

[Liquid Porosities]

*“**Porosity is the space of opportunities** and improvisation (...) and its relevance as a **tool** for understanding urban dynamics and for developing a set of instruments to describe and **design space.**”*

Paola Viganò, 2018

1. Objectives

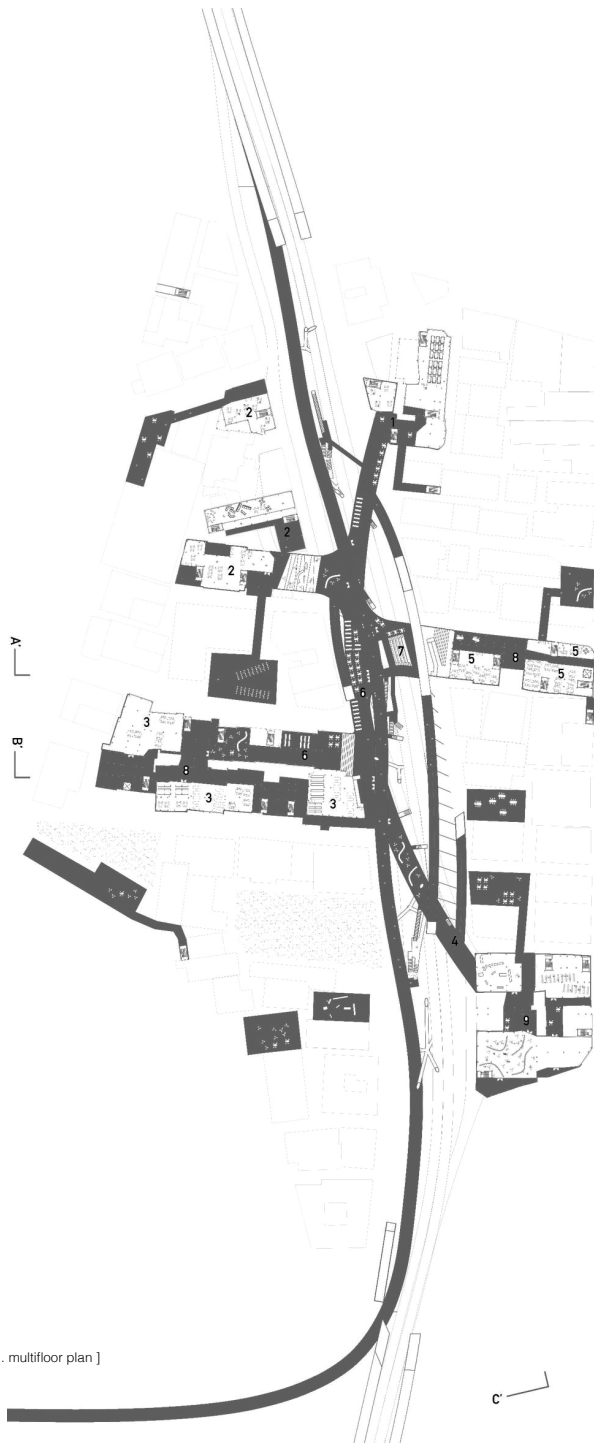
The course "Integrated Project II" aims to deepen students' critical skills in analyzing and interpreting complex urban territories and to develop design solutions that address emerging issues relevant to contemporary society, particularly in the development of urban strategies and urban design interventions that successfully integrate functions, mobility, the built environment, and public space.

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Through a critical perspective that integrates theory and practice, the course seeks to foster an understanding of the city as a living, multifaceted organism composed of multiple systems. The goal is to situate urban design within a broader framework, reflecting on its transformative impact not only on the immediate site but also on the wider territory. Based on a theme and a major urban composition exercise, the course seeks to work with various design tools that articulate a strategic vision for the territory, hybrid programs, and an urban design capable of integrating infrastructure, ecological systems, built structures, and public space.

