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Hybrid Agency. Architectural design theories and practice within the digital turn

Original

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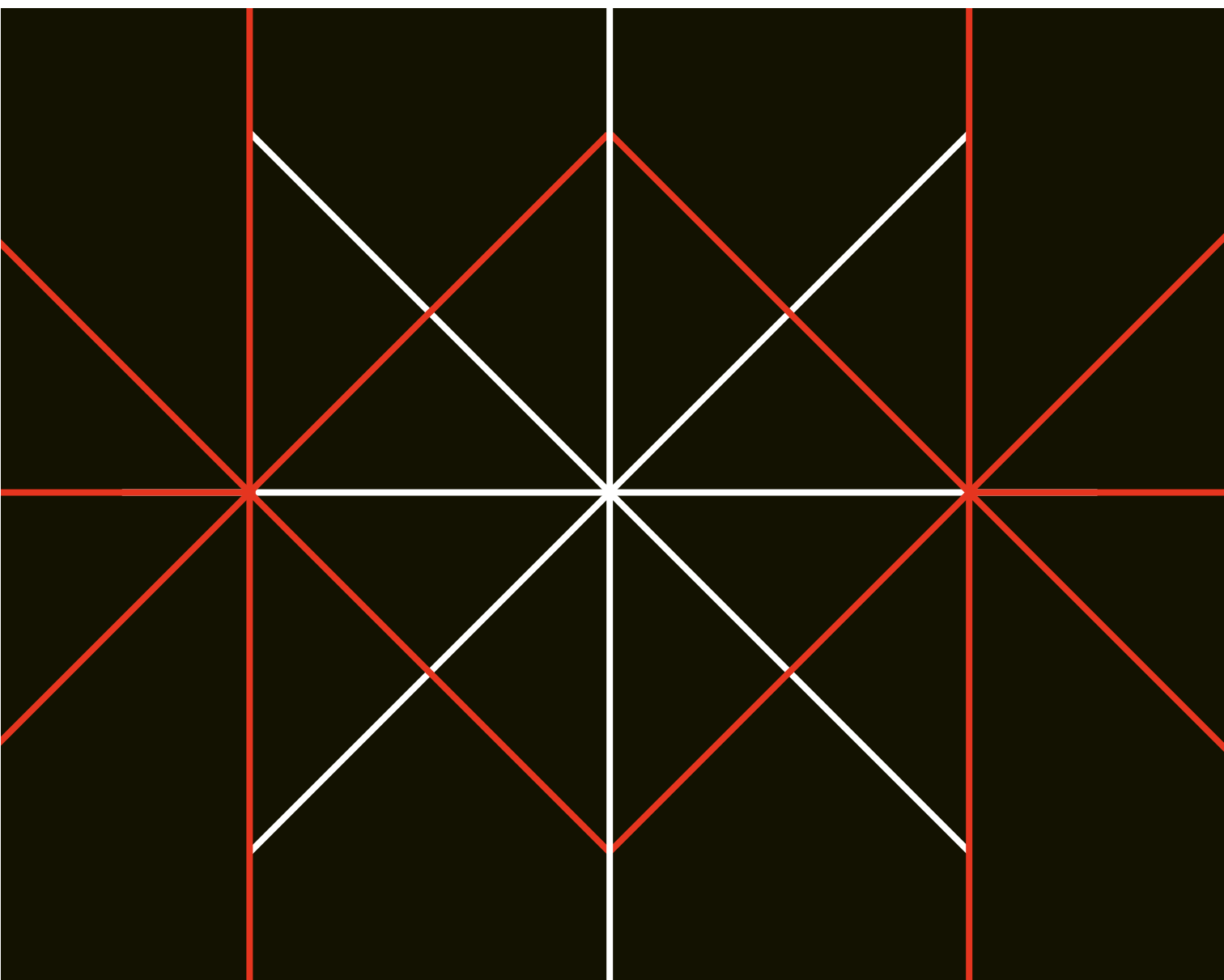
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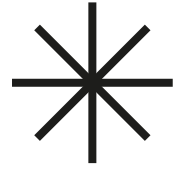
SPACE

DASP Yearbook 2023



SPACE

DASP Yearbook 2023



SPACE

SPACE

DASP Yearbook 2023

PhD in Architecture.
History and Project

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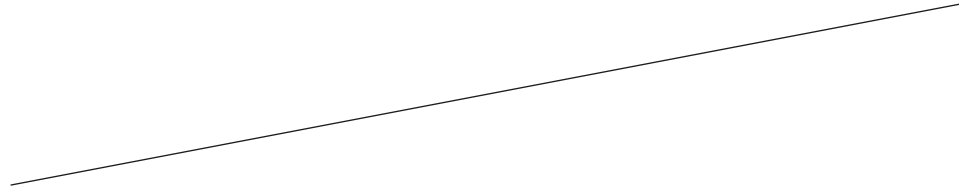
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INTRO- DUCTION

