

UNFOLDING TRANSNATIONAL CONSTRUCTION TECHNIQUES: CONSTRUCTION
EXPLORATIONS TOWARDS POSSIBLE ALTERNATIVE MODERNITIES IN CHINA

Original

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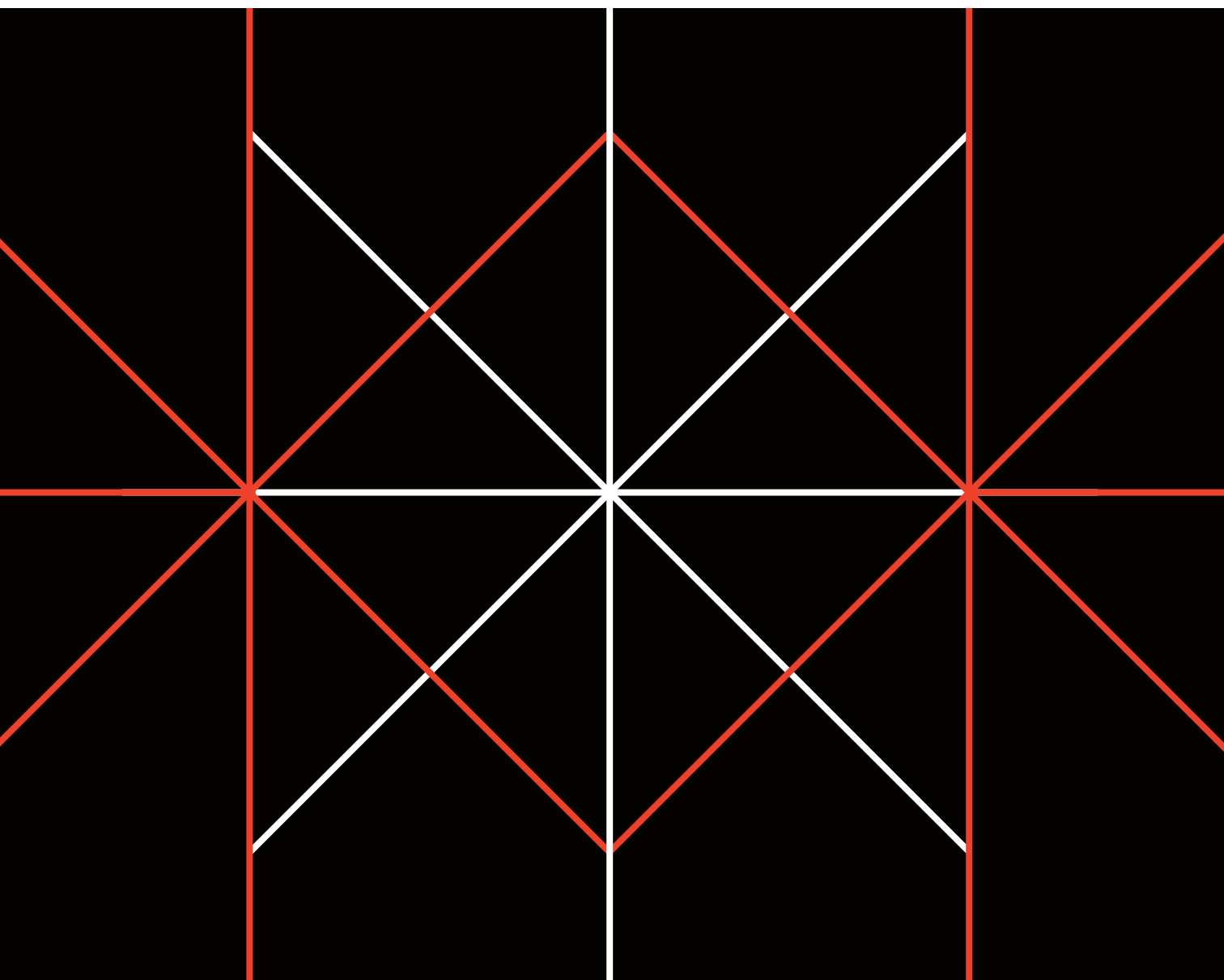
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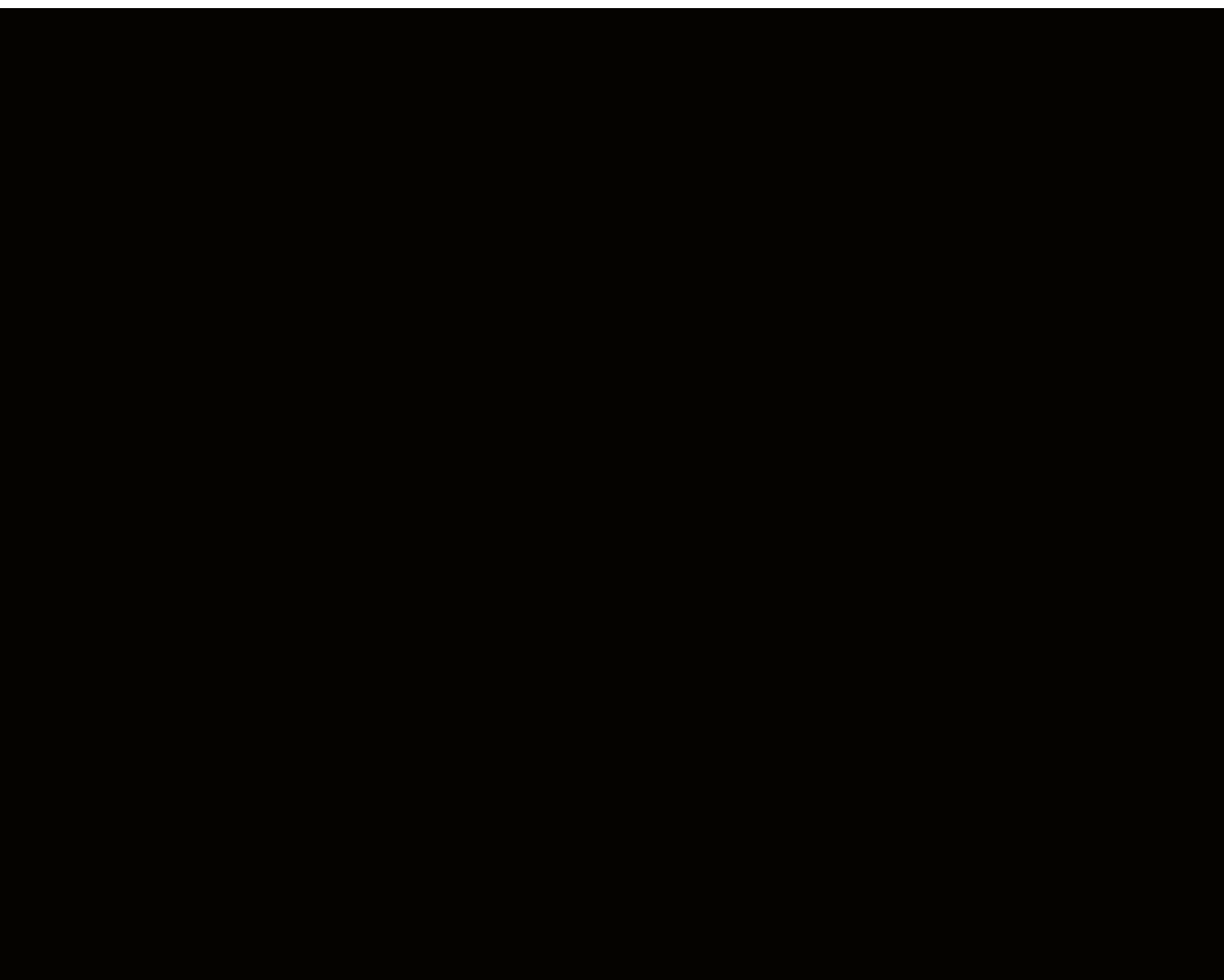
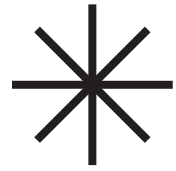
SPACE