2. Theme: Liquid Porosities: A New Cartography of Infrastructural Space

The 20th century was profoundly shaped by the theoretical principles established by the Modern Movement, which represented a dramatic rupture with the pre-existing city. From the second half of the century onwards, theoretical thought sought to react



[Zhong-Zheng Bridge Project, Taipei . multifloor plan]

against this new dogma, giving rise to various currents that reinforced the importance of establishing a balanced and integrated dialogue within the urban and landscape context. The so-called crisis of the isolated architectural object and of urbanism as a science led to a new disciplinary approach that emphasized the relationships between the built fabric and the values of public space.

More recent architectural production seeks to reinvent or recover spatial systems characterized by ambiguous transitions, where rigid limits between public and private are questioned in favor of collective and democratic use. The architect is thus called upon to imagine new spaces, or to transform pre-existing structures, where the dissolution of boundaries, porosity, fluidity, and the extension of public space into the built fabric emerge as strategic hypotheses for anchoring architecture to place.

In this context, it becomes inevitable to recall Giambattista Nolli's innovative vision of public space in Rome (1748) and to recognize the value of certain building typologies in shaping urban form and in demonstrating how architectural works can design and influence the urban habitat.

Liquid porosity thus emerges from the exploration of urban transition systems that connect water and the concept of fluidity to the urban fabric. Metaphorically, we can understand the various urban flows and rhythms as fluids that nourish the city's fabric; in this sense, it is important for us to develop urban systems capable of reconciling the diverse layers that give shape to the complexity of contemporary urban space. The design of urban devices capable of facilitating transitions - public/private or interior/exterior - while simultaneously providing a framework of elements that structure part of the urban fabric has come to be recognized in the current debate as one of the essential tools for (re)designing a new urban cartography, reconfiguring public space, its boundaries, and the way we move through or inhabit it.

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The spatial structure of the city acquires a shared meaning as platforms for collective activity emerge, and alternative routes catalyze the urbanity of urban space, fostering transformative actions in the built city [*urbe*] and urban society [*civitas*].

This theme takes on particular significance in urban spaces where disruptions or breaks in the urban fabric are most pronounced. Porosity, as a strategy for creating connections and pathways, or ways of appropriating space, emerges as a strategy for urban design and for stitching together the urban fabric. Major infrastructure corridors repeatedly leave deep scars and cuts in the continuity of public space, dividing the city into two sides. In this sense, there is an urgent need to develop a new cartography that integrates these places, creating a new layer at the pedestrian scale and conferring greater urban integrity. Against this backdrop, porosity, as defined by Paola Viganó, emerges as a hypothesis for establishing networks of spaces that combine public and



collective places, buildings, and ecological structures. In the structure of a sponge, the voids - the pores - are fundamental for allowing flows to move; similarly, public space in the city asserts itself as the fundamental structure for the development of different flows and rhythms..

3. Site

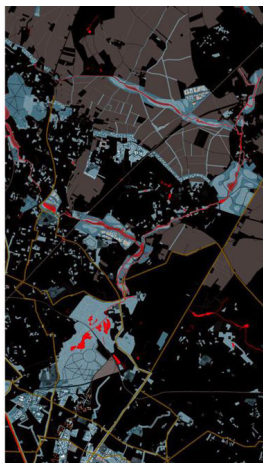
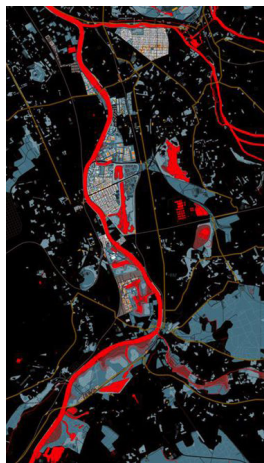
The city of Barreiro currently faces some of the greatest challenges, and at the same time opportunities, in the Lisbon Metropolitan Area. The construction of the third bridge across the Tagus River and the resulting implementation of the high-speed rail line (TGV), as well as the expansion of the Metro Sul network, are bringing about transformations in this area that will reshape significant parts of the city. The introduction (and reconfiguration) of this transportation infrastructure adds a new dimension to the city's relationship with the river—a relationship that has yet to be developed since the decline of industrial activity at the Quimigal industrial park. Vast areas of landfill remain to be reclaimed, creating a barrier that separates the city and its people from the river. Vacant terrains, ruins, a waterfront with untapped potential, infrastructure in need of upgrading, and neighborhoods waiting to be connected emerge as the basic urban material for processes of urban metamorphosis that could reconfigure the built fabric of the city of Barreiro, developing new spaces for transition and articulation between different systems and creating new areas for employment, production, commerce, and culture with those on the opposite bank of the Tagus (in Marvila)—as exemplified by initiatives such as the Unicorn Innovation District or spaces like Marvila 8 and Fabrica do Braço de Prata.