TORINO 10125. OUT OF THE DASP-HOME.* AN INTRODUCTION

Marco Trisciuglio

*"But the designer does not usually construct a history with the rigor expected of a historian, and we expect the design to display other qualities of subjectivity as well. A design is also equivalent to a novel, convincing the user to suspend disbelief. Part-novelist, part-historian, the architect is 'the history man'. We expect a history or a novel to be written in words, but they can also be cast in concrete. An architectural book can be history and a novel, and so can a building"**.*

Jonathan Hill (Director of the PhD Architectural Design at UCL), 2014

The PhD Program in Architecture. History and Project (DASP) was born out of two long lasting traditions of doctoral level studies and research in the area of Architecture at Politecnico di Torino. The PhD Program programatically investigates the complexity of architectural cultures starting from the multi-disciplinary and trans-disciplinary interweaving between the history and the design of buildings, cities, territories. On the one hand, in fact, urban and architectural composition and technology of architecture favor an interpretation of the project as a tool for measuring the stratifications of theoretical elaborations, technical innovations and modifications of built environment. On the other hand, the historical disciplines for architecture and the city, far from a local vision and thanks to the cooperation with other histories (the economic, social, anthropological and aesthetic ones), trace paths that can be traveled by architects and urban planners, but also by other humanities scholars, such as philosophers and linguists. The intertwining of the two research traditions on which it was founded has thus made the DASP in recent years, precisely starting from these premises, the most advanced doctoral space in which to cultivate humanistic studies within the context of a technical European university as Politecnico di Torino is.

The activities of the DASP are characterized by a push towards internationalization, built starting from the vast network of scientific projects established by the members of its Council (named Collegio), which becomes fundamental both in the definition of new strategies in the architectural and urban fields (in the two areas of design and historiography) and to face the professional and working challenges that derive from it.

The PhD Program shares the study objectives of numerous laboratories, centers and research groups based in the University (such as the China Room, the Future Urban Legacy Lab interdepartmental center, the Institute of Mountain Architecture and, more recently, the Construction History Group and the Transitional Morphologies Joint Research Unit): often the thesis proposals are built in agreement with these subjects or are open to the world of entrepreneurship and innovation, involving public administrations, companies, trade associations, non-profit organizations. Equipped with a teaching staff made up of over a third of teachers from other Italian universities and from foreign universities, alongside the Italian language the DASP has equally chosen (both in internal communication and in the didactic offer) the English language, considered as the lingua franca of scientific research.

Recognized by the Department of Architecture and Design DAD, in its Strategic Plan, as the joint instrument of third level learning and research training in the field of Architecture, the DASP is the main place where that fundamental (or "curiosity driven") research is cultivated which is useful for feeding apparatuses of knowledge and skills to be spent on applied (or "mission oriented") research and on participation in competitive challenges in the European research framework (nowadays Horizon Europe).

The main purpose of the DASP as a pedagogical institution remains that of research training, whatever the occupational and professional outlet that this specific training will allow for the PhD. The PhD in Architecture. History and Project provides PhD students with tools and methods to address and

resolve specific research questions related to design and historiography of buildings and their contexts (topographical, technical-constructive production, symbolic and socio-economic), of cities and their characteristics (of form, functioning, strategic role), of territories and their narratives (in the game of the processes of representation, interpretation, transformation). The DASP aims to keep this research training at a high level and with broad horizons of attention in order to make the skills acquired usable, also and above all, in fields of competencies that are not strictly and purely academic, in line with the profile of skills that today it is required, both in Italy and in Europe, from those who obtain the title of PhD.

The DASP PhD gets in fact the competencies to become a researcher at universities and at research institutions (either public or private, either Italian or foreign) in the fields of history and documentation of architecture and cities, of buildings' design processes management, of infrastructures and urban spaces design, of control and development of technologies and especially construction techniques, working in the domain of abstract and applied sciences in the main fields of design and technological innovation. The future of the PhDs foresees a career as a researcher and teacher, as a manager in national or international public bodies, in all those sectors responsible for architectural quality, the enhancement of the historical heritage, the address of urban and territorial transformations, because of them having the necessary skills to also deal with the organization and promotion of cultural events and the management of complex design processes at various scales. The PhD training allows access to the liberal professions in architecture, where high quality skills are required, but also the ability to critically analyze phenomena and decision-making processes, and also in other parallel fields, such as urban and territorial planning, the management of capitalization phenomena and specialized publishing.

The objectives of the DASP are clarified in the accreditation document, compiled every year by Coordinator upon request of the Italian Ministry of University and Research and made available to the Academic Board and DASP PhD students. The same objectives are part of the introductory report that Coordinator and Council hold every year on a date located between the first two weeks of November to welcome the new members (Opening Day): it is an occasion that is not only formal, but which serves to better define, by periodically refining it, the scientific and educational agenda of the PhD in Architecture.