DASP Yearbook 2023



SPACE

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SPACE

SPACE

DASP Yearbook 2023

PhD in Architecture.
History and Project

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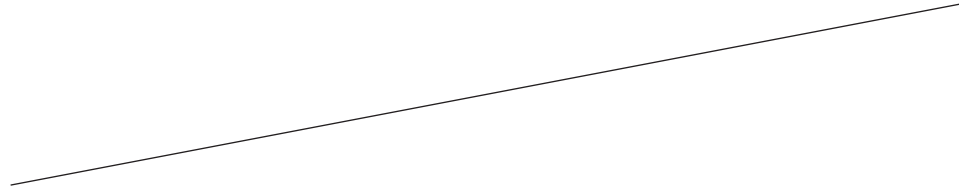
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INTRO- DUCTION

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.



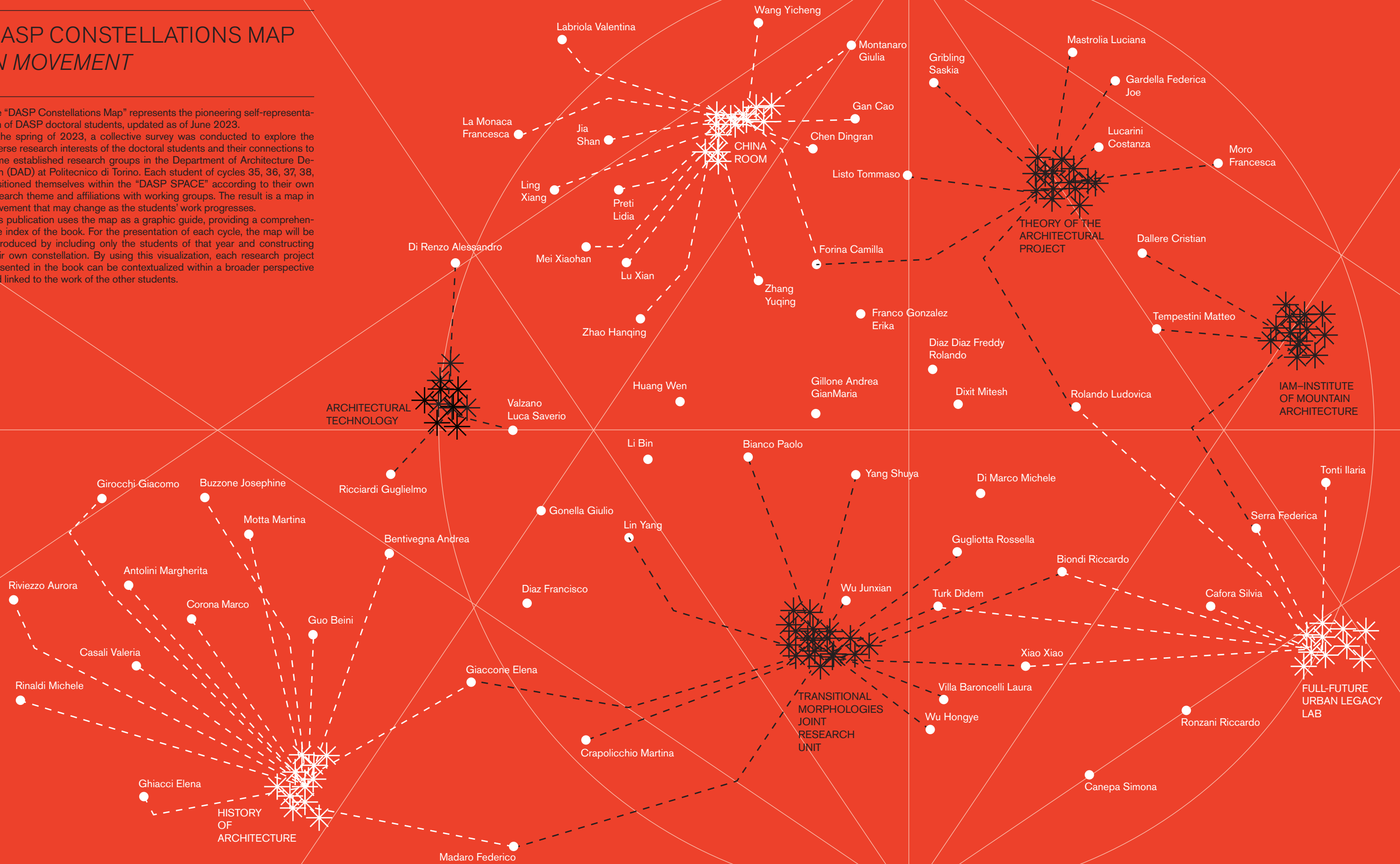
DASP CONSTELLATIONS MAP

IN MOVEMENT

The "DASP Constellations 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 some established research groups in the Department of Architecture Design (DAD) 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. This publication uses the map as a graphic guide, providing a comprehensive index of the book. For the presentation of each cycle, the map will be reproduced by including only the students of that year and constructing their own constellation. 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

