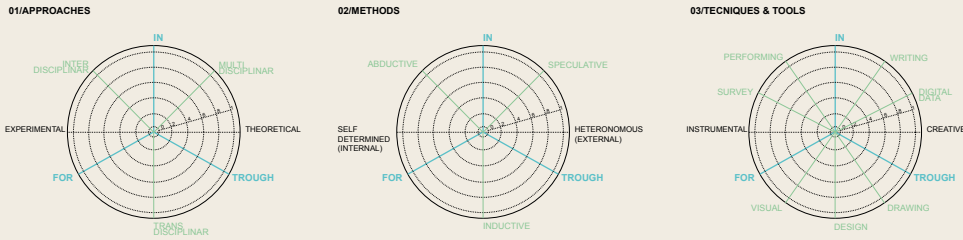


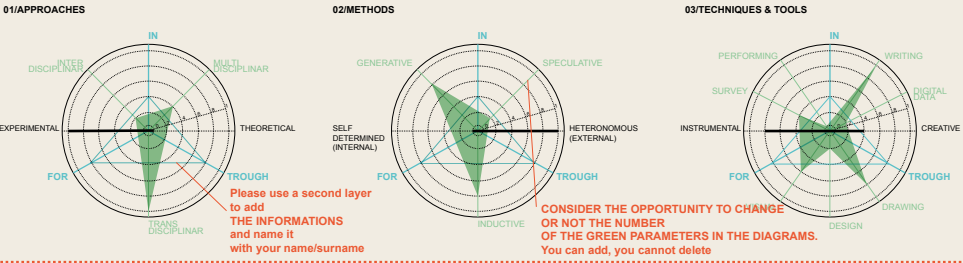
# CA<sup>2</sup>RE+

## 2 EVALUATION OF DESIGN-DRIVEN RESEARCH

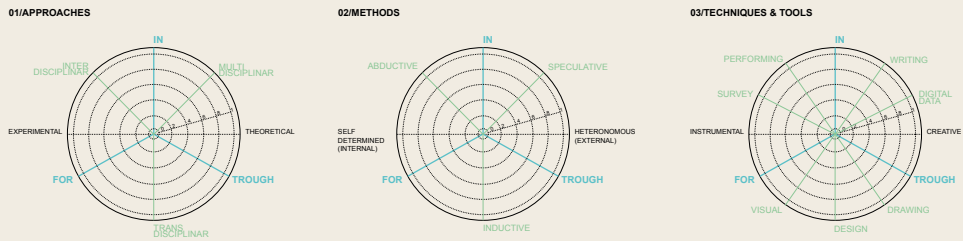
### LEVEL 1/ PERSONAL POSITION



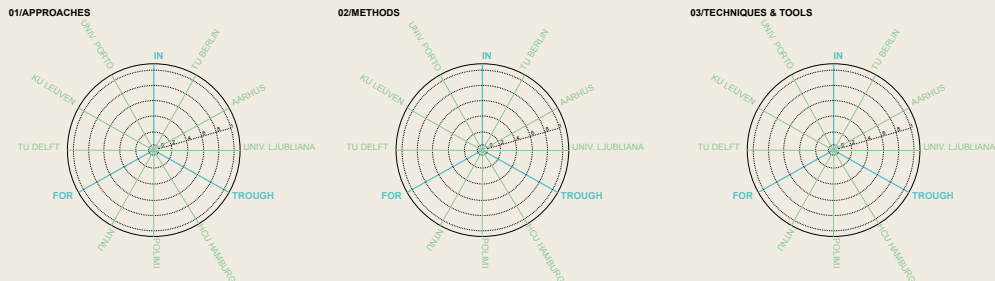
### / PERSONAL POSITION\_ EXAMPLE: Name Surname



### LEVEL 2 / PHD COMMUNITY POSITION



### LEVEL 3/ CONSORTIUM POSITION



**CA<sup>2</sup>RE+**

**2**

**EVALUATION OF  
DESIGN-DRIVEN  
RESEARCH**

## COLOPHON

CA<sup>2</sup>RE+ 2 EVALUATION OF DESIGN-DRIVEN RESEARCH

2022  
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## CA<sup>2</sup>RE+ PARTNERS



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**Endogenous /  
exogenous,  
the two hemispheres  
of architectural  
research**

Alessandro Rocca  
Politecnico di Milano

## ABSTRACT

**In a discipline as architecture, scientific advancement exists only for a part, for that half which concerns measurable aspects. There is another half, which is indispensable and makes us irreplaceable. It is the one that has no beginning either end, is the circular Vitruvian speculation about the timeless quality of architectural design, mainly mixing art and technique with many other inputs. Research in architectural design must find a balance between motivations of general interest and others of a strictly personal nature. This determination is challenging and requires a deep self-consciousness and a lot of work because, in most recent cases, an orientation prevails that favors external reasons, we could say exogenous, concerning the core of the discipline. The researcher, therefore, poses as a subject responsible for contributing to the solution of the most popular and urgent questions, from the climate change to the post(?)-pandemic perspective. The applicative research finds a greater success both among candidates, who can quickly orient themselves within a question of broad multidisciplinary debate and among evaluators and financiers, who are significantly more likely to fund research that is understandable outside the narrow academic circle. Architecture, a composite knowledge based on millenary foundations, must go beyond simple professional tasks and addresses, with a design culture with no substitutes, the present and future issues of the built environment.**

**Keywords: Fieldwork, autobiography, discipline**

From the discussion of the doctoral research in progress, we can draw some convictions that help to clarify a design-driven methodology. The first point concerns the explanation of the “why,” the reason which individuate the field of study. I believe that, on this point, research in architectural design must find a balance between motivations of general interest and others of a strictly personal nature. This determination is challenging and requires a lot of work.