The identity of the DASP is also made explicit on the two doctoral websites: the official one on the Politecnico di Torino platform (<https://www.polito.it/didattica/dottorato-di-ricerca-e-scuola-di-specialization/active-courses/architecture-history-and-design/research-themes>), and the one external to the university system, traditionally self-managed by PhD students (<https://daspstudents.org>). Today, this DASP Yearbook is added to those communication tools, as the first result of a passionate initiative by DASP PhD students, once more interested in socializing the content of their researches and offering it to the widest possible comparison, cultivating the precise project of building a scientific community ready to face future challenges.

Even out of the comfort zone of their physical headquarters DASP-Home (at Istituto Galileo Ferraris), Torino 10125.

* The text of this introduction is taken from the document *Proposal for the accreditation of doctorates - a.y. 2023/2024*, presented to the Italian Ministry of University and Research on June 5th, 2023.

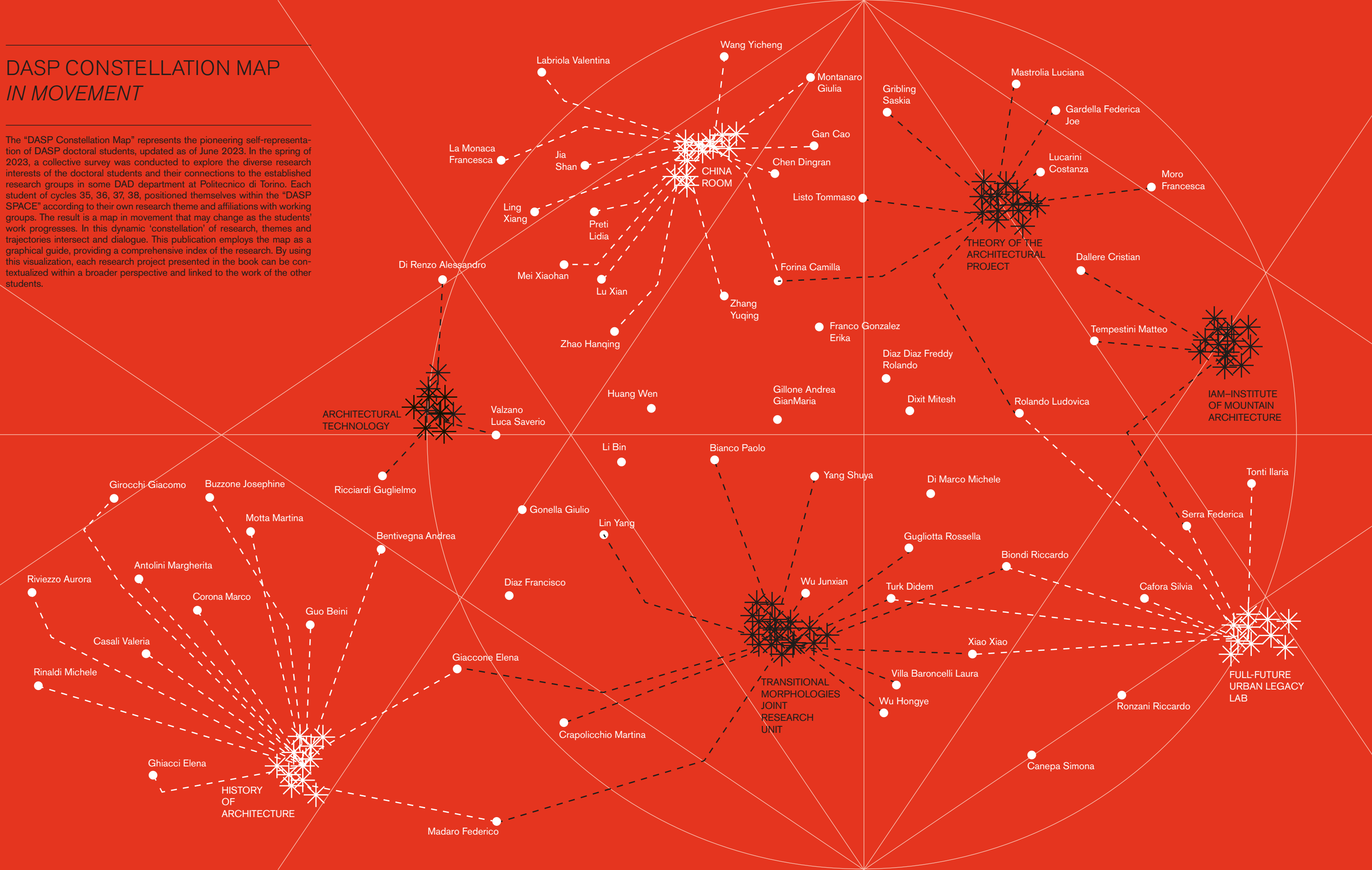
** Jonathan Hill, *History by Design*, in Ian Borden, Murray Fraser and Barbara Penner (eds), *Forty Ways To Think About Architecture. Architectural history and theory today*, John Wiley and Sons Ltd, London 2014, p. 166.



