilitando". This drawing arises from the application of the references of versatility, disintegration and indeterminacy.

CITY, FRAGMENTS.

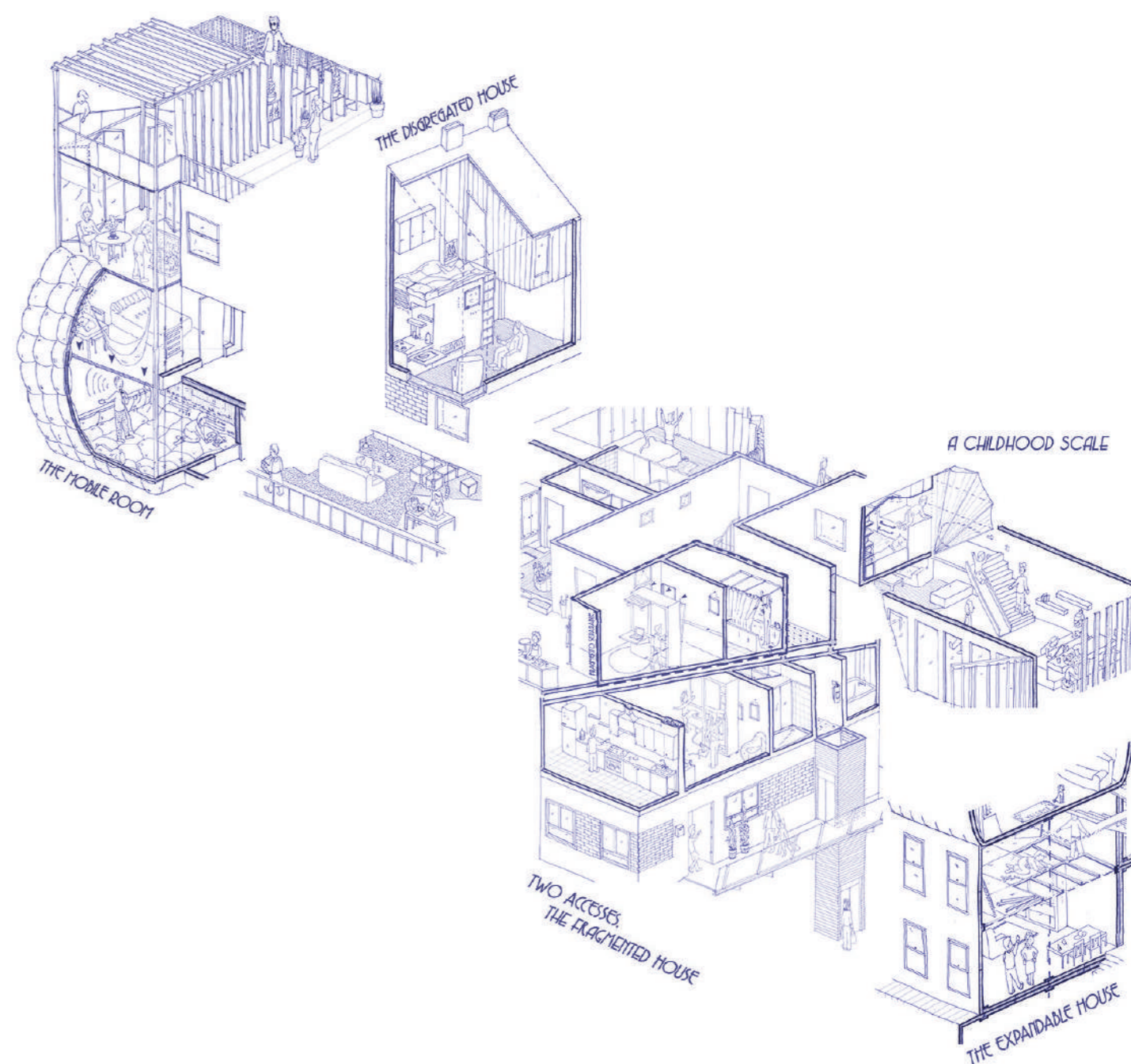


Fig.8 and 9 - Fragments: The mobile room, a disgregated or expandable house and the childhood's space.

(house < building < block). Now the goal is the creation of a city fragment in which the new living boundary is reformulated (Fig.7).

RESULTS

The city-drawing comprises the sum of the references, reflections and knowledge generated during the process. This drawing constitutes the representation of an aspiration and imagination, the representation of an environment

that destroys the traditional boundary of the nuclear family housing block, welcoming the current diversity of ways of living.

In the foreground, the city drawing shows a set of houses in which the movement of one of its pieces is allowed. Rem Koolhaas already did it in his project *Maison à Bourdeaux*. This mobile space breaks, in this case, the border of the adjoining dwellings and travels from one unit to another allowing the pilgrimage of one of

the members of the family unit. This theoretical proposal generates a non-static domesticity and serves to illustrate the extreme case of the journey of shared custody. Apart from the constructive application, it is interesting to emphasise the revolutionary character of changing a point of view. Suddenly the roles are reversed and it is in that mobile space, occupied by the child, that daily life develops. The centre has shifted to children.

In the upper part of the city-

drawing the rupture of the traditional housing scheme is reproduced, causing the separation of the house's "meeting" spaces from the spaces with a greater degree of privacy. A series of partial dwellings then emerges (Fig.8).

This design shares the most communal programme (living room or kitchen) and place the private rooms (that "refuge from which to start again") in an element whose architectural translation is similar to the concept of traditional cabin.

The exchange of spaces is another of the visible aspects in this block that brings together the different issues arising from the perspective of shared custody.

Like the vision of the *Satellite Rooms* project developed by the research group *Habitar* of the Polytechnic University of Catalonia (UPC) there is, in the representation of this city fragment, a will to disintegrate the housing programme and treat the block as a container that enables the repositioning, the exchange and movement of the parts that support these programmes. The different rooms or spaces can be scattered throughout the building without having to form a compact set.

The housing units are built independently and are added to form the housing block.

The different needs of space can adapt in relation to the prevailing code in the housing sector (Fig.8 and Fig.9).

The accesses play to connect different housing pieces. For example, in the parent's house, in addition to its traditional entrance, there is an additional access from the same staircase of the block. In this way the unit can, if necessary, be separated into two fragments.

Enabling the transformation, union or fracture of the different housing programmes is another of the ideas that runs through this drawn block.

The new boundary of living is drawn on the basis of the needs of each family unit and

can be stretched or dispersed, disintegrated or concentrated, in so far as it needs to reflect the inhabitants' requirements and their relationships.

The overall image of the housing complex also positions the child as an independent individual within the family unit, and designs to that scale.

Sometimes it is the architecture of the block itself that plays as if it were a child. The design open passageways demonstrate, have fun and respond in a uninhibited way. There is a special attempt to develop proposals that adapt to the childhood scale and give free rein to imagination and creativity. A corner under a table and a bend behind the curtain have an incalculable value and, thanks to the freedom granted by drawing, these ideas permeate every domestic box.

The way in which Carmen moved under the regime of shared custody between different ways of living pours, into this fragment of the city, a subversion in the use of the spaces. There is a trapdoor-viewpoint, a façade-orchard, a slide-room and a library-network. In summary, there is a laboratory of winks to the wide possibilities that architecture loses under the staticity of the border of the property.

The imagined block aims to represent a fragment of a diverse, inclusive, flexible and more human city. As Francesco Tonucci defended in his book *The City of Children: "It is about lowering the optics to the height of the child, so as not to lose anyone"* (1997, p12).

DISCUSSION AND CONCLUSIONS

The border of living turns out to be after all *non-border* from the strictest meaning of this word. The idea of property limits, about demarcation as a legal agreement of domestic space is, under this approach, suffering a constant erasure, modified by the relationships between individuals.

This concept is finally reinforced

with the construction of three models that complete the city-drawing. Each of the three models concentrates conclusions about what has been developed in this research (Fig.10).

The first of them is a representation of the *adaptable-border* with the construction of a series of housing-boxes that can be exchanged, grow or fracture, supported by the configuration of the partial housing block and derived from the need to adapt the architecture to the different situations that a family unit can develop over time.

It is followed by a *mobile-border*. This model reproduces the situation of movable space that travels from one house to another and that has its origin in enabling that pilgrimage of the child-suitcase, the starting point of this research.

And finally, the *absence-border* graphically translates into the most primitive version of living. The latter of the models is dedicated to the dilation of space from the child's point of view. This model talks about the imaginative and unrepeatable journey in a stage of pre-knowledge of childhood's environment. "*Our home is a piece of time*" (Txarango,2021).

Home is an experience, and any forced delimitation invalidates the free expression of living. There is no doubt that it is childhood, with its imaginations and aspirations, that invites us to rethink the most essential way of living and returning to that first home, a pending issue in the housing sector.

In the words of Gaston Bachelard, (as quoted in Montenys and Fuster 2011):

"No doubt the successive houses where we have lived later have trivialized our gestures. But we are very surprised, if we enter the old house, after decades of odyssey, to see that the finest gestures, the first gestures, are suddenly alive, always perfect. (...) The word habit is a word too worn out to express that passionate link of our body that does not forget the unforgettable house".

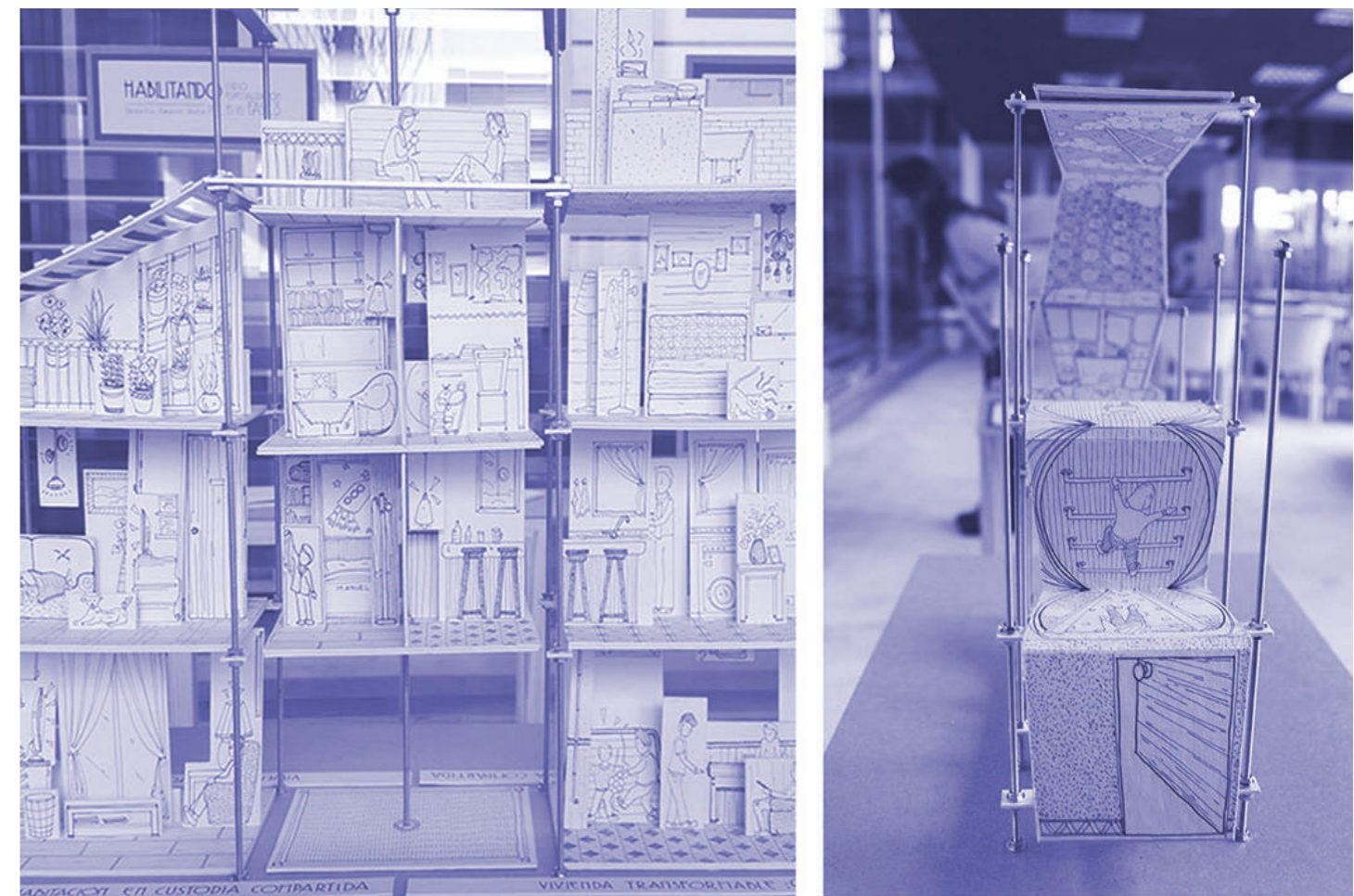


Fig.10 - The models. Application of the reflections of share custody on housing.

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How can the architectural design of public buildings be improved for Visually Impaired people?

vision impairment
public buildings
accessibility
qualitative research

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The aim of this paper is to identify issues that visually impaired (VI) people face in public buildings and, where possible, suggest design solutions. Research methods involved interviewing VI individuals with varying levels of vision, to gain first-hand insight into their experiences within public buildings.

Several discussed issues included the importance of multi-sensory design and the observation that acoustic features can lead to disorientation. The paper considers use of lighting, importance of design consistency, and benefits of natural light and hindrance of glare. It emphasises the importance of contrast, to distinguish between features, around doorframes and on the nosing of stairs, and use of staircase tactile indicators and extended handrails, to improve safety.

The paper also highlights the importance of consulting VI individuals to make use of their embodied expertise in a co-design process, to hopefully help make public buildings more accessible to VI people.

1 INTRODUCTION

How do Visually Impaired (VI) people experience public buildings? This paper investigates their experiences, both good and bad, after considering a number of design interventions and examples of best practice, to provide reflection, inspiration and some uplift or relief from participants' frustrations. The argument developed is that processes which produce buildings presenting obstructions to a socio-economically and socio-culturally disadvantaged demographic constitute an important barrier to good design. The paper will move from reviewing VI people's experiences of public buildings to suggesting that an adapted, inclusive design process could potentially help improve designs and produce more socially inclusive spaces. It is important to note, however, that the paper is based upon a small study-sample, and so should be considered a pilot to prompt further research.

In the UK, since 2006, instead of being classed as blind and partially blind, the terminology has shifted to referring to the sight impaired (SI) and severely sight impaired (SSI); in this paper, for simplicity and clarity, the phrase Vision Impaired (VI) will be used as an umbrella term for all those affected by poor vision, as it is more commonly understood UK public parlance. In order to be registered SI or SSI, one must meet certain set criteria (Fig.1). Most VI people have some level of vision (Fig.2), and most of those who do not are likely to have had some previously in life, meaning that "98.5% would most likely have a visual memory and could understand visual concepts" (RNIB, 2022).

	Sight Impaired	Severely Sight Impaired
Full visual field	3 / 60 - 6 / 60	3 / 60
Reduction of field of vision	6 / 24	3 / 60 - 6 / 60
Very reduced field of vision	6 / 18	6 / 60

Fig.1 - A table showing the level of visual activity needed to qualify as SI or SSI. 6/60 means that the level of detail the VI person can see at 6m away, a healthy eye sees from 60m (RNIB, 2022).

This paper will hopefully help encourage more thinking around inclusive public building design through sharing insight into the VI world. There would appear to be a weakness in the literature surrounding access needs for people who are partially sighted and those with no sight. A survey of the literature using Scopus, a widely respected database of peer-reviewed journal publications, for example, using the search terms "vision impair*", and "visual impair*" AND "building*" under title, abstract and keywords, brought up 363 results. However, on reviewing paper abstracts, most were not relevant to the paper's research focus, looking instead at the public built environment (the spaces between buildings) (Lauria, Secchi & Vessella, 2019), travel (Trop et al. 2023), technology (Jeamwathanachai, Wald & Wills, 2019) and the effectiveness of aids such as tactile paving and white canes (Demirkan, 2013). In the end, less than 10 papers were found to be useful from this particular search, many of these around the importance of strong contrast (Feigusch, Stefan & Ossberger, 2021; Lukman et al., 2020; Fallatah, et al., 2020). "Sight impair*" brought fewer results and "blind" an unmanageable number due to the many different meanings of 'blind'. "Visual impair*" AND "built environment" brought up a similar number of much the same results, and so on. This paper will provide additional knowledge that can assist in prompting thinking around designing more inclusive spaces. To produce accessible designs, there are many aspects to consider, such as how to get to, enter, use and then understand instructions in buildings. Within these categories, it would appear to be commonly understood that

specific thought should be given to creating clutter and barrier-free spaces, accounting for lighting, colour, contrast, surface texture, sounds, scents, etc. (Arch20, 2020; UK coaching team, 2021). Although some literature is available, there is seemingly, from the review conducted for this paper, still a "lack of design evidence in relation to what enables and disables people with visual impairment" (McIntyre & Hanson, 2014, 59). The Social Model of Disability states that it is the barriers that buildings and society create that disable people, rather than impairments themselves (Shakespeare, 2006), meaning it is vital to produce accessible designs allowing people to function to the best of their ability; accessible design "can cost as little as 1% more" (Badaway, 2020, 9). It is affordable, entirely feasible and officially required, to meet legal requirements, to provide spaces accessible to all (Badaway, 2020; McIntyre & Hanson, 2014; RTF, 2022).

By studying existing literature and research papers and interviewing VI respondents who kindly gave their time to talk about their experiences, this paper aims to provide new insight into improving the accessibility of public buildings for the VI.

2 LITERATURE REVIEW

When talking about designing more accessible buildings for VI, it is important to consider all the literature currently available. As previously noted in the introduction, there remains something of a paucity of published peer-reviewed work in this area focused specifically upon the experiences of VI within public buildings. The aim of this paper is to help progress the discourse and practice a little; it is a small study, conducted unfunded by an undergraduate student, but the hope is that findings from the 14 interviews considered could help provide the grounds to justify further research funding, scaling up and out from the pilot work presented here.

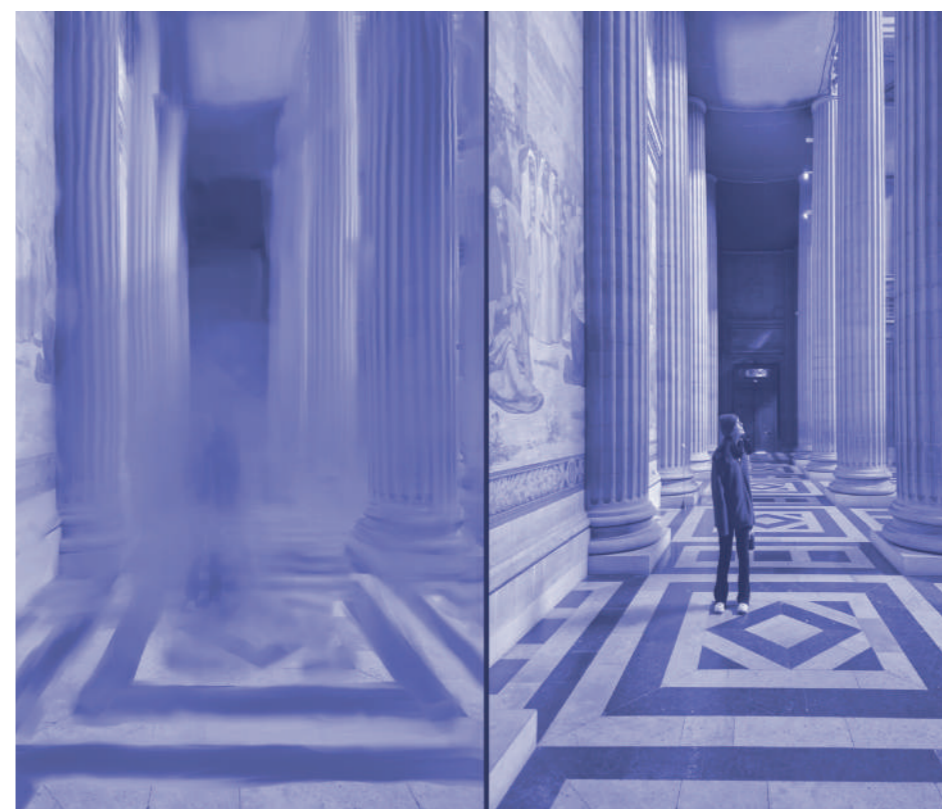


Fig.2 - A representation of what the primary author can see as a severely sight impaired person with a form of macular degeneration.

2.1 VI Simulation and Design

Before talking about solutions, it would be useful to begin to try to understand the problem and consider some examples of best practice. Back in 2008, Banks and McCrindle produced a visual eye disease simulator tailored for architects and designers to replicate several different VI views of the world.

This was potentially very useful, as it is not easy to design for something you have no direct experience of, and so do not understand. It is important to consider design from a VI point of view, or lack of, "for reasons of social inclusion, legislation and increased personal safety" (Banks & McCrindle, 2008, 167).

This could encourage production of more inclusive designs, especially if adapted and embedded within Computer Aided Design programmes, then made available as training tools for promoting more thinking around accessibility. This could potentially be game-changing, as it is key to at least try

2.2 The Importance of Multi-Sensory Design

Secondly, when designing for VI, it is important to design for all senses rather than just to be visually appealing. Chris Downey, a recently blind architect, noticed that when walking around he now notices a "symphony of subtle sounds" (Downey, 2013) that weren't as prominent beforehand, that help him to navigate through familiar places. The Centre for the Blind and Visually Impaired in Mexico sits as an example of best practice design, using a retaining wall that functions as a sound barrier, and inserting channels of water running alongside pathways, allowing the VI to be guided by these sounds to the building's entrance (Fig.3). This technique is not very widely used, however, it has received significant praise when it has (RTF, 2020).

Sense of smell is also important for creating atmosphere in and around public buildings; several buildings designed specifically for the VI and others have implemented sensory aromatic gardens to stimulate the sense of smell. Plants such as lemon, rosemary, jasmine and lavender have strong, pleasant aromas and so are widely used in such gardens, providing another method of sensory wayfinding in addition to creating clear landmarks (Jenkins, Vogtle & Yuan, 2015; RTF, 2022).



Fig.3 - Running water directing towards the entrance with a gravel strip either side to guide VI people alongside the water rather than into it.

2.3 How much is too much?

On the other hand, extreme sensory overload can be overwhelming; sound, being the most common culprit, can distract from useful audible indicators, hindering the VI person's ability to effectively navigate (such as noisy hand-dryers). Similarly, large open spaces can be disorienting as there is nowhere close-by for sounds to reverberate off, leaving no useful audible cues. A more desired outcome would increase useful sounds like footsteps, but reduce disturbing mechanical sounds (Jenkins, 2012; Ormerod, 2005; RTF, 2022).

2.4 Vitality of Contrast and Colour

Dalke, et al. (2006) speak about the importance and legal requirement for good colour contrast in buildings for the VI. The specific colours tend to matter less, so long as shades have big enough distinctions between them on the Light Reflectance Value (LRV) scale. However, it is important to note that neon colours can be distressing to people with colour and light sensitivity. Fallatah, et al. (2020, p.8) note that many previous studies had approached the topic from the perspective of printed text; these are much less relevant, they argue, but such studies are nonetheless included in their work because of the 'lack of research in the environmental design field' concerning preferences over dark to light values.

Colour-coding different types of spaces can be a good method of "wayfinding, orientation and providing key landmarks" (Dalke et al., 2006, 347); using such on signage can make places more user-friendly for all, and by carrying the contrast on throughout the design of floors or walls can produce easy-to-follow trails for VI people. Further, using bold, contrasting colours for receptions can make these points easier to find when entering buildings, aiding

in locating key support provision (Fig.4, Dalke, et al., 2006; RTF, 2022). Jenkins, Vogtle and Yuan (2015) further suggest using interesting 'contrasting textures to define different areas ... surface materials that provide distinct tactile and auditory feedback for cane-tapping'.

2.5 Tactile Indicators

Creating a multi-sensory design can not only make it more accessible to VI and neuro-diverse people but also create a "more inclusive, equitable, just city for all" (Downey, 2013, 11:07). Further, using contrasting materiality to distinguish between stationary areas and walkways with laminate flooring and carpet, simply but effectively helps to guide someone VI through a building – as long as this is consistent throughout. It is important that floor surfaces are firm and level but also not slippery. Tactile tiles can also be used, most commonly outside, but they are a useful tool for highlighting staircases; lined tiles signal to go forwards whereas dotted signify to stop or turn. These can allow VI people to navigate to and in-between public buildings and find entrances more easily through the use of a cane or feeling through their feet. (Badaway, 2020; RTF, 2022). Finally, tonal detailing can help VI people identify the shape



Fig.4 - The use of a bold colour on reception can aid VI to identify it.

of a space. For example, Victorian detailing can help orientate the VI "due to shadow detail on mouldings" (Dalke et al., 2006, 352) as it provides definition to the edges of spaces.

2.6 What about lighting?

Good lighting is essential for those with VI; poor lighting can hinder eyesight further, disorientate and cause headaches. Many people struggle with extremes, going from bright sunlight to dimly lit areas. Where artificial light is necessary, as it will often be, daylight bulbs or, as Karyono, et al. (2020) suggest, a smart lighting system made up of LEDs, could allow users to adapt the light to the surrounding conditions and task at hand; they could also use previous experiences to predict preferred lighting conditions. This could therefore reduce the effects of moving from one area to another (Fig.4). Natural light is preferable, however this is often not possible, and glare from windows can also be an issue. Blinds could be a useful tool here, slanted to let diffused natural light in, preventing glare. Another technique used at the National Institute for the Blind in Budapest is the placement of large sheets of perforated metal over windows, which prevent harsh



Fig.5 - Daylight effect smart bulbs.

direct sunlight coming in and instead allow for a softer, kinder light, causing less discomfort (Dalke et al., 2006; RTF, 2022), (Fig.5).

2.7 Indoor Mapping

There are several proposed methods to use mobile devices to navigate routes inside buildings for the VI (e.g. Anken et al., 2022; Upadhyay et al., 2022; Engel & Weber, 2022). Some public buildings have already produced visual online maps, however these are often not VI friendly. Instead, projects have inserted sensors into buildings' rooms and corridors that connect via Bluetooth to a mobile app and can provide directions to specific rooms (e.g. Guerrero, Vasquez & Ochoa, 2012). Such devices would allow people to plan routes in advance and save previous routes. Although this is a particularly effective modern tool, it is not the focus of this paper, as these are not a design feature in the makeup of the building, but instead potentially useful guidance tools (McIntyre & Hanso, 2014; Jain, 2014).

2.8 Participants in the Design Process

One very effective way of improving public buildings for VI, is to include VI users in the design process, to ensure disabling features such as obstacles, glare or poor surfaces are designed out and positive features like good colour contrast, diffuse natural lighting and multi-sensory stimulation are included. This is usually included in Stages 1-3 of the RIBA Plan of Works 2020 (in the UK) and would hopefully help ensure more accessible designs (Badaway, 2020; Boys, 2014; RIBA, 2020).

However, clients have been argued to frequently view accessible design as something that must be done for legal reasons, but that hinders design processes and outcomes, leading to many designers doing the bare minimum, and mostly for mobility impairments, rather than hearing, neurological divergence and the VI (Boys, 2014). Additionally, many

designers have also been argued to believe that access consultancy and co-design will stifle creativity in the design process, having to include a plethora of access components (Boys, 2014). However, a growing number of other researchers and writers argue that accessible design can be stylish and innovative, when well carried-out (Badaway, 2020; Boys, 2014).

3 Methodology

In order to develop techniques to improve public buildings for VI people, more primary research is needed, this, it is argued, by the authors and research respondents, should directly involve VI individuals, recognising the value of their lived experience and embodied expertise (Hetherington, 2003). The valuable research published in the field of visual contrast now needs broadening out to other areas outlined in this paper, around, for example, more accessible stairway and door design, more optimal office and kitchen layout, improved noise attenuation, and so forth. This, it is argued, should involve research with VI people as well as, post-occupancy evaluations of existing buildings, to assess what could be improved.

A mixture of primary and secondary research was undertaken for this paper; firstly, a literature review. This comprised reviewing sources discovered from search terms including: VI, blind, partially sighted, architecture, public buildings, accessibility, wayfinding, multi-sensory and inclusive design. This provided a range of academic sources covering many aspects of VI in the built environment, although, as mentioned, a more restricted sample specifically looking at access within public buildings.

Secondly, primary research was pursued using qualitative methods, due to the exploratory nature of the research. As the literature suggests, it is important to ask the opinions and experiences of the demographic concerned (Naoum, 2019). Therefore, attitudinal research; was carried out to "subjectively evaluate the opinion, view or the perception"

(Naoum, 2019, 58) of respondents. Because of the lack of existing data in the scholarly literature, it was felt more appropriate to investigate in a qualitative manner, rather than providing questions with a limited range of pre-set answers, which could stifle participants' voices, cause frustration and impact negatively upon engagement and so findings.

There are several forms of attitudinal research, the most appropriate here being semi-structured interviews (SSI), an effective way of collecting both facts and opinions. The research purpose, to explore ways to improve public buildings for VI people, required explanation and examples rather than simple yes/no answers or agree-disagree scales, meaning the exploratory interview was more suitable than surveys. In addition, respondents being either VI or totally blind made verbal interviews much more accessible than written surveys.

After consulting the literature and using the first-named author's personal experiences as a VI individual, an interview script was developed and a manual qualitative discourse analysis (QDA) approach employed in analysing results. QDA is a good method for analysing qualitative data, involving the repeated in-depth scrutiny of transcribed texts; keeping an open mind about discovering new or contrasting information to the literature (Naoum, 2019).

There are both strengths and weaknesses to these methods, the positive including the collection of in-depth responses due to the informal aspect of SSIs, leading to a deeper understanding of each respondent's experiences, whilst keeping the conversation topical. However, choosing an interview approach rather than a questionnaire did result in fewer participants, simply due to the time- and labour-intensiveness of arranging, conducting, transcribing and then analysing in-person interviews, so a smaller number and therefore possibly variety of experiences was gathered.

Although this would have had some restricting implications, the interviewees had a range of eye conditions, and different levels of sight and demographics, and therefore provided a diverse and interesting range of views. The interview process continued until a point of saturation was reached and no new findings were emerging from each successive interview; 14 interviews were conducted, and so this sits comfortably within the range outlined in Hennink and Kaiser's (2022) systematic review of sample sizes for saturation in qualitative research. This is not to argue that further new findings might not have emerged from additional interviews, but on reaching saturation in a small unfunded pilot study, it was felt appropriate to stop collecting primary data. A thematic analysis was then carried out using the themes identified and indicated under sub-headers in the literature review.



Fig.6 - Natural lighting coming in from above to provide a diffuse light.

4 Findings and Discussion

The research sample consisted of 14 volunteers with various levels of VI, including no vision, light perception, identifying shapes, light sensitivity and various levels of very poor, but useable, vision. This diversity in levels of vision meant that the sample was able to represent most of the VI population. Many core issues arose from this work; lots have been addressed in the literature, however, unique findings would also appear to have been noted and these analysed, around energy-saving bulbs, colour-contrasting indication of zones of purpose and barriers, and the need for more tactile markings around and on staircases. It is important to note that as a small qualitative study, the strength of any claims must be measured, however, the work can hopefully offer insight into areas of worthwhile future research.

4.1 Natural Lighting

Lighting was the most common issue to arise, firstly natural and secondly artificial. There was a consensus (amongst everyone who could perceive light) that natural lighting was preferred, however, it was also noted by many respondents that direct sunlight can cause discomfort and pain, particularly to those with light sensitivity (Fig.6).

Another issue identified was glare – both from screens and surfaces, and the eye itself – caused by bright direct sunlight hitting the surface in question. This is particularly problematic with partially sighted participants who need to see a computer screen at work or home, as when light hits the screen it can make it extremely difficult to effectively carry out tasks due to even further impairment of vision. In addition to this, one participant mentioned her experience at hotels abroad which have white floors and walls to reduce heat absorption; this produces higher levels or glare, meaning that even with sunglasses on, walking around the grounds can be particularly painful.

Other participants agreed that this is a difficulty they have experienced, even in day-to-day life. For example, white tables and desks have been criticised for attracting glare and making it more difficult to function due to the discomfort caused.

One solution proposed was the addition of linear blinds to guide natural light more evenly. Another effective way of creating more diffuse light is to let it in from above either through skylights and roof lanterns, clerestory windows, sawtooth roofs, atriums (although these can be problematic for VI people), remote distribution, light reflectors, daylight-reflecting window film and fibre optic concrete walls (Lowe, 2016).

This would allow for a more even spread of gentler natural lighting, which is also said to provide visual comfort and wellbeing, for all users (Sylvester & Konstantinou, 2010).

4.2 Artificial Lighting

Good lighting is essential throughout the entirety of any building, but often there are spaces that natural lighting doesn't reach effectively, as well as seasons where natural lighting can be scarce, and therefore artificial lighting is an unavoidable and important consideration. Findings from interviews unearthed new issues to do with lighting and the transition between differently lit zones not found much in the literature. This is valuable information that could be used to create much more visually comforting spaces for those with VI. Lighting is difficult to get right, and most participants said that if lighting is too dim, it is hard to function but at the same time, if it is too bright, it can cause headaches and discomfort.

