

# CALL IT PREFAB

*from the Serial to the Custom Oriented*

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Unlike other words that leave ample room for interpretation and shifts in meaning, the definition of prefabricated given by the Italian dictionary is simple and unambiguous.

Prefabricated: “building components previously manufactured in different locations from that in which they are deployed”.

On closer inspection, however, there are two areas that are not clearly defined; the first element of doubt lies in the fact that there is no mention of the size or the base materials with which these elements are made. The second is related to the fact that there is no mention in any way of the type of manufacturing process of such elements, which is to say that a product to be defined as prefabricated need not necessarily be produced as a series or through an industrialized process. So actually, with this definition, virtually everything that is manufactured outside of the place of its final use is included: from bricks — the smallest, individual, basic element of construction — to the whole system, or the completed prefabrication. A wardrobe designed and made to measure in some workshop in Brianza, installed in some house in Milan is, in effect, a finished product manufactured elsewhere, which means that it is prefabricated.

Therefore, with the term prefabrication one cannot determine a reduced number of cases and construction practices on which to reflect, the term prefabrication

must accompany a noun that qualifies and determines it and that, in some way, circumscribes its meaning.

In general, at least in the building industry, what is meant by prefabrication is the production of standardized building elements of modest size that are easily transportable. That are to be assembled at the construction site with the objective of reducing production *in situ* and therefore the size of the site area, in order to optimize the characteristics of the element through the monitoring of its production process, and to reduce the time of production, not so much of the single piece, but of the entire system and, therefore, of the building itself.

Seen in this way, prefabrication assumes an identity that immediately leads to more reassuring areas for those for which, roughly speaking, the prefabricated building is that practice dealing with, almost exclusively, the production of elements related to the skeleton of the building and some parts of the facade, and that are used for the construction of production buildings or large commercial containers.

Consequently, prefabrication has been used relatively little in construction, where, at least until a few decades ago, all, or almost all, the experiences of application have been marked by some interesting theoretical reflection, but with poor aesthetic results. In particular, it seems that the results were dissatisfactory, as the use of prefabrication systems was rigid, radical and, dare I say it, obsequious in comparison to “factory” systems and indications and production of the same elements, and their subsequent use and installation,

and therefore of the final result.

Apart from rare cases, this widespread situation has meant that the issue of prefabrication in Italy has often been used only for industrial or infrastructure projects where it seems that it was not necessary to think about the aesthetic value of each component and, accordingly, of the whole but, on the contrary, was sufficient for responding to factors inherent in the efficiency of the production line, standardization, speed of assembly and cost reduction.

That said, however, it remains clear how prefabricated products have held, and still hold, a certain level of attraction and interest for architects and engineers involved in experimentation.

I believe that this attraction has meant that, in the past, architects like Zanuso, Magistretti and Mangiarotti, but also Spadolini, Gregotti and Valle, made their name with this particular practice because of the unique relationship between prefabricated and construction architectural elements.

The first are produced in a place other than that in which they are installed but must meet specific, often local needs once assembled together, needs that the proposed architectural design should then interpret and shape. It is as if, in a sense, the deepest rationale behind architecture, which is normally to respond to “localized” needs, was realized through elements which are the expression of processes and systems, produced “elsewhere”, often very far away.

And it is perhaps for some of these reasons that prefabrication in Italy came late compared to other European countries. As has often been the case with technical (or technological) innovation, which has its roots in the Enlightenment and in the industrial revolution that followed, prefabrication has also had a slow and

difficult path in order to take root in the construction practices of our country.

The strong tradition of building techniques related to the use of brick and, above all, concrete, which is popular, malleable and easily available throughout the country, has slowed the spread. Prefabrication also requires a major effort at the beginning of the decision-making process of project development and a complex and intricate organization of the construction site, leaving little room for changeability and adaptability during construction. Such a need for change, be it an expression of the mood of the client or that of the architect, cannot be reconciled, or for a long time has not been reconcilable, with the structure and organization of professional studios and construction companies, both of which are organized around artisanal rather than industrial systems, and where there is a stronger need to implement systems to streamline the production process.

There is then set out a clear and very specific nature for prefabrication in Italy. This specificity is to be found mainly in the history and evolution of Italian industrial design and its particularities, the impossibility of separating its development from architecture at least in its origins. In particular, the process of architectural industrialization was marked by several important steps, often derived from changes related to the mechanical industry, in particular to the car industry at the beginning of the century. We have to wait thirty years to identify the clear processes of architectural industrialization, especially when it was motivated intentionally, as Gregotti says, by a “unity of method” in the design and relationship between the steps of the project, those inherent in the city and those most typical of the product design. But it is only in the years

after the war that we can really appreciate the first real undertaking implemented by Pierluigi Spadolini, for example, in emergency management, creating the Emergency Housing System (*SAPI: Sistema Abitativo di Pronto Intervento*), in fiberglass.<sup>1</sup> First stage of a series of buildings that together with the headquarters of the newspaper *La Nazione* and the Palazzo degli Affari in Florence mark important