DASP CONSTELLATION MAP

IN MOVEMENT

The "DASP Constellation Map" represents the pioneering self-representation of DASP doctoral students, updated as of June 2023. In the spring of 2023, a collective survey was conducted to explore the diverse research interests of the doctoral students and their connections to the established research groups in some DAD department at Politecnico di Torino. Each student of cycles 35, 36, 37, 38, positioned themselves within the "DASP SPACE" according to their own research theme and affiliations with working groups. The result is a map in movement that may change as the students' work progresses. In this dynamic 'constellation' of research, themes and trajectories intersect and dialogue. This publication employs the map as a graphical guide, providing a comprehensive index of the research. By using this visualization, each research project presented in the book can be contextualized within a broader perspective and linked to the work of the other students.



LEGENDA. HOW TO READ THIS PUBLICATION

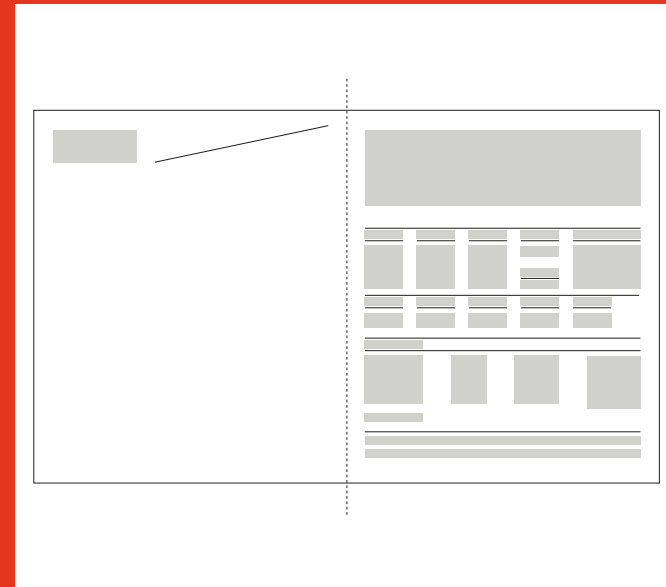
The aim of this publication is to explain the complexity of the DASP's structure and its relationships both inside and outside the organization. The content is presented in a simple and easy-to-read format, resembling a magazine which covers several PhD research topics with varying levels of detail, all presented on equal footing.

The publication's layout and graphical design takes inspiration from two Italian literary series from the 1960s: the *Piccola Biblioteca Einaudi*, a universal pocket series of non-fiction, and *URANIA*, a science fiction series by Arnoldo Mondadori. The DASP Yearbook adopts the small pocket format and the use of three primary colours (white, black, and red), which distinguished the stylistic choices of both publishing houses at the time, thanks to Einaudi's strong identity imprint by Bruno Munari and Mondadori's Art Director Anita Klinz. This publication uses those different colors to define each macro area and identify the content of the pages. The recurring structure is flexible and can adapt to the unique differences between cycles and PhD students. Images and diagrams are presented in black and white to maintain continuity, with images often crossing pages to keep them connected.

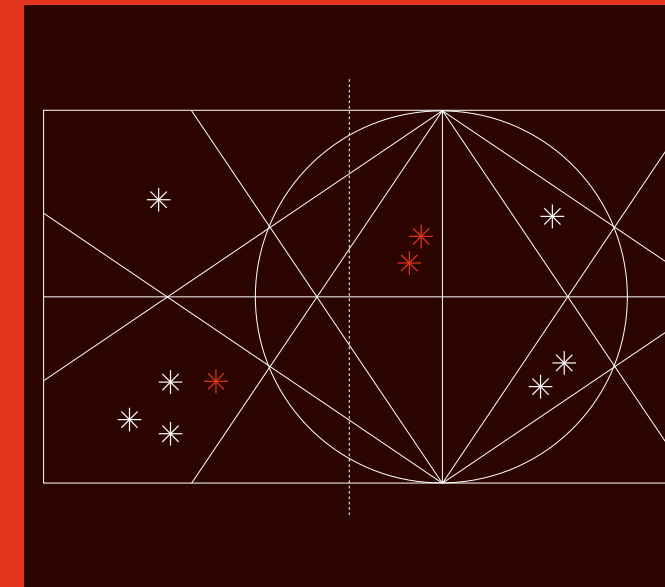
The typography used in this project features the *Akzidenz Grotesk* typeface. It's a simple and clean *sans-serif* font that became popular in the 1950s as part of the *Swiss Modernism* style and it was widely used by public transportation companies, including the New York Subways, because of its neutrality and clarity. To balance out the system's rigidity, we've added *Marlide Display*, which was inspired by classic serif fonts from the late 1970s.

CHAPTERS A COLOR CODE

Every chapter is guided through its specific colour and contains various topics, specific materials with different formats of text and/or images.