It was mentioned several times that very warm lighting can be disorientating, as hues are so different to natural daylight; daylight bulbs or smart lighting systems are preferable, as they ease the passage from outside to inside. This means that people with light sensitivity won't struggle as much passing through spaces, as for many, their "pupils take longer to adjust to light changes" (interview F). Schneck and Haegerstromportnoy (2003) similarly recommend avoiding large changes in light levels wherever possible with regard to VI.

Spaces such as kitchens and desks need optimum lighting, as tasks which need high levels of focus occur here; stairs and toilets are arguably something of an afterthought, with lighting too often either dim or very bright and targeted. Four participants spoke of discomfort in these situations, mostly due to light sensitivity and difficulties adjusting to quick brightness changes. In addition to this, automated energy-saving lighting systems were mentioned by participant H; these can start to dim with no warning and then brighten back up to different light levels with the slightest movement, which can be difficult to adjust to and can cause pain and eye fatigue (similarly, interviews D, H, N).

Motion sensors, although good in theory, can prompt drastic changes in light levels; if one remains still for too long, the lighting changes again, causing cycles of readjustment and eye fatigue (interviews D, N). Importantly, this is something that was not found within the published literature. Karyono, et al. (2020) have proposed a smart lighting system that allows users to adapt colour and brightness levels manually, using memory to predict levels for certain times of day. However, for this to be effective, there would need to be very slow lighting change fades over a period of five or ten minutes, so as to not shock the eyes. This could simulate the evening dusk as it becomes darker outside, slowly changing to a warmer softer light, a gentle contrast against the dark sky and warm streetlamps (interviews D, J, N).

This rings true with the literature reviewed, which, as noted, is as yet rather sparse. Karyono, et al. (2020, p.1) note that 'the design of the workplace currently is still lacking in compliance with [the needs of VI employees]', due to the lack of building regulations' attention to differing levels of visual impairment. Lewis and Torrington' (2013, 345) similarly observe that 'there is scope for additional guidance on aspect and daylight ... [I]ittle of this specialist guidance is included in mainstream design guidance'. Finally, Feigusch, Steffan & Ossberger (2021, p.7) do at least optimistically note that 'considering the needs of people with visual impairments ... by means of adequate lighting and visual contrast of building elements, is growing in importance and in interest by stakeholders'.

4.3 Contrast

Another important issue noted was contrast of colours and materials; everything should be contrasting (A, C, F, H, I, L, M, N). It is important that desks are not white (M) as this can cause too much glare, but also that they are a significantly different colour to the floor, walls and chairs, so they are easier to find and less of

a trip-hazard. One idea proposed by an interviewee was to have a contrasting floor to identify each type of area; for example, wet-rooms like kitchens and bathrooms one flooring type, waiting spaces like reception or seating areas another type, and a third for circulation zones. Contrasts in materiality are textural cues that a cane or guide dog can pick up on, colour changes ones that people with some vision can identify, but these need to be consistent throughout any building (H, L, M).

The literature (Badaway, 2020; RTF, 2022) backs up all these points, including the drastic contrast needed for the nosing on the edge of steps. However, participant I suggested that having a bold contrast around door frames would further help, such as using bright paint or tape to highlight openings in existing buildings. Figueiro, et al. (2012) also note this point in their discussions around Improving night-lighting to enhance contrast around door frames in an effort to improve the safety of older people (Fig.7).

In terms of décor, colours tend currently to match rather than contrast (C), however it would be possible to have “appealing, comfortable and calming colours which are still contrasting” (M). Another contrast issue mentioned, and not noted in the literature, was that of barriers indicating where to queue; if these blend with the floor,



Fig.7 - Contrast in doors, trim, walls and floor.

they can be disorientating and cause one to get lost in a place one goes to weekly if they are moved around (M).

Finally, participant M mentioned that “rain is nice as it causes more contrast”; this prompts the question of whether shiny floor surfaces could be used to the same effect, enhancing contrast with surrounding furniture. It would appear that there is no literature surrounding this idea, so it is suggested that this could be a matter worthy of further investigation; one potential negative could of course be glare, if a surface is reflective, so considerable primary research would be necessary before any formal advice could be developed.

Approved Document M (HM Gov, 2015), the most current UK building regulations, does specify the need for visual contrast with doors, nosing on steps and handrails of 30 light reflectance value (LRV) points at 100 lux luminance; however, a variety of authors have since argued from their research with VI participants that contrast needs to be considerably stronger (Lukman et al., 2020).

4.4 Stairs

Steps and stairs can be a major issue; several interviewees specified the importance of high-contrasting nosing at the edges of stairs. This can help more when descending, as “it’s harder going downstairs than up, as the stairs get further away rather than closer to me” (N). If stairs can be avoided with a ramp or lift alternative, several participants said they would choose that option instead.

When stairs are necessary, it was felt by interviewees to be vital that there were tactile markings signifying the stairs’ top and bottom, to reduce chances of falling, and markings needed to be a universal indicator (B, C, D, E, F, G, H, I, J, K, L, M, N). Foster et al. (2014, p.156) note that ‘a high-contrast tread edge highlighter present on steps and stairs and positioned flush with the edge of the tread should

improve stairs safety’, observing that whilst UK British standards (BS 8300-2:2018) and regulations (HM Gov, 2015) advise on the width and the location of the strip (55mm), practice can vary on whether this is flush or set back from the stair edge.

It was felt important by several respondents that handrails should extend 2ft past the end of stairs as an indicator that stairs are there, a point also asserted by Wood-Nartker, Beuschel and Guerin (2019). Furthermore, these respondents felt that if the bannister is made of glass, the handrail should be a bold contrasting colour such that it is more easily visible (B, D, F, L). Handrails were mentioned much more in the academic literature covering older adults, rather than the broader VI population, for some reason (Fang, Liang & Liang, 2023; Wang & Leung 2023). In addition, several different respondents stressed that stairs should be a smooth, even surface rather than a rough stone, so they remain predictable and reduce the likelihood of tripping. Stairs of different heights and spiral staircases were also noted to be a hinderance, due to their uneven nature (G, H, M, N). Overall, as a mix of new findings and ones confirmed by the literature, the important things to remember were the importance of tactile markings, extended contrasting handrails, even stairs and contrasting nosing to make using stairs safer and less scary for VI people (M, N).

4.5 Clear signage

In buildings such as hotels, offices and universities, it is important to clearly identify room numbers; this can be very challenging to a VI person. Interviewee N, who has usable vision, said “I can never find the correct room without someone taking me there”, and B, “It is helpful to have staff around in the lobby, especially in the GP”. It is also important to have good signage, which should be located at eye-level, in an easy-to-read font, such as Calibri, Helvetica or Arial (Macular Society 2023). A large font-



Fig.8 - Clear signage with braille and colour contrast.

size with highly contrasting colours was said to make things easier to read, and it was noted that this should also feature either braille or tactile indicators, that signage should be positioned uniformly and numbering systems be consistent throughout any building, to assist VI users with identifying (see Fig.7, A, B, C, D, H, M, N). Thoughts here concur with the advice of the Macular Society (2023) cited above.

Wayfinding can be difficult – “where is the door?!” (E). The literature suggests using multi-sensory design methods to help VI people find their way to doors and around buildings; paths can be created with scented plants, water-trails and use of colour, as noted with the example of the Centre for the Blind and Visually Impaired in Mexico (Dalke et al., 2006; Jenkins, Vogtle & Yuan, 2015; RTF, 2022). K suggested that public buildings create tactile maps to help VI people navigate new places, as was noted in the literature review (Demirkan, 2013). Another problematic design feature is large open spaces like atriums, where useful sounds can get lost with no structures for them to bounce off (Fig.8).

4.6 Desks

Desks and workspaces could usefully be adapted to better

suit the needs of the VI; limited reference was found to this in the literature covered. Four participants mentioned that adjustable desks and chairs would be ideal as “I have to lean a lot closer to the desk to work, causing back and neck pain” (D), meaning that higher desks and lower chairs could be a good combination for partially sighted people. Interviewee M suggested that rounding the corners of desks could prevent some injuries, as reducing the sharp-edged hazards in a room that might be walked into.

4.7 Noise Levels

Loud or sudden noises can be problematic. Both participants H and M stated that Dyson-style hand dryers in public toilets can be disorientating, as they are so loud they can warp sense of place. In addition, crowded rooms or rooms with an echo can also cause disorientation (B), making it harder to navigate even familiar buildings. Participant M suggested that buildings be acoustically divided, so sounds do not leak between spaces. Fire-drills can be more alarming to the VI as some can be more sensitive to noise (D, N); therefore, verbal warnings about planned fire-drills would be useful; currently, written warnings are common but VI people tend not to know about these. Although the

literature recognises the potential sensory overload these matters can produce, there were not many suggested solutions.

4.8 Kitchens and Clutter

A lot of interviewees mentioned clutter as a problem due to limited vision, as it is easy to miss obstacles on the floor and trip; corridors and walkways need to be clear so there is no safety hazard. In addition to this, cluttered kitchens can hinder a VI person; everything needs to be put back in the correct place to be able to find it again (H, L, N). Kitchen appliances can also be inaccessible; several interviewees mentioned liquid-level indicators that sit in the top of a cup and alert you when the liquid is near the top, accessible tactile or talking microwaves to allow VI people to independently reheat their food in a public kitchen, and indicators on taps to identify which is hot and cold, as very enabling technology they wished were more widely used (B, D, H, L, M).

4.9 Public Toilets

Public toilets can be problematic for the VI; although toilets were not covered in the literature review due to limited time and are an intended subject of future research, respondents mentioned several issues. As previously discussed, dryers can be unpleasantly loud, resulting in disorientation; mixed with a complex layout, this can mean “it’s almost impossible to find my way out again!” (N). A straightforward layout is clearly preferable, so that wayfinding is less confusing (H). Furthermore, a couple of participants mentioned that it is difficult to tell if toilets are locked or not, which has resulted in opening doors onto cubicles in use; clearer signage would evidently help. Accessible or self-contained cubicles containing toilet, sink and dryer, would be beneficial, allowing users to find everything without needing to consider other users. Participant L suggested that talking accessible toilets would be preferred; on entrance, these

inform the user of bathroom layout, allowing them to understand where everything is located.

4.10 Doors

Manual doors can cause issues if they are left half-open, as a cane may miss them and cause injury. However, automatic doors can cause issues too, particularly if they require a button-press to open, as locating the button can be tricky unless very clearly signposted, with contrasting colours (H). When automatic doors open towards the user, this can cause those with VI to walk into them; sliding automatic doors were felt to be preferable, as they cause fewer obstacles. (Fig.9.)

4.11 Communication

Finally, and arguably the most important point, “companies should engage with the VI before designing buildings, to understand what is and isn’t accessible” (A). Several participants agreed with some of the literature and suggested that employing at least one VI consultant for each project would allow design teams to consider VI accessibility more effectively (Badaway, 2020; Boys, 2014). Another suggestion was to educate architecture students more thoroughly on all aspects of accessible design, which would increase awareness, in turn hopefully leading to more

outcomes accessible to the VI and other disabled users (F, I). This is important for all minority groups, not just VI, and has been expertly articulated in the book *Doing Disability Differently* (Boys, 2014); Boys’ work stresses that inclusive design should not be seen as a limiting or restrictive imposition, but rather as opening the design process up to other creative and innovative skills and methodologies.

5 Conclusion

VI people face many barriers in day-to-day life, many coming from poor design of public buildings. Through a literature review and set of semi-structured interviews with 14 participants, the paper collected information and viewpoints that can hopefully assist in developing research programmes to investigate the mentioned matters in more detail, as a step towards assisting the design community to produce more accessible public, and other, buildings.

The research highlighted the effects a range of issues can have on the VI. Lighting consistency, speed of luminance change and transition between different building zones were found to have a very significant effect, especially for those with light sensitivity; consistent and diffuse lighting was felt to be best throughout buildings, to minimise discomfort. Contrasts

in colour and tone were found to be essential to help people distinguish between zones of purpose (e.g. queueing), objects, and the floor, and needed especially on the nosing of stairs, for safety, and around doorframes to help with wayfinding. To provide more warning that the individual is approaching a staircase, universal tactile floor markings were advised to be fitted and extended handrails used. The use of different materials to define different spaces was suggested as an effective way of helping building-users know where they were.

Multi-sensory design came through from the research as an evident potential advance encouraging more accessible design; it is advised that this consideration should be carried into future research and design work. Ensuring public kitchens and bathrooms have simplistic layouts with accessible features, such as talking toilets/microwaves, could make things much easier to find and use. Beyond building design and into matters of facilities maintenance and day-to-day building management, minimisation of clutter was noted to be essential. It is much easier to carry out tasks if everything is where it should be, and there are no unnecessary obstacles in pathways.

Importantly, one argument coming strongly from the interviews conducted for this paper was that the best way to avoid bad design and design more accessible public buildings for VI people is to include them at the consulting stage, as only the VI can truly understand what is needed to accommodate for the VI successfully. This in turn would provide insight towards each of the highlighted issues, so that architects can work towards practical solutions. This point aligns very strongly with the consistent theme coming from Boys’ (2014) work covering all forms of impairment; that we need to involve the lived experience and embodied expertise of disabled people as early as possible in the design process and then consistently throughout, to produce more truly accessible design.

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Fig.9 - Automatic sliding doors to reduce obstacles, with contrasting trim.

THE BORDER AS IMAGE AND THOUGHT

Re-engaging the Physical within Liminal Landscapes

digital
liminal
design
sustainable
architecture
AI

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We live suspended between the digital and the physical, in a liminal space. The pioneers of digital landscapes we navigate realms unfettered by physical constraint, where stories can construct and reconstruct themselves at will, where time is not just static but can be reversed, where truth can be rewritten and history revised. Orientation increasingly turns to an expanding mirror world, the echo of Borges fiction. A 1:1 remaking of the world where huge ships hide within the folds of fake signals, infrastructure is analysed through its digital twin, and non-existent islands rise into being, leading very real expeditions to search for them.

It can begin to paint a picture of a digitized retreat into our imaginaries. With the dominant imaginary of the global north on course to decimate the conditions that both we and our fellow critters need for survival, this may feel like setting our course for a dystopian future. Yet our liminal landscapes equally hold the potential to deepen our embodiment within the physical realm, enhancing our understanding of our relationality and challenging corrosive anthropocentric perspectives. Through designing spaces we dare to imagine might we begin to construct the future we need; "*a future with a future*" as Tony Fry succinctly puts it?

Students at Oxford Brookes University, University of Brighton, and the Bartlett School of Architecture explored this territory, teasing out opportunities and unveiling potential futures. Might we begin to see beyond our limited anthropocentric perception? Might we extend our understanding of our histories? Could we begin to draw the digital back to its hidden corporeal foundations? Within this liminal realm might we pioneer new routes towards a sustainable future in real life; IRL?

INTRODUCTION

In real life, IRL, has become just one of many options available in the expanded spatial field we now inhabit. A third of our time can be spent online, and minute to minute our phones augment our capability to navigate, supplement our memories with twitter feeds whilst offering the world's knowledge and opinions at the touch of a screen. We are suspended between the physical and the digital, inhabiting a liminal realm.

Yet fundamentally we still inhabit what we always have, stories. All cultures, nations and ages have lived within their narratives of the world, and we are no different. These stories, or social imaginaries, offer frameworks through which to interpret the shear complexity of the world with which we are faced. Our architectures grow from our stories, becoming stage sets on which to play out reality as we wish to see it. Constant tending and maintenance can attempt to deny inconvenient truths, yet the meteorological and the temporal can never be fully silenced. The fluid digital landscapes that play over the land are however freed from any physical constraint. Their capacity to construct reality knows no bounds; history can be rewritten, truths denied and time stilled. Pure storytelling freed of limitation or contradiction, these shapeshifting narrators ply their stories unfettered by physical constraint.

With the toxicity of the dominant imaginary of the global north driving us closer and closer to the destruction of the habitats we and other critters need for survival, an engulfment by the digital paints a dystopian picture. Our liminal landscapes however also hold within them the potential to enhance embodiment. IRL might become an expanded field of existence, merging the physical with the digital to draw us into relational understanding and unearthing wonder; re-enchanting us with the intoxicating complexity of reality. It could deepen our understanding of both ourselves and our co-inhabitant non-humans,

and in so doing might it start to challenge and undermine the stories of the imaginary and their toxic anthropocentric perception? Flowing over the imaginary's stage set of architectures the digital might reinterpret, readdress, resee, reframe, and reclaim. What we first need to do though is to become storytellers, to begin to write new stories through which to reclaim our future.

Since 2011 we have been crafting stories with undergraduate and postgraduate students. Collaborating at different times with Unit B at Oxford Brookes University, MA Architectural and Urban Design and BA Studio 3 at Brighton University and BSc UG10 at the Bartlett School of Architecture, UCL. We will begin with an exploration of the territory this work emerges from, and then offers some initial forays into speculative proposals; first steps in designing within this expanded realm.

EVOLVING FIELDS

There is a long history of engagement between microelectronics and the constructed landscapes of architecture, which stretches from the exotic to the mundane. Visionaries and theorists operating outside of the dominant social imaginary are perhaps amongst the most interesting. Prospecting for alternative futures they push boundaries of technology to further environmental and social engagement.

One of these early pioneers was Nicholas Negroponte who founded the Architecture Machine Group at MIT in 1967. The group explored the potential of microprocessors to enhance user interaction and adaptation of the spaces we inhabit by making them responsive. In his 1975 book *Soft Architecture Machines* he writes "*we are making buildings more context responsive, and in doing so we should not forget that building's final context of response is the needs and sensibilities of its inhabitants*" (Negroponte, 1975). The ambition was to use these new technologies to enhance human experience, as he writes: "*computers*

have the potential for assuring a responsiveness, individuality, and excitement in all aspects of living". Wellseley-Miller, a member of the same group, penned an influential analogy, which to this day can be heard within the ambitions of many projects, "*we are talking more of artificial domestic ecosystems capable of intelligent responses than of computer controlled conventional homes. Buildings that can grow and upgrade themselves, that open like a flower in fine weather and clamp down before a storm, that seek to delight as well as serve you*" (Negroponte 1975).

Gradually microelectronics began to be incorporated into commercial construction practices. The primary application became the intelligent glass facade with shading and/or automated ventilation, either activated by sensors or run through algorithms to lower energy usage. The focus on the potential of this technology to enhance human experience was no longer the primary aim. In the 1990s, as the prevalence of these facades grew, their capacity to reduce energy consumption whilst also providing environments enjoyed by the inhabitants started to fall into question (Stevens, 1999). The systems appeared to not be capable of achieving both, with user satisfaction apparently at odds with the technology's application to lower energy usage.

Interactive installations of the time which deployed the same technologies however illustrated no such issues. Indeed they clearly showed the potential to fulfill the early MIT ambitions by extending the capacity for people to adapt their environment. Importantly this interaction was actively welcomed and sort out. Christian Moeller's interactive dance stage, for example, deployed sensors to enable a dancer's movement to generate their own music. The recognition of peoples' presence through changes in light and sound, in a design Moeller completed for an interactive square in Rotterdam, made it a popular meeting space. The issues with user dissatisfaction within buildings with intelligent

facades were clearly not due to the capabilities of the technology (Stevens, 1999).

The term user satisfaction is actually revelatory in itself of reasons for this disparity. By terming those inhabiting a building 'users' a positioning as other to ourselves becomes possible. This enables the consideration of the user as the issue in the system; ill-informed individuals limiting the operation of a perfect energy efficient machine (Stevens, 1999). This attitude is obviously in complete contrast to the early empowerment aims for these technologies, and also to the desire for participatory engagement embedded within Moeller's installations. The contrast in the reception of these different applications acts to reveal the power of the thought leading their design, and how it goes on to influence experience (Stevens, 1999). As Marx said "*technology discloses man's mode of dealing with nature, the process of production by which he sustains his life, and thereby also lays bare the mode of formation of his social relations and of the mental conceptions that flow from them*" (Woodward 1994, p.30). Technology is inhabited by the thoughts that design it, becoming almost a physical manifestation of them and this is perhaps particularly evident within interactive technologies. The ability of buildings to adapt in order to limit energy use was not in fundamental conflict with a provision of enjoyable environments. Respect for those of us who inhabit the final building was what was needed as a founding thought before design work began.

CRITICAL THOUGHT

Not just our technology, but our whole built environment is inhabited by the thoughts that design it. Yet this goes still further, as Harrison writes "*we replace the world with our ideas of it*" (Harrison, 1977). We do not just design our technology, our cities, but the reality we inhabit. We tell ourselves stories about our world generating our social imaginaries, the pre-reflexive frameworks we

live within. We have always lived within stories, every age and every culture has had its own belief system. They enable us to make sense of the immense complexity of reality. As alien as some of these stories may now seem, edges of the world from which you might fall, or dog headed people inhabiting the mediaeval age, fundamentally they are really no different to our present situation. We design our reality. David Graeber sums up the implications very clearly, "*The ultimate hidden truth of the world is that it is something we make and could just as easily make differently.*" (Graeber, 2015).

These are the concerns that are at the heart of ontological design, which is the approach applied through my design teaching. Anne-Marie Willis (Willis, 2006) has set out a very clear introduction in her paper *Ontological Designing*, which to an extent can be summarized when she says "*we design our world, while our world acts back on us and designs us*" (Willis, 2006). The values embedded in the form of our built environment and technologies play out through our experience. For ontological design therefore, strong critical reflection and a clear critical position are crucial starting points for design. From these foundations we conjure alternative futures, new stories to inhabit.

Stories are all powerful, they guide our actions with immense implications for all living entities. The primary, and thereby default, imaginary of the global north is hugely problematic. Priorities for economic growth and ever-increasing consumption are clearly in direct conflict with any path to sustainable futures. A massively obvious statement but one that points to an unassailable truth, the need for radical change. Philosophers and theorists, such as Virilio (Virilio, 1984), Fry (Fry, 2012) and Guattari (Rawes, 2013) have all championed this call. The ex-Governor of the Bank of England, Mark Carney has even discussed how we have the technologies we need to address an environmental crisis, but first we need to rethink the value systems with which we

wield them. As he notes "*we can't self-isolate from the environmental crisis. We have to live the values that are necessary to solve it.*" (Carney, 2021). If the foundations of design are left uninterrogated this imaginary could however long continue to inhabit our cities, designing our future and moving it incessantly towards destruction. To move forwards to a viable future, towards cities that promote wellbeing for human and non-human alike, we must first sculpt with thought not form.

Our digital landscapes also emerge from these stories but do so with the capability of instantaneous shapeshifting, reimagining themselves at the touch of a button. Emerging mirror worlds, digital twins of our physical context, render reality as we choose to see it, or to be more precise, how the designers choose to see it. From the almost unimaginable complexity of the physical world choices are being made, what to include and what not to include in these digital replicas; a determining of what is of value and what is not, and is therefore fated to be written out of our reconstructed worlds. The further we retreat into this representation arguably the further we move from any possible critique or displacement of the values that form it, as little remains which might contradict them. Yet these digital landscapes can also become navigational charts to other futures. As extensions of our spatial field they might reconstruct interpretation, rebuilding our world, expanding rather than reducing our engagement with the physical.

DESIGN FICTIONS

Architecture itself holds the innate capacity to propose fictions, new stories. Alternative futures we might inhabit can be sculpted from thought into both physical and digital form. Through this they can lever what Lefebvre discussed as the possible impossible, extending the realm of the possible. He discusses this as "*making possible escape beyond the limiting perspectives of so called reality... [that] today more than ever there is no theory without utopia. Otherwise a person is content*

to record what he sees before his eyes: he doesn't go too far - he keeps his eyes fixed on so called reality: he is a realist... but he doesn't think!" (Lefebvre 2009 [1970]).

Speculative architect Liam Young's film *Seoul City Machine* (2019) imagines beyond the present to a city evolved in conversation with an AI chatbot. It is occupied by automated transport, augmented reality, drone pets and holographic adverts. He conjures up a city which begins to speak to you, a sentient city that might evolve as an extension of ourselves. One can start to imagine how such a city might begin to speak to us of our past within the city fabric. The Future Cities, Urban Intelligence Conference at MIT in 2019 discussed the realistic potential of smart cities, with roads full of self-navigating cars and water pipes that report when they leak. With urban tech noted as the top for venture capital investment Liam's sentient city might not be as far away as we think.

Digital twins already offer the capacity to integrate vast complex systems, extending building management systems into mirror worlds operating at the urban scale. AI enabled they can interrogate multiple data streams, identify issues and propose responses. The Centre for Digital Built Britain at Cambridge University has been evolving shared operational principles for digital twins termed the Gemini Principles (2021). The critical position upon which they might be founded however seems little discussed, yet this is fundamental to the nature of the liminal futures we construct. As environmentally focused as it might appear, sole ambitions for limiting energy use can still be wrapped in the cloaks of the primary imaginary, and merely act to sustain a toxic culture for a little longer (Morton, 2018).

When driven by a clear critical position, however, evolving technologies can be applied to build alternative futures. Might IRL become an expanded spatial field of augmented perception? Might

we extend our understanding of ourselves as fundamental interconnected and relational beings by augmenting our senses and extending our perception?

Already our phones augment our navigational senses and extend memory capabilities to encompass both all we have experienced, as well as much we have not, offering the world's memories at the touch of a screen. Future cities might enable us to see magnetic fields, hear the communication of plants and feel distant vibrations. Google's orca tracking project uses AI to identify the whales' calls from a wealth of oceanic sound, and then accurately calibrates their locations. We might augment our cities and ourselves with the capacity to track other species, extending our perception to get glimpses into others' worlds. Our cities might augment our human limitations and by so doing overpower the hold anthropocentric perception has over our imaginary.

As AI powered design tools evolve and begin to challenge the role of the architect, the critical position from which we make design decisions comes clearly to the fore. These tools can become powerful allies, but we need to be at the helm in charge of decisions, determining which generated options are chosen. Increasingly architects are exploring these tools and evolving methods to deploy them. Thom Mayne, Wolf Prix and Patrick Shumacker are amongst those at the forefront of experimenting with this expanded tool kit (Leach, 2021).

Interesting work has also been carried out at SCI-Arc. Their 2021 ArchBestia exhibition and symposium explored generative design and co-authorship, with AI generating its own outcomes in real time from cross disciplinary feeds. All this work begins to signal potential modes of engagement. With clear steerage such technologies seem replete with potential to assist in envisioning new futures, Lefebvre's possible impossible.

RADICAL PROPOSALS

Since 2011 we have been constructing design fictions and evoking alternative futures from foundations of ontological design. Over this time period collaborators have included Unit B at Oxford Brookes University, MA Architectural and Urban Design and BA Studio 3 at the Brighton University and BSc UG10 at the Bartlett School of Architecture, UCL.

We asked how the design of our architectural spaces and cities might critically engage these liminal landscapes through investigating potential frameworks of engagement. Might we begin to evolve architectures which blur the boundary of the physical and digital, enabling entry into others worlds to see beyond our anthropocentric perception? Might we return the digital to the physical, revealing its hidden corporality? Could our cities offer us visions of our past, extending our understanding of our own histories? The following design explorations begin to offer first glimpses of futures we might dare to imagine: a zoo of proto architectures for the liminal realm IRL.

Head in the Clouds

The internet has become an integral part of our daily lives, on average we can spend a third of our time just using social media. At any one point in time thirty percent of us will be online, yet the mode of engagement disguises the physical reality of massive infrastructure and carbon footprint. The cloud is housed in anonymous data centres, which can consume the same amount of electricity as a small town. The project aims to draw the digital back into the physical, exposing in real time the weight of the cloud (Fig 1).

The oft hidden flickering beauty of the data centre is put center stage, giving the cloud back its physical presence. As levels of engagement with the digital landscape fluctuate so does the heat given off by the servers. A water heat recovery system collects this waste heat to

power the climate engineering of large glazed public gardens which sit alongside the data towers. Its pipes are foregrounded as key architectural elements highlighting the process. As data use rises heat output reaches a tipping point and mists begin to form, clouds gather then rain storms descend. The physical impact of the digital landscape is made manifest as it powers its own weather systems which fluxes in relation to the use of the cloud; the number of twitter feeds, facebook posts, instagram feeds (Fig 2).

Space, time and the beauty unseen

This interactive volumetric video installation allows people to experience themselves in a new multi-dimensional anachronous way. The piece aims to extend our understanding of ourselves and our physical, spatial implications.

Three sensor cameras create a live pointcloud of the subject and project this onto the three clear perspex screens. Delays built into the software's algorithm generate reflections from three different

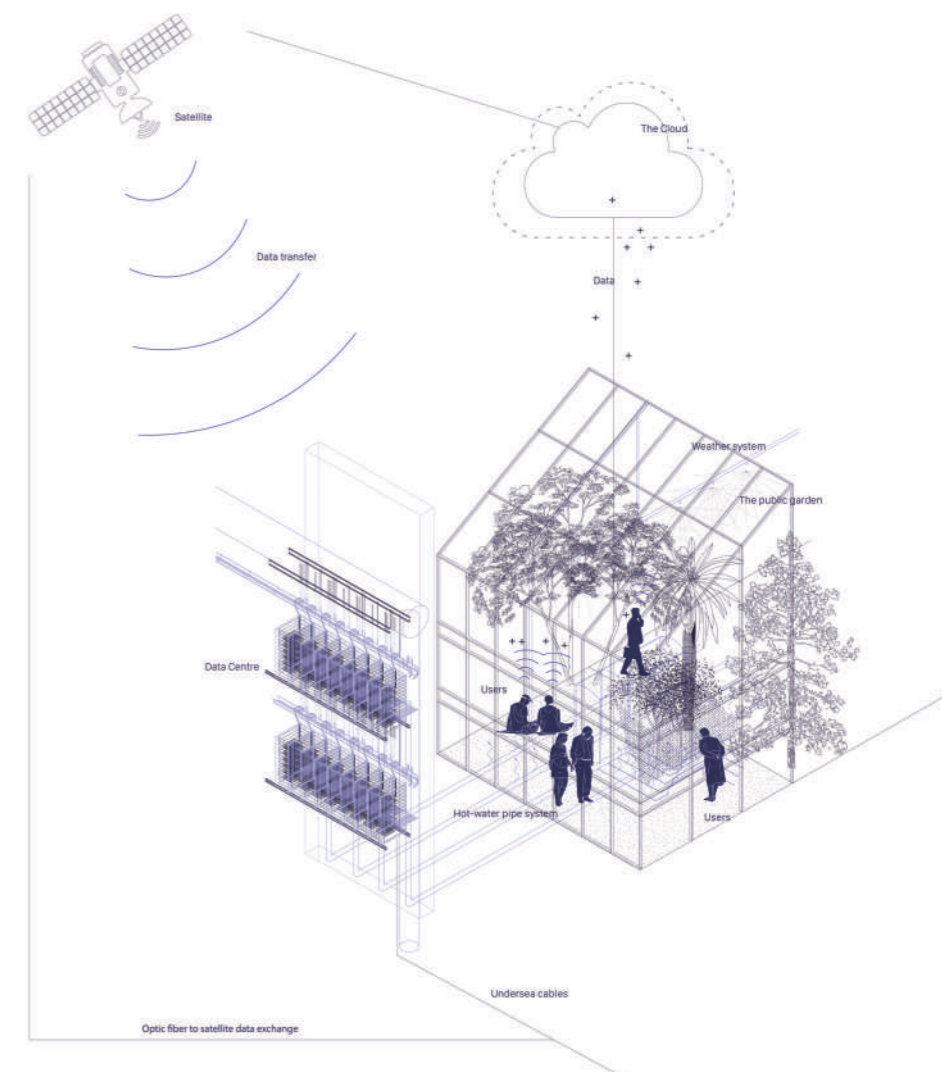


Fig.1 – Head in the Clouds: UG10, Bartlett UCL, Amanda Dolga.



Fig.2 – Head in the Clouds: UG10, Bartlett UCL, Amanda Dolga.



Fig.3 – Space, time and the beauty unseen: Matt Reed, MA Architectural + Urban Design, Brighton.

moments in time. The two side screens incorporate a delay of two and four seconds respectively, offering two historic reflections, whilst the central screen shows the present. As the images are provided by 3D scanners the viewer sees a three-dimensional representation of themselves, like a 3D holographic mirror. This aims to distort the viewer's perception

of space and time to create a sense of disembodiment within that particular urban space. Initially sited outside the Churchill Square shopping centre in Brighton, the piece would tour different citycentre sites, operating after dark.

The installation aims to shift perspective to enable reflection on the personal internal experience

of the immediate past through its delayed replaying of this. In this way it uses technology to begin to augment our physical experience, extending embodiment (Fig.3).