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Furthermore, it is important to enhance public space and its regeneration in conjunction with the built fabric as a strategy for consolidating a common ground that structures and integrates lines of continuity with existing elements.

O espaço canal infraestrutural ligado à linha férrea do Barreiro destaca-se como um dos corredores urbanos de maior potencial e simultaneamente de maior fratura entre o território norte e sul da cidade. A sua recalibragem e adequação à introdução do TGV e correspondente ligação à nova ponte, pode implicar uma grande oportunidade para questionar o modo como esta infraestrutura se deve relacionar e integrar com a cidade. A definição de novos pontos de ligação transversão ou nódulos de articulação constituem bases para um novo sistema a implementar que fomente um processo necessário de metamorfose de todo o espaço canal.

Assim, o espaço público e sua interligação a determinados edifícios ou equipamentos localizados ao redor da linha de férrea pode constituir as bases para a criação de uma



[Grand Paris]

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nova rede de espaços de utilização colectiva que projecte o Barreiro como uma nova centralidade na Área Metropolitana de Lisboa.

4. Programa e metodologia de projecto

The proposed core exercise involves developing an urban project capable of embodying a vision for the future of the city of Barreiro, reimagining a new relationship with the infrastructure corridor linked to the train and the high-speed (TGV) and supported by a network of public or communal spaces capable of accommodating hybrid programs that combine different uses and redefine the way we engage with public space.

The **urban project** should function as a **new layer** that contributes to the **consolidation of the fragmented and obsolescent fabric** located near the Tagus riverfront, envisioning a network of public spaces that link proposed and pre-existing building complexes to create new spatial continuities and connections between key points within the territory.

The classic notions of boundaries must be reevaluated, promoting overlaps, porosities, or intersections between systems as a means of social integration, urban diversity, and an interface with the various aspects of daily life - *work, home, and leisure*. The **urban project** therefore plays a key role in integrating a vital infrastructure corridor as well as in **reconfiguring small-scale public space, defining alternative levels that help mitigate the barrier effect**. The porosity and multiplicity of levels within public or collectively used spaces make it possible to define a new urban fabric and, in doing so, bridge the two sides of the railroad line.

The proposal must be guided by a strategic, conceptual vision that underpins the principles formalized in the urban solution and critically reexamines the current thinking already envisioned for the site. The aim is for the project, presented at various scales, to foster an intense relationship between buildings and public space by redefining boundaries, transitions, and ways of experiencing the city.

The methodological approach is grounded in direct experience with the site and is structured into three essential phases, each corresponding to one of the three exercises.

Decode

The territory, understood as a support, is approached as a material for exploration and reference. As such, in the first phase, it is essential to recognize the site,





understanding its characteristics, potentials, and weaknesses. The context and its critical interpretation can then be understood as the first act of the project, embedding the foundational basis of the design.

Concept

The exercise of conceptual or exploratory hypotheses is understood as an essential moment in the project. It constitutes the time for anchoring the idea to the fundamental principles of the intervention. The development of scenarios or more conceptual explorations contributes to the consolidation of spatial systems, functional organization, and structuring relationships between architecture, program, and place.