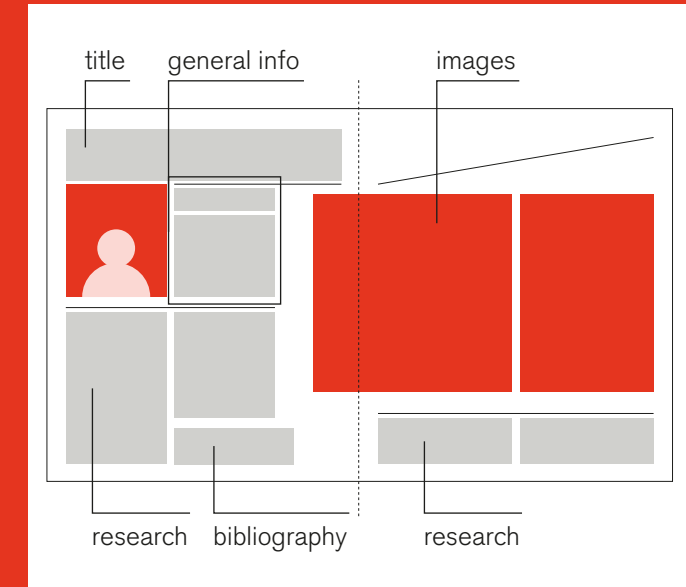
White - Title page of the chapters and colophon



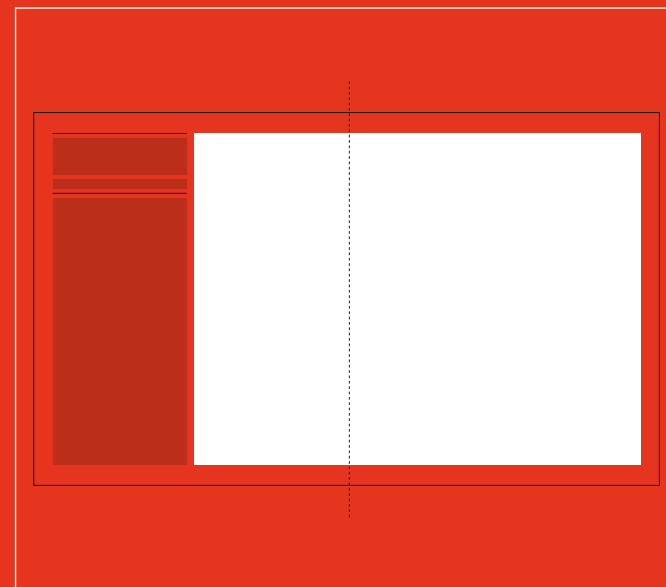
Black - Graphical index of the cycles

A SIMPLE STRUCTURE TO SHOW COMPLEX RESEARCH

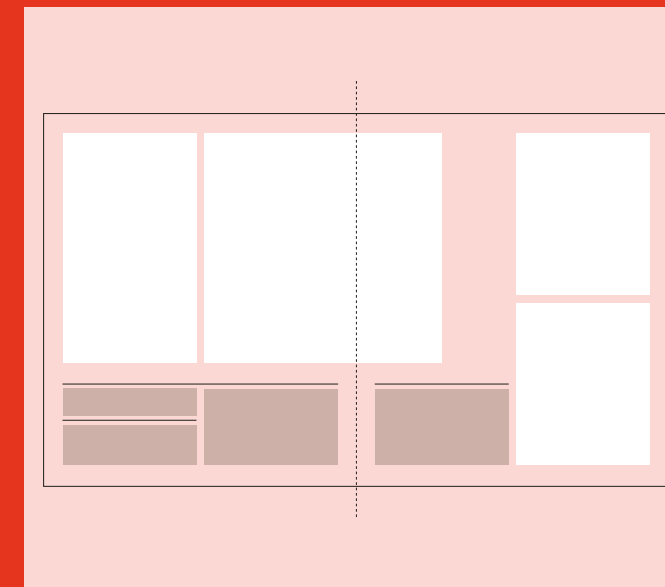
The PhD Candidates pages have a simple and repetitive structure that can be adapted to any research



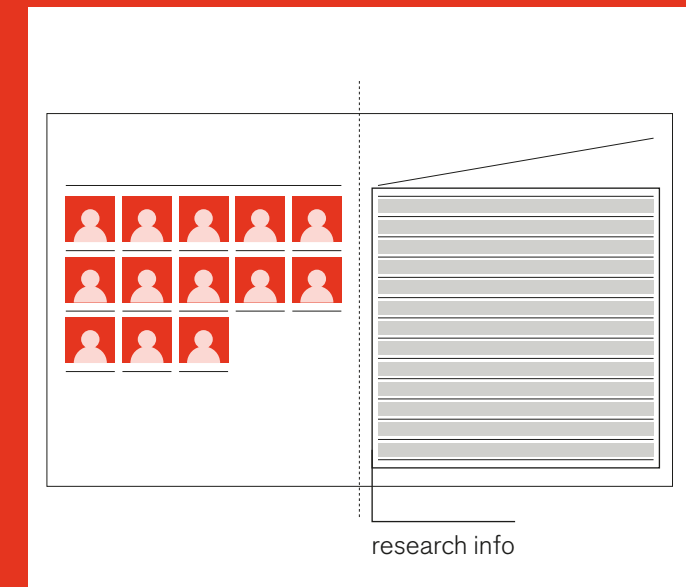
Page structure for 38-37-36 cycle PhD students



