Community
for Artistic and
Architectural
Research

Collective
Evaluation of
Design Driven
Doctoral Training

COMPARISON

Conference for Artistic and Architectural Research
Book of Proceedings

POLITECNICO
MILANO 1863

DIPARTIMENTO DI ARCHITETTURA
E STUDI URBANI
DEPARTMENT OF ARCHITECTURE
AND URBAN STUDIES

AUID PHD PROGRAM
ARCHITECTURAL URBAN
INTERIOR DESIGN

LetteraVentidue

CA²RE I CA²RE+ Online Conference for Artistic and Architectural Research
Book of Proceedings

AUID PhD Program in Architectural Urban Interior Design,
DAStU Department of Architecture and Urban Studies, Politecnico di Milano

28th-30th October 2020, Milano

Collective
Evaluation of
Design Driven
Doctoral Training

Co-funded by the
Erasmus+ Programme
of the European Union

CA²RE+ consortium

ISBN 978-88-6242-481-3

First digital edition: March 2021

© LetteraVentidue Edizioni

Text and images © the authors (individual papers) and editors

Editors: Fabrizia Berlingieri, Pier Paolo Tamburelli, con Francesca Zanotto,
Chiara Pradel, Enrico Miglietta, Beatrice Balducci e Claudia Mainardi

Any reproduction of this book, even partially, is prohibited. It is the hope of the author and the publisher that, by having kept the cost of this book at its minimum, the readers shall be encouraged to purchase a copy of the book rather than spend an almost analogous sum in running photocopies. Further, the collection's pocket-size format is an invitation to carry a book with you wherever your day may take you. A stack of photocopies is rather inconvenient in this regard.

Should any errors or omissions have been made regarding copyrights of the illustrations, we will be glad to correct them in the forthcoming reprint.

Graphic design: Gaetano Salemi

LetteraVentidue Edizioni S.r.l.
Via Luigi Spagna 50 P
96100 Siracusa, Italy

Scientific Committee

Alessandro Rocca
Prof. Dr., Politecnico di Milano

Anđelka Bnin-Bninski
Dr., Faculty of Architecture University of Belgrade, ARENA

Anders Kruse Aagard
Assistant Prof., Aarhus School of Architecture

Andrea B. Braidt
Mag. Dr., Institut für Theater, Film und Medienwissenschaft, Universität Wien
President ELIA European League for the Institutes of the Arts

Anna Katrine Hougaar
Dr., Aarhus School of Architecture

Boštjan Vuga
Associate Prof., Faculty of Architecture, University of Ljubljana, AA School of Architecture

Claus Peder Pedersen
Prof. Dr., Aarhus School of Architecture

Débora Domingo Calabuig
Prof. Dr., Universitat Politècnica de València, EAAE

Edite Rosa
Prof. Dr., University of Porto Faculty of Architecture

Eli Støa
Prof. Dr., Faculty of Architecture and Design, Norwegian University of Science and Technology

Fabrizia Berlingieri
Assistant Prof. Dr., Politecnico di Milano

Gennaro Postiglione
Prof. Dr., Politecnico di Milano

Ignacio Borrego
Prof. Dr., Institute of Architecture, TU Berlin

Jacopo Leveratto
Assistant Prof. Dr., Politecnico di Milano

João M. Barbosa Menezes de Sequeira
Prof. Dr., Universidade Da Beira Interior

Johan Van Den Berghe
Prof. Dr., Faculty of Architecture, KU Leuven

Johan De Walsche
Prof. Dr., University of Antwerp Faculty of Design Sciences, ARENA, EAAE

Jürgen Weidinger
Prof., TU Berlin

Lidia Gasperoni
Dr., Institute of Architecture, TU Berlin

Maria Hansen
Executive Director ELIA European League for the Institutes of the Arts

Markus Schwai
Prof. Dr., Faculty of Architecture and Design, Norwegian University of Science and Technology

Matevž Juvančič
Dr., Faculty of Architecture University of Ljubljana

Matthias Graf von Ballestrem
Prof. Dr., HafenCity University

Naime Esra Akin
Prof., Department of Architecture, Baykent University, Turkey

Oya Atalay Franck
Prof. Dr., President EAAE & School of Architecture, Design and Civil Engineering, ZHAW Zurich