The Virtual Engine

A re-imagining of an abandoned theatre into a live/work residence of a VR Programmer and a Network

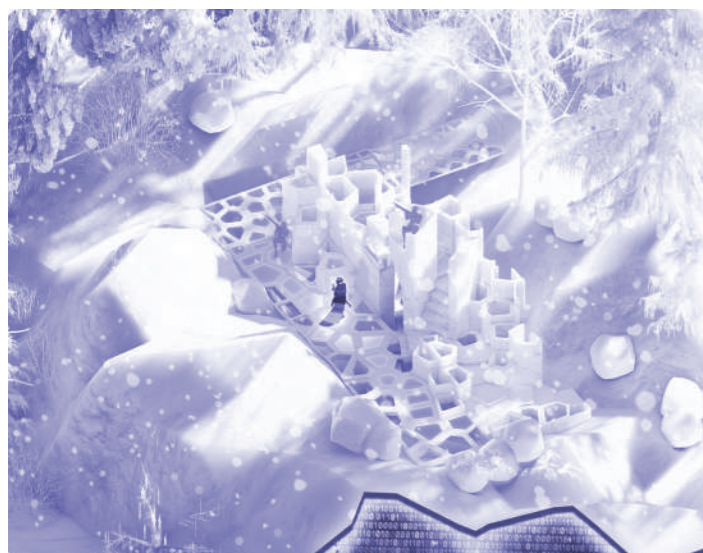


Fig.4 – The Virtual Engine: Ed Garton, Studio 3 BA Architecture, Brighton.

Engineer, the proposal inhabits both physical and virtual domains (Fig.4). It aims to reform the digital environment to both physically aid the physical world and extend our understanding of it. A layering of digital and physical environments blurs the line between, with mirror worlds blending into the physical alongside participatory immersive technologies inhabiting physical architectural space.

The virtual is further grounded within the physical through its powering of environmental technology through waste heat. This acts to contrast the intense synthetic experience of VR with the AI controlled aquaponic systems it supports.

The interfaces are designed to benefit users not reduce them to data to be harvested, as technologies create new realities with the digital in service of the upkeep of the real.

Between Ruins and Reconstruction

The work responds to concerns about gradual erosion of place, identity and belonging within a globalised consumerist culture. Environmentally sensitive feelers construct an ever evolving picture of the fluctuating site, building new identities. The data feeds an automated drawing machine to produce daily site portraits inspired by the tradition of Moghal

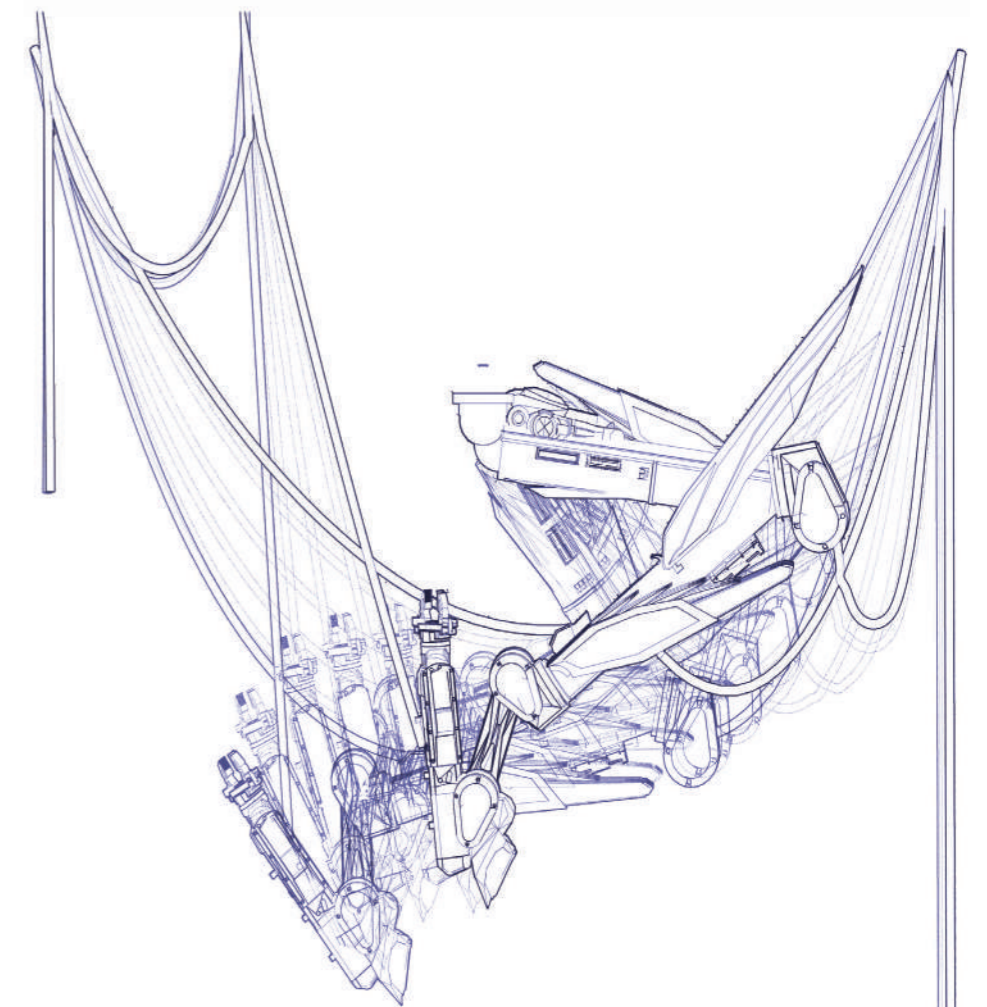


Fig.5 – Between Ruins and Reconstruction: Shahkar Ali, Studio 3 BA Architecture, Brighton.

minatures. A robotic arm inhabits a courtyard carved out of an abandoned shop on the main shopping street in Brighton (Fig.5 & 6). Open to the public it generates expressions of the ever-changing moment. The past calendar of daily drawings are exhibited on

automated tracks winding around the ruined interior.

The space aims to offer a counterpoint to the consumerist street beyond, expressing place and identity for individual interpretation; a reinvention of identity within a hybrid liminal space.

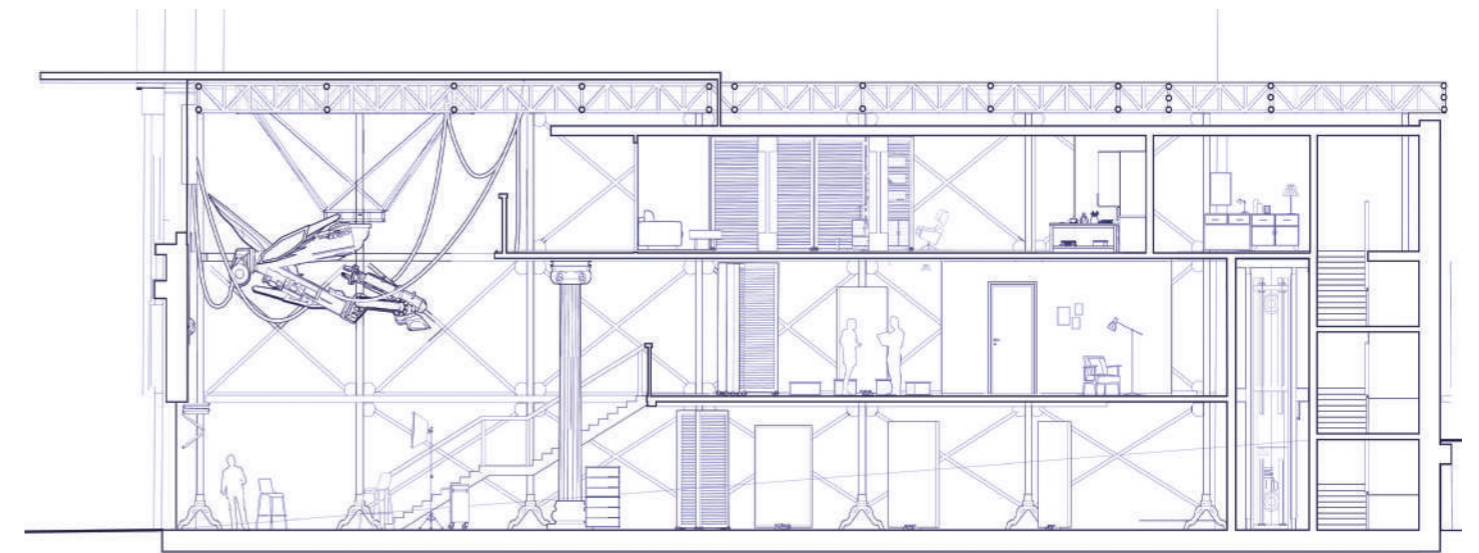


Fig.6 – Between Ruins and Reconstruction: Shahkar Ali, Studio 3 BA Architecture, Brighton.

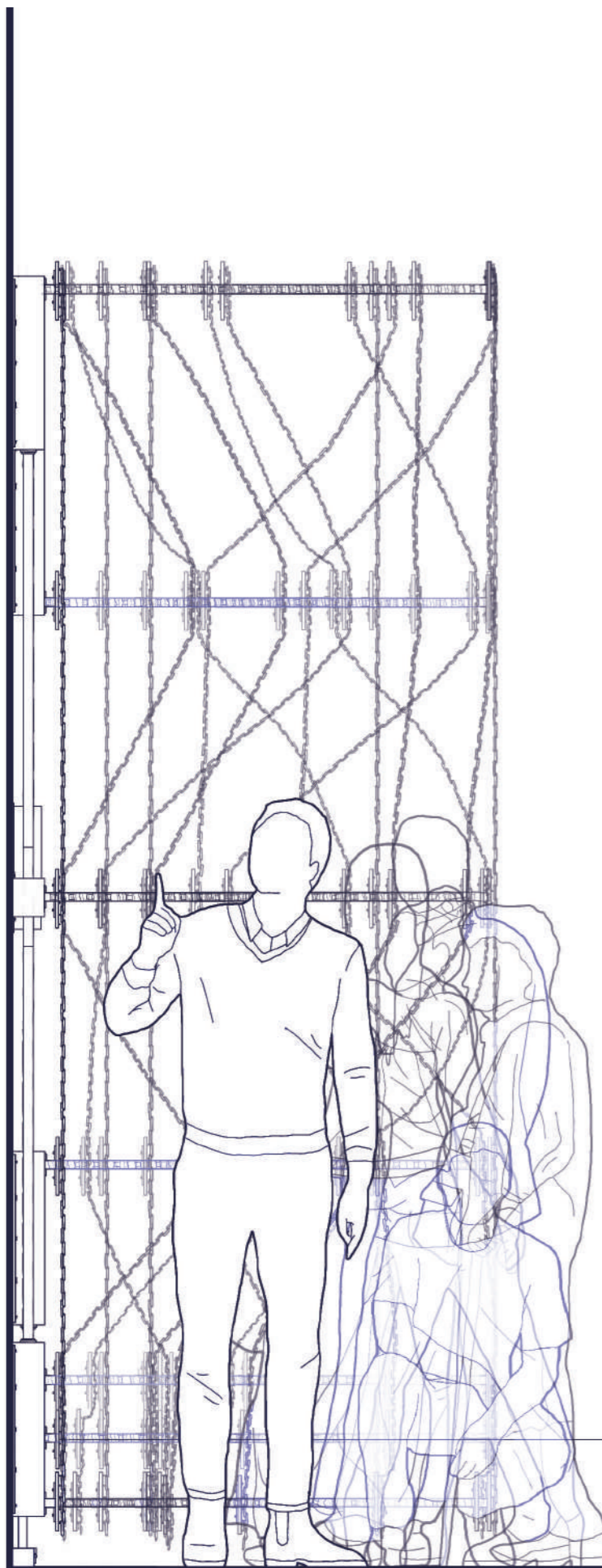


Fig.7 – Co-authorship: A collaboration between human and AI: Meg O’Hanlon, Studio 3 BA Architecture, Brighton.

Co-authorship: A collaboration between human and AI

In a narrow Brighton lane a wall begins to interact with people passing by. Initially responding to their actions but then predicting and preempting responses, a ballet between structure and people begins. During its use the AI controlled hydraulics begin to learn. Gradually it builds a recognition of behaviour patterns and begins to use this understanding to preempt action. The wall then starts to respond to predicted future behaviour, moving in advance of, as opposed to in response to peoples’ actions (Fig.7).The project explores the potential for co-authorship between humans and AI. Peoples’ activity influences AI which then in turn influences human movement in a ballet of co-authorship within the lane. The design was evolved and tested by the design, construction and programming of a 1:1 working prototype of a single module (Fig.8).

Brighton in 4D

The project asked whether we might now augment our cityscapes with its layers of past occupation, offering access to past inhabitations. It aimed to explore the potential of augmented reality to expand our understanding of place and identity. Might this immersive technology have the capacity to go further than photographs or recorded media in connecting us with our past? The project explored the potential of generating digital city ghosts via a smart phone app, with the screen as a lens into the past.

An app rebuilds Brighton’s Chain Pier, allowing its presence to again sculpt activities, revitalizing lost connections and generating new ones (Fig.9). Little now remains to signal the existence of the Chain Pier on Brighton seafront, yet at in the 1820s and 30s as many as 4000 people visited a day. For an admission of 2d they were entertained by regimental bands and side shows. The digital

```

#include <Arduino.h>
#include <Stepper.h>
#include <Ultrasonic.h>

#define TRIGGER_PIN 6
#define ECHO_PIN 7
#define MOTOR_PIN 8
#define MOTOR_WIRES 9, 10, 11, 12
#define MAX_DISTANCE 30 //cm
#define PIR_SENSOR_PIN 13
#define PIR_SENSOR_DISTANCE 10 //cm
#define PIR_SENSOR_DURATION 100 //ms

void setup() {
  pinMode(TRIGGER_PIN, OUTPUT);
  pinMode(ECHO_PIN, INPUT);
  pinMode(MOTOR_PIN, OUTPUT);
  pinMode(PIR_SENSOR_PIN, INPUT);
  Serial.begin(9600);
}

void loop() {
  int iterations = 3;
  duration = sensor.ping_duration();
  distance = (duration / 2) * 0.0343;

  if (distance > 10) {
    Serial.println("IF DISTANCE MORE THAN 10 CM = SPIN ANTICLOCKWISE");
    digitalWrite(MOTOR_WIRES, HIGH);
    stepper.step(-stepper.stepsPerRevolution());
  }

  if (distance < 10) {
    Serial.println("IF DISTANCE LESS THAN 10 CM = SPIN CLOCKWISE");
    digitalWrite(MOTOR_WIRES, HIGH);
    stepper.step(stepper.stepsPerRevolution());
  }

  if (distance < 5) {
    Serial.println("OTHERWISE OUTPUT ERROR TEXT TO SERIAL");
  }
}

```

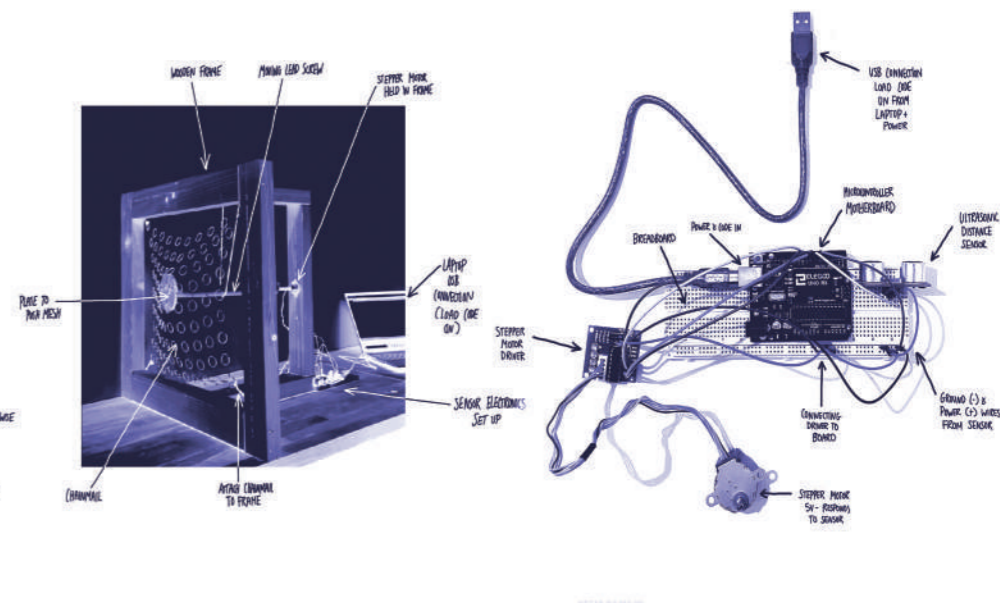


Fig.8 – Co-authorship: A collaboration between human and AI: Meg O’Hanlon, Studio 3 BA Architecture, Brighton.

resurrection drives physical interaction, building urban relationships by augmenting the city with its past.

CRITICAL FUTURES

To secure the sustainable future we need we must first design with thought not form. We must become storytellers, rewriting our narratives to recover enchantment and reclaim relationality. Ontological design offers routes forward, with design fictions signaling potential destinations. The digital and our liminal realm can offer an expanded tool box to negotiate the challenges we encounter if we maintain a clear eye on the road.

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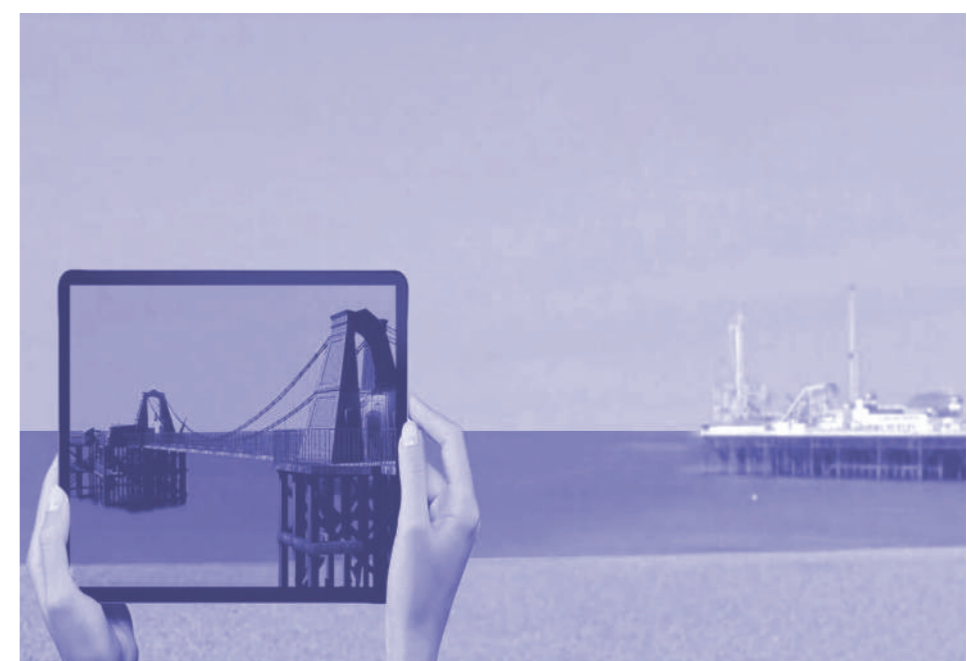


Fig.9 – Brighton in 4D: Matt Reed, MA Architectural + Urban Design, Brighton.

Cartographies and Limits through the accumulation of Imaginaries

inteligencia artificial
 humanidades digitales
 fronteras
 espacio relacional
 producción artística
artificial intelligence
digital humanities
borders
relational space
art production

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La presencia de nuevas herramientas basadas en la Inteligencia Artificial (IA) en diferentes campos del conocimiento está suponiendo, más allá del avance tecnológico, un punto de disrupción conceptual que podemos abordar desde diversas perspectivas, especialmente en su vertiente ética y desde su capacidad transformadora de los procesos tradicionales de creación.

Este artículo pretende abrir una reflexión sobre el conocimiento implícito que existe en los patrones visuales generados por la IA, así como visibilizar desde la práctica artística nuevos escenarios de debate y posicionamientos alternativos que contribuyan a ampliar la lógica multimodal en el uso de la tecnología de la IA.

En particular, nos centraremos en cómo sintetizar visualmente nociones como frontera y/o umbral a través de la acumulación de imaginarios fotográficos extraídos de repositorios abiertos de imágenes, y observar el resultado procesado por la IA como respuesta a analizar en profundidad, no en su apariencia formal, sino en su significado, en su proceso de intersubjetivación, y en su posible interpretación humana.

En definitiva, acercarse a la semántica de la imagen para proyectar un espacio contemporáneo, real.

The presence of new tools based on Artificial Intelligence (AI) in different fields of knowledge is reaching, beyond technological progress, a point of conceptual disruption that we can approach from various perspectives, especially its ethical aspect and its ability to transform traditional processes of creation.

This article aims to open up a reflection on the implicit knowledge that exists in visual patterns generated by AI, and also to make visible from artistic practice new scenarios and alternative positions that contribute to expanding the multimodal logic in the use of AI technology.

In particular, we will focus on how to visually synthesise notions such as border and/or threshold through the accumulation of photographic imaginaries extracted from open image repositories, and observe the result processed by AI as a response to analyse deeply, not in its formal appearance, but in its meaning, process of inter-subjectivisation, and possible human interpretation.

In short, getting closer to the semantics of the image in order to project a contemporary, real space.

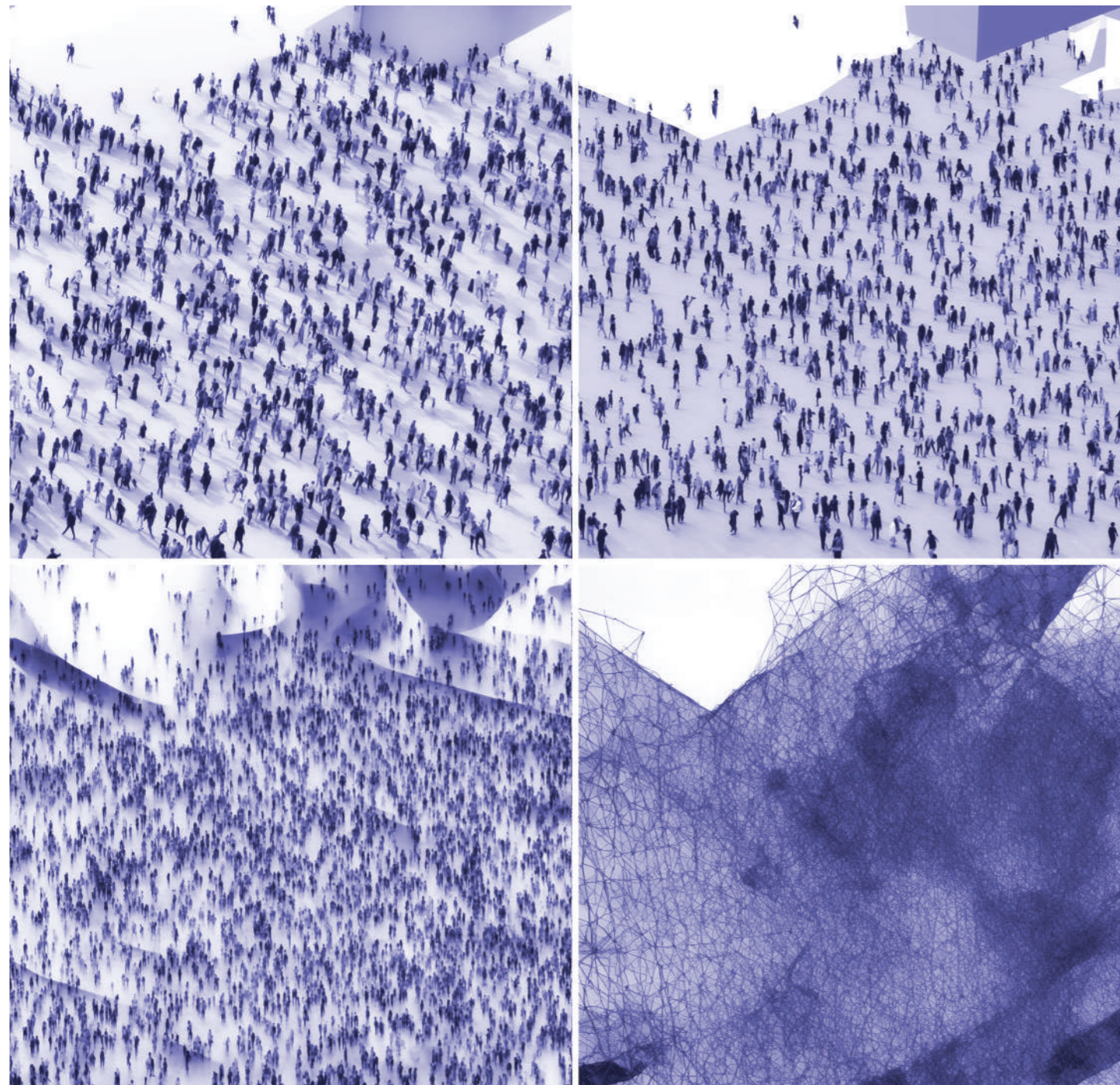


Fig.1 - Porosity and presence (graphic: Kenneth Russo & WAAI, 2022).

INTRODUCTION

The development of Artificial Intelligence (AI) tools, associated with the implementation of algorithms in the treatment of massive data, allow us to extract and synthesise valuable information that can help us: in making specific decisions, in clinical diagnoses, in analysis of behaviours, in prediction of spaces, etc... Whether through symbolic learning or automatic learning (Ramesh, 2017), and beyond its relevant ethical role that it implies for us, AI can crystallise patterns and logic that history hid over time, or it can make visual

forms visible to us to interpret the world and its inherent thought. In this sense, the interest of this article, based on artistic production through AI, lies in the revelation of hidden data through the image.

It is not about a machine replacing the human ability to project, nor delegating social design to an algorithm. It is about understanding space through the representations that history has documented, it is about approaching universal patterns, represented complexities, patterns, represented complexities, and generating alternatives from

human coherence in a framework that brings us closer to the actor-network theory of Bruno Latour (2007).

The following research is based on different images generated through data seeds from a bank of thousands of images. None of the images exist, but at the same time it concentrates the logic of imaginaries where concepts such as:

- "Presence" (Fig.1).
- "Periphery" or "Place" that take a decisive role in the construction of the "Map" (Fig.2 and 4).

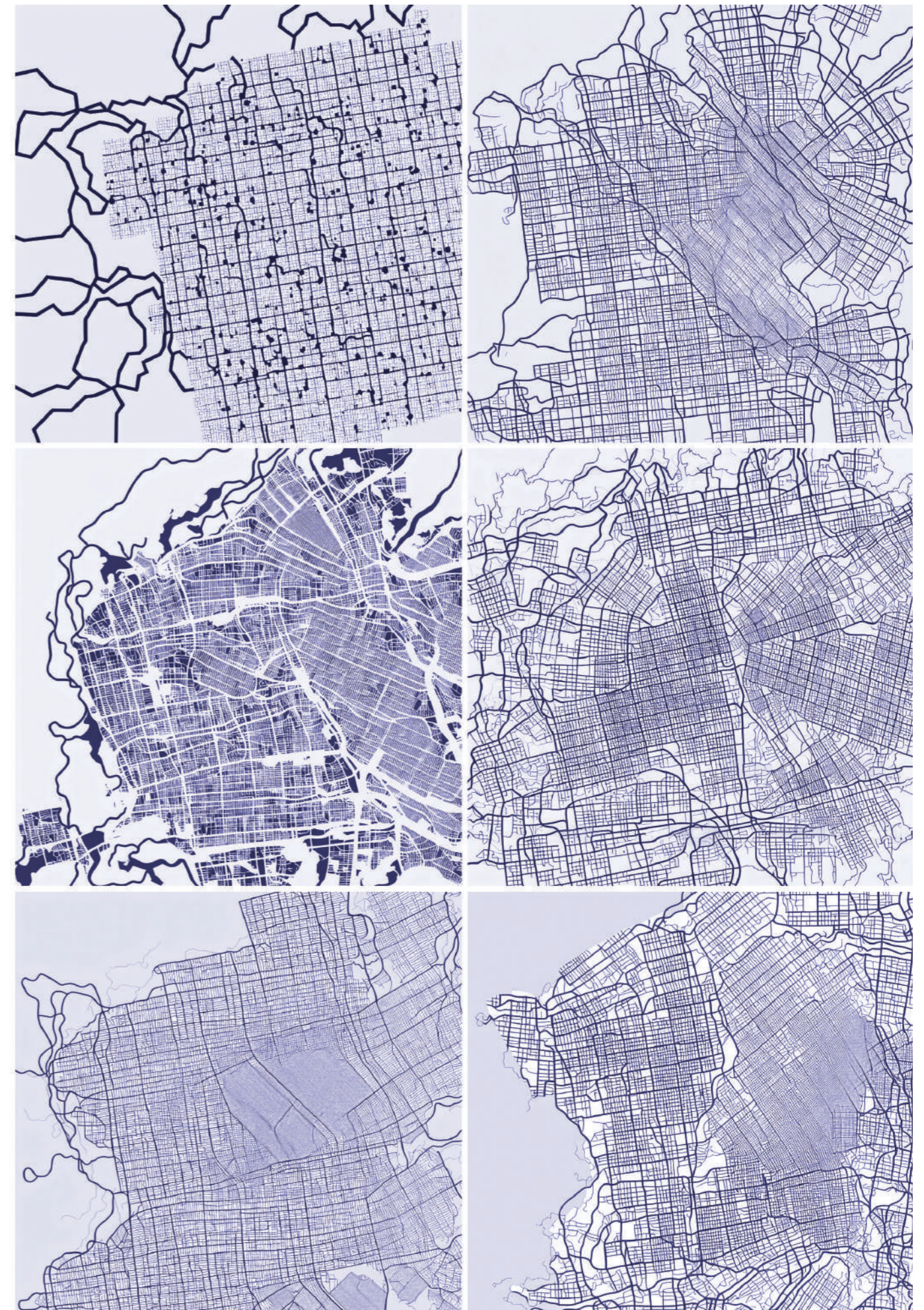


Fig.2 - Citymap of borders 1 (graphic: Kenneth Russo & WAAI, 2022).

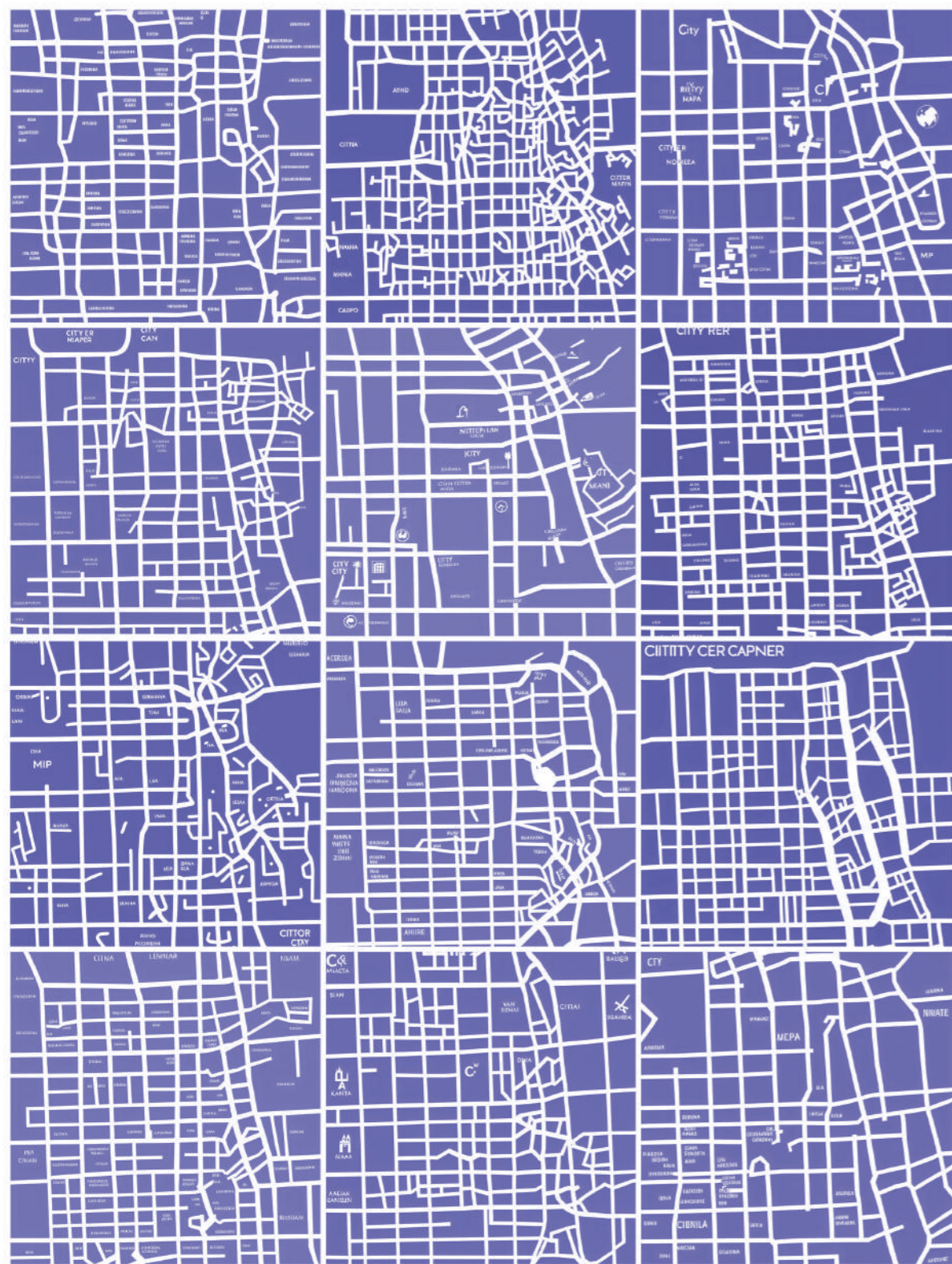


Fig.3 - Variations of limits in urban circuits (graphic: Kenneth Russo & WAAI, 2022).