Red - Introduction and info on the DASP and the yearbook

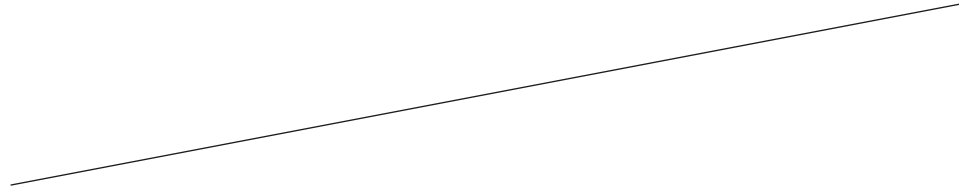


Pink - DASP activities such as workshop and congresses



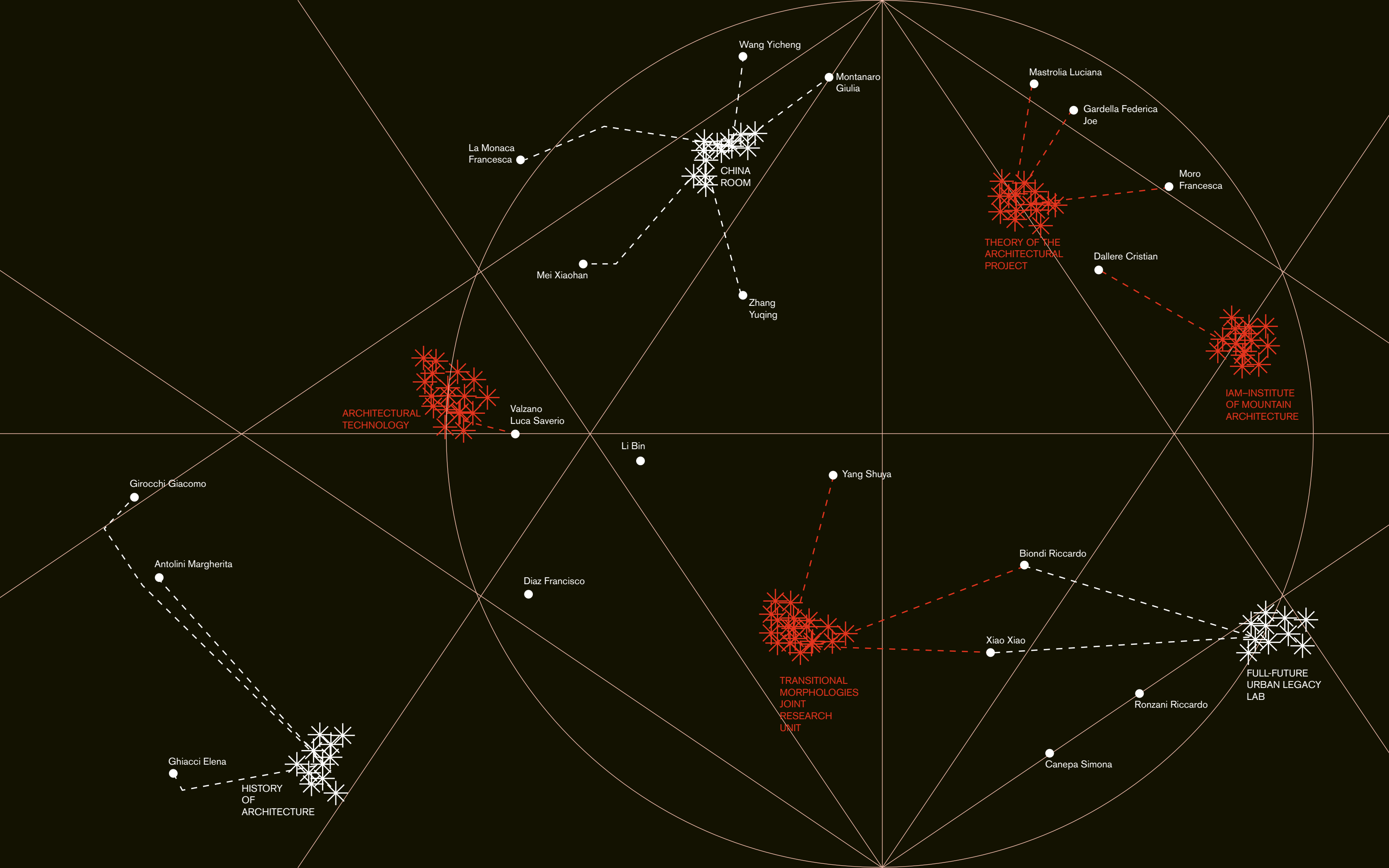
Page structure for 35 cycle PhD students