Pier Paolo Tamburelli
Assistant Prof., Politecnico di Milano

Ralf Pasel
Prof. Institute of Architecture, TU Berlin

Roberto Cavallo
Prof. Dr., Department of Architecture, TU Delft

Tadeja Zupančič
Prof. Dr., Faculty of Architecture University of Ljubljana

Thierry Lagrange
Prof. Dr., Faculty of Architecture, KU Leuven

Riet Eckout
Dr., Faculty of Architecture, KU Leuven

CA²RE Milano Conference JST and Professionals

Anđelka Bnin Bninski, Anders Kruse Aagaard, Andrea Oldani, Angeliki Sioli, Boštjan Vuga, Cecilie Andersson, Christoph Heinemann, Corneel Cannaerts, Esther Venrooij, Giulia Setti, Hugo Faria, Joaquim Almeida, Kathrin Wildner, Lidia Gasperoni, Manuel Bogalheiro, Marjan Hočevar, Mark Pimlott, Matevž Juvančič, Mia Roth-Čerina, Mona Mahall, Nina Katrine Haarsaker, Ollie Palmer, Sergio Koch, Špela Hudniik, Stamatina Kousidi, Stefano Tropea.

Executive Board

Fabrizia Berlingieri, Pier Paolo Tamburelli, Alessandro Rocca, Gennaro Postiglione, Jacopo Leveratto
with
Francesca Zanotto (coordination)
Beatrice Balducci, Chiara Pradel, Claudia Mainardi, Enrico Miglietta

INDEX

9 **CA²RE | CA²RE+**

11 **Caring about Design-Driven Research**
• Gennaro Postiglione, Alessandro Rocca

Comparison Open Workshop

15 **Comparison as Discursive Practice**
The Milano CA²RE Open Workshop
• Fabrizia Berlingieri

Position Papers

19 **Aarhus School of Architecture**
• Claus Peder Pedersen

22 **TU Berlin**
• Ignacio Borrego, Ralf Pasel

27 **TU Delft**
• Roberto Cavallo, Alper Semih Alkan

34 **HafenCity University Hamburg**
• Matthias Ballestrem

36 **KU Leuven**
• Johan Van Den Berghe, Thierry Lagrange

38 **University of Ljubljana**
• Tadeja Zupančič

43 **Politecnico di Milano**
• Alessandro Rocca

51 **Lusófona University of Porto**
• Edite Rosa, Joaquim Almeida

57 **Norwegian University of Science and Technology**
• Markus Schwai, Eli Støa

61 **Tools for Comparison**
Building a Common Ground
for Doctoral Design-Driven Research
• Chiara Pradel, Francesca Zanotto

67 **Maps and Diagrams**

Exploring by Drawing

77 **Exploring by Drawing. An Introduction**
• Pier Paolo Tamburelli

82 **A Reflection on the Tools**
and Techniques of the Researchers
• Beatrice Balducci, Enrico Miglietta

Panel Sessions

91 **The Panels: Designing**
an Environment for Mutual Learning
• Jacopo Leveratto

96 **Observations on Panel Discussions**
• Claudia Mainardi

Selected papers

98 **Knowledge Spaces of Globalization**
Musealizing the Spatial Assemblages of Global Trade
• Melcher Ruhkopf

109 **Investigating the Twenty-first Century**
Emerging Agencies
Codification of Architectural *Epistemes*,
from Discourses to Practices
• Claudia Mainardi

122 **The Variation of Architecture Identity**
in the Age of Globalization
• Andrea Crudeli

133 **Exploring the Impact of Dwellers' Psychological, Social and Cultural Needs on Generating the House's Experiential Qualities**
• Aurora Saidi

142 **Situated Artefacts**
Exhibition Making as a Discursive Practice
• John McLaughlin

153 **Green Walls**
Shaping Urban Communication
• Jana Kozamernik

162 **The Potentials of Urban Design for a Seismic Resilient City**
• Katarina Rus

176 **The In/visible Border**
A Photographic Walk Along the Swiss Italian Boundary Line
• Nicoletta Grillo

196 **The *Potential* of Form**
Assessing the Transformative Potential of Existing Buildings in the Post-functional Era
• Elena Guidetti

204 **Modernity of the Antique, or the Policy of Conservation of Roman Monuments in Pula Through Nineteenth and Twentieth Century**
• Emil Jurcan

213 **From Modulation to Algorithm**
• Taufan ter Weel

223 **Synthesis of Arts**
Ico Parisi's Interiors
• Carola D'Ambros

238 **SuNEARrth**
Sun – Earth Interconnection in Frequences
• Pepa Ivanova

246 **Nodes**
• Steinar Hillersøy Dyvik

258 **Architecture and UNESCO Buffer Zones**
The Scientific and Academic Research
for the Definition of Layouts of Design Actions
• Greta Allegretti

274 **Architecture *on* the Modern**
Methods and Design Actions
for the School Heritage within Seismic Italy
• Greta Maria Taronna

288 **A New Urban Stereotomy**
Design Strategies for the *Base*
of Social Housing Districts
• Valerio Maria Sorgini