- "Limit"(Fig.3).
- "Edge"(Fig.5).

As Deleuze and Guattari pointed out: *"The map does not reproduce an unconscious closed in on itself, it builds it"* (1997:28-29).

This cartography of the limits, which is not a simple representation of the territory, is installed in the meaning itself and in its metaphorical component that displays all those cognitive processes that underlie the map

(Balaid et al., 2013), in the relations of resistance (Foucault,1979), or in an update of Debord's narrative structures where registered experience and catalogued/ processed information are now mixed (Russo, 2022).

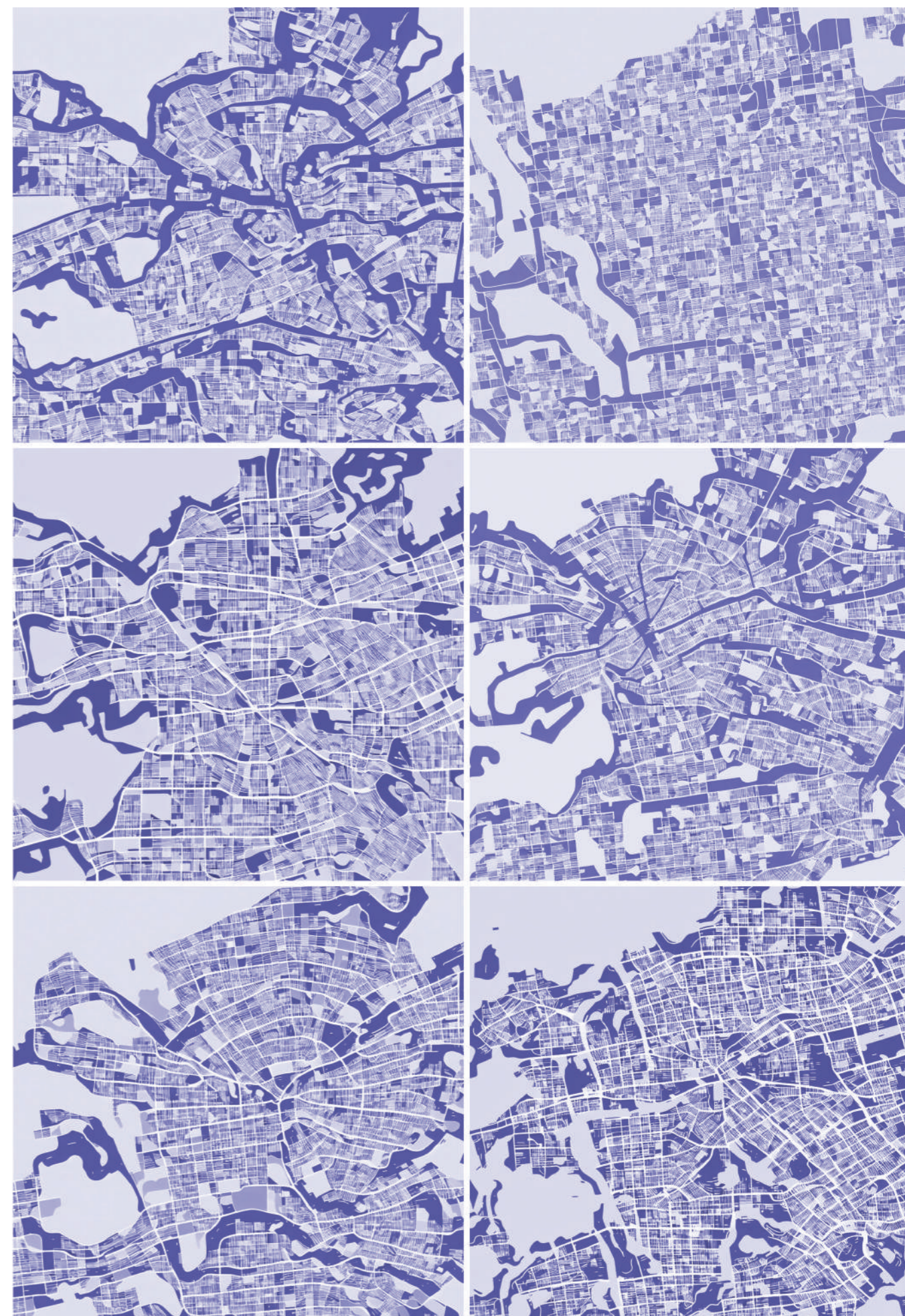


Fig.4 - Citymap of borders 2 (graphic: Kenneth Russo & WAAI, 2022).

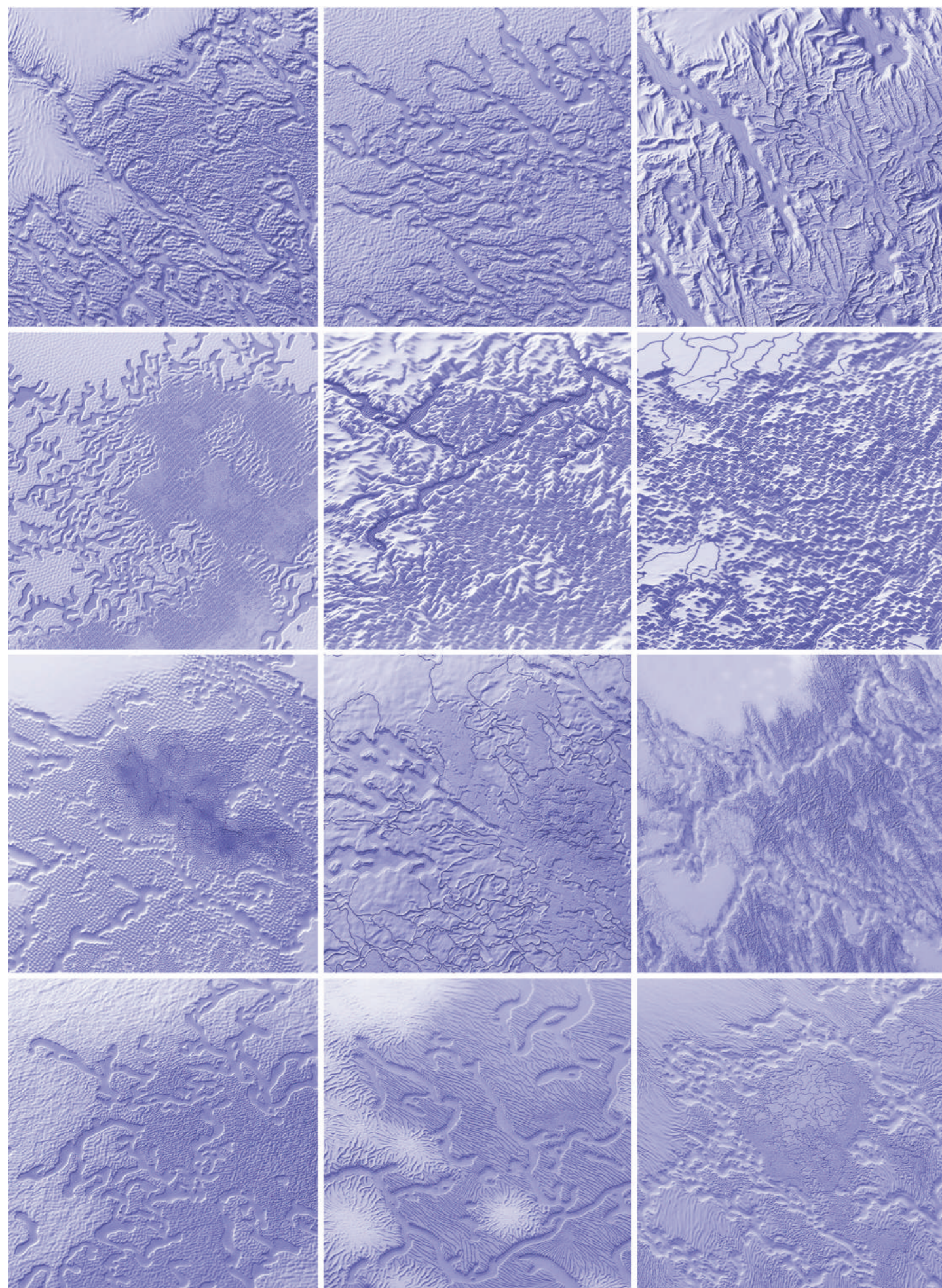


Fig.5 - Geological border in non-geopolitical zones. Edgeview (graphic: KennethRusso & WAAI, 2022).

GET CLOSER TO AI

The economy, society, the environment and governance are key factors, which in their balanced combination, would have to draw us a conceptual framework in which to address our possible futures and our relationship with AI. Beyond a technological vision in which efficiency in work flows and data processing systems improve economic development, AI is a tool subject to human approaches.

In other words, the focus of interest in which to apply AI technology is decisive, in the same way that the choice of relevant data to be processed is decisive. This obviousness is frequently diluted in an ocean of approaches based on hyper-specialised models, which respond with general logic about aspects of productivity and connotations of the economic framework, to the detriment of the humanistic component.

The global demographic increase and its concentration in urban areas brings us closer to the use of AI as a tool to plan sustainable cities, or to achieve a certain degree of autonomy in the flows of a city, advancing towards the notion of a Smart City. In its holistic vision of how to deal with this reality, different contributions from authors (Richelle Winkler et al. 2015, Yigitcanlar et al. 2015) already point out that: *"As a matter of fact, sustainability represents a nested hierarchy consisting of environment, society and economy as living environment, which enables human society to build an economic system that is not a threat to the environment"*.

As a disruptive technology, we can see AI as an opportunity to optimise existing resources in its multiple applications, be it in: home automation, robotics applied to social services, management of autonomous public transport and flow monitoring, diagnosis of climate change, control of animal health and crop status, 4.0 industry, etc. But the question that accompanies us in this reality is to know how we intertwine human

control and its decisions in front of a machine and its algorithms, and how it makes real decisions, in hybrid thinking, which can profoundly affect our future.

Our direct participation in these network spaces that shape us is one of the gaps that is opening up unevenly, between individuals and societies, and which, according to Adam Greenfield (2018), forces us to understand how these radical technologies work and to reconsider our relationship with these objects and services that colonise our daily lives: smartphones, block-chain, augmented-reality interfaces and virtual assistants to 3D printing, autonomous delivery drones and self-driving cars.

WHAT INGREDIENTS DO WE FEED THE AI WITH, AND HOW DO WE COOK THEM?

Research into problem solving, planning, language processing or interaction between individuals, using a machine that emulates and automates these cognitive processes originated after the end of World War II. At the present time, massive data is interconnected through the network, a fact that allows for improving the prediction of patterns through algorithms that determine precise instructions based on predictability of behaviours. Although it is a complex issue to label AI according to whether it is based on capabilities or functionality, we must highlight the notion of machine learning (ML), which more than a type of Artificial Intelligence in itself, consists of the way in which AI learns.

If ML exists, then learning is carried out by the system itself autonomously without human intervention. We can talk about a specific AI: a system dedicated to executing actions to solve a specific problem, but that does not know anything beyond that specific problem, and which, in short, are systems that focus on a single task and are far from behaving like humans.

In contrast, ML refers to a general AI, our interest, where through algorithms, it gives computers the ability to identify patterns in massive data and make predictions. Specifically, ML is the technique in which an algorithm is trained to generate an output of information, without the need for explicit programming, and that, saving the distances, allows the machine to acquire a reasoning capacity and data interrelation similar to what humans can do. However, it should be noted that any decision delegated to machine learning algorithms has to be deeply evaluated to understand how the AI has reached the result.

This idea, in AI known as explainability, is the one that inevitably accompanies the generation of data capable of transforming our reality. As Jocelyn Maclure (2021) points out: *"weighing the benefits and the risks must be done on a case-by-case basis, but it is hard to find cases where explainability can be given up when the rights, opportunities and wellbeing of citizens are at play"*.

For this last process, the availability of large-scale and well-annotated data sets is essential to adopt deep learning models, since Big Data requires prior human analysis and classification to outline a base model on which to develop training. In other words, it is not about projecting models based solely on quantification and statistics, but to obtain a robust model we need it to be complemented with multimodal analyses, own abstract concepts such as affectivity or subjective evaluations that add value to the cognitive process model.

In this sense, we find revealing and academically documented works such as Graph Neural Networks for Knowledge Enhanced Visual Representation of Paintings (Efthymiou et al., 2021), an example of multimodal architecture that integrates Graph Neural Networks (GNNs) and Convolutional Neural Networks (CNNs), to weave a framework of meanings between visual and semantic artistic

representations, and that allows us to show the significant advantages of multitasking learning.

This proposal means that the transversal integration of human knowledge, that captures and encodes valuable relational dependencies between artists and works of art, can surpass the performance of traditional methods that are based solely on the analysis of visual content.

As a summary, given that the artificial processes of visual analysis are complex and are the subject of visual analysis are complex and are the subject of in-depth study, we are referring to the relationships that can be generated between the labels that categorize fine arts in combination with semantic relationships such as attributes extracted from social networks, attribution/authentication structures to artists or contextual data of styles.

The objective of this essay does not fall on the description of specialised progress, but on the multimodal approach that underlies the notion of AI. In other words, taking the field of Digital Humanities as a reference, we see how tools based on the use of CNN allow us to explore digitised art collections in relation to singular works, and consequently: extract, detect, identify, contextualise, classify contents and styles... In order to show interdisciplinary methodological extensions where digitised information and humanistic perspective come together.

This means that the machine can return an "aesthetic prediction" or even an "aesthetic creation" (Elgammal, 2019) from network training.

Another topic to study would be the specific analysis of the operation of the different generative platforms trained on huge data sets, among which *Stable Diffusion* (the basis of the artistic production presented) and *DALL-E* stand out. As Somepalli et al. point out: "Because these datasets are too large for careful human curation, the origins and

intellectual property rights of the data sources are largely unknown. This fact, combined with the ability of large models to memorize their training data, raises questions about the originality of diffusion outputs. There is a risk that diffusion models might, without notice, reproduce data from the training set directly, or present a collage of multiple training images" (2022: 2).

Opening the debate on whether AI systems could become autonomous artists, as if they were autonomous critical creation machines, leads us to deduce that the machine is still far from having a self-awareness of the perception of time and/or its emotional capacity to interpret the data (Hertzmann, 2020).

Despite these sensitivity limitations, which represent a challenge for the future, AI can be a great ally to expand the possibilities of artistic production. As Mazzone and Elgammal already pointed out: "For human artists who are interested in the possibilities (and limitations) of AI in creativity and the arts, using AI as a creative partner is already happening now and will happen in the future. In a partnership, both halves bring skill sets to the process of creation" (2019).

Therefore, again the AI in this perspective acquires more prominence as a tool driven by humans, in a hybridisation whose result is superior to the autonomy of the parts.

At this point we cannot continue without mentioning the rigorous study *Understanding and Creating Art with AI: Review and Outlook* (2022), by Eva Cetinic and James She, where we are presented with an exhaustive journey on the intersection between AI and art, from which we point out the following:

"Most of the current AI Art works can be understood as results of sampling the latent space. Perhaps the most novel aspect of AI Art is this possibility to venture into that abstract multi-dimensional space of encoded image representations. From the artist's perspective, the latent space is neither a space of reality nor imagination, but

a realm of endless suggestions that emerge from the multi-dimensional interplay of the known and unknown. How one orchestrates the design of this space and what one finds in it, eventually becomes the major task and distinctive signature of the artist. In this context, it is important to understand the role of the human in this collaborative process with the machine." (2022: 9).

QUESTIONS

The most relevant of the images presented in this essay, which become research results in a visual format, are not simply aesthetic values associated with a style. Each image has been generated following a CNN process, emulating AI Art generation procedures, and starting from strategic prompts ("presence", "border", "limit"...) that search for connections between databases of thousands of images catalogued in open repositories.

Therefore, the tangible return of the image itself is the result of synthesising thousands of catalogued representations that balance on an idea transferred over a period of time.

We are talking about an AI process applied in a speculative way on the representation of the territory and/or the city, and that apparently is not related to the efficiency data logic with which the Smart City is fed.

In other words, the advances in AI oriented towards the contemporary production of space are developed in a frenetic collection of data, quantifications and statistics, whether from mobility sensors, energy consumption indicators, intensity of transactions in social networks, flows of economic activities... However, how do we link the historical context in these processes? Can we add human values in AI processes? After citing experiences in which the discipline of Art History and the discipline of Computer Science seem to have found a meeting point, can we apply this communion of values in an interdisciplinary field?

CONCLUSION

In a hybrid scenario where different humanistic positions come together and Deep Learning is developed based on computational methods, we are also capable of imagining a machine capable of interpreting metaphor, representation, or even contextual influences. The generated images that are shown have their origin in a database conditioned by values such as: the reputation and experience of the institution that provides the database; the quality of the images, including resolution, lighting and reproduction quality; the rigour of the classification and description of the images; the presence of metadata and other relevant information; and the availability of documentation and technical support.

These technical items reinforce the idea that AI image generation algorithms have to be created by multidisciplinary teams that work together to design, train and validate the models. AI can be used to collect and analyse data, identify patterns and trends, and generate graphs and visualizations to illustrate the results. However, decision-making regarding the interpretation of the data must be carried out by human researchers and from collaborative work.

The result we see is the reflection of a historical consciousness processed by a trained algorithm, and in reality it is about how we represent the border-limit through a documented collective imagination, a bird's-eye view that also warns us that everything that is not we see. It does not warn of accumulated errors, of the importance of the explicability concept in AI, and above all of the need to interpret speculative maps with human intelligence (HI). As a synthesis, it is necessary to highlight different ethical premises that we cannot ignore in any use of AI, since its power to transform our real environment is expanding. So, beyond speculative exercises and visual experimentation, we must always bear in mind the need to: collect and analyse data responsibly

to avoid bias in the information used to train AI models, evaluate the impact of algorithms for AI in different population groups to detect possible discrimination, verify that the algorithms work correctly and are not biased, that users and developers understand how decisions are made in AI systems, have a diverse development team that includes different perspectives and experiences, and implement policies and regulations that promote equity and fairness in the development and use of AI.

Going deeper into liminal spaces or borders from an image generated from experience and knowledge transformed into data is one of the challenges that we must address collectively: with AI technology and human involvement in all its branches of knowledge. This is precisely the core idea that shapes that configures the set of visual information exposed, which could be seen as the laboratory to trigger a critical stance on social and ethical design (Manzini, 2015), or as plastic and static evidence of a complex game of relationships which will require a human interpretation. A map built from the accumulation and abundance of data. A map-image where to interpret the place from the polyhedral sum of superimposed and saturated visions. A way to semantically expand the AI models from the image and its substratum of meanings to "inhabit the world within the existing reality" (Bourriaud, 2006).

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A Battle of Memory and Image

War Tourism as Reconstruction Strategy in Sarajevo

Saraybosna
savaş turizmi
etnik çatışma
aidiyet
kültürel bellek
Sarajevo
war tourism
ethnic conflict
sense of belonging
cultural memory

Avrupa'nın Kudüs'ü olarak bilinen Saraybosna, turistik açıdan Balkanların en çekici yerlerinden biridir. Jeopolitik konumu, görkemli peyzajı ve farklı dönemlerin mimari tasvirlerini içeren zengin tarihi ve kültürel mirası, şehri otantik ve canlı bir yaşam alanına dönüştürmektedir. Bunun yanı sıra, 1990'ların Bosna Savaşı, kentsel peyzajda derin izler bırakmıştır ve savaşın izleri günümüz kentine net bir şekilde yansımaktadır. Şehir, savaşın sona erdiği 1995'ten bu yana yavaş yavaş toparlanmayı başarmıştır, ancak savaş sonrası yeniden yapılanma sürecinde kentsel dokunun fiziksel bir olgudan daha fazlası olduğu göz ardı edilmiş gözükmemektedir. Bu kapsamda, bu çalışmanın amacı, Saraybosna özelinde savaş sonrası turizm endüstrisinin süreç ve sonuçlarını mekânsal, kültürel, sosyo-politik ve ekonomik olarak incelemektir. Çalışma, savaşın bir cazibe merkezi olarak temsilini araştırarak, kentte aidiyetin fiziksel izdüşümlerini ve bunların günümüz anlatılarına nasıl yansıdığını değerlendirmektedir. Araştırma, kişisel ve kolektif algıları esas alarak karşılaştırmalı tarihsel kentsel analize dayanmaktadır ve buna ilişkin kentlilerle 11 derinlemesine görüşme yapılmıştır. Sonuçlar, mevcut kent peyzajına entegre edilmiş savaş sonrası yeni fiziksel (yeniden inşa stratejileri ve politikaları) ve sosyal (kentlilerin algısı) boyutların savaş turizmi vizyonunu desteklediğini göstermektedir.

Sarajevo, known as 'the Jerusalem of Europe', is one of the most attractive tourist destinations in the Balkan region. Its geo-political position, tremendous landscape and rich historical and cultural heritage including architectural portrayals of different eras turns the city into an authentic, vibrant place of living. Alongside, the 1990s' Bosnian War left heavy traces in the urban landscape and signs of the conflict are clearly traceable in today's Sarajevo. The city has managed to recover slowly since the war ended in 1995, but the urban fabric seems to be avoided during the implementation of post-war reconstruction applications. The study investigates the representation of war as a tourist attraction, evaluating the physical expressions of belonging in the city and how this is reflected in today's narratives. In this scope, the main objective of this paper is to examine the process and outcomes of the post-war tourism industry in spatial, cultural, socio-political and economical manner in the case of Sarajevo. The research is based on a comparative historical urban analysis to illustrate the impact of war tourism in the city and 11 in-depth interviews to narrate the related personal and collective memories. Results show that the new post-war physical (reconstruction strategy policies) and social (citizens' perception) layer integrated in the existing townscape emboldens the vision of war tourism.

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This paper approaches socio-political and socio-cultural borders that have emerged from the Balkan conflict during the 1990s and highlights how these boundaries, intentionally or unintentionally, are utilized to encourage tourism. The tourism industry exploits the temporal boundary of memory by connecting the past with the present through a diversity of representations in the urban landscape of Sarajevo. The discussion regarding these issues has been framed within the urban discourse which requires an embrace of inquiries, approaching the subject sensitively, multi-faceted and concerning boundaries and culture within a post-conflict urban setting.

INTRODUCTION

The tourism sector is characterised as being a one of the fastest growing sectors worldwide that has attracted immensely the interest of both developed and developing countries. It is expected that within ten years, the number of international tourists will reach 1.8 billion worldwide (UNWTO, 2020) and 46 percent of international travels are cultural trips (UNWTO, 2018). Motivation of respect for history and commemoration and the curiosity towards human experiences increases the interest in national and international travels to war sites (Alaeddinoğlu & Aliagaoglu, 2007; Okuyucu & Erol, 2018). Within the scope of special interest for culture-based tourism, the concept of war tourism -which has been developing rapidly since the mid-1990s- has gained importance in the recent years. The notion of war tourism was introduced by Foley & Lennon (1996) and defined as attractions that are somehow related to death (Akyurt Kurnaz et al., 2013, p.58). The concept was previously mentioned by Seaton (1996) as 'Thanatourism' and described as the travel to places in reference to symbolic or actual places of death and disaster. Visiting these places, the tourists encounter death for real or symbolically and affiliate themselves with the event

(Seaton, 1999). As a matter of fact, war tourism offers tourists the opportunity to get closer to human experiences that are screened off in everyday public space within a safe, defined and socially accepted environment (Stone & Sharpley, 2008). Many places that are subject to war tourism are often affiliated to cultural heritage (Alaeddinoğlu & Aliagaoglu, 2007). Besides the interest of tourists, locals engaged in war benefit from war tourism as a tool for preserving historical and collective memory, raising awareness, promoting reconciliation and creating economic opportunities. The attention brought by locals and tourism can lead to increased efforts in preserving and maintaining these sites, ensuring their long-term conservation and historical significance.

Bollens (2007) extensively mentions about the political, social and spatial dynamics of historically significant cities facing conflicts and post-war territorial disputes, which intersects with or have implications for tourism. His work includes various destinations throughout the world such as Jerusalem, Nicosia, Belfast, Barcelona and Johannesburg. Likewise, Sarajevo -the capital city of Bosnia and Hercegovina- have faced similar post-conflict complexities and has always been a popular tourist destination. Its geo-political position, tremendous landscape and rich historical and cultural heritage including architectural portrayals of different eras turns the city into an authentic, vibrant place of living. Alongside its multicultural character, distinctive natural landscape and biodiversity, its tangible and intangible historical and cultural landscape, the city has been often mentioned with its civil war during the 1990s.

The city's multi-dimensional tourism with its continuity throughout the year significantly contributes to the economy of present Bosnia and Herzegovina. According to visitors' evaluation¹, about 40 percent of top ten attractions in Sarajevo are related to war. On the other hand, war

tourism merits to be studied from the witnesses' perspective, because "it reflects how people have gradually emerged from the shadow of war and gained the courage to face history" (Lee, 2016, p.698). Thus, both the visitors', as well as the citizens' perception is noteworthy to emphasize on while evaluating attributes of war tourism. Almost three decades after war, the scars of war are still clearly visible in the city and people's memory. The study analyses the post-war reconstruction management and the adaptation structure of war-related tourism in the post-conflict context of Sarajevo. Moreover, the paper presents tourism-oriented narratives and evaluates the economic, political, cultural and socio-spatial outcomes of this process based on 11 in-depth interviews with residents of various ethnic backgrounds (Table 1). As a part of a doctoral research², the semi-structured interviews aim to examine the concept of place attachment with a particular focus on cultural diversity in the city of Sarajevo. The interviews cover questions regarding experiences with war, evaluation of social interactions on urban space in Sarajevo and personal attitudes towards war tourism in the city. This qualitative approach provides, among other aspects, in-depth understandings of the tourism-based factors of place attachment relevant for the Bosnian context.

Participants' Profile	N=11	%
Gender		
Male	5	45
Female	6	55
Age		
18-27	4	36
28-40	4	36
41-71	3	28
Ethnic Identity		
Bosniak	5	46
Croat	3	27
Serb	3	27
Education		
High School	4	36
Bachelor's	5	46
Master's	1	9
Doctorate	1	9
Occupation		
Student	2	18
Public sector	2	18
Private sector	3	28
Own company	1	9
NGO	1	9
Retired	2	18

Table 1. Interview Participants' demographic information.

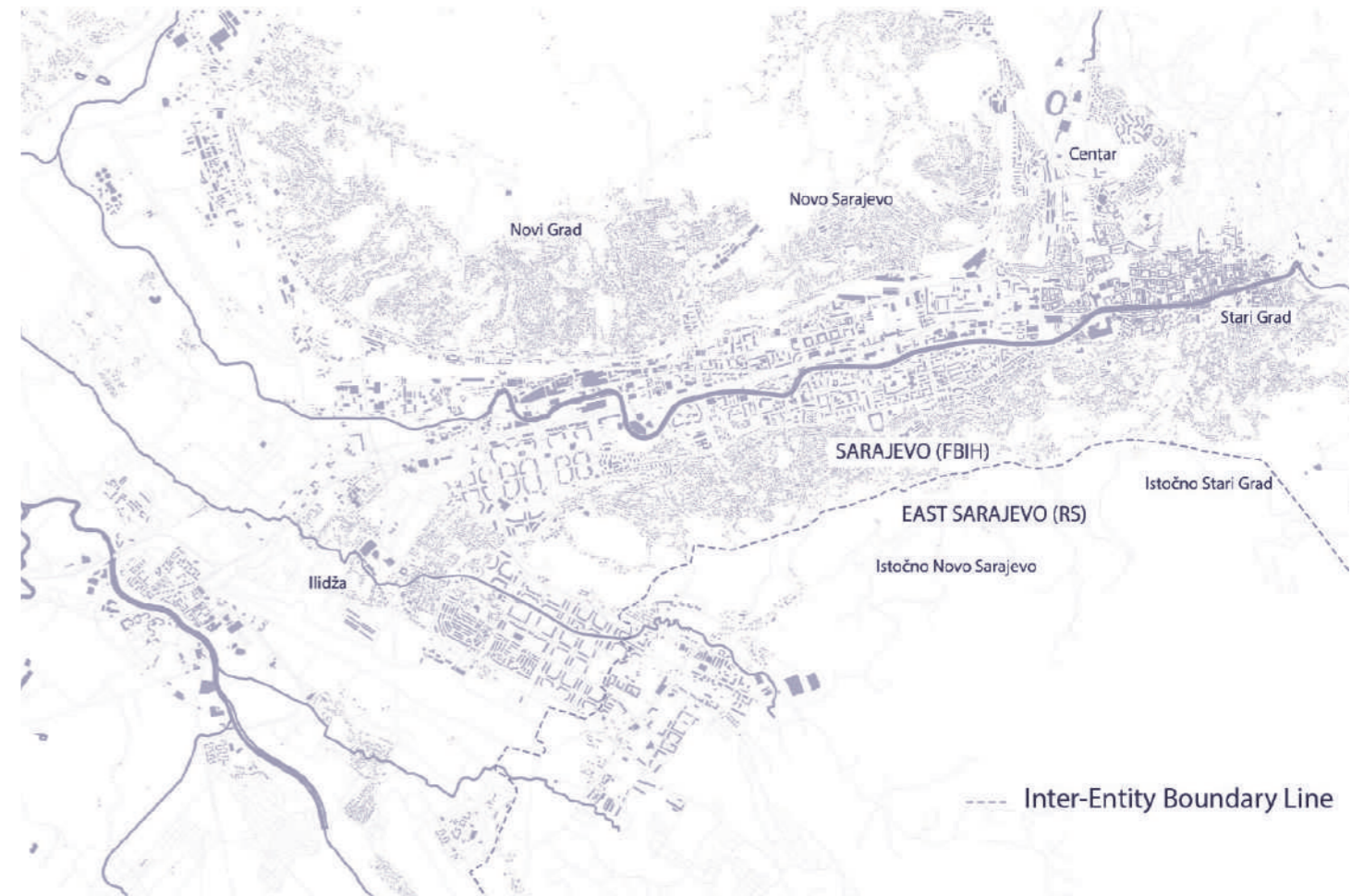


Fig.1 – Map of Sarajevo according to the Dayton Peace Agreement's political boundary line

According to the findings, war tourism has been evaluated as very important in the (trans)formation of place attachment, which is assessed as the personal and collective identity involving the connectedness and responsibility towards the tangible and intangible cultural aspects evolved through present and past experiences with and perceptions of the war.

POST-WAR SARAJEVO AND THE RECONSTRUCTION PROCESS

The first bombs fell in Sarajevo when Bosnia and Herzegovina was recognised as independent state in April 1992. This meant for the city a 1425-day siege, the longest one in modern history. The city went through the turbulent event of war united in poverty, unemployment and corruption. When the war came to an end with the implementation of the Dayton Peace Agreement in

December 1995, prospects for the city were dark. Sarajevo was known as the city with too much history and too little future. The country faced a simultaneous movement (the so called 'triple transition') from war to peace, from communism to democracy and from socialism to a free-market economy (Lamphere-Englund, 2015, p.3). Consequently, despite the reconstruction of the physical destruction, the peace-building mission had the primary goal to promote a prompt political and economic liberalisation. The Dayton Peace Agreement consolidated arrangements for power-sharing between the divided ethnic groups (Bosniaks, Croats, Serbs) with the intention to be temporary. Accordingly, Bosnia and Herzegovina have been divided into three territorial entities: the multi-ethnic Federation of Bosnia and Herzegovina (hereafter FBiH) in the south, the Serb-dominated Republika Srpska (hereafter RS) in the north and east, and the independent district of Brčko in the north. Sarajevo became the capital

city of the FBiH. The Inter Entity Boundary Line (hereafter IEBL) -which politically divided Sarajevo (FBiH) and East Sarajevo (RS)- was a part of this partition and has been stipulated in annex 2 of the agreement (Lamphere-Englund, 2015). Although there is no physical border, the boundary line separates the facilities and interactions in the urban area (Fig.1).