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XXXVII

CYCLE



Wang Yicheng

Montanaro Giulia

Mastrolia Luciana

Gardella Federica
Joe

Moro Francesca

La Monaca
Francesca

CHINA
ROOM

THEORY OF THE
ARCHITECTURAL
PROJECT

Dallere Cristian

Mei Xiaohan

Zhang
Yuqing

ARCHITECTURAL
TECHNOLOGY

Valzano
Luca Saverio

IAM-INSTITUTE
OF MOUNTAIN
ARCHITECTURE

Li Bin

Girocchi Giacomo

Yang Shuya

Antolini Margherita

Diaz Francisco

Biondi Riccardo

TRANSITIONAL
MORPHOLOGIES
JOINT
RESEARCH
UNIT

Xiao Xiao

FULL-FUTURE
URBAN LEGACY
LAB

Ghiacci Elena

HISTORY
OF
ARCHITECTURE

Ronzani Riccardo

Canepa Simona

HYBRID AGENCY. ARCHITECTURAL DESIGN THEORIES AND PRACTICE WITHIN THE DIGITAL TURN



Federica Joe Gardella

Cycle
37° - PoliTo Grant

Year
2021 - 2024

Supervisors
Giovanni Durbiano

Research Group
Theory of the Architectural Project

Over the past few decades, the emergence and proliferation of digital technologies have led to a continuous mutation of the architectural design practice in its production, exchange, transmission, and legitimization, and the Covid-19 pandemic has stood as an accelerator of this process. In the international discourse, this transformation has been interpreted as a moment of discontinuity, variously referred to as the technological revolution, digital turn, documentary revolution, datafication, and more. In this period, the exponential rise in documentary capital and technical mediums has triggered a renegotiation of the entities and practices involved in the design process. This research explores this moment of transition, focusing on architectural design practices developed in university research centres. The goal is to investigate the impact and effects of incorporating digital technologies on research processes, seeking to understand if and where innovation occurs. In practical terms, the study adopts the operational perspective of Science and Technology Studies to observe case studies of research architectural design practices, exploiting an ethnographic approach to observation to unfold the project action in its sociotechnical dimension.

The fascination for the digital

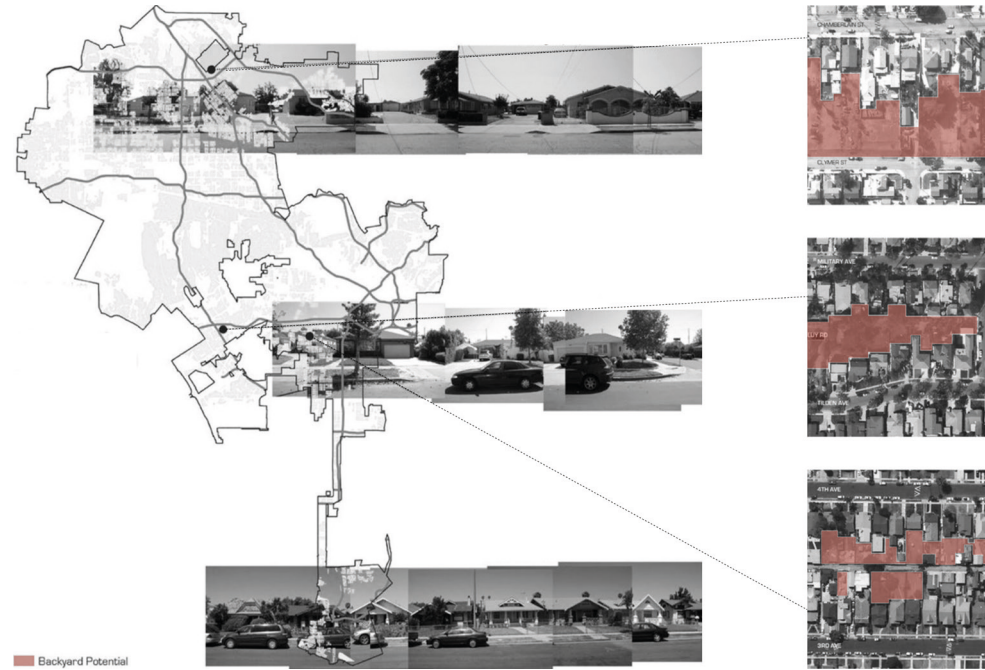
By the XXI century, the issue of digitization and computational approaches to design has shaped architectural discourse. Several scholars of the history and impact of the digital in architecture (Antonie Picon, Mario Carpo, Greg Lynn, Molly Wright Steenson, Philip F. Yuan, Neil Leach, Daniel Cardoso Llach, Rivka and Robert Oxman,

among others) have documented the rapid growth of technical and scientific acquisitions that has occurred since the second half of the twentieth century, identifying the emerging technologies and tools that have contributed to the transformation of the architectural practice, from the irruption, within research projects, of numerical control and CAD systems, the applications of cybernetics and artificial intelligence on architecture, the Internet of Things, and Big Data, etc. Drawing on Daniel Cardoso Llach (2015), this research seeks to contrast the two frames that coexist and dominate technological discourses on architectural design: autonomy, according to which technologies with their intelligence can act as surrogates for architects, and neutrality, whereby technologies are passive tools executors of designers' intentionality. Implicit in both cases is the dichotomy between the human, bearer of a priori values, and the optimizing technology, executor of facts, in a framework of separation between human evolution and technical optimization.