300 **Limits of Change of Town**
Form Character in Lithuania
Changes of Biržai During the Twentieth
and Twenty-first Centuries
• Agnė Vėtė

312 **The Matter of Form**
Reasons of Form in Structural Components
• Gino Baldi

324 **A Safe Space**
Architecture and Preparedness in the Era of Uncertainty
• Beatrice Balducci

334 **The Potential of a Tectonic Approach**
for the Experiential Qualities of Architecture
• Tim Simon-Meyer

349 **Home: Things and Bodies**
The Possibility of a Thing-based Revolution
Within and Against Domestic Space
• Marta Fernández Guardado

364 **Proprioception and Immersion**
in the Implicit Design Processes
• Wiktor Skrzypczak

373 **Back to the Future**
Unearthing Tacit Design Knowledge
through Experimental Frameworks
of Reflective Past Practice Design Research
• Sandra Felix

388 **Underground Hubs**
Connecting Soil and Subsoil
• Amath Luca Diatta

397 **Designing Departure**
Examining End-of-life Care Spaces
as 21st Century Collective Living Types
• Alberto Geuna

411 **The Design of a Continuous Flow**
Mapping Water in City's Topography
• Maria Margarida Maurício

426 **The Accessible Frame**
Research on Ancient Chinese Landscape Architecture
Towards a Perceptual Interaction Paradigm
• Luyi Liu

438 **Architecture and Public Space,**
a Typological Hybridation
• Janet Hetman

452 **Biographies**

466 **Program**

CA²RE+ is a joint platform for research in all fields of architecture, design, and arts, and supports early-career researchers and Ph.D. students to improve the quality of their research within the realm of Design-Driven Research.

The CA²RE+ Strategic Partnership builds on the experience of the CA²RE community and it is supported by The Erasmus+ Strategic Partnership. It comprises 9 European Universities in association with ARENA (Architectural Research European Network Association), EAAE (European Association for Architectural Education), and ELIA (European Network for Artistic Research). The project, running for 3 years, develops a collective learning environment through the Evaluation of Design-Driven Doctoral Training. Design-Driven Doctoral research (DDDr) is taken as a multidisciplinary example of an experiential learning-through-evaluation model, appropriate for identification and promoting relevance of research singularity, its transparency, and recognition, to award excellence in doctoral training for creative and culturally rooted solutions of contemporary design-driven developments.

CA²RE+ is intended to bring together senior staff, advanced researchers, and early-career researchers to understand, scrutinize, and improve research quality through an intensive peer review at key intermediate stages. The conferences are platforms to develop a “Collective Learning Environment through the Evaluation of DDDr Training; to create Evidence of DDDr Learning Environment and Evaluation Materials; to identify the DDDr Strategies, to explicate the DDDr Evaluation process and to prepare the DDDr Framework. We wish to contribute to the open and diverse fields that exist in architectural, design, and artistic research, to include subjects such as environmental design, sustainable development, interior design, landscape architecture, urban design/ urbanism, music, performing arts, visual arts, product design, social design, interaction design, etc.

Its backbone is a series of biannual international and intercultural INTENSIVE STUDY PROGRAMMES for doctoral candidates, guided by experienced evaluators from participating universities and invited experts.
The 8th CA²RE conference together with the 3rd CA²RE+ event series is

promoted by the Department of Architecture and Urban Studies (DAStU) and the Ph.D. Program in Architectural Urban Interior Design at the Politecnico di Milan. The main topic of the event is COMPARISON. The focus will narrow by comparing design strategies and tactics applied to highlight common approaches and methodological recursions.

Practice & Design-Driven Research encompasses many different forms of research in which (architectural, design, and artistic) practice and the results thereof, are implemented as a means to generate and disseminate new knowledge. This includes contemporary alternative formulations of the field, like Artistic Research, Research by Design, Practice-Based/Led Research, Creative Practice Research. The CA²RE+ explicates the transformative and innovative power of highly individual strategies in artistic research, the diversity of research traditions, and the integrative nature of architectural design research, able to face the contemporary knowledge fragmentation from humanities, social sciences, and technology. It explicates the interdisciplinary relevance of convergent thinking, mastering wicked problems, open-ended processes, resilience, and risk, as well as orientation to future, all present in Design Driven Doctoral Research (DDDr). It explicates the didactic relevance of DDDr for training creative professionals on how to use the integrative power of design thinking to master open-ended processes while solving contemporary spatial dilemmas (sociological, climate-change-related, political).