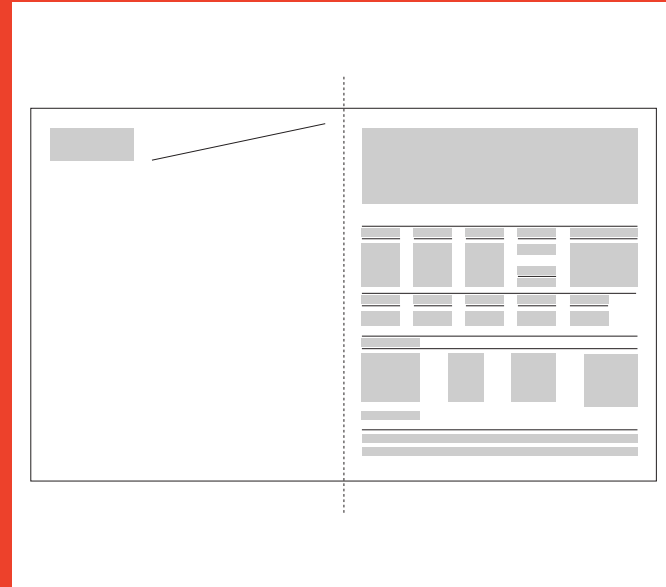
The aim of this publication is to explain the complexity of the DASP's structure and its relationships both inside and outside the organization. The content is presented in a simple and easy-to-read format, resembling a magazine which covers several PhD research topics with varying levels of detail,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

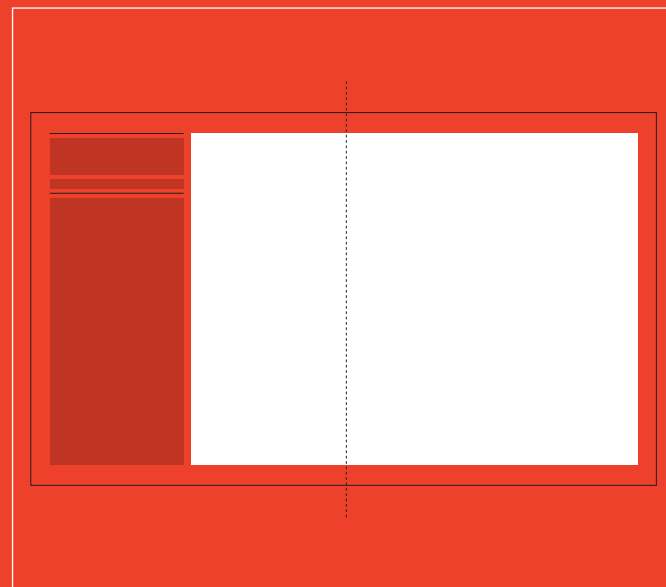
The typography used in this project features the *Akzidenz Grotesk* typeface. It's a simple and clean *sans-serif* font that became popular in the 1950s as part of the *Swiss Modernism* style and it was widely used by public transportation companies, including the New York Subways, because of its neutrality 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

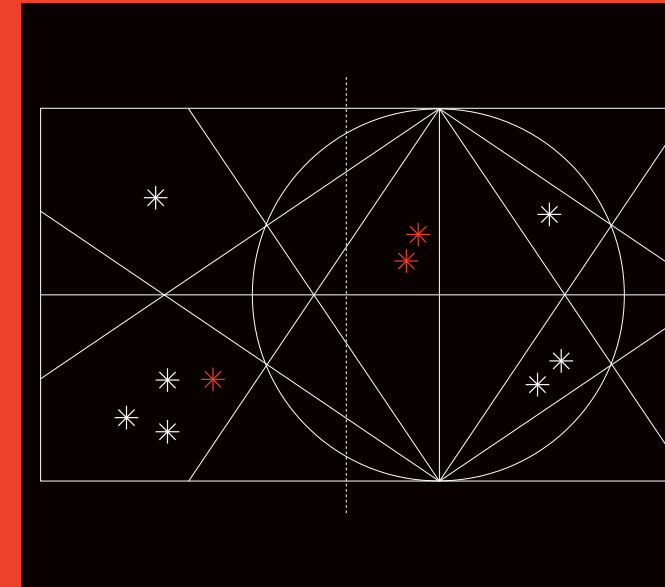
Every chapter is guided through its specific colour and contains various topics, specific materials with different formats of text and/or images.