Project

The project, as a conceptual phase, develops integrated solutions in which the built environment must seek ways to coordinate the city's form, the urban design, and the details of public space design.

The design exercise must incorporate the semester's theme - **liquid porosities** - into the proposed solutions and should be understood as a continuous process of research and experimentation, with various hypotheses or tests being evaluated using different tools. Hand-drawn sketches, models, and technical drawings are used in a coordinated manner, operating at various scales and with the aim of addressing different questions or phases of the work.

The project focuses on a specific, predefined intervention area but includes a broader urban area as its territory of knowledge and information. In this way, the logic of broader urban systems that directly or indirectly affect the intervention site is taken into account. The exercises involve periods of group work, while the urban composition project will be carried out through individual work. Throughout the various exercises, students will be asked to create an individual notebook to organize their work and keep a more personal record of the various circumstances they identify as essential.

Theoretical Component

The practical component of the exercises plays a structuring role within the course unit; however, project decisions must be informed by the provision of fundamental theoretical content, articulating both practice and theory. In this way, design choices are consolidated through a solid theoretical and conceptual foundation. In addition to the theoretical lectures, the program foresees the involvement of invited guests, either connected to the thematic scope or to the intervention site, who will contribute to complementing and enriching the debate and the underlying design process.

5. Research

The work carried out in the curriculum is well-aligned with ongoing research lines by the research group *formaurbis* LAB. You can find more information about this research group at the following link: <http://formaurbislab.fa.ulisboa.pt/>

6. Assessment

Assessment of the course is based on Continuous Assessment and, if applicable, a Final Exam, in accordance with the FA.ULisboa Assessment Regulations.

In accordance with the provisions of Article 3, paragraph 7, a final Continuous Assessment grade of 10 (ten) or higher results in passing the course.

Continuous assessment takes into account the development of assignments and public presentations, as well as participation, attendance, and work during the class period. Thus, continuous assessment is structured around three main points:

1. Continuous assessment consists of three formal evaluation periods corresponding to the three assignments, as well as class attendance and participation, with specific dates set forth in the course calendar. It evaluates all work produced and the development process, and must take into account the minimum requirements defined in the syllabus for each assignment. The grade for each phase will be expressed on a scale of 0–20 points.
2. The percentage distribution of the three assessment components is as follows: 1st Midterm Assessment: 10%; 2nd Midterm Assessment: 20%; and Final Assessment: 70%.
3. Each assessment component includes the submission and presentation of assignments and a comprehensive evaluation by the instructors, allowing each student to understand the level achieved for each learning objective.

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Final approval in Continuous Assessment requires a passing grade on all assignments for the semester.

Registration for the exam is optional and serves as a supplementary assessment, constituting the final exam for students who do not pass the Continuous Assessment or for those seeking to improve their grade from the Continuous Assessment. This exam is graded independently, without a fixed weighting relative to the Continuous Assessment; the higher grade prevails when the exam is taken to improve the grade. In this course unit, registration for the exam is contingent upon attendance at a minimum percentage of in-person sessions: 60% for students in the standard program

and 30% for students with special status who are not exempt from the minimum attendance requirement. Attendance will be verified by signing the attendance sheet provided by the instructor. Failure to meet the applicable threshold results in exclusion from Continuous Assessment and from the exam for the semester in question, without prejudice to the mechanisms provided for in Articles 8 and 10.

In programs with a legal exemption from attendance, no minimum attendance requirement applies; demonstration of learning and competencies, when necessary, must be ensured through the compensatory measures provided for in Article 8, namely an Individual Compensation Plan (ICP).

If an exam is required, it will consist of the submission of all work completed during the semester in digital format and an in-person oral exam covering all the work from the semester. The exam will be administered in person before a panel of jury members.

7. Bibliography

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