Caring about Design-Driven Research

Gennaro **Postiglione**, Alessandro **Rocca**

The CA²RE+ program enters normal research activities like a detonator, circulating ideas that subvert the habits cultivated within each department. This tension between the centripetal and the centrifugal is the rule. On the one hand, the need to strengthen a Faculty and a group of researchers' internal cohesion is evident. On the other hand, a continuous exchange with the outside world is equally vital, with interlocutors different enough to arouse friction but also similar enough for a good mutual understanding. This double polarity was described with great precision by Arata Isozaki in the essay Japan-ness, referring to Japanese culture's periodic oscillation, between opening and closing, in the relationship with other cultures.
In a researcher's trajectory, these moments alternate in a way that is not always predictable, but it is clear that today the push for exchange is more necessary than ever, constituting the very basis of research funded on a European frame. However, we must not forget how often the most exciting research, those that are genuinely able to bring advancement of knowledge in architectural design, occur by individuals or small groups that act in solitude or, at least, at a distance of security from university institutions. Therefore, there is a gap between research as a solitary path, often an individual adventure, and research as a firmly founded project, recognized

by institutions, incorporated into academic activity's daily routine.
This duality is a problem when it leads to the failure to acknowledge and use individual research results within institutional research. For example, it is essential to understand the value, and the necessity, of singular and personal contributions such as Isozaki's essay, quoted earlier.
The research doctorate is the place where these two modalities overlap, where the institution is responsible for supporting and guiding research that, in academic practice, is based on individual research. Therefore, the doctorate plays this valuable role in connecting the two phases, comparing the personal path's process with the university environment's plurality and codes.
In CA²RE+, the relationship between individuals and organizations represents the center of innovation. In the research discussion, the institutions remain in the background, represented by a galaxy of people who feel fewer specific habits and routines and experience unnatural freedom of relations and movement. In the CA²RE panel, the different doctoral programs are dismembered, appearing precisely through their members disconnected from the Board to which they belong.
This innovative aspect is crucial because it produces a friendly, cooperative, and interactive mode that is probably unachievable within a single department.
To this is added another very significant innovation factor, which is the Design-Driven Research (DDR) orientation. This choice, discussed at length in elaborating the CA²RE+ Erasmus + project, represents a relevant specificity and innovation element.
With all the articulations and reflections on the topic that we find in these Proceedings, it remains clear that the DDR mode is a strategical objective that invests fundamental questions on the nature of Art and Architectural Design research. Furthermore, it is also clear that this goal, welcomed with its various internal dialectics, represents a point of arrival, after the CA²RE+ experiences of the past years, and a starting point for the development, in future years, of a new theoretical and educational horizon.
In Design-Driven Research or Research by Design is concerned, it is essential to note that this operational field is typical of the art practices. It is sometimes possible to identify a productive activity with a theoretical and cognitive aspect. Practitioner and researcher coincide, as do the object of study and the result of design activity. This practice aims to know what doing means by doing; a survey of disciplinary foundations, mostly aimed at developing (quasi)-theories that produce theoretical advancements and at the same

time also legitimize own practice. Practice-based theories are not about explanations and justifications (knowing why) but about establishing facts (knowing what) and instructions for action (knowing how). In this field, there is no operational protocol, no method; each author independently and personally defines the survey scope of his/her practice.
Along with Research by Design, Operative Research represents a crucial relational junction between a merely cognitive activity (research) and a purely operational activity (design practice). The reflective and analytical justification of one's design practice (and those of others) leads back to understand critically one's own (and ultimately others') ideas and work. This process is usually done within a historical perspective, using history not just as a study subject for the advancement of knowledge on (historical or current) works, but to build the legitimization as one's theory. The concept of operative research – related to the use of history – has found its theoretical formalization in architecture within Manfredo Tafuri's thought and work, lastly in his essay *Il progetto Storico* where he defines what he calls *Critica operativa* – Operational Criticism.
Therefore, at Politecnico di Milano we understand and perform DDR in the light of this theoretical tradition. This tradition is lost in most of the new Ph.D. programs in Italy. Thanks to the presence and effort of the CA²RE+ community, we strengthen this method among our candidates and colleagues. We are fully aware of how relevant it is for Architecture and its circles to create a community of learners who nourishes DDR approach.
As organizers of the CA²RE+ meeting at the Politecnico di Milano, we were glad and honored to host this edition within our doctoral program in Architectural Urban Interior Design (AUID), where the Conference met a large audience, interest, and participation of candidates and professors.
We are deeply grateful to all the European partners and all researchers and professors who have worked hard in all activities of a very dense and intense calendar. The Milanese CA²RE+, inserted after Trondheim and before Hamburg, is another step in the experimentation of a new perspective in the study, comparison, and dissemination of knowledge for doctoral programs engaged in artistic and architectural research.

Milano, January 2021