Other than political outcomes, the conflict instigated social, spatial, economical and symbolical consequences. In the post-war period the housing sector showed huge devastation due to the siege. The urban centre of Sarajevo was destroyed which caused migration, densification and urban sprawl. The rate of building damages in three out of the four municipalities of Sarajevo were between 74 and 96 percent (IMG, 1999; Lamphere-Englund, 2015). Furthermore, about 80 percent of the basic utilities in the city were disabled (Kotzen & Garcia, 2014; Lamphere-Englund, 2015). The internal and external

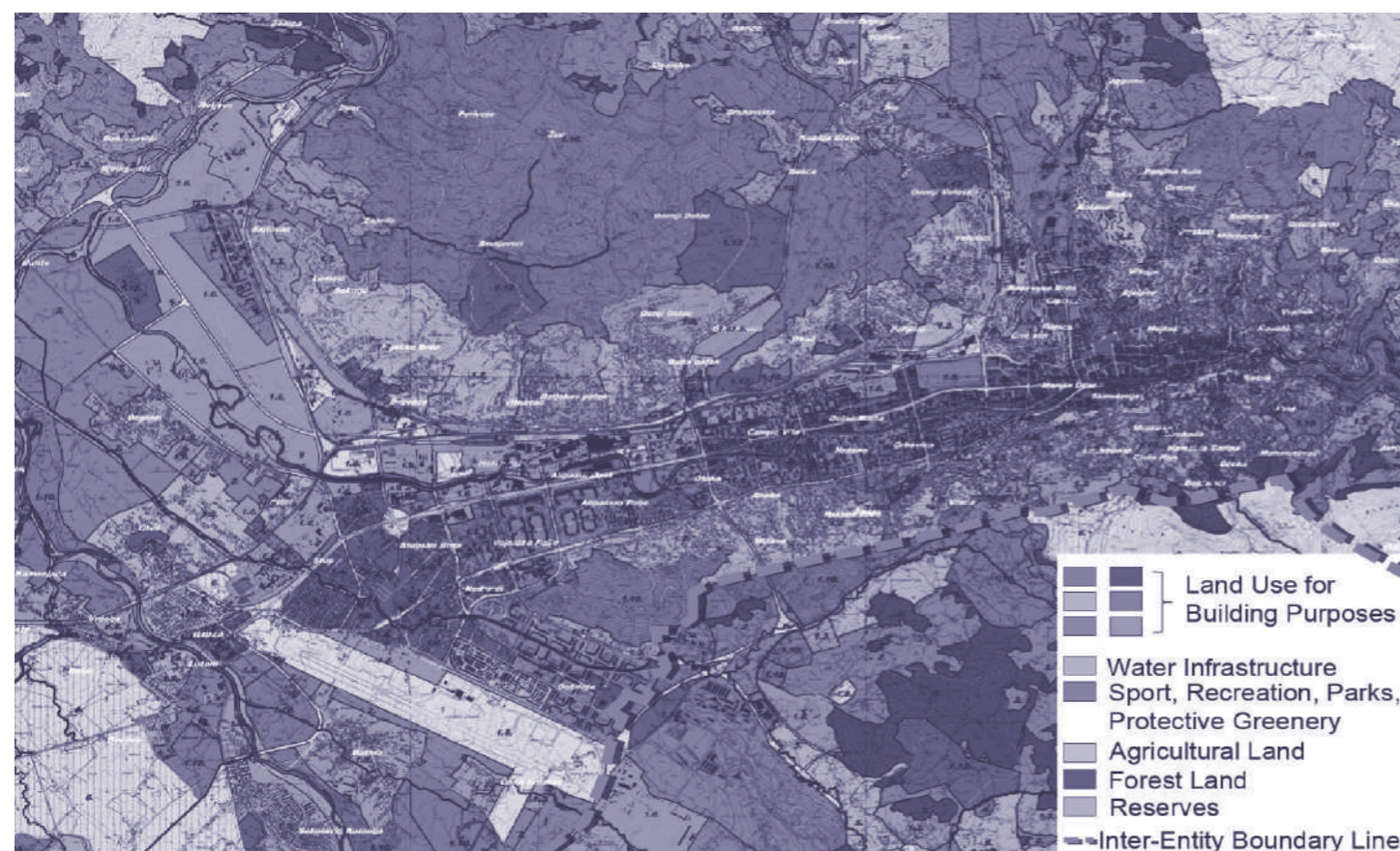


Fig.2 - Urban Plan of the City of Sarajevo 1986-2015 showing the disintegration of the IEBL (adapted from ZPR KS, 2021).

portraiture of the state got harmed and Bosnia and Hercegovina had to forge a new national identity fostering the centuries' old diversity. The portrayal of a war-torn Sarajevo through media images and videos has posed challenges in shaping the city's new identity. Overall, rehabilitation of the city in technical, institutional, environmental and economic matter was required considering the socio-cultural sensitivity.

Dayton's Reconstruction Strategy

The Dayton Peace Agreement contains 11 annexes concerning both military and civil stipulations. Annexes 8 and 9 of the agreement basically address general provisions about physical reconstruction and heritage protection. However, the reconstruction process has been carried out in four stages with no single integrated plan. The city constituted four plans on cantonal³ level; (1) Urban Plan of the City of Sarajevo for Urban Area for the period from 1986 to

2015; (2) Canton Environmental Action Plan 2006; (3) Sarajevo Canton Development Strategy until 2015 and; (4) Spatial Plan of Sarajevo Canton for the period from 2003 to 2023 (OWHC, 2018). The constitution of these plans led to an inconsistent development and created conflicts during the reconstruction process. For example, despite the introduction of the cantonal plan in 2006, the plan of 1986 was still in force -even though being revised in 1990 and 1998- and guided the main organization of Sarajevo's central urban area. Although, morphological transformations occurred and are designated due to new urban developments in the centre (e.g. shopping malls, office towers) by foreigner investors (Martín-Díaz, 2014; Gül & Dee, 2015). Secondly, the IEBL aroused separate councils and planning offices for the physical reconstruction. The urban plan of 1986 had classified zones that became part of the RS (Fig.2), while new plans were prepared in the RS and eliminated in the urban plan of 1986. Along with these authorities, various responsible local and international actors took

a role in different phases of the reconstruction. Among leading organisations, UN forces acted on the importance of political reform and the World Bank assisted mainly the economic recovery and normalisation.

Infrastructural reconstruction and the containment of conflict 1995-2000

The first phase of the reconstruction included the deployment of NATO forces to contain the conflict against a possible resurgence of armed conflict. The priority was to restore the war-torn basic infrastructure in the city (e.g. water, electricity, telecommunication) to meet the basic needs of residents.

International protectorate against nationalist obstructions 1997-2006

Besides primary physical repairs, shelter and property restitution were fraught with confronting the occupation of vacant houses owned by people who have left the city, as well as the transition from collective to individual property rights. During this phase, an evolution of the role of the High Representative and increasing involvement of international actors in domestic state affairs slowly inaugurated.

State-building improvements 2000-2006

A new stage of urban renewal has been reached through the engagement of international actors to accomplish the transformation from an aid-dependent system to a self-sustaining economy. Nevertheless, power sharing of and consensus between the ethnically representative organs did not work at all. Consequently, institutionalisation and state level corporation to (re)form laws and legislations regarding reconstruction were unable to develop healthy (Marko, 2005; Causevic & Lynch, 2013, p.147-148). The insufficient cooperation reflected in the residents' opinions; nearly 90 percent of the residents of Canton Sarajevo did not feel represented (Lamphere-Englund, 2015). Regarding the cultural heritage, significant funds were provided for the reconstruction of existing buildings and new public and religious buildings; "the increased presence of Islamic structures, from schools and mosques to Islamic-bank funded shopping centres such as the BBI Centar, contribute to the so-called "greening" or Islamization of Sarajevo" (Lamphere-Englund, 2015, p.6).

Withdrawal of international donors and deterioration in reconstruction and state reforms and 2006-present

Although their collaboration was planned to be temporary, international donorships provided a basis for the development of a market economy which created possibilities for long-term engagement. In this manner, a part of the shareholders transformed into private investors and this had a profound impact in forming the major structures and contemporary public spaces in the city (Zivali Turhan & Ayataç, 2020). Instead of integrated economic program or manufacturing facilities, Sarajevo became represented by massive shopping malls not corresponding to the needs of the residents, while markets in the suburban areas filled the void in the informal economy.

All by all, the post-war urban planning in Sarajevo did not directly react to the major needs and the reconstruction phases were missing a coherent and sufficient vision and urban programming. Moreover, "no single master plan for the city's reconstruction was created, representing a split with the modernization plans of the previous century" (Kotzen & Garcia, 2014). Authorities oversaw an inefficient and insufficient level of urbanization and destruction of public spaces. Corruption had occurred as the major problem, caused by a lack of recruitment and implementation control. Planning permissions have been granted for large buildings and shopping centres without justification. The existing culture and the changing demographics

(due to the displacement) were neglected in the reconstruction phase.

In the extent of the Dayton Peace Agreement, the 1999 Sarajevo Canton Development Strategy until 2015 aimed to develop the city towards a European metropolis, strengthening the east-west connection. Due to international aid and investments, the emphasis on the economically oriented sectors increased, fostering new economic conditions and directions for locals and foreigners. This next post-war recovery phase encouraged the growth of tourism after 2015 (Fig.3). This is not surprising, as the increasing internationalisation (both in terms of labour and capital), the degree of power-sharing between the public and private sector and the transformation of industrial and urban cultures and consumption played a major role in the formation of contemporary urban reconstruction that can be observed in cities in the entire Central and Eastern European region (Sýkora, 1994; Szelényi, 1996). In the larger region, Belgrade, Bucharest and Sofia has undergone similar significant changes since the 1990s. Although, the historical contexts and their specific challenges have influenced their trajectories of urban reconstruction in distinct ways. In Sarajevo, the focus of reconstruction has been on restoring war-damaged infrastructure, preserving historical sites. and promoting a sense of

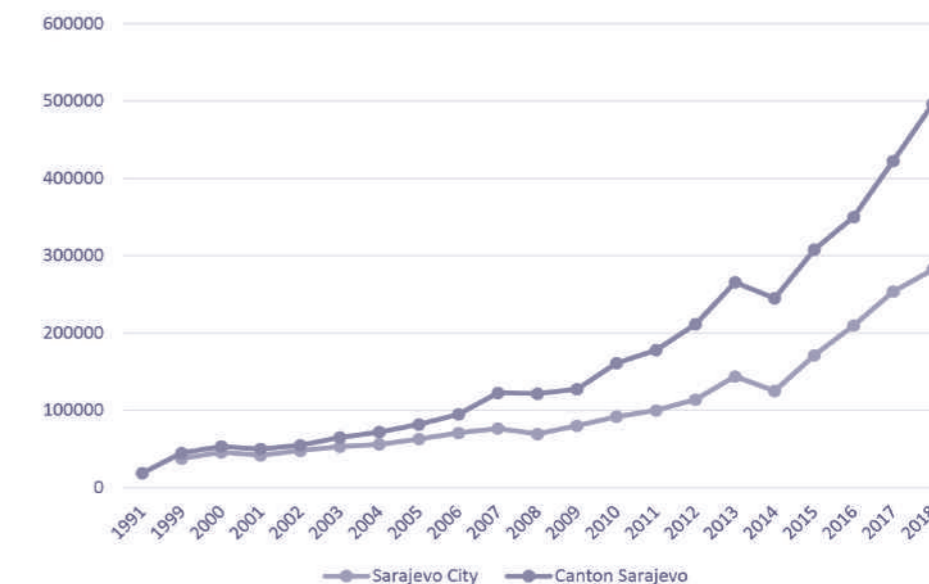


Fig.3 - International tourism indicators for Sarajevo between 1991-2018 (ZPR KS, 2010; 2015; 2019).

shared identity and memory. Additionally, the (temporary) return from displacement of qualified Bosnians changed the diaspora patterns and tourist indications in the city:

"I have returned in the late 2000s from Germany. A couple of my colleagues also came as expat to live in Sarajevo. The city became a point of civilized attraction with cheap living conditions for expats, due to the war. Since then, the increase in foreign tourists is clearly noticeable. The city has directly reacted to this socio-cultural potential and the tourism sector got more institutionalized." (A.S., male, 35 years)

Today, Sarajevo is the most popular tourist destination in the country due to its geographical position. In Sarajevo, the nature of the tourism products and presentations has transformed by building the tourism sector around the theme of war (Naef, 2014; 2016). Eventually, in post-conflict contexts it is expected that the tourism potential of post-war sites will increase, as it may play a role to overcome or reduce long-term post-war traumas and difficulties (Smith, 1998). The transformation and reconstruction efforts undertaken (with the Sarajevo Reconstruction Fund established in 2000 and guidance of the Dayton Peace Agreement) attracted tourists interested in witnessing the city's journey towards healing and rebuilding, as well as engaging with the war's history through reconstruction of historical sites contributing to the tourism potential of the city. It seems that the citizens benefit from the interaction with tourists and consider encountering as a tool to process these difficulties:

"Sarajevo is a great city to visit as war zone for tourist. The prices are moderate. It is not strange that inhabitants are open for a talk with tourists. They are pleased to welcome foreigners, as they can finally 'share their story', even almost 30 years has passed. It is a long process; lessons are still not learnt. Outsiders should not blame people in this country. It takes a long time to process the events

of war, from the governing level to the individual. We are still in struggle to find the right balance between our identity and its representation." (M.C., male, 30 years)

Memorialization Based Recovery

Culture determines and defines social life and builds social capital. Hence, culture and heritage are essential in creating the city's identity and image. Sarajevo represents the immense cultural heritage destruction of Bosnia and Herzegovina (Mileusnić, 1994; Riedlmayer, 2002). Moreover, Hadžimuhamedović (2019) defends that "the destruction of cultural heritage in Bosnia was not simply a collateral outcome of the 1990s war. It was large-scale, systematic and co-orchestrated with other forms of human suffering." Until the war, Sarajevo promoted art and music to develop authentic cultural tourism yields. Tangible and intangible cultural heritage of Bosnia and Herzegovina and its individual regions are extremely varied and reflects the very dynamic historical-geographical processes over centuries (Causevic & Lynch, 2011; Naef, 2013; Naef & Ploner, 2016). Other than the tangible heritage, cultural traditions and expressions embody the resilience and cultural identity of the local community. Traditional craftsmanship and artisanal skills (e.g. woodworking,

metalworking) have been preserved and revitalized, representing an important post-war intangible heritage. Additionally, Sarajevo's cultural scene has witnessed the emergence of new performances and festivals that celebrate the city's diversity and serve as platforms for artistic expression. Ethno-cultural events (e.g. Sarajevo Film Festival, Jazz Festival, Bašćaršija Night, Sarajevo Winter Festival) are also very characteristic and significantly enriches today's tourist offer. Although, as mentioned previously, post-Dayton reconstruction policies did not take the existing cultural context and changing cultural dynamics in consideration, but focused on the emergence of physical stability and recovery. Some of the cultural public buildings (e.g. major sport complexes, theatres, museums) were rebuilt, but (deliberate) poor management and non-funding of the creative industry by governing bodies have led to a closure of many cultural buildings.

The impact of war on tourism seems to be negative in the short term (Mihalič, 1996, p.244; Radnić & Ivandić, 1999), "although in the long run war may have a positive impact as it attracts additional tourists to the scene of the war" (Weaver, 2000). Correspondingly, the country saw a potential in the increasing demand for travel to war sites. Memorialization of the war became a powerful tool in reshaping the

city of Sarajevo and representing it to the outer world. Creating a war-based tourism was not the primary objective of the Dayton Peace Agreement. Although, the way the post-war Bosnian tourism sector has developed, manifested parallel to the conditions of the agreement (Causevic & Lynch, 2013: p.154). Since authorities and (private) investors saw a chance to promote tourism targeting the present history and memory, the priority converted from emphasizing the national identity to encouraging tourism (and thus the economy) through a politicised nature of developments. The relationship between national identity and war tourism is intricate and multifaceted, highlighting the need for a comprehensive understanding of their interplay. War tourism provided an avenue for visitors to engage with the national identity of Sarajevo by exploring war-related sites and narratives associated with the war. On the other hand, the experiences and stories shared through war tourism contributed to a shared national narrative and reinforced the sense of identity among the local community.

The integration of the urban heritage became an important component in creating the stimulation of war tourism. In post-conflict Sarajevo, the scars of the war were observable through the entire urban landscape, but particularly on the Sniper Alley (officially Meša Selimović Boulevard and Zmaja od Bosne Street), which runs through the heart of the city and parallel to the Miljacka River (Fig.4). This main artery connects the industrial area of the city with the historical-touristic places. The street posed significant danger during the war as citizens crossing it were targeted by snipers in the surrounding mountains. After war, most of the reconstruction practises have been implemented along and around this alley.

New urban projects

The aim to create a profitable business environment in the later phases of the reconstruction process, tourism related new

urban projects were considerably important. About 15 percent of the new urban projects were related to symbolic projects, temples and monuments. To give a boost to the sector, new hotel projects were implemented. The reconstruction of existing or new heritage were (partly) funded and supported by countries such as Saudi Arabia, Turkey or Malaysia (Martín-Díaz, 2014). Contemporary commercial buildings (e.g. Avaz Tower, Sarajevo City Center) created a new alternative for leisure activities, which motivated certain groups of people to take distance from the city identity predominantly shaped by the narrative of war:

"As much as I love the old part of the city, for leisure activities I prefer to go to new places. These places have less history, so I can create the history on my own. In Sarajevo, history is not always something a subject to be proud of. Maybe because I did not witness the war events, but I heard a lot of stories about it. I respect it, but we must respond to the contemporary needs and clearly these needs do not prioritize the scars of war, at least for people from my generation." (A.L., female, 23 years)

War-affected cultural sites

Besides the destruction of exclusive residential buildings, significant damage has been

claimed upon numerous sites containing religious, historical and signature buildings. The destruction of the cultural heritage targeted to devastate single buildings on the site, but at the same time to affect the entire urban sphere. These cultural sites represent various periods of Sarajevo; Ottoman and Islamic heritage, Catholic Archbishopric heritage, Austro-Hungarian heritage and Orthodox heritage. Many original documents are lost together with the destruction of these sites. For example, the manuscript collection of the Institute for Oriental Studies, which contained thousands of Bosnian, Turkish, Arabic and Persian manuscripts may count as one of the most immense cultural losses in the country. Similarly, Vijećnica (Sarajevo's National Library and Townhall) built in Moorish-style architecture during the Austro-Hungarian period lost thousands of original documents when it burned to the ground during war. Careva Džamija (Emperor's Mosque) is the first mosque to be built after the establishment of Ottoman Sarajevo. The mosque is part of a complex that includes a hammam, library and residence. The mosque and its cemetery were heavily damaged during war. Despite the fact that the site has (partly) been rebuilt in recent years, numerous bullet holes in walls are still visible (Fig.5). Based on the interview respondents about reconstruction strategies, implementations and

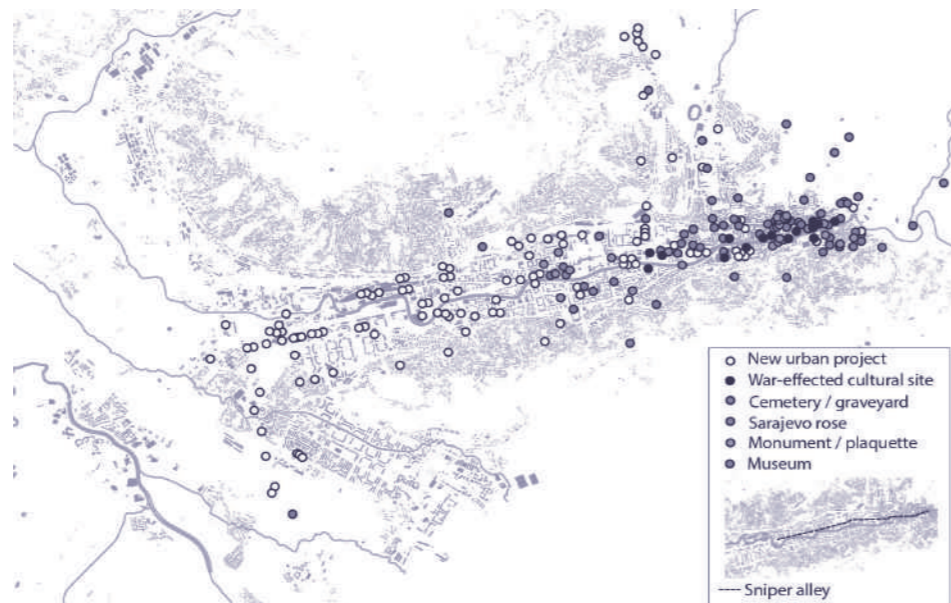


Fig.4 – Tangible traces of war in the urban layout of Sarajevo (adapted from: Ristić, 2013; Martín-Díaz, 2014).



Fig.5 – War traces are still observable on Careva Džamija (Emperor's Mosque) (personal archive Zivali, T., 2015).



their reflection on the city, it seems that the symbolic role of religious buildings and the use of public spaces have partly changed. In pre-war Sarajevo, religious buildings stand for local diversity and common space. After war, this kind of cultural property became more community specific, but at the same time more prominent as international attraction point:

“Many of my Muslim and non-Muslim friends spend time in the avlija (inner garden) of Begova džamija, which is situated very central in the city. Since my high school years, it was our meeting point. After the war we preferred to choose other places to meet. For us (Muslims), Begova has

Fig.6 – Most popular war related museums in Sarajevo⁴ - a. Tunel Spasa (Tunnel of Hope) (personal archive Zivali, T., 2012); b. War Childhood Museum (Sarajevo Travel, 2021); c. War Hostel (Emric, A., 2018 on Aljazeera).



Fig.7 – Kovači Martyrs Cemetery is an example of a city park transformed into a newly designed public graveyard (Büker, M., 2009 on Wikimedia Commons).

been a place for religious purposes only. So mostly, you see Muslim people around. But nowadays, there are also a lot of foreigners, mainly tourists, who spend their time at the avlija to rest” (L.S., female, 39 years).

Museums

Another target of destruction were exhibition institutions. Some of these buildings were already functioning as museum, but some buildings have been transformed into museums to exhibit the war. The pavilions of the Zemaljski Muzej (National Museum of Bosnia and Herzegovina) received major damage. Several parts of the complex totally burned down. A part of the exhibition showcases and documents have been preserved. After war, the museum reopened and closed several times due to non-funding. The Tunel Spasa (Tunnel of Hope) (Fig.6a) was dug by the Bosnian army and served to supply Sarajevo during the siege and was the only (relatively) secured route to the rest of the territory controlled by the Bosnian forces. Primary needs such as food, medicine and other goods were smuggled into the city through this tunnel. After the war ended, the tunnel lost its utility and collapsed. There remained only the part which was leading to a private house. The house owners turned the existing structure into a museum. The War Childhood Museum (Fig.6b) is another example that sheds light on the scarcity of goods during the war. The collection presents personal items (e.g. toys, letters, shoes) showing how children grew up and spent their time. The War Hostel (Fig.6c) stands on the site of a family house of which the owners survived the siege. Here you will get a real glimpse of how people lived under real war conditions (with a realistic and original war décor and items in the rooms) in Sarajevo. A relative of the hotel manager explains that the facility is not only established to offer a point of attraction in the town, but to represent the true emotions of the city through experiencing the war in a tangible environment:

“I did witness just a small part of



Fig.8 – Most popular memorial sights⁵ - a. ‘Nermine, dođi’ Statue (Grabovic, N., 2017); b. Sarajevo Memorial for Children (Vos, L., 2021); c. Rose of Sarajevo (Atlas Obscura, 2021).

the war. Listening to war stories is one thing, but seeing them, touching them is totally different. I have the feeling that I can finally share the sadness of the city has been gone through, the pain of many of us”. (B.L., female, 66 years)

Cemeteries / graveyards

Memorialisation forms, functions and intentions added a new layer of public space in Sarajevo’s urban layout. Numerous cemeteries and graveyards through the city became one of the sensational places referring to the war. In fact, many existing green spaces have been transformed into graveyards and herewith, a new function was designate to public spaces (Zivali, 2013). Kovači Martyrs Cemetery in the old town is one of the main cemeteries (Fig.7) viewing the commercial quarter Baščaršija. As this cemetery is -among others- prominently situated in the city centre, it raises critical questions regarding the urban layout and identity:

“Some years ago, a group of international researchers came to do a cooperative workshop here. I was

their tour guide for a couple of days before their actual work began. They were very impressed when they saw the graveyards in the middle of the city. One of them asked me why we insist on commemorating the war in such a way. ‘Isn’t it much easier just to (re)move the graves?’ was the question asked to me. It is not to refresh our memories or emotions of loss and pain. The dead are a part of this city. Maybe they are the ones who deserve to be here the most.” (I.V., male, 38 years)

Monuments and plaquettes

The continuing interest in ‘the war’ is evident through the presence of many monuments and commemorations. The ‘Nermine, dođi’ sculpture (Fig.8a) represents a video scene (recorded during the war) when father Ramo calls upon his son Nermin to surrender and that Serbian troops do not want ‘anything’ from them and promising their release. Unfortunately, the remains of Ramo and his son were found in 2008 in a mass grave near Srebrenica. The sculpture has been designed and situated in Veliki Park (Great Park) in commemoration of

this event. However, it has been repeatedly torn apart by ethnic extremists as an act of protest. Situated in the same city park, Sarajevo Memorial for Children (Fig.8b) is a significant but obscure monument standing as a testament for the children who died during the siege:

"This is one of the most benign monuments in the city, as it would be easy to miss it if you do not know its meaning. Many people, including some tourists pass by. It looks like an ordinary fountain until you read the inscription. I prefer to look to it as an ordinary monument instead of a commemoration of war." (T.A., male, 19 years old)

Scattered through the city, the 'Roses of Sarajevo' (Fig.8c) are scars from grenade explosions, marked with blood-red paint. Following the marks provide a basic but sufficient passage to visit the main war attractions:

"You can directly recognize tourists in this city. If you see someone looking

up to the facades of buildings or looking down and take a look at the 'roses', you definitely know it is a tourist. Most of the inhabitants walk by, they are used to the red marks, but foreigners find it impressive, because the marks on the ground explain themselves. Most of the walking tours in the centre are arranged according to these marks." (M.E., male, 63 years).

Intangible and informal memorialization

The problems plaguing post-Dayton Bosnia and Herzegovina extend beyond the context in which the tourism industry develops in sense of the built environment. Besides physical remarks in the urban landscape of Sarajevo, intangible and informal traces of war are also a part of the warscape. For example, tourists can buy -among the famous džezva (traditional copper coffee pot) and colourful carpets handmade crafted

grenade cases and bullet shells in various sizes in the old commercial quarter Baščaršija (Fig.9b). This type of craftsmanship play a major role in the story that portrays the country to tourists. Although, not all of them conceive this approach as acceptable:

"Some tourists are surprised with the fact that they can buy souvenirs featuring war motives. The shops in Baščaršija (old town) sell souvenirs like carved and decorated bullet shells and grenades. Many tourists think that it is just an attractor, but react surprised when they come to know that they are materials being used during war time. For some it is a great souvenir, while others think it is a reminder of hard times and just provokes negative thoughts about war." (I.V., male, 38 years)

There are also many paintings as public messages in Sarajevo that refer to the war. For example, in an alley in the old town there exists a painting depicting a soldier defending his city. The

accompanying text reads: 'I love this city, I defend this city' (Fig.9c). This type of public expression has transformed into artistry through years and created a distinctive field to coalesce:

"My friends and I have a platform where we create and share public art. With this, we try to reach the city beyond traditional urban boundaries. We work together with NGO's. cultural centres and various institutes. But in particular the youth is very important for us. They tend to leave the city, but by increasing the awareness, we can increase their attachment to Sarajevo." (A.C., female, 33 years).

The commemoration of the war in forms of art has not been expressed only in the urban layout of the city, but also with national holidays, yearly events and practices. Except of Independence Day (1st of March) and Statehood Day (25th of November), there are various unofficial days in remembrance of the Bosnian war and its victims. Much national and international

attention has been paid to the memorial event "Red Line" with 11,541 red chairs lined up along Tito Boulevard (Fig.9a). The event was held on the sixth of April in 2012 in memory of the citizens who died during the war. Similar events have been held in various cities in the country.

According to MacCannell (1973), tourists seek the "real, experienced life" of the locals, willing to pay for activities that interactively bring them closer to the visited "other". It seems that the personal stories are the most attractive ones. Parallel to this, Causevic & Lynch (2011) argue that individuals such as tour guides are also willing to share their side of the narrative:

"There is lots of emotions, such as sadness, frustration, confusion and disappointment inside us. We were not able to share the frustration during war time, this caused serious post-traumatic situation. Traces of war in the city is an expression of our anger. With tourists we have moments we

can bring out our dimmed voices." (A. D., female, 33 years)

In this manner, investments are made for touristification and advertisement of the war sites (Fig.10).

"I have been running this tour agency for over 20 years. I can see a clear change in behaviour and demand of 'the tourist'. In pre-war Sarajevo, the city was known for its Franz Ferdinand and Olympic Games. The city has attracted many tourist (especially from outside the Balkans) after the Olympic events during the 80s. Winter sports and winter tourism increased, but again drastically decreased during war time. After war, winter and cultural tourism have been promoted through the advertisement of war." (I.V., male, 38 years)

CONCLUSION

Sarajevo is the historical symbol of the once divided Europe and a melting pot of the East and West united in diversity. This identity positioned Bosnia and Herzegovina

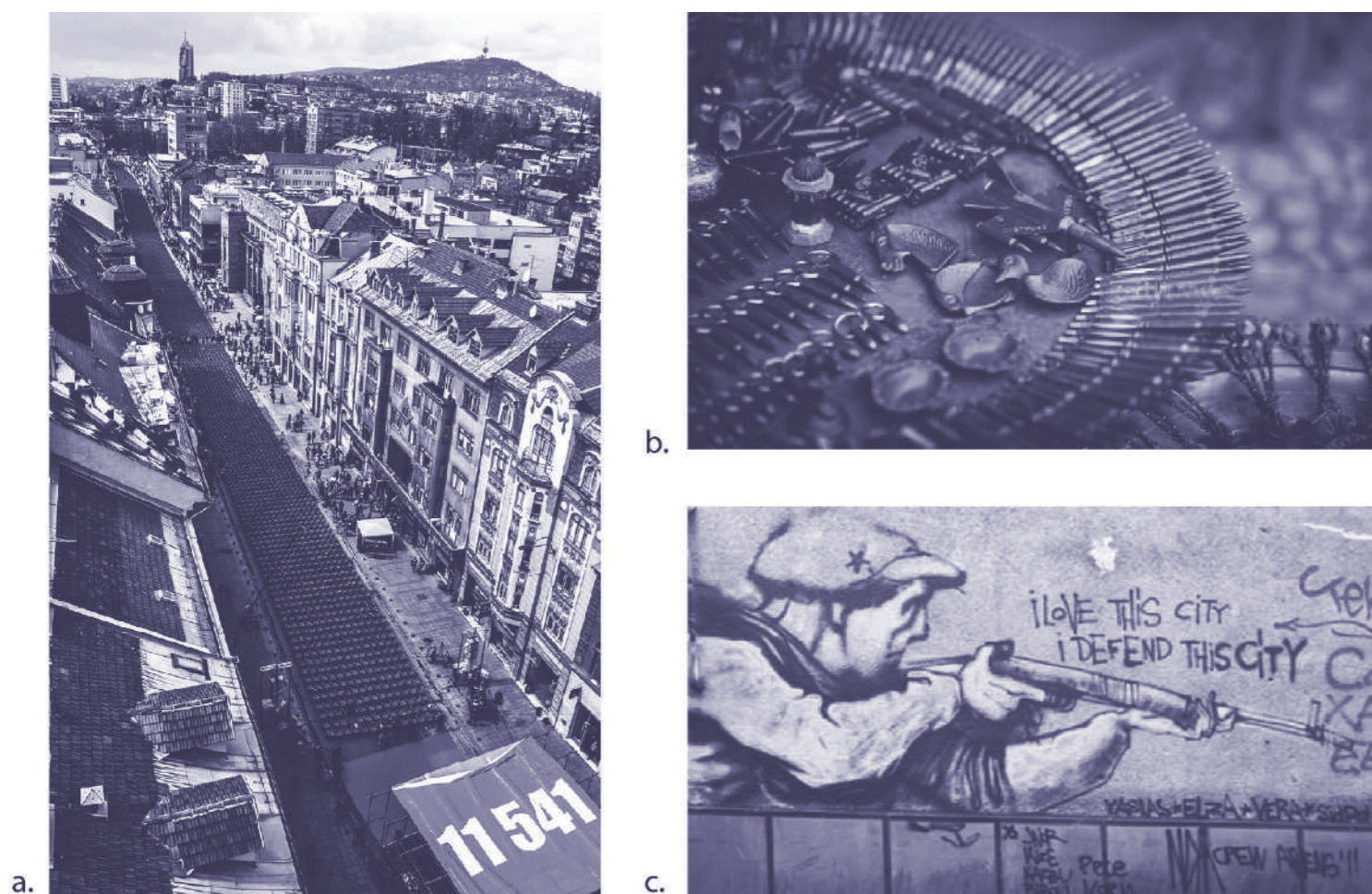


Fig.9 – Well-known intangible and informal forms of memorialization - a. Sarajevo Red Line (Wikimedia Commons, 2012); b. Decorated bullet shells (Anadolu Agency, 2018); c. 'I love this city, I defend this city' graffiti (Flickr, 2012).



Fig.10 –a. Promotion flyer of the film festival event in 1993; b. Promotion flyer for a war tour in Sarajevo (Sarajevo Tourism Office in Naef, 2012: 4).

as a vulnerable state through its history. One of the key experiences that fostered this fragility is doubtless the Bosnian War during the 1990s. The post-war Dayton Peace Agreement was inaugurated as political compromise to create a new state identity and stabilize the economic, socio-cultural and political values. Regarding reconstruction approaches, various strategies have been adopted; the emergence in physical reconstruction and containment in conflict in the early post-war years; shelter and property restitutions and international protectorate; rebuilding of government institutions from the early 2000s onwards; and gradual withdrawal of international donors. Although, early institutional development and sufficient funding provision at the local level could have resulted in better planning and coordination. In this manner, a more formal incorporation of cultural tourism should have been employed with prior consideration of the current issues and constraints in Sarajevo during the Dayton's reconstruction phases.