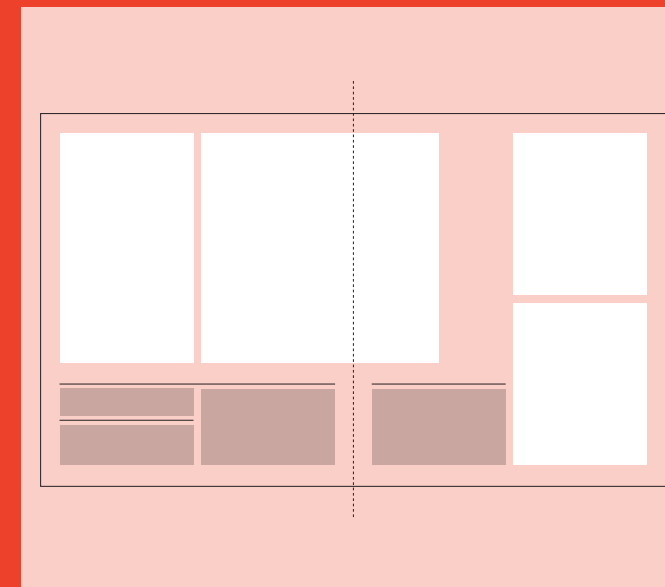
White - Title page of the chapters and colophon



Red - Introduction and info on the DASP and the yearbook



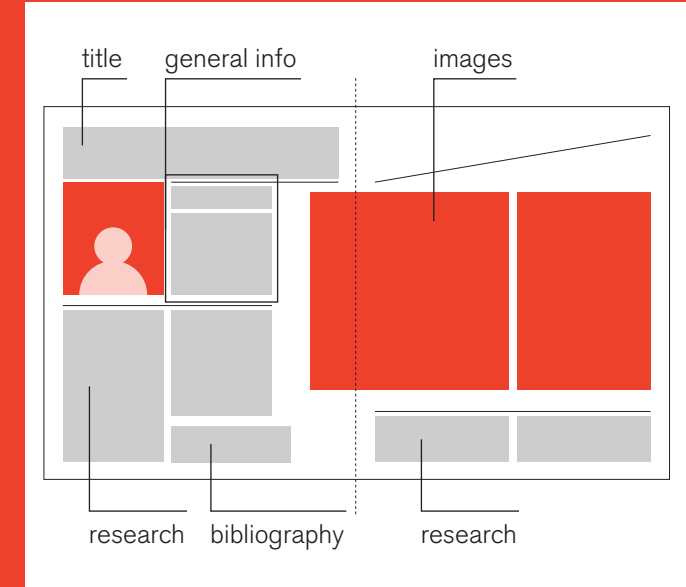
Black - Graphical index of the cycles



Pink - DASP activities such as workshop and congresses

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



Page structure for 35 cycle PhD students

UNFOLDING TRANSNATIONAL CONSTRUCTION TECHNIQUES: CONSTRUCTION EXPLORATIONS TOWARDS POSSIBLE ALTERNATIVE MODERNITIES IN CHINA



Giulia Montanaro

Cycle
37° - PoliTo Grant / Joint PhD Tsinghua

Year
2021 - 2024

Supervisors
Michele Bonino, Li Zhang

Research Group
China Room

This PhD research intends to investigate ongoing dynamics related to the increasingly deep recurring construction explorations from the last generation of designers in the Chinese architectural context. Architects are looking for original responses to the huge issue of the entire Chinese construction industry. Since Chinese architecture today is affected by different issues deriving from urbanisation at an unprecedented rate, some architects are developing strategies to respond to today's building quality conditions. The issue became an asset: Rather than aiming for the perfection of high-tech construction techniques, the contemporary generation of Chinese architects is not focusing only on high-tech resolution but looking for the most suitable one, usually shifting the focus to low-tech solutions. The design starts by rethinking construction techniques and materiality concerning the context and the lowered skills of the manufacturing workers, capable of operating manual rather than mechanised or industrialised tools. Nearly one-third of China's 200 million migrant workers are employed by the construction industry: It is a rural labour force that built urban China. The result is simpler building systems that reject unnecessary technification. They are preferred to construction techniques commonly used in the building industry and are easy to control in the construction process since they tolerate imperfection to guarantee better construction quality. A strong dichotomy exists between the increased control of the architectural design and the construction process today, and the affordances given by many construction contexts, especially building

environments with limited available means in developing countries or where there is a young construction industry. Only a minority of the world has become highly technocratic systems: this is part of today's construction industry critique. The globalisation of techniques led to a diffusion of constructive culture through manuals, which led to an interpretation of the technique as a "totaliser" of architecture (Petriccione 2021), radically transforming the relationship between practices and local context, affecting architectural practice today. In China, planners get sustained by two decades of rural-oriented policies of Rural Revitalization Strategic Plans to mitigate the rural-urban gap. Additionally, the non-urbanised area encompasses a cultural dimension released from the burden of urban codes, regulations, and requirements, which generate design limitations. It puts designers in the condition of more freely experimenting with site relationships, buildings' typologies, and architectural languages. From this perspective, the rural past and contemporary redevelopment became a compelling showcase for many Chinese

Bologna, A. (2019). *Chinese Brutalism Today: Concrete and avant-garde architecture*. San Francisco: ORO.
Hui, Y. (2016). *The question concerning technology in China: An Essay in cosmotechnics*. Falmouth: Urbanomic.
Bolchover, J.; Lange, C.; Lin, J. (2013). *Homecoming. Contextualizing, Materializing and Practicing the Rural in China*. Berlin: Gestalten.
Lu, A., & Dou, P. (A. c. Di). (2018). *China homegrown: Chinese experimental architecture reborn*. John Wiley & Sons.
Rizzardi. (2018). *The condition of Chinese architecture*. Singapore. TCA Think Tank.
Zhang, L. (2018). Alternative Modernity, Rural Rediscovery and What Next: The Ongoing Debate on the Modern in China. *Architectural Design*, 88(6), 134–141.



Reconnaissance of Construction Experimentation, Case Studies in China
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Reconnaissance of Construction, Experimentation Case Studies in China
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architects eager to test cutting-edge design approaches also to learn from. Material and construction techniques experimentation worldwide found space in the countryside: in China, it has been widely and deeply needed. During the 2013 National People's Congress, the central government recognised the vast environmental problems, social inequities, and urban-rural disparity resulting from the vast scale and rapid development speed. The research takes as references architectural responses that had extracted ideas from their rural contexts, materialising them into meaningful reflections on the evolving condition of China's countryside. Working with local communities, these projects are imbued with the wisdoms of their respective region's cultural heritage and traditional craft and aim to contribute to their sites' cultural and economic development through inventive and contemporary architectural approaches. In those situations, the building industry and the architectural profession have played a key role in facilitating the understanding of the real possibilities of who will build it to achieve the best possible result in terms of architectural quality and sustainability. Architecture has never been simply about producing a form or demonstrating technologies. Each era's creation serves to reflect the culture and ethics of the times: "Technology is culture", and "construction choices" were always "historically determined", as Construction History teaches us (Picon, 2005). Architects learnt from these experiences and innovatively are testing different techniques to complete large-scale buildings with high construction quality and

experimenting with a substantial reinterpretation of traditional construction techniques and local manufacturing knowledge, responding to an external framework of architectural practices that construct the system of China's architectural profession. To have their projects built, architects must work within that system. An interesting case study can be identified in Gong Dong architect's construction consciousness in operations, where manipulations of "materials" can explain the ongoing deep research in managing the construction process. Today, from the lens of the post-Anthropocene discourse, there are many materials that we are going to rethink. There is a need to investigate material use through construction techniques tightly connected to the local context and the workers' conditions in a specific environmental model. It is a real happening that could address contemporary discussions about technological universalism and plurality: an opportunity to open the possibility of reappropriating and redirecting modern technology along alternate trajectories sustainable on the entire spectrum around the concept. The underlying scope seeks to enrich methods relating to contexts where the construction industry is not aligned with modernist development. Therefore, instead of implementing it on the same matrix of a single construction approach, which proved inflexible and unsustainable, we need to find answers deriving from specificities although the unstoppable global technological exchanges processes.

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COLOPHON

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