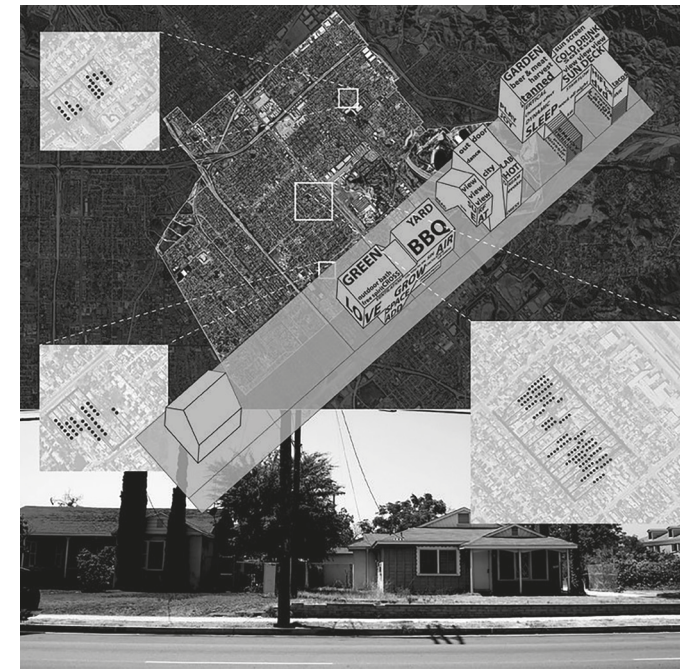
Unfold complexity through the sociotechnical lens

To advance an alternative position, avoiding any finalist misunderstanding, the research is developed according

Cardoso Llach, D. (2015). *Builders of the vision: Software and the imagination of design*. New York-Abingdon: Routledge.
Cuff, D., Higgins, T., and Dahl, P. J. (2010). *Backyard Homes L.A.* (Report, cityLAB-UCLA).
Ferraris, M. (2009). *Documentalità. Perché è necessario lasciar tracce*. Roma-Bari: Laterza.
Yaneva, A. (2009). *Made by the Office for Metropolitan Architecture: An Ethnography of Design*. Rotterdam: 010 Publishers.
Latour, B., and Yaneva, A. (2012). "Give me a gun and I will make all buildings move": An ANT's view of Architecture. In *Architectural theories of the environment: Posthuman territory* (pp. 107-114). London: Routledge.



Backyard Homes - Pacoima 10k Project, cityLAB-UCLA
© Per-Johan Dahl



Backyard Homes - Pacoima 10k Project, cityLAB-UCLA
© Per-Johan Dahl

ding to a multidisciplinary approach that considers the architectural design project as a specific field of inquiry. Two theoretical frameworks are crucial in building the methodological structure of the work: the operational approach of Science and Technology Studies - in its 'architectural' developments referable to Bruno Latour and Albenya Yaneva (2009, 2012) - and the document theory of philosopher Maurizio Ferraris (2009). The sociotechnical perspective reveals architectural design as a complex practice, intended not as attributed to or dependent on intentional subjectivity, but co-produced through hybrid networks of alliances, mediations and translations, which build through contingent actions the agency of the project. At the same time, the document theory narrows the object of observation and analysis to the document entity, endowed with specific operating characteristics and its own agency independent of the author. This methodology makes it possible to reveal what happens when the project is immersed in an inevitably messy and unpredictable reality, making visible the politics of digital technologies and how they act in contingent situations by reconfiguring the project's networks of human and nonhuman actors.

What happens inside the laboratories of the architectural project?

The observation focuses on some academic research centres (or laboratories) in architectural design, both at the Polytechnic University of Turin and at international partner universities, through periods as a Visiting Researcher. During two months of fieldwork at the University of California Los Angeles

(UCLA) in the cityLAB research centre directed by Prof. Dana Cuff, I sought the transformative role of digital technologies in their design practices through participatory observation of an ongoing project, as well as interviews and archival research. An emblematic example I encountered concerns the 'Backyards Homes' project's initial stages. In 2007, the development of a study of the Pacoima single-family neighbourhood in Los Angeles coincided with the diffusion of Google Earth technology. The adoption of this medium in the research practice unveiled the vast built stock in private backyards, encompassing an asset which had been hidden away from the human eye's street view. The striking transformative effect of the technology used laid the groundwork for the research project that later amended the single-family unit legislation in California (Cuff et al. 2010). I also followed the "researchers in the making" during a new research project that began in the winter of 2023, tracing through close ethnographical observations how the project strategy was constructed through a heterogeneous and hybrid network of human and nonhuman actors in constant motion and expansion, in a collective process of negotiation.

To conclude, this work aims to contribute to the international debate on the practice of architectural design with the rapid evolution of digital technologies, challenging conventional narratives of digital-architecture by articulating instead discourse about technology that allows us to unfold the contingent and situated nature of the practice.

006

COLOPHON

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