While it was not stated as a major subject, the reconstruction of the city through protection, state-building, reorganization of land and economic targets opened doors for tourism with war as main attraction in the sector. The change to a different type of tourism has determined the new image/identity of the city. Today, a large number of tourists is visiting Sarajevo by the stimulation of war. In this sense, war-based tourism created many new opportunities for revival and recovery of socio-spatial tissue and helped to generate income for the city and (re) created job opportunities for the local community, especially in the field of tourism, craftsmanship and outsourcing creating a favourable workforce environment for external companies and competitive labour opportunities for locals.

Based on the interviews, personal attitudes towards war tourism can be classified into three categories: war tourism as a source of moral awareness; war tourism as a

primarily source of economic development; war tourism as an ethic failure and humiliation towards the Bosnian cultural and natural values. These dimensions reveal the perspective and the degree and form of attachment of the residents to the city. Additional research emphasizing on the tourists' perceptions could serve as a contribution to this classification. Further investigation could delve into exploring the innovative utilization of rituals, social activities, and how the emergence of new cultures in Sarajevo can effectively mitigate the lingering effects of the city's dark past. With this, it may strategically promote alternative directions for its socio-cultural development.

Another important factor in the reconstruction (and thus the recreation of the cultural identity) processes is the cultural heritage itself. Literature shows that in the context of Sarajevo, there are basically two categories in the heritage management process; the pre-existing cultural heritage constituted before the conflict, and the heritage created by the conflict. In this manner, there is a clear differentiation between the rehabilitated and the new heritage. The dissolution of Yugoslavia did not perse dissolve -but rather transformed- the cultural values of Bosnia and Herzegovina. The war of the nineties has become a part of their culture. The urban metamorphosis seems to have developed a third type of 'hybrid' heritage in which structures already were existing but lost their symbolic value and/or significance as cultural heritage, which have strengthened the moral awareness of 'do forgive, do not forget'.

Unforeseen and present global events are directly affecting the familiarity of Bosnia and Herzegovina, rather than the war. For example, the pandemic which emerged from 2019 on, offered the possibility to work remotely. A significant number of displaced Bosnians (especially in Western European countries) chose to return (temporary) and work from their home country. Many juniors,

the so-called 'digital nomads', saw remote working as an opportunity to return and have established small businesses (especially in the IT-sector) in Sarajevo. Short-term and long-term prospects and impacts on the socio-economic area may offer the potential to a shift from tourism-based economy to an entrepreneurial economy. Another current issue concerns the changing demographics of the country. Subjects as brain drain and migration are main concerns the capital city must deal with. Many young people leave the city due to low job opportunities. On the other hand, migration flows are affecting Bosnia and Herzegovina due to its geo-political position in Europe. A large number of (especially Middle Eastern) migrants move through the country towards the Western countries. Appropriate procedures and behaviour towards these new coming groups are essential in the formation of a moral and national identity, as Sarajevo has experienced similar difficulties and challenges as these refugees do experience today.

Results show that the new post-war physical (reconstruction strategy policies) and social (citizens' perception) layer integrated in the existing townscape emboldens the vision of war tourism, which can be comprehend as the intended outcome of purpose of promoting and engaging tourism activities related to war-affected areas in Sarajevo. Yet, long-term revitalization of both the physical and social structure of the city requires to integrate present city dynamics and thus react to the above-mentioned contemporary nomadism and migration-related issues instead of neglecting them. Building upon this study, further research regarding local and national policy interventions and a clear-cut management strategy in especially economy-related sectors can form the base in the process of future policymaking. Then indeed, appropriation of war tourism may open doors to a refreshed new image of the city with the war as a part of the history, representing one of the most vibrant countries of the Balkans.

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NOTES

1. 4. 5. Sarajevo's most popular attractions (1), most popular war related museum attractions (4), most popular memorial attractions (5) according to the travelers' rankings on; tripadvisor.com, booking.com, google.com, getyourguide.com, culturetrip.com, trip.com, lonelyplanet.com, Travelocity.com, expedia.com, viator.com.

2. The PhD research entitled "Cultural Encounters in the Multi-Ethnic Setting: An Ethnographic Study of Belonging in the Urban Landscape of Sarajevo" conducted at Istanbul Technical University, department of Urban and Regional Planning aims to examine and reframe the theoretical basis of Place Attachment in reference to Ethnic Diversity, and to evaluate the theoretical framework through citizens' narrative.

3. Canton Sarajevo represents the metropolitan area of the country's capital city, including nine municipalities, of which four of them forms Sarajevo City.

ATLAS

ATLAS

The University of Universities project is, at heart, a pedagogical innovation that seeks to draw together students and academics from across Europe and beyond in the pursuit of thinking, learning and creating in the fields of art, architecture and urbanism. The opportunity is there for us all to learn together, to cross-fertilise our understanding of place and to develop new techniques to become better and more relevant designers. The UoU runs workshops throughout the year with just these goals in mind. And, every year, many, many students work together online and in person to set the creative spatial agenda for years ahead.

The ATLAS section of the journal is a chance to showcase projects that touch on the theme of an issue, and that show new ways of investigating and communicating ideas.

On the pages that follow we get to see some wonderful work from students in Edinburgh (Scotland) and Nicosia (Cyprus) who were faced with the prospect of thinking about borders in their studios.

In the former case, those borders were to be found between the natural and the man-made in considered sites in Berlin. What is impressive here, is that the students had to develop investigative tools to drill down into the problem being set and to help them arrive at conclusions that they could move forward towards potential solutions. The students explain themselves well, so without repeating that here, it is worth

emphasising this identified need that unites these projects - to understand the boundary and the micro relationships around it, to question the spatial and temporal qualities of it and to remember at all times that boundaries implicate humans and non-humans. In the case of Nicosia and Agios Sozomenos, the border as a marker and remnant of conflict is all too apparent. By devising new 'mapping' techniques students are able to capture something of that borderscape - 'mapping the invisible' as they put it - and to interrogate it.

The communication of the findings and the emerging solutions they lead us towards are carefully presented by the students. The 'visual' is an international language and we see a range of drawing, photography and painting techniques in use to project the tangible and intangible results of seriously useful work.

The call for this edition was designed to stretch the imagination and to engage with new ways of looking at a condition we are all familiar with. The submissions all emphasise the role of the pedagogic enterprise that is university education in architecture and urbanism in equipping students to do this, and, by reciprocity, also equipping the staff with the where-with-all to have complex and meaningful discussions.

As the University of Universities projects grows (it is now at 30+ partners) there will be more opportunities for students to virtually and physical cross boundaries and to learn from and with each other.

Devereux, Michael¹

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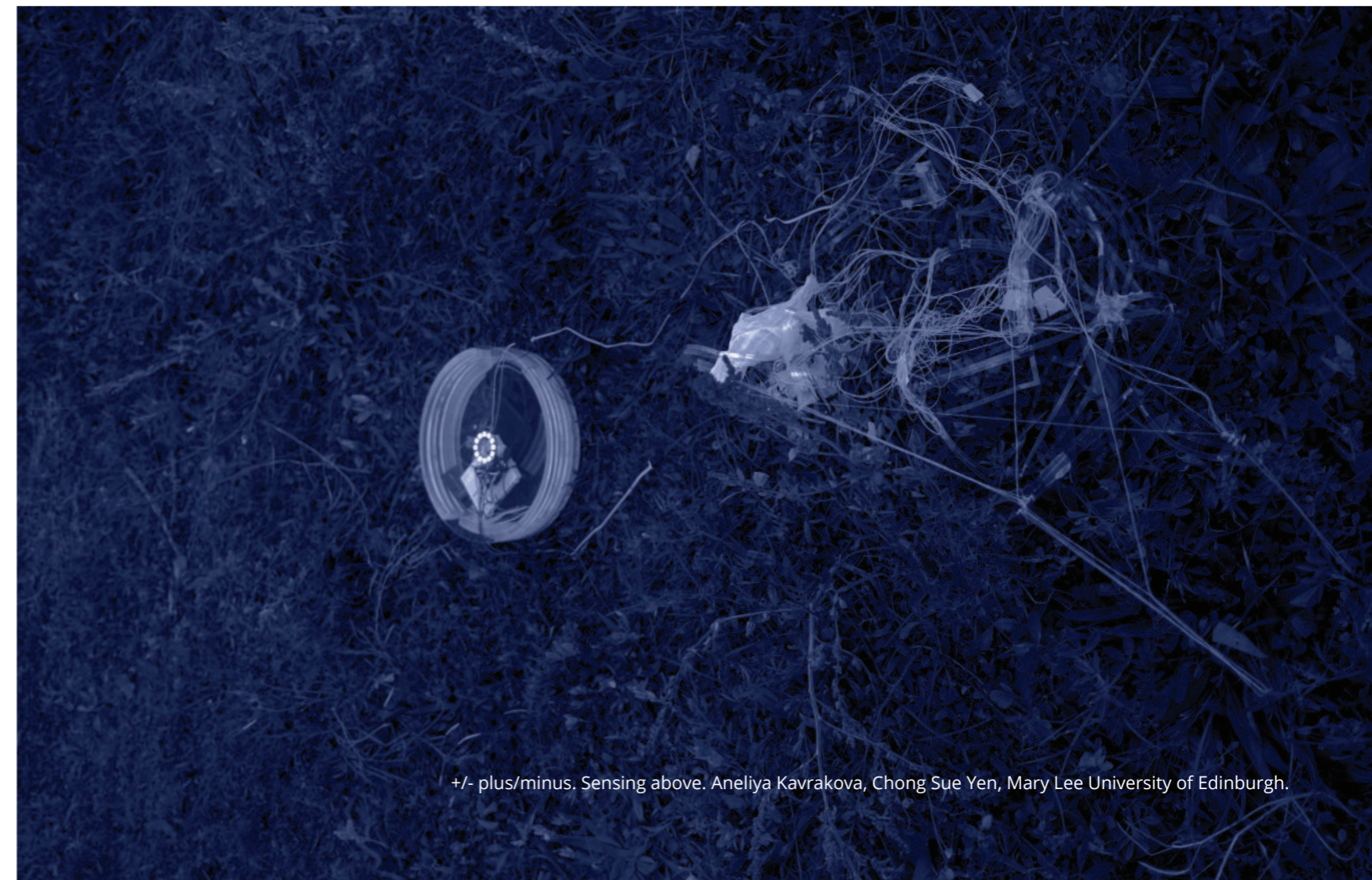
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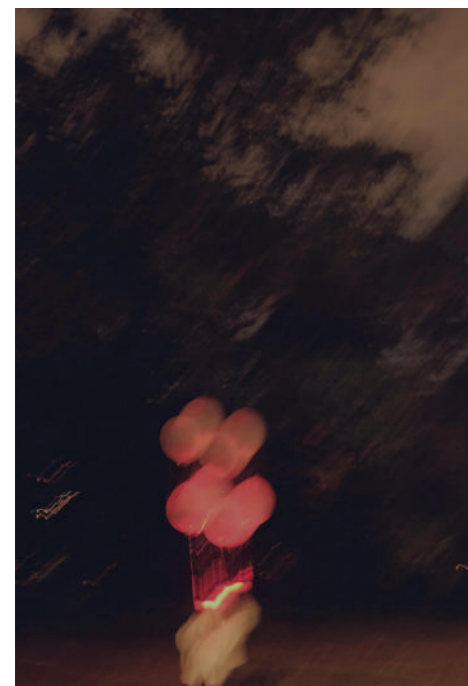
+/- plus/minus. Sensing above. Aneliya Kavrakova, Chong Sue Yen, Mary Lee University of Edinburgh.



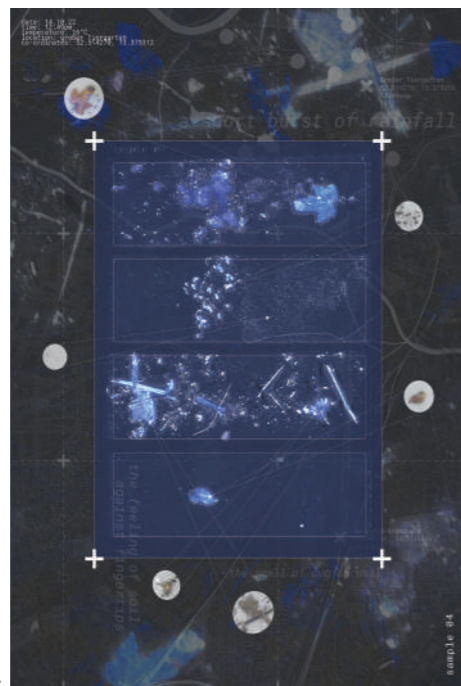
+/- plus/minus

Aneliya, Kavrakova; Chong, Sue Yen; Mary, Lee

¹University of Edinburgh, Master of Architecture*



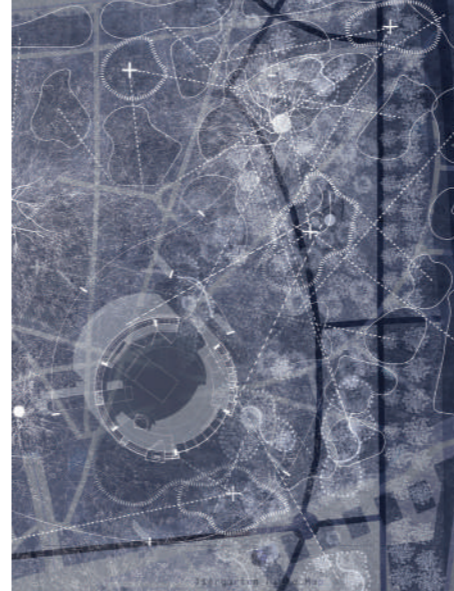
1.



4.



6.



1. +00. Sensing Above, Air device

2. +00. Sensing Above, delicate weaving of air device lattice frame

3. -00. Sensing Below, Soil device, a portable instrument

4. air sample from Tiergarten

5. -00. Sensing Below, sonification of soil and air conditions.

6. Synthesise, an ecological journey across Berlin. Map of micro-interventions of field stations across Berlin

7. Nord-Sud Grunzug experiential field station, Tiergarten mycorrhizal field.



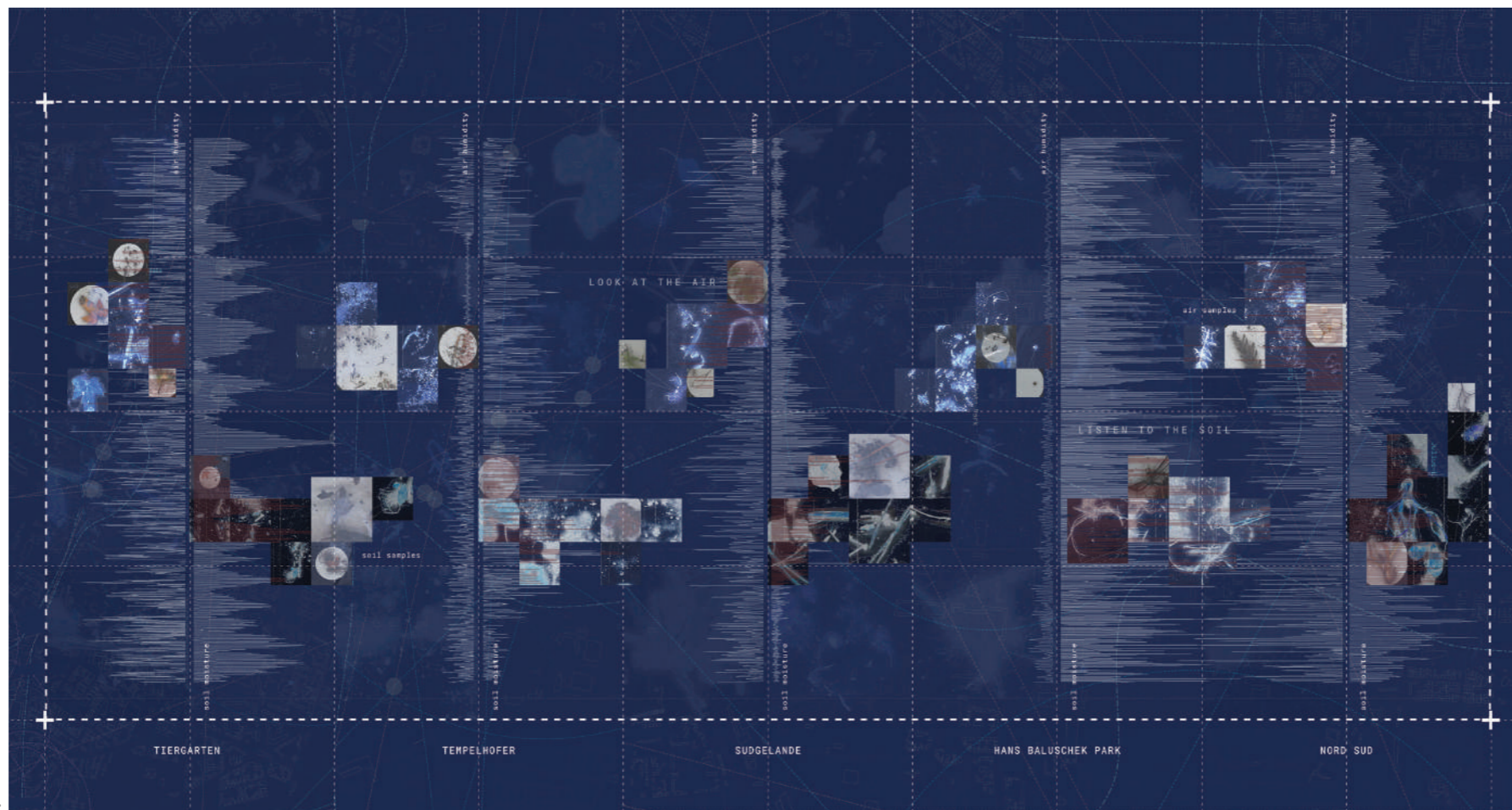
7.



2.



3.



5.

The mainstream narrative in scientific literature is one of competition and the survival of the fittest in times of trouble and emergency. While this remains true, a more silent narrative is emerging. This is the one of reciprocity and the mutual flourishing of multi-species. These reciprocal relationships - between trees and fungi, dolphins and fishermen - have always been there all along, and we are only just beginning to unravel them. In our time of climatic emergency, we shift our attention to our more-than-human kin for ways to rebuild more reciprocal relationships between the democracy of species. plus/minus is a continuation of an existing approach to ecological and economical thinking, exploring the circular and reciprocal relationships within the critical zones between soil and air. The study is situated in Berlin, Europe's most biodiverse city, and learns from the post-war development of the urban brachens, practices of controlled neglect and the balance between preserving as is and developing value.

Berlin is explored through the lens of the datascape, mapping its ecological landscape against its economical and infrastructural topography. This top-down research methodology through the technocentric infrastructure of the city was combined with a bottom-up urban research practice through two surveying instruments. An Air and Soil Device were constructed as a method of understanding the city, whilst exploring the feasibility and processes of a more hands-on urban ecological research practice across five key sites in Berlin. These surveying instruments function to communicate between air and soil to humans through a technological interface, mediating the thresholds between the heights above and below the human's everyday perception.

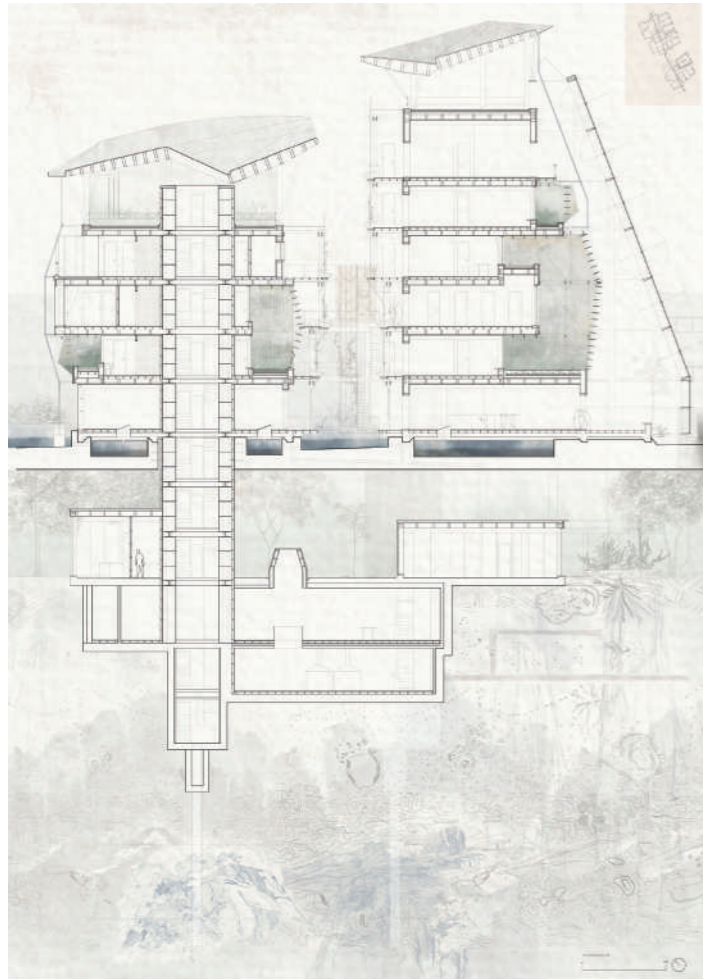
Learning from this body of collected fieldwork data and embodied spatial practices with the devices, the proposal envisions a network of micro-interventions spanning across the city. At each site, a research field station is situated as an initiation to connect and redefine the borders between the air and soil, between human and non-human relationships, and between science and perception. These sites act as test beds in generating alternative narratives of economy and ecology in urban Berlin. Together, they string a journey through the North-South Greenbelt of Berlin with tales of reciprocity, generosity, and care between the human and non-human kin who call Berlin home.

*Studio Sender Berlin. Tutors: Miguel PAREDES MALDONADO, Andrew BROOKS, Andrea FAED. University of Edinburgh, Master of Architecture.

Waterscape - A Permeable Moment

Mari, Helland

University of Edinburgh, Master of Architecture*



1.



2.

In *Critical Zones* Bruno Latour defends against landing on earth, calling moderns 'absent landlords', a distinction between the politicised world they live in and the natural world they live off¹. Drawing out the edges, the threshold between the concurrent existences prompt a place of presence, a possibility for encounter between the twofold².

Conceived from an ambition to unite Latour's dual world, the project 'Waterscape - A Permeable Moment' seeks a better understanding through weaving

the urban and natural landscape of Berlin into a pseudo 'critical zone'. As such it rejects well-established beliefs of the anthropocentric city through reimagining the way we inhabit it by re-organising its waterscape to promote a synchronicity between human and non-human counterparts. Considering the building as a threshold through its rethinking of the human-centric cityscape, it embodies a space in-between the natural and the urban, its porous boundaries speculating as to on what the post-Anthropocene city

might entail.

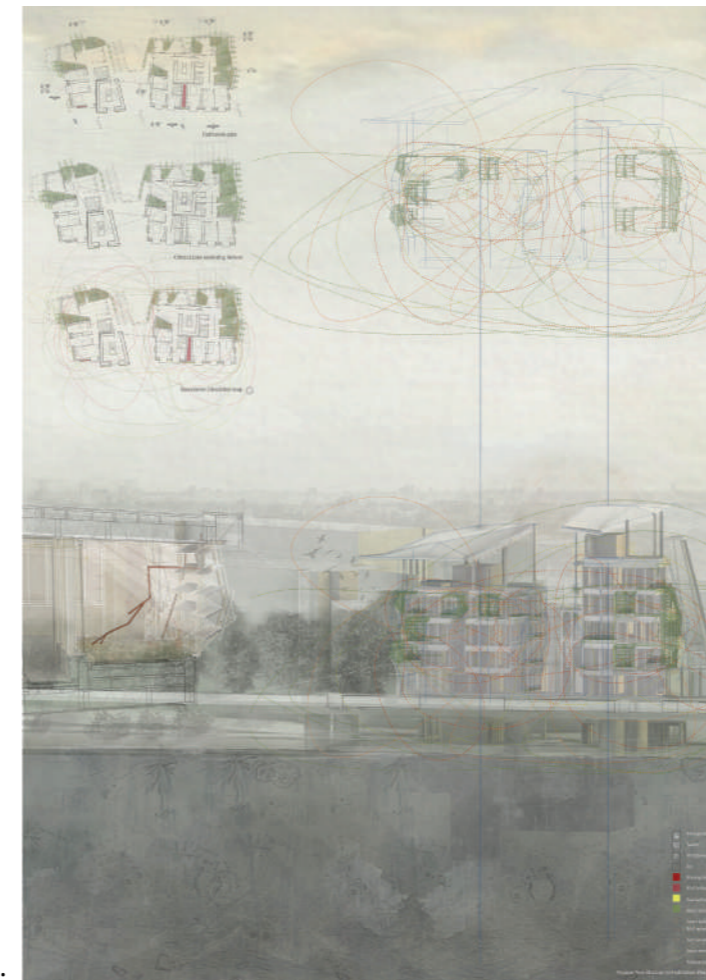
Catalysed by intensified climatic changes, the project recognises its existence within a liminal space. The masterplan (developed as part of group work) questions existing infrastructures, offering a proposal for a climate of dichotomies, periods of increased rain and drought. Imagining such as concurrent to a move away from car-centric transportation, the motorways of Berlin offer a real estate suited for these new infrastructures, and thus embodies the duality of the

threshold, as existing between the spatial and temporal. It envisions a new waterscape that connects existing rainwater catchment areas, offers natural filtration and vital storage and allows the city to mediate the change in precipitation patterns. Implementing natural landscapes in the filtration process creates new homes, that within the lakes and amongst the reeds, has the potential to provide for the multifarious life within the city.

Distinguishing the housing crisis as occurring for both the human and non-human population of Berlin, a residential building for people under 30 seeks to relieve the issue. The project uses thresholds, cuts into surfaces of the building, to create a porous and habitable skin, with planting beds, birds, insects and bat-habitats promoting coexistence, offering a moment of respite from the non-human flight from the city. Aiming to leverage the threshold that has too often functioned as separation between Latour's two worlds and enforced the human-centric view

in the ambition to divide social and environmental factors, the project instead considers it as a place of encounter between species³. It is a place of transition, not only between spaces, but also where nature can thrive throughout the seasons, designed as a biosphere with multiple habitation and hunting opportunities across the building. This is merged with the building as a vessel for water, a method for collection with the 'droplets' caught is used to replenish the ground beneath and feed the building's thriving greenery.

Linking together the past, present and future, the building attempts to join Latour's worlds, and imagine how a building for the post-anthropocene might mediate co-existence between humans and non-humans. The proposal recognises water as life-giving, and as such aims to offer a greater level of water security to the people of Berlin through leveraging existing car-centric infrastructures in the city.



3.



4.

*Studio Sender Berlin. Tutors: Miguel PAREDES MALDONADO, Andrew BROOKS, Andrea FAED. University of Edinburgh, Master of Architecture.

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2. Edward S. Casey, *The World on Edge* / Edward S. Casey. Bloomington, Indiana: Indiana University Press, 2017

3. Till, Boettger, *Threshold Spaces: Transitions in Architecture, Analysis and Design Tool*, Basel/Berlin/Boston: Walter de Gruyter GmbH, 2014.

1. The building as a threshold.

2. Site strategy and overview.

(group project:

Mari Helland, Lulu Alsharan, Minyoung Choi and Alice Reed)

3. Contextual section and water strategy drawing.

4. Contextual drawing and floor plan.

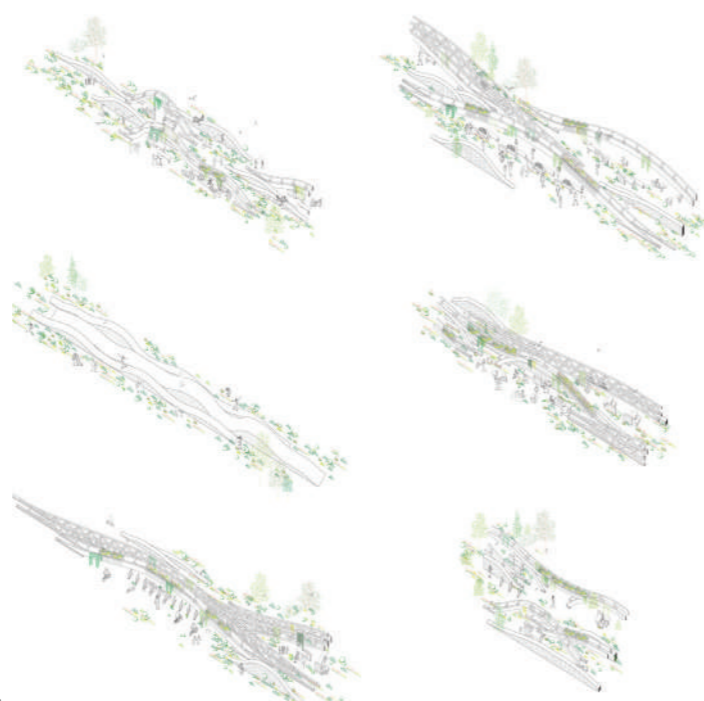
Interspecies threshold strips in Tempelhofer Feld - Berlin

Changhuan, Xu; Yunfang, Xu; Xiaowei, Xue

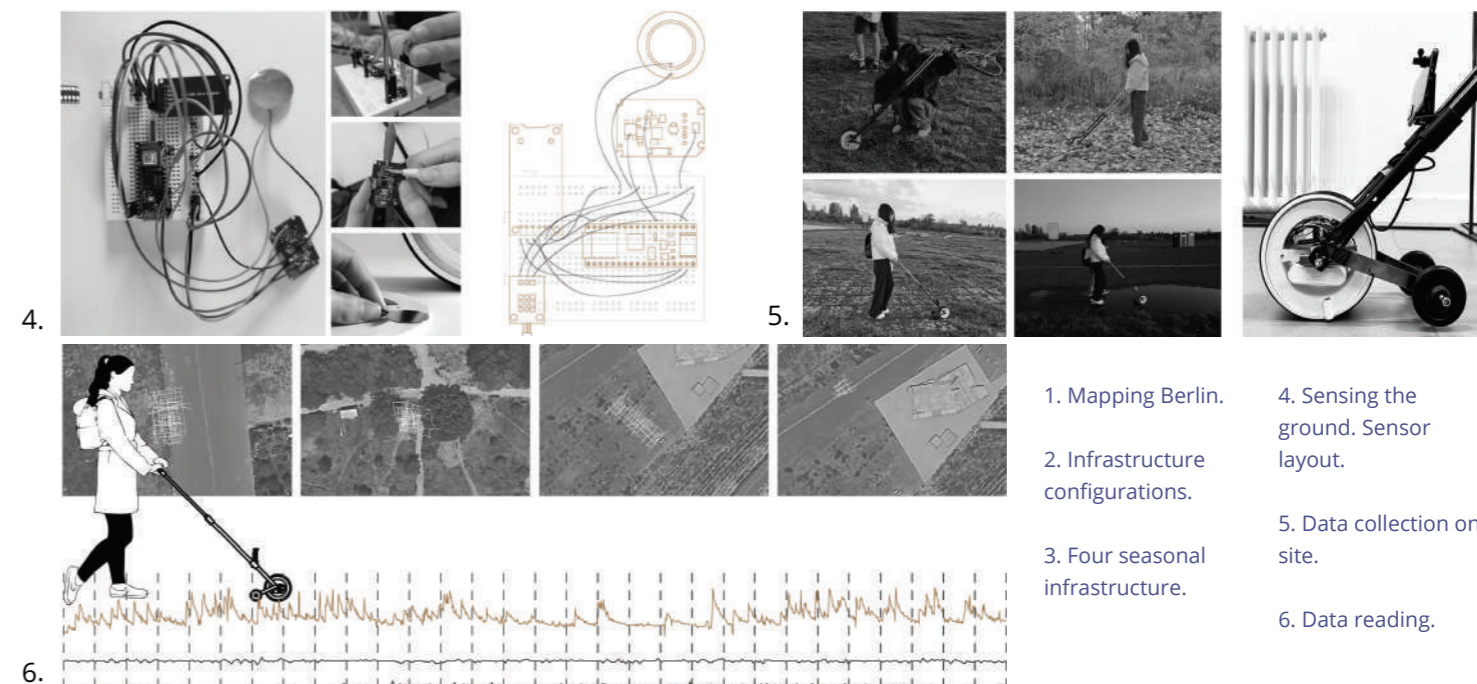
¹University of Edinburgh, Master of Architecture*



1. 2.



3.



4.

5.

6.

1. Mapping Berlin.

2. Infrastructure configurations.

3. Four seasonal infrastructure.

4. Sensing the ground. Sensor layout.

5. Data collection on site.

6. Data reading.

Berlin, as one of the most biodiverse metropolises in Europe, hosts an enormous variety of flora and fauna within its urban fabric. When studying the interactions between different species we discovered that human activities disrupt other species where their paths intersect. This creates boundaries between human and non-human species.

By using the ground as a medium for encounters between humans and non-human species this project aims to challenge the boundary between nature and artificiality, creating a space for interspecies coexistence. The expanded ground turns interference into positive interactions among different species, fostering a conversation between them.

Mapping Berlin – Searching for Contact Zones.

This project was initiated by the exploration of contact zones between humans and non-human species. We focused on the city's natural landscapes and reinterpreted different types of green spaces as ground textures to examine their relationship with the interactions between humans and urban wildlife. Tempelhofer Feld, a former airport, was chosen for further investigation due to its flat topography and the potential for conversations between humans and other species.

Sensing the Ground – Identifying thresholds within contact zones.

We prototyped a wheel-powered digital sensing device to study the vibrations of different ground textures, exploring the habitats of both human and non-human species. We surveyed data from four different sites, each representing a threshold between natural and artificial textures: Grass growing between tiles, creating a blend of textures; the distinct boundary between the grass field and the asphalt runway; seasonal leaf litter as a unique feature; the appearance of water ponds during rainfall. In these sites, we discovered the possibilities of integrating

nature and artificiality, as well as the interactions between human and non-human activities.

Design Intervention – Breaking boundaries.

The infrastructure serves as an extension of the ground, providing shelter for all types of species. It expands the ground and enables various forms of life, aiming to activate Tempelhofer Feld by creating potential contact zones for different species.

Taking into account the density of species distribution in the Tempelhof area, we identified four sites in the most populated areas. We added thin "stitches" to these sites, connecting the park's edge to the center, encouraging human activities from the periphery of the park to move towards the center and connecting interrupted habitats of non-human species. We employed various curved compositions to create different spatial conditions. The structure provides essential infrastructures to accommodate various activities, allowing people to spend more time at the center of the park. Nesting boxes are placed on the structures, providing additional habitats for plants and wildlife. The location and heights of the nesting boxes were carefully considered based on the characteristics of the selected species, while also encouraging all forms of life to inhabit them. The structure adapts to the needs of different activities throughout the seasons. Additional seasonal textures embrace various habitat requirements and stimulate more interactions. Using natural materials, the structure will gradually decay and merge back into the ground in the future, expanding the habits of both human and non-human species without clear boundaries.

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Natura Urbana Revival

Bridging the boundary between humans and nature

Zhaoyi, Yan¹

¹University of Edinburgh, Master of Architecture*

RENDERING SOUTH FACADE



1.



4.



3.



2.

1. Bridging boundaries between human and nature. View of the south facade.
2. Site plan of the intervention
3. Section of the residential modules.
4. Detail of the facade

This project explores the present and possible future of a former parking lot in Berlin, Germany. The previous building on the site has become abandoned, and it is being used as a testing ground to initiate communication with the surrounding parks and residential areas.

New residents are being guided to restore building facilities using simple, transparent, and sustainable materials and methods. The goal of this work is to spark discussions around the future of post-industrial urban centres and communities.

The design outcome is not a final product but a gradual transformation of the design process. This proposal allows something to dissipate over time while building a new foundation for humans and other living beings to coexist with mutual respect.

Restoring dialogue with nature is a primary objective of the project. The plan aims to maximize the connection between humans and nature while ensuring residential density. The ground floor serves as a bridge between the original northern garden and the newly built garden in the southern part of the new communication site. Green natural areas are set up in the north and south, guiding people towards the central natural atrium and encouraging them to create suitable habitats for both human and non-human species in this area.

The inserted residential modules are divided into two different scales: single-person and family, measuring 40 square metres and 80 square metres, respectively. Additionally, a small theatre with a capacity of 100 people can be added to the ground floor to meet the daily needs of community residents. The newly built lightweight wooden frame, with the size and combination of the concrete frame as the template, is used to rebuild the roof garden and integrate it into the residential design.

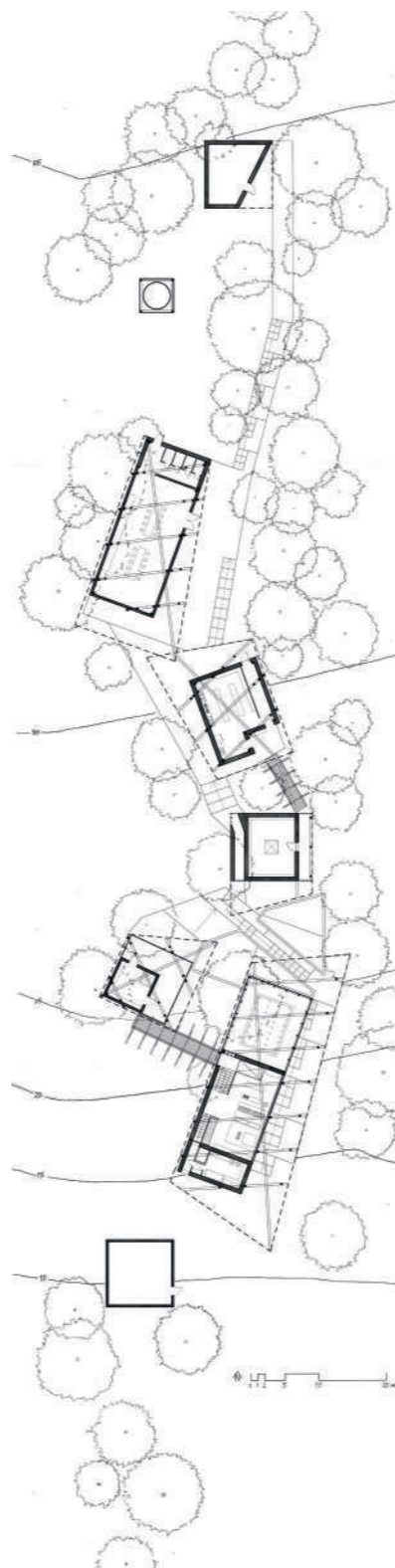
*Studio Sender Berlin. Tutors: Miguel PAREDES MALDONADO, Andrew BROOKS, Andrea FAED. University of Edinburgh, Master of Architecture.

Lines in Landscape

A Mushroom Farm

Gerhardstein, Alicia; Reece, Tsa; Peng, Tom

University of Edinburgh, Master of Architecture*



1.

1. Hanging hedgerow layered linedrawings showing decay over days 1-6.

2. Hanging hedgerow layered watercolour paintings showing daily decay over days 1-6.

2.

3. Plan of a Mushroom Farm scheme.

4. Hanging hedgerow experiment.

3.

4.

"A hedge is an edge habitat that has two sides or, in other words, a hedge is all edge" (Wright J., 2017).

The starting point for this project is the Hedgerow, which is in essence an edge, or a border. This quality makes hedgerows excellent habitats for fungi. 'Stress fruiting' occurs within edges of hedgerows when mycelia (fine fibres that make up fungal colonies) detect a lack of nutrition away from supporting trees and sexually reproduce in an effort to maintain the species, producing fruiting bodies (mushrooms). An abundance of light (not present in dense woodland) associated by fungi with moving air, and needed for dispersal of spores also increase mushroom growth. Hedgerows are also landscapes of human construction, at very least in their conception. These defining characteristics are explored in the making of a hanging hedgerow model, composed of species samples from our chosen hedgerow. The effect of time, an essential component to all life quantifying stages of living and decomposition, is explored through line drawings mapping the changing borders of the hanging hedgerow as it withers over a week. Daily decay shown through border movements are highlighted using watercolour.

Nothing human, nor non-human exists in isolation. Hedgerows are a perfect example of interdependence and collaboration of biotic and abiotic in a landscape; collaboration between water, climate, flora, fauna, fungi and humans. Therefore, the hedgerow is also the perfect design impetus for a Mushroom farm. Also encompassed within a hedgerow, the farm contains spaces for all the stages of a mushroom's life cycle (from a human perspective). Water is central to the scheme, as it is to all life both in a Hedgerow and beyond. The roof of each building mimics a tree canopy collecting water through gentle inward slopes which funnel water at one central point from roof to roof moving with gravity. Finally collected in a reflective pond, water penetrates beneath the ground in root adjacent movement through pipes to a filtration unit at one end

of the site, whereafter it is pumped up to a water tower at the other end of the site for redistribution. With wandering pathways parallel to farm's buildings, visitors can process up the site to the dining space whilst observing the growing, harvesting, storage, and cooking of mushrooms; the journey between one building and the next is a transition across the stages of a mushroom's lifecycle. While there are two paths across the site, one for visitors and one for movement of mushrooms from one stage to the next, these pathways intertwine and cross over. This represents the interwoven nature of species in a hedgerow and of all life on earth; interdependence, symbiosis (and sometimes mutualism) and collaboration of biotic and abiotic components across ecosystems and species borders in vital (Tsing A.L, 2015). Within the scheme, interwoven movement removes existing boundaries between food production and consumption. Indeed, there are great physical and intellectual borders between food production and consumption in our world. Crossing these borders is vital not only for increasing food security in the future, but also for recognising human reliance on other species. Disconnecting from a human centric outlook on the world is key to understanding a landscape environment. Collaborative survival is only possible through cross species coordination, and the transcendence of human imposed borders.

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Edges, Symbiosis, Mutualism, Interweaving, Temporal change.

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Time Synergies

Adaptive Architecture

Kyriacou Petrou, Angela; Hadjisoteriou, Maria

University of Nicosia, Department of Architecture*

Perceived as a distinct militarised border the site of the buffer zone in Cyprus has remained tinged and stigmatised by its ambiguous status. However, the boundary between the north and south of the island has been appropriated through different occupational patterns and activities as well as unseen movements and crossings which penetrate the seemingly rigid green line.

Unit 6 investigated the space of the buffer zone from the dense urban site of Nicosia to the uninhabited, abandoned village of Agios Sozomenos. Ground-truthing attempted to communicate ideas about the material conditions of the site as well as personal stories, and practices, which exposed unseen layers of complexity. Through cataloguing actual conditions and creating detailed mappings, representations of the sites attempted to disassemble predetermined ideas about the boundary as simply a line of division, but instead sought for alternative layered narratives of place, re-reading the border-land as a zone of interaction and a dynamic zone of exchange and hybridity. Acknowledged as a site of contestation but also fusion, the boundary was seen, not as a line that delimited a national boundary, but as porous edge, an overlap of

old and new, private and public and a continually mutating landscape.

Studied in parallel the two conditions of the buffer zone revealed the complexities and paradoxes of the specific sites. The buffer zone in Nicosia is evidenced through repeated fragmentation of networks, dead ends and militarized zones of a dense urban space. A series of additions and subtractions emerge along the boundary line often where military fortifications meet domestic spaces, linking everyday living with discarded underground tunnels, trenches and other disused structures. The seemingly strict buffer edge is seen to take different forms masking, extending and penetration the architectural shell as well as the surrounding landscape resulting in a mutation of the edge. Organic appropriation begins to shape and mutate the existing environment; these conditions create opportunity for small-scale public activity and mechanisms for urban transformation.

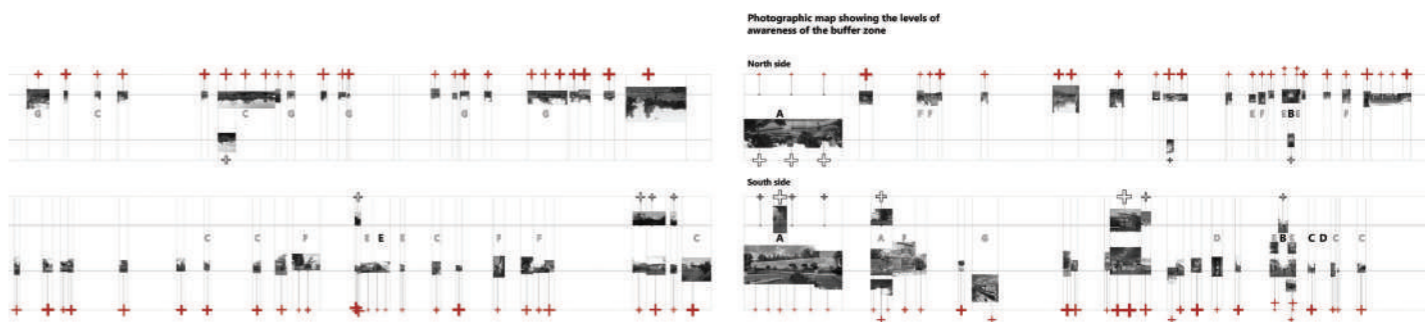
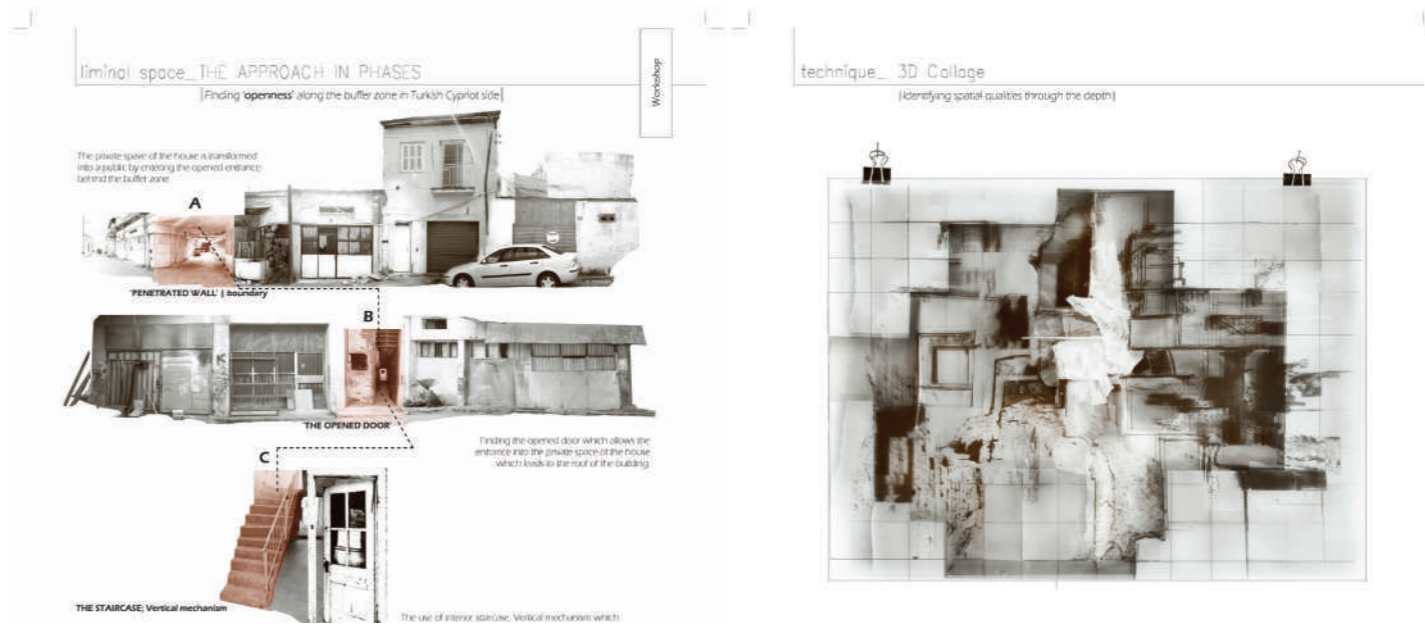
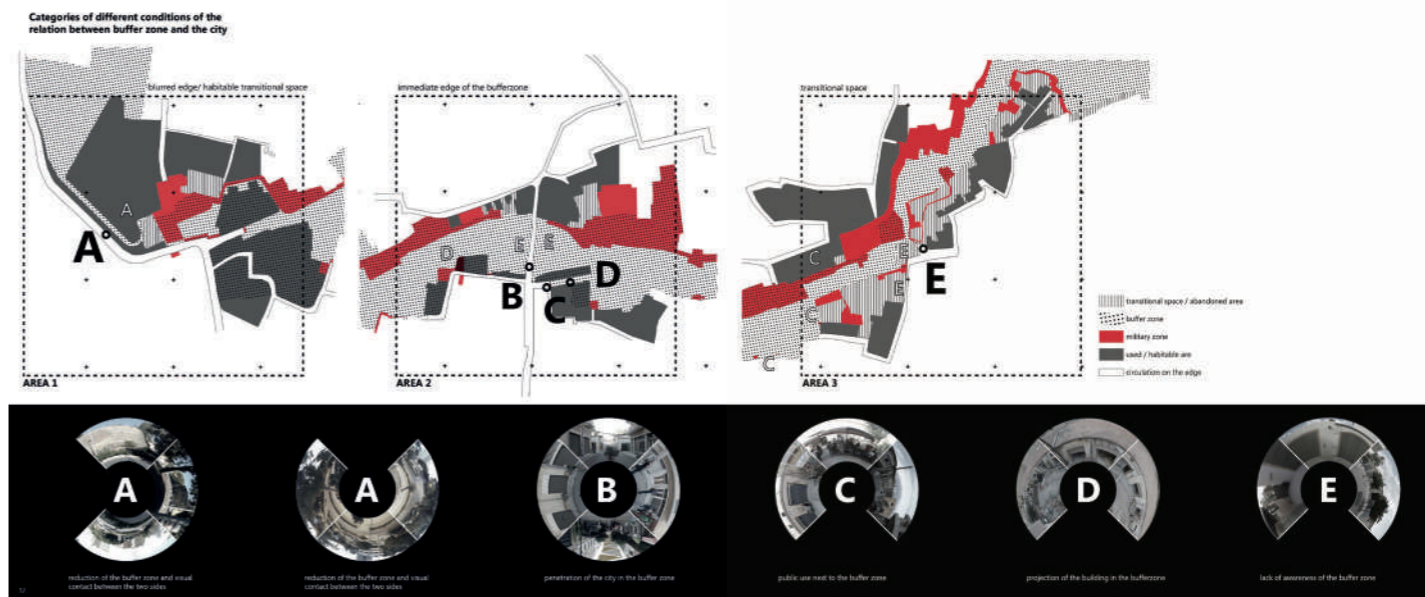
Agios Sozomenos is an abandoned village on the outskirts of the Nicosia district. A fertile agricultural area, previously used for growing barley it is also scattered with fragments of medieval churches, archaeological artefacts and uninhabited derelict houses of its former residents. The surrounding

area is made up of farmland for cereal production. The weathered abode bricks, the parched soil, the sandy cliff edge that frames the village and the expanse of agricultural land creates a visually homogenous material landscape. The open landscape of the area slowly unites the north and south of the island without any visible lines of division. - the farmland, which is actively cultivated- creates an informal ambiguous zone of division, demarcated only in the minds of the local residence, some of whom often transverse boundary line.

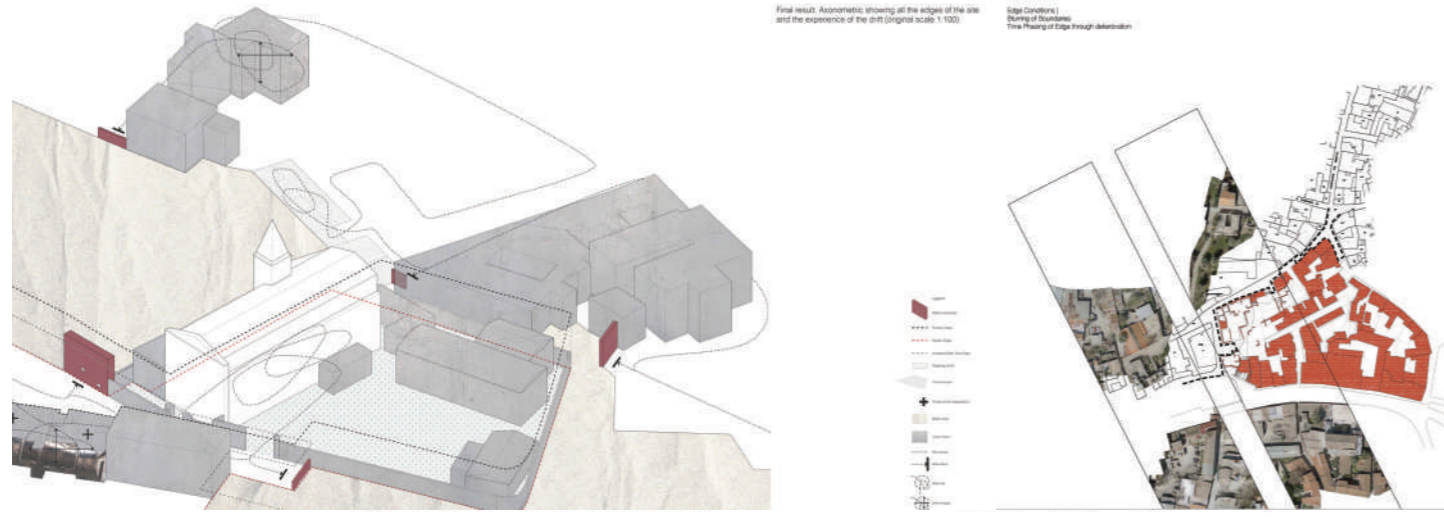
Compared to the palpable border line of Nicosia, mapping the invisible boundaries and the borderless landscape of Agios Sozomenos was bewildering- the absence of visual boundaries guided a different examination of the edge which was recognised through agricultural practices and the trajectories of individuals. The boundary lines were revealed only through the storylines of the surrounding residents and a brief seasonal emergence of wildflowers which temporarily tinted the dry brown land and revealed a brief visual pattern of layered occupations.

The contribution includes drawings from 4th & 5th year students Unit 6, Spring 2016 led by Angela Kyriacou Petrou and Maria Hadjisoteriou.

Nicosia Buffer Zone



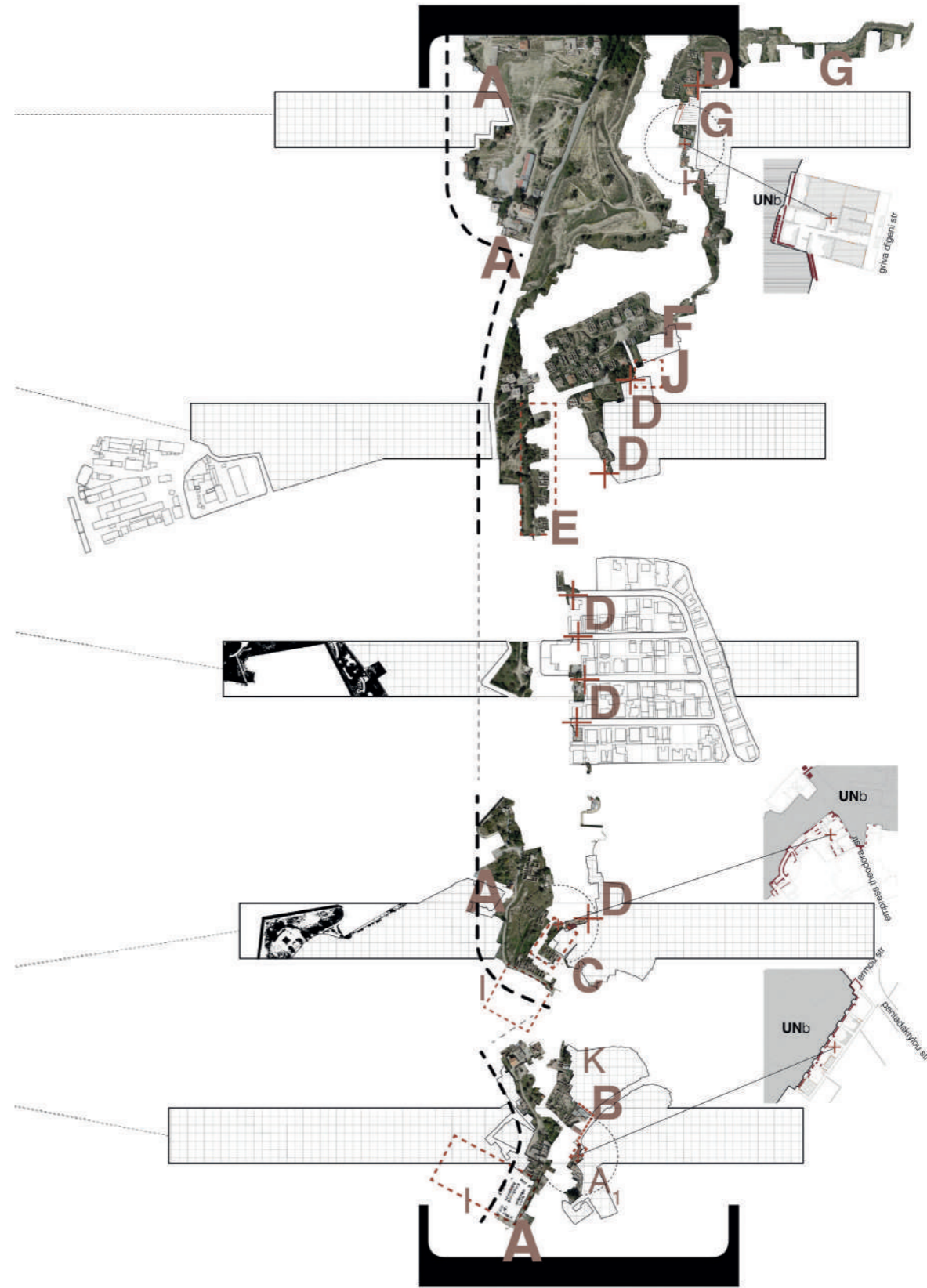
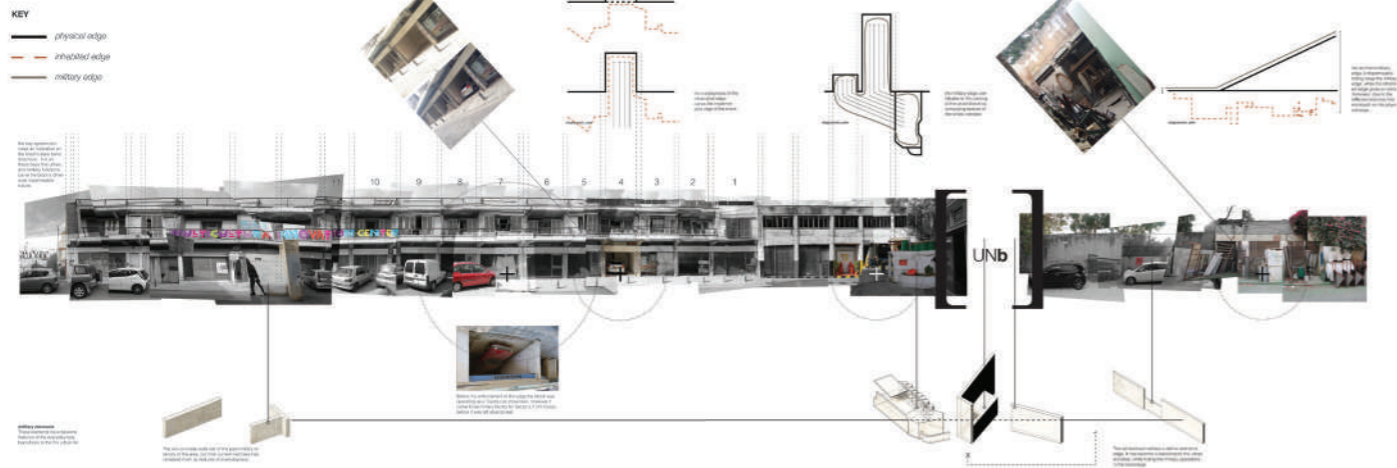
Nicosia Buffer Zone



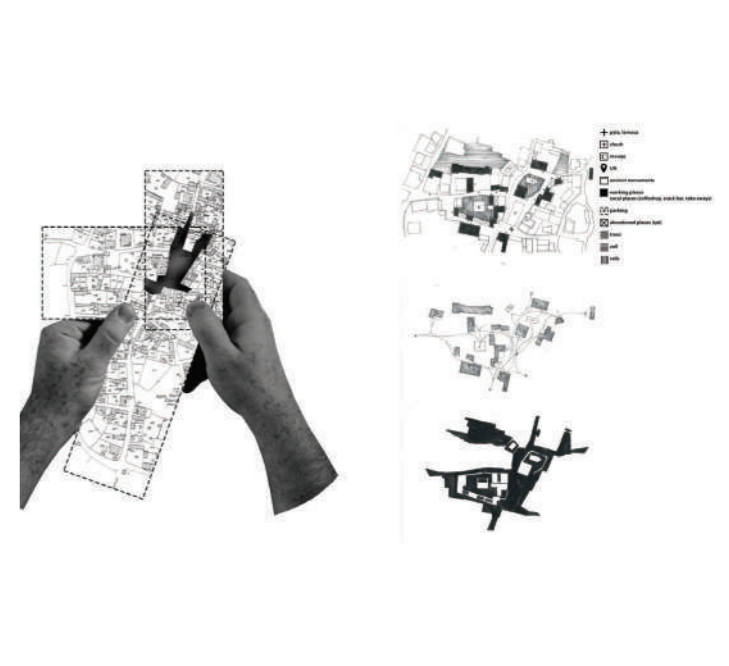
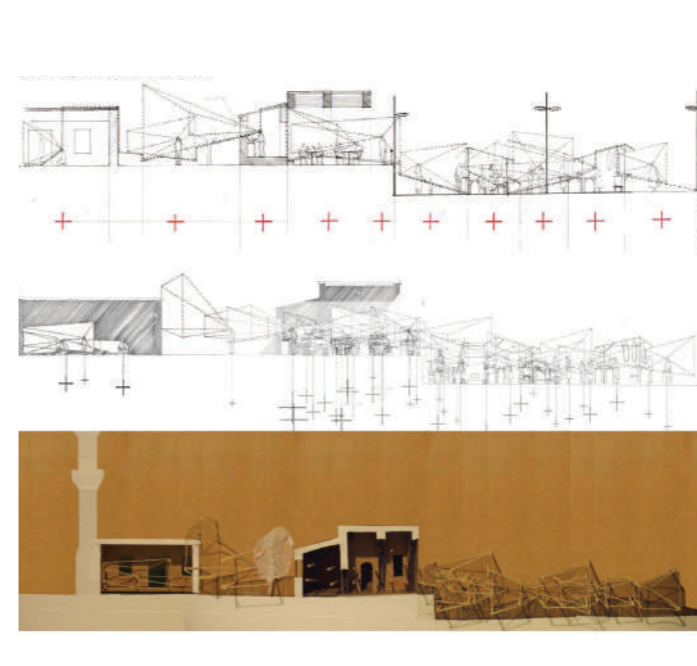
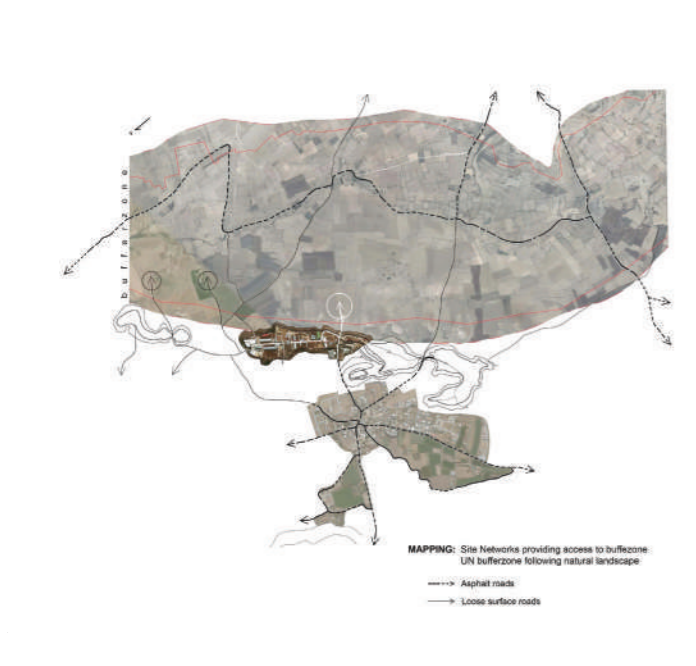
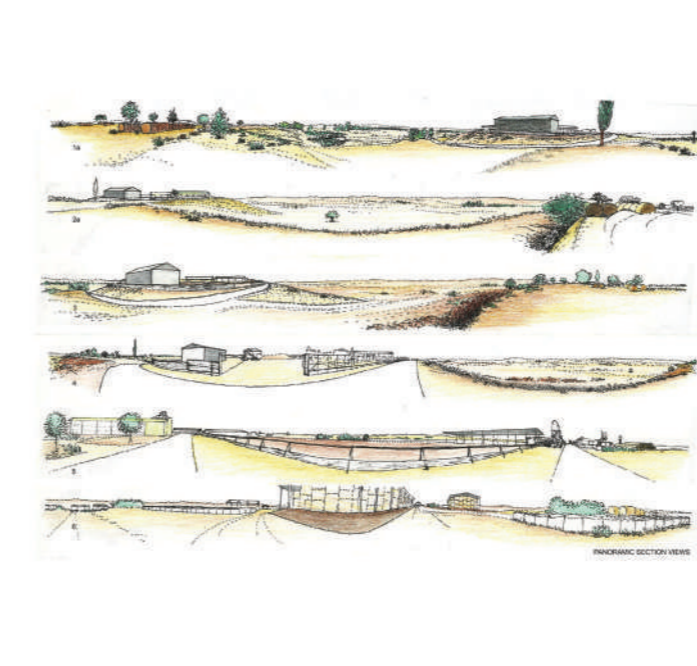
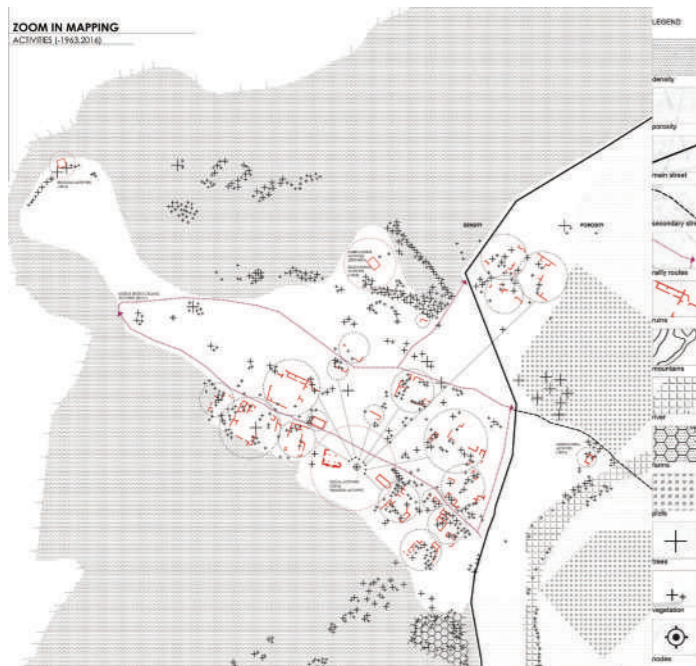
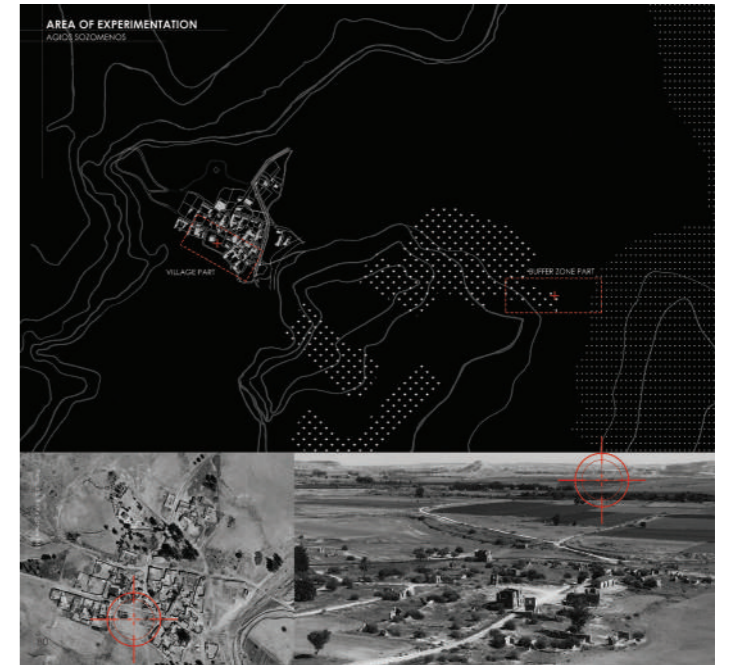
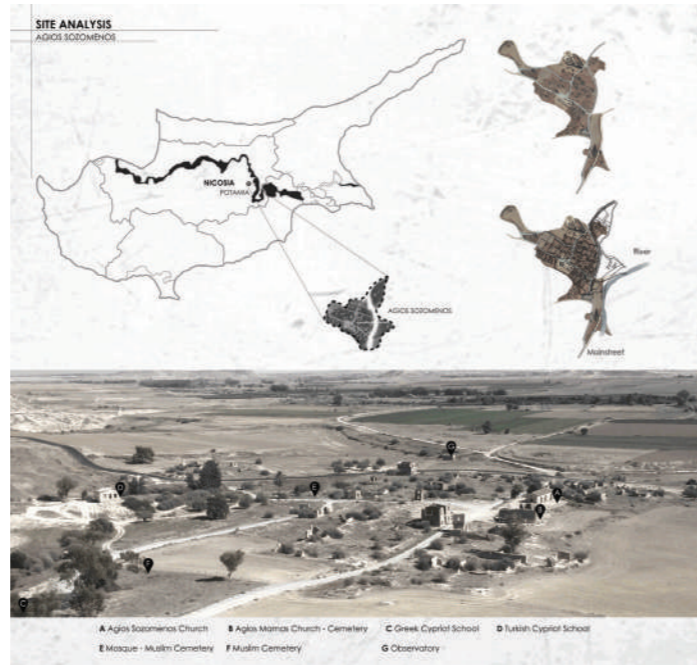
Unfolding the facade: The Liminal Circus

In this liminal circus different acts come to interplay, however their act is not just taking place in front of indifferent impermeable backdrops. They come to alter it, to play with it, to know it. As in a circus, what makes the stage in the apparatuses that support the act, here the city. The scene shows onto the podium (or everyday scene) of the neighbourhood, the military, the present, the spectator.

The liminal circus provides an ambiguous reading on the edge. The urban act re-adjusts the edge conditions blurring the possibility for delicate edge conditions. In some cases military and urban functions seem to defy the physical edge, while there are points where the physical edge becomes the threshold between the inhabited and the military edge. In the latter situation both military and urban activities seem to thicken the physical edge.



Agios Sozomenos



Meet yourself, as you really are

Extended Reality and Embodiment in the Mirror
World

augmented reality
embodiment
digital memory
avatars
extended reality

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My interest is in 'extended reality' (XR) technologies, particularly augmented reality (AR), and the worlds that they are creating. Worlds that transcend the border between the real and the virtual. This edition of the *UOU scientific journal* (Borders) is a useful moment for me to bring my thoughts together and to consolidate them into a 'student' essay submission for the journal. It tells a story and reflects upon my engagement with a module on my MA in Architectural and Urban Design degree. I hope it provokes others, likewise, to reflect upon the theme.

Note: The title "Meet yourself as you really are" comes from a 1936 psychology book of the same name by Prince Leopold Loewenstein and William Gerhard.

INTRODUCTION

We are standing at the beginning of a new era. Advances in artificial intelligence, deep learning, and spatial computing already significantly affect the way we live our lives. The media is filled with conjecture about the future of the so-called “metaverse,” a virtual reality-based world (or, more likely, a decentralised network of worlds) that promises to allow us to escape our physical bodies and live in other, virtual environments. But for me, this version of our digital future is not the most interesting or relevant, as another type of digital domain is already being constructed. Led by Niantic, the company that created Pokémon Go, the entire physical world is gradually being mapped at 1:1 scale, akin to the fantastical map imagined by Lewis Carroll in *Sylvie and Bruno* (1889) or by the author Jorge Luis Borges in his 1946 short story *On Exactitude in Science*. Bit by bit, the world is being scanned in three dimensions to create a “mirror world” or “real world metaverse” that will enable augmented reality to be permanently fused in parallel with our physical plane of existence. These new virtual spaces, whatever form they take, will be inhabited by human users, or at least their digital representatives in the form of avatars. In these new digital environments, we will need 3D avatars that can interact with other users. These digital twins might look like our real bodies or allow us to take on any appearance we wish. Depending on the regulations that govern this new digital realm, whichever form we take could have far-reaching implications, with race and gender likely at the forefront of the debate. Our ability to build our bodies and identities digitally raises important questions about how to own and protect ourselves and how to keep our personal information safe in a digital world.

DIGITAL FOOTPRINTS

The term “Internet of Bodies” (IoB) describes how humans connect with computers and other electronic gadgets by means of their own bodies. Like the Internet of Things

(IoT), this can take many forms, such as wearable devices that track and monitor different aspects of a person’s health and physical activity, implants that provide medical benefits or enable new capabilities, and devices that allow people to control or interact with their surroundings in novel ways. No doubt, I am not alone in the fact that I would normally give little to no thought to the personal information being collected by my electronic gadgets. Wherever I go, my phone is with me, and everything I spend is monitored by my banking apps. My smartwatch keeps tabs on my heart rate and alerts me if it rises (or falls) beyond a certain level. My phone and watch are connected to a fitness app that records how active I am and sends that information to my health care provider, who then evaluates my progress and encourages me to do more by offering rewards. This element of gamification sometimes even motivates me to work out more. When used in conjunction with another app designed to improve mental health, it can make me feel more at peace and give me an increased sense of embodiment - a feeling of heightened awareness that I am part of a greater whole and not just living within my conscious mind. This is interesting because it echoes the thoughts of philosophers like Maurice Merleau-Ponty, who, in his embodied subjectivity theory, considered one’s physical body to be a crucial component of the subjective self. I’m intrigued by the prospect of gaining a new perspective on the relationship between the body and the mind thanks to the virtual separation afforded by creating an avatar of myself and then observing it in the mirror world.

The record of my day-to-day travels kept by Google is both alarming and exciting. I have mixed feelings about privacy concerns and the prospect of advertisers buying and selling my personal information, and this is something I’ll continue to ponder. The information that I’m accumulating will be permanently archived to serve as a more thorough record of my life than any scrapbook or diary could contain—a visual record that is far more comprehensive

than any mere collection of holiday snaps. The sad thing is that very few individuals will ever see it, and the data will remain purely commercial. When I examine my online activities more closely, I find some noteworthy anomalies. For example, the iMax cinema in London is one of the locations on my list, but I have never actually visited it. This highlights a problem. Because the building is situated on a roundabout that I have driven around numerous times, Google assumes that I have been inside when in fact, I have not. As inconsequential as this error might seem, it nonetheless paints an incorrect picture of my actions and might have more serious ramifications given a different situation. This notion of digital memory and the possibilities it presents fascinate me.

It is said that certain people have what’s called a “photographic memory”, which is the capacity to recall a former scene in detail with amazing precision, exactly like a photograph. Could I somehow use augmented reality to leave a lasting impression within a particular space? Like a spectral, three-dimensional photograph, which begs the question: “Can a place have a memory of me?” An image of stone floors or stairs being worn down over many years by foot traffic instantly comes to mind. In the future, in the mirror-world, I might be able to show you my history by taking you to a certain location and rewinding time, presenting my past as a three-dimensional hologram. Could I somehow make a three-dimensional memento of a precise moment in time and then permanently fix it to that point in space? If so, what could these visual notes for future viewers be used for? To be able to find out, my next challenge would be to create a three-dimensional video avatar of myself and somehow place that memory into AR.

PRACTICAL EXPERIMENTS

The subsequent experiments were conducted with a spirit of playful curiosity, and while some

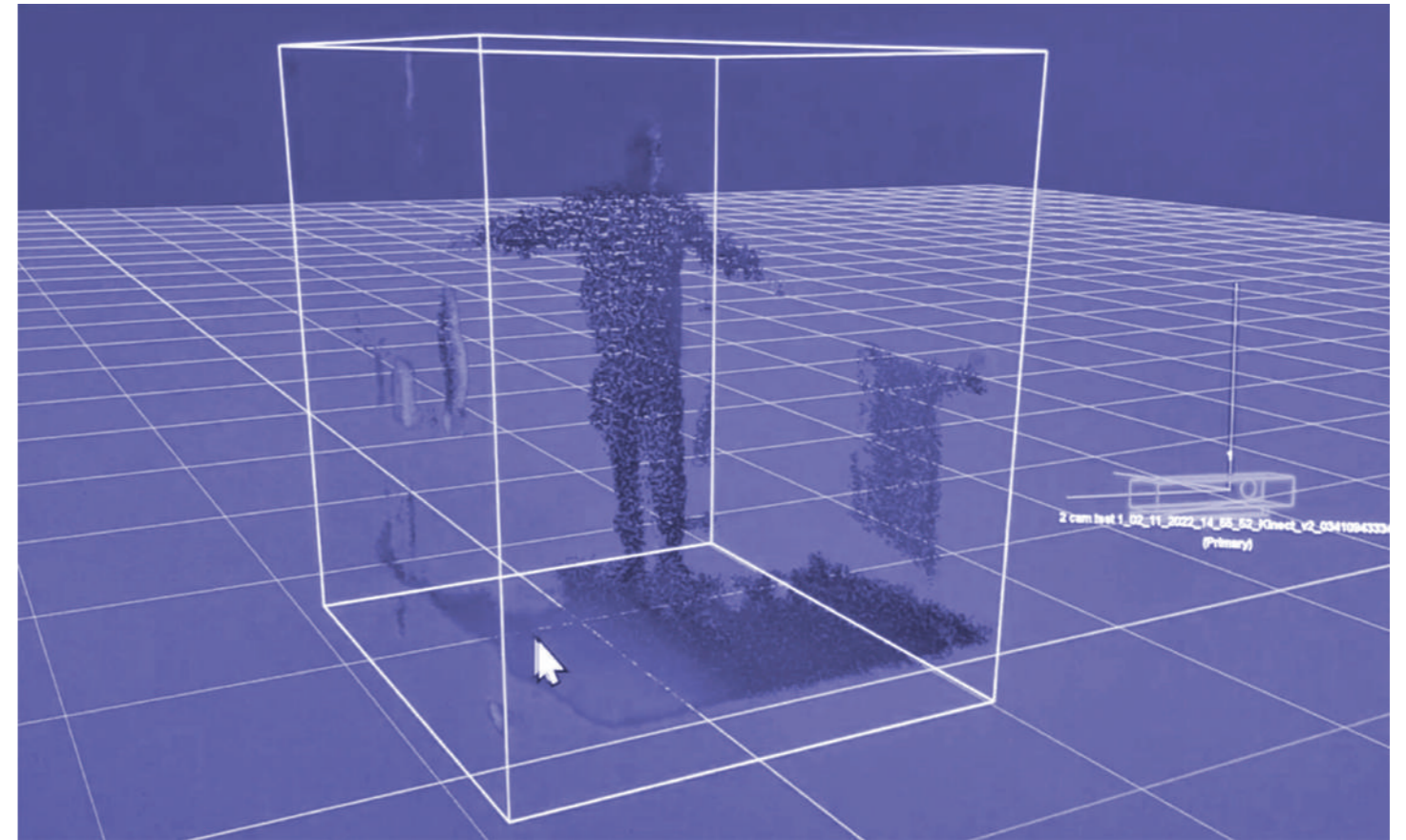


Fig.1 Video clip showing the volumetric point cloud generated by a single Kinect sensor camera.

of the work was undertaken with commercially available apps and scanners, the bulk of my time was spent working with repurposed Kinect sensor cameras, originally designed for use with the Xbox games console but now discontinued. When combined with the right software, these sensors can create volumetric video, a special kind of video that records and displays three-dimensional objects and spaces in a way that permits viewing from any vantage point. Professional setups with dozens of fixed cameras mounted from every possible angle, such as those used in the film and gaming industries, can be hired but are prohibitively expensive. But for less than fifty pounds, you can purchase a piece of equipment that will accomplish similar results. The cameras produce *point clouds*—three-dimensional models consisting of millions of distinct measurement points, each of which has an x, y, and z coordinate. Thirty of these point clouds are recorded every second to create the motion of the volumetric video (Fig.1).

(Click play button to watch

video or go to <https://youtu.be/W8yDkTSrHS0>)

Previously, I have had varying degrees of success with these cameras due to their temperamental nature. Because of the sheer amount of data being processed, a very powerful computer is required, something I learned the hard way before purchasing a high-end gaming machine.

Most importantly, as I was only using one camera, I could only create a point cloud of one side of my body. To remedy this and create a 360-degree avatar that I could walk around in augmented reality, I would require multiple cameras. But, as the software I was using only supported one camera per machine, each camera would require its own computer, and these computers would need to be networked. In addition to this, the feeds from each camera view needed to be synchronised so that they could be aligned to create the complete 360-degree view. To my frustration, despite numerous attempts and even after

contacting the online forum for help, I was unable to successfully align the cameras. I was able to get two separate cameras running on two computers to capture me from two perspectives, but I was unsuccessful in synchronising and then aligning the resulting point clouds. Although disappointing, in retrospect, this lack of success taught me some valuable lessons. More than a lesson in patience, I learned that it is okay to not know how to do everything and that my standpoint as an artist differs from, say, a computer science student. I also didn’t have the luxury of time because the module’s deadline was approaching, so I was forced to shift my focus to other things, which exposed me to new ways of thinking that I might not have considered if I had been successful in other areas. I was conscious that I might need outside help with the technical aspects of getting my volumetric video into AR. I reached out to Alex Judd of MAVRIC Research, who very kindly offered to develop an app in Unity that could display my volumetric video in AR. I gave him the two separate camera views that I had captured but had not aligned,



Fig.2. The full body scan created by the Fit3D scanner. I appeared at precisely 10:17 a.m. on December 7, 2022.

and I continued to research other ways to capture my image.

After some research, I found that a local health and beauty clinic has a Fit3D body scanning machine, and I paid to have my body scanned (Fig.2). The machines use a rotating turntable to scan the body in forty seconds, and from over 1000 images of the body, it calculates a variety of personal biometric data, such as weight, full body measurements, body fat percentage, posture, and how your body weight is distributed. As well as a 3D model in the form of an .OBJ file, I was given a detailed report on my biometrics, which are usually used to help people track their progress as part of a health and fitness plan.

This was by far the most accurate method for creating a digital representation of my body, although for the purposes of this research, physical accuracy is not necessarily what I am after. A disadvantage of this model compared to the volumetric video is that the avatar is static. However, until I can make the volumetric video version work in AR, this appeared to be a great option for an asset that I could try with third-party apps due to its comparatively small file size. Now that I had the file from the scan, I was able to have 3D printed models of my body created, providing me with an additional, more analogue representation of my body that I could position in physical space (Fig.3). Made to be 1:10 and 1:25 scale, these models could be incorporated into physical architectural models, and even though these models are not digital, they still elicit thoughts about embodiment and body image. This new perspective takes some getting used to, but I will always have this



Fig.3. 3D printed models at 1:10 and 1:25 scale.

Throughout this time, I had been looking at commercially available apps that could capture my image or take an existing 3D model and insert it into augmented reality. There are several options available online, with new ones emerging all the time, and I prioritised those that were either free or offered a free trial. I will not discuss all the apps I tried in this essay, but I will say that the results were mixed. The majority required me to download and install an app onto my phone, but recent developments have led to WebAR becoming much more popular. WebAR is a relatively new technology that can function without a mobile application. Using the smartphone's built-in camera and mobile web browser, users can directly access AR experiences. One of the primary reasons for WebAR's popularity is that it is so

simple to use, meaning that people are much more likely to participate; however, there are disadvantages. WebAR is dependent on an internet connection, which necessitates smaller file sizes. As a result, older phones may have difficulty running WebAR applications smoothly. The difficulty in my case was that volumetric video tends to have very large file sizes, so it would not be possible to use a WebAR application, but Alex Judd of MAVRiC Research assured me that he could develop a standalone app in Unity that would work.

In the meantime, I had managed to get my Fit3D scan into WorldCast Studio, a browser-based tool for creating WebAR experiences. The beauty of Web AR is that it requires no coding and is quick and relatively simple to create.

Fig.4 below is a QR code that will activate the experience, allowing you to try it out for yourself, and you should be able to see my avatar within your space. I refined the model in Blender and changed its colour from the rather dull greyish white, and I also increased the transparency to 70 percent to create a more ethereal effect. The model was then raised 50 cm above the ground, and a slow rotation was added. The WorldCast Studio platform also allows sound to be

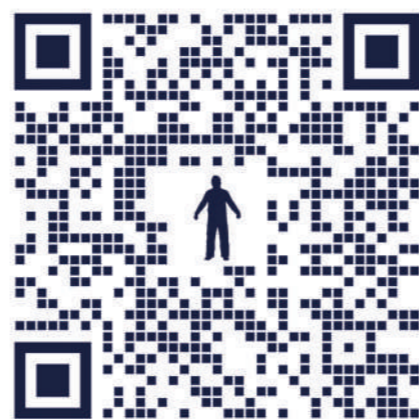


Fig.4. Scan this QR code with a mobile device to activate the AR.

added so I recorded a short piece of audio of my voice to increase my sense of presence.

Another exciting function within WorldCast Studio is the ability to create location-based AR, meaning that an asset can be remotely placed at a point anywhere in the world. It accomplishes this by allowing you to attach the model to a GPS location on a map so that the model will appear when you move to within five metres of the anchor point at that place. I tested this by fixing my model to a nearby park (Fig.5) and experimented with changing my scale.

Playing with the proportions of my body and imagining myself as a giant was entertaining, but the experience inspired me to take the idea further. As part of the "My Virtual Vacation" art project, I've had my virtual self stand in for me on five continents: West Sussex (UK), Goa (India), Dar es Salaam (Tanzania), Los Angeles (USA), and the plaza in front of the Sydney Opera House (Australia). Due to my project deadline, I had to cut my trips short there, but if you'd like to contribute to the ongoing artwork, please feel free to email me a screenshot of my avatar in your environment to the address at the top of this paper. And please, feel free to have fun with it.



Fig.5. My giant avatar placed into a local park using World Cast Studio.

Inadvertently, the people I know all over the world have started constructing an entirely new digital map of my travels. This map is analogous to the one that Google generates from the data on my phone, with the exception that this time every memory of a place I've been is a fabrication, at least in the physical sense (Fig.6).

This was a lot of fun for me as well as for my friends, who all remarked on how it seemed as though in some way I was there with them (Fig.7). I'm sure that, at some point in the future, we will be able to conduct virtual meetings with other people from across the world, where we will chat with one another as 3D avatars, something already being worked towards by companies including Microsoft.

At the same time, Alex Judd of MAVRiC Research was hard at work creating an app for my volumetric video; I was able to download the beta version on my mobile device and test out the augmented reality experience. Although I had provided him with footage from both cameras, he was unable to edit them together in the time allotted. We attribute this to the lack of a concrete sync point to which they can be adjusted. In the future, I want to utilise a clapper board to provide a common reference



Fig.7. A friend in Goa, India having fun with the scale of my avatar.

frame that both sets of point clouds may use to stay in sync with one another. Yet, the findings were quite promising. I was able to see a moving version of myself for the first time thanks to augmented reality, and it was an unsettling experience. My hologram wasn't

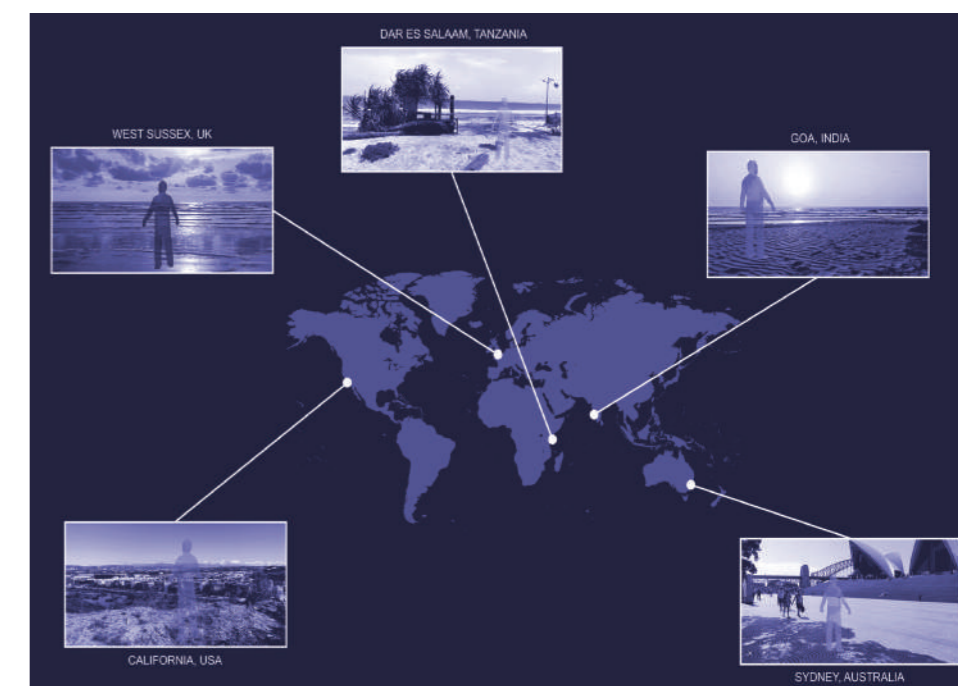


Fig.6. "My Virtual Vacation". Map showing my avatar placed in locations around the world. These images are screenshots from mobile phones and have not been created in Photoshop.



Fig.8. Meet Yourself as You Really Are (2023).

fully formed as it was from just one camera angle, but I was still able to move around it and even through it.

The next stage was to ground myself in reality, so I shot footage of myself in a variety of different settings. But none of them were enough to fulfil my need to finally meet myself or to bridge the threshold between the real and the virtual. The clip below (Fig.8) is my first effort at making a video that attempts this. On the left, you can see my volumetric avatar that the Unity app places in AR. Then, on the right, you have the actual me—both of us there, in the same space, but existing in distinct realities and timelines.

(To watch video go to https://youtu.be/euOp2k_ShU)

CONCLUSIONS

With these preliminary experiments, I have begun to understand that AR provides a novel approach to enhancing the sensory experience of the human body and so fostering greater embodiment. It has been a lot of fun experimenting with different new techniques for recording and displaying my

own image, and I now feel that I have a greater understanding of this field overall. It is my opinion that augmented reality is going to become significantly more widespread in the not-too-distant future and it will take us across new borders. In addition, I believe that many of us will begin to make use of avatars when the metaverse, in whatever form it takes, becomes a more significant part of our everyday lives. My intention is to keep working towards the goal of making a fully immersive 360-degree volumetric avatar, thus, my next technological challenge will be to persist in synchronising three separate sensor cameras. As I continue to explore, I might like to try out forming groups of holograms using multiple avatars, filming them from different angles to see how embodiment is felt within a crowd.

There are some answers to the questions I asked at the start of this project, but this is just the start of a much longer investigation. That said, I will strive to respond as best I can. Firstly:

“How is technology, in particular augmented reality, able to extend our sense of personal embodiment?”

The successes I have had with using different applications to capture my body image in 3D have allowed me to experience myself like never before. Like many people, I am not generally very comfortable with my own self-image and shy away from seeing photographs of myself. I have also never liked the sound of my own recorded voice, so having the chance to “meet myself as I really am” has been a fascinating experience. Instead of avoiding my own image, I have felt compelled to meet it and, at times, have found myself sucked in, observing my own image for lengthy periods of time. The fresh viewpoints that are shown to me intrigue me. I am literally able to look over my own shoulder and this gives me a strong awareness of the way others may perceive me.

Meeting my digital twin in the Unity app was the most unusual and thought-provoking of all the experiments, and that was the moment that really felt as if I was successfully bridging the physical and digital realms. I will work more to refine this and see where that takes me, but as far as gaining insight into what it feels like to

experience myself in the digital world, this was the most powerful.

The World Cast Studio app was also very successful in making me feel a sense of my extended embodiment because, being run with web AR, it is very quick to trigger, easy to control, and easy to share with others. The added bonus of sound gave it an extra layer of me “meeting myself.” This enhanced my sense of immersion and presence in the digital environment, making it feel more like an extension of my own body and senses. I also very much enjoyed interacting with friends around the world and placing my digital memory into five continents. This social factor demonstrates how, in the context of the metaverse, avatars can be a powerful tool for increasing embodiment and communicating with others in the form of their own avatars.

The word “embodiment” is used a great deal, but I really want to try to establish the meaning that is best for me to describe how this all makes me feel. It has different meanings in philosophy, psychology, and sociology and is often associated with the idea of the embodied self as presented in phenomenology and the work of Husserl and Merleau-Ponty, where the body is seen as being central to our identity, inseparable from sensory experience and perception. My experiments have allowed me to see an alternative view of myself from the outside, but they have also given me an insight into how technology is becoming a way for us to gain a greater understanding of how our bodies are working on the inside.

The biometric data being collected by our technology is helping us make new connections between the body and the mind, and technology is helping us to, in some ways, be better versions of ourselves. This starts to answer my second question:

“Can a physical space that I once inhabited have a memory of me, and how does memory play a role with new technologies like augmented reality?”



Fig.9. Memory QR behind wallpaper.

I’ve demonstrated that a 3D snapshot of myself at a certain point in time can be captured and then projected into a different place and time, both locally and around the world. These memories of ourselves could play a variety of roles in the future; perhaps digital memorials with avatars of lost loved ones using AI-constructed voices that can speak beyond the grave?

Another idea that occurs to me for how a place could have a memory is illustrated in Figure 9. In redecorating a new home and removing the old wallpaper, I am certain that some readers have discovered a child’s artwork or a message from the former residents scrawled on the wall. What if, when you peeled back the old paper, you discovered a QR code stencilled on the wall behind? And, when this code was scanned, holograms of the family who had inhabited the place emerged, like a three-dimensional cine film of events from their lives, as though they were friendly ghosts of the past eternally present in that space.

I am aware of my own limitations when it comes to computers and technology, particularly when

entering the realm of coding, so collaborating with Alex Judd of MAVRiC Research has been invaluable in enabling me to experience a moving point cloud avatar of myself in the mirror world, and I am very thankful to him for that.

To progress with this inquiry into the sense of embodiment felt by seeing one’s own body in the form of a digital avatar and subsequently placing it into AR, it might also be useful to undertake a comprehensive phenomenological study to take the findings from this project further than my own personal experience. By performing a survey of a wider range of people, I would hope to gain insights into their reactions to their bodies being digitised and placed into the mirror world. The data collected from these surveys might clarify the relationships between lived experiences and the theories used to explain those experiences, with an emphasis given to post-phenomenology, an area that focuses specifically on understanding the roles that technologies play in the human experience.

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December 2023

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13 June 2023

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15 September 2023

Full paper submission.

01 October 2023

Outcome of double-blind peer review process.

01 November 2023

Final submission of completed papers.

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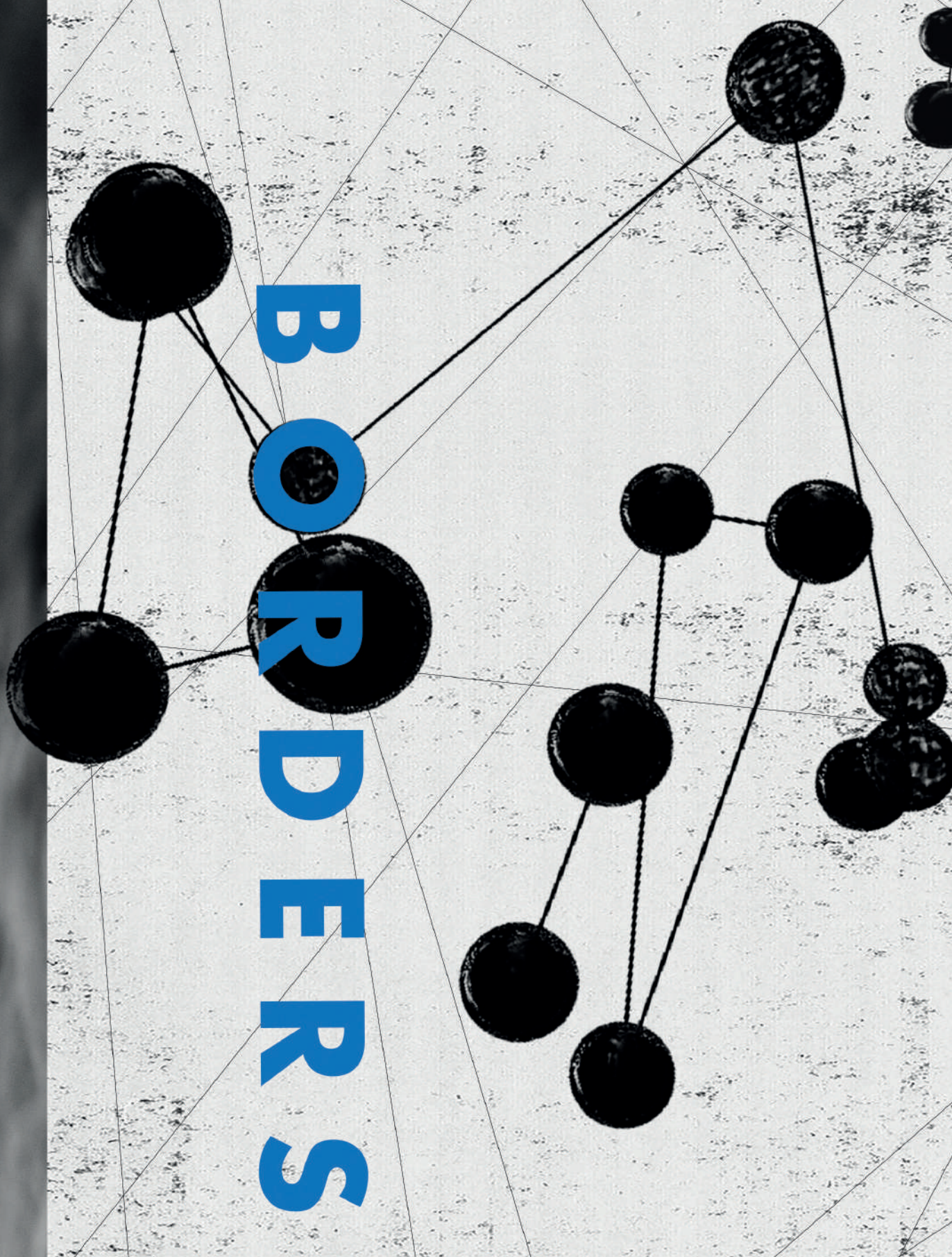
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