In most recent cases, it seems that an orientation prevails that favors external reasons, we could say exogenous, concerning the core of the discipline. In these cases, the researcher, therefore, poses as a subject responsible for contributing to the solution

of some problem. There are many possible examples. In the Auid program ([www.auid.polimi.it](http://www.auid.polimi.it)), the research launched in 2021 is focused mainly on issues of the exogenous type. Here is a synthetic list of the research topics: the organization of underground urban spaces; social housing in the global South; coastal landscapes vulnerable to climate change; abandonment and recovery of rural villages; supportive interventions in marginal urban areas; actions to combat heat islands in the urban environment; the use of integrated digital design in public housing; soil design in relation to social use of urban space; the architectural and landscape project in rural areas; low-tech ecology experiments in rural areas; participatory projects for the redemption of the rural regions; natural elements in the Smart City project; nature-based solutions and circular economy within the design transition due to the climate change; soil projects for the recovery of suburbs; perspectives for the architecture of university campuses; designing rural areas in the global South; the dialectic between public space and private space, between urban and interior, in the global cities; architecture and psycho-physical well-being; the use of highly innovative materials in architecture; the design of urban green spaces.

Among the twenty or so new Auid research works in progress, there is only one proposal of a historical nature. Also, only one research refers to a purely disciplinary and foundational issue: the meaning of the design of the plan in architecture. If we quickly look at one of the latest Ca2re Proceedings, referred to the session at the Politecnico di Milano (October 2020), we find that endogenous themes have a relevant presence. We can empirically assess that more or less half has an endogenous solid component out of twenty-nine selected papers. In reference to the disciplinary question, in the Ca2re environment, we have a better balance than in the last generation of Milanese researchers.

In any case, the prevalence of applicative research seems indisputable. It finds a greater success both among candidates, who can quickly orient themselves within a question of broad multidisciplinary debate and among evaluators and financiers, who are significantly more likely to fund research that is understandable outside the narrow academic circle. Scholarly thinking, general exogenous themes are fine because they mean that architectural culture knows how to interact with the dynamics, problems, and perspectives of public interest and on a large scale, often even planetary. However, this breadth is necessary but not sufficient. If the more individual and original part is missing, the authorial contribution constitutes the first energy source of design-driven research. Together with the general

theme, the research must also support an utterly personal design interest that takes the form of an obsession.

For example, looking at the works of our doctoral students in the mid and advanced stages, we find research works that investigate the role of detail or the relationship between form and structure. In these cases, the individual part is very present, and the frame of a specific, obsessive theme is evident. This research adopts the rhetorical figure of the synecdoche, assuming a part of the architectural discipline for the whole. In this kind of research, the outcome of an exciting result is much higher. The first advantage is that it is consistent with the architect's training, culture, and role, combining the labor of the two cerebral hemispheres, the one in charge of rationality and the one devoted to fantasy and imagination.

The second advantage is that this research can address general issues with their means. Suppose we take on categories and tools of a technical and scientific nature, of an objective nature. In this case, architects pay for their incomplete preparation, less profound than researchers trained in both the humanities and the hard sciences.

Architects make great when face non-disciplinary issues applying their disciplinary design culture and approach. So, they can reformulate creatively the fieldwork, and they can design, with unparalleled capacity, their original and specific research tools, forged for that specific occasion.

In a discipline as architecture, scientific advancement exists only for a part, for that half which concerns measurable aspects. There is another half, which is indispensable and makes us irreplaceable. It is the one that has no beginning either end, is the circular Vitruvian speculation about the timeless quality of architectural design, mainly mixing art and technique with many other inputs.

Because only the strength, originality, and relevance of the discourse do helpful research, especially for those who do it and the entire scientific research community. To validate our work, we must develop a self-legitimizing process. Therefore, the methodological aspect cannot be acquired from a previous example or a theoretical framework but must be taken as the first object and the most critical result of research.

In conclusion, we must admit that design-driven research today faces non-disciplinary issues. This is a necessary point not to remain locked up in a sterile academy, separated from the universe of knowledge, closed to the multidisciplinary interactions that are now more necessary than ever. On the other hand, the design-driven methodology gives an evident impulse; that is, it pushes and forces disciplinary tools: this contribution is

fundamental; it is the source of energy that opens a two-way exchange between architecture and the world. Thus architecture, a composite knowledge based on millenary foundations, can go beyond simple professional tasks and addresses, with a design culture with no substitutes, the present and future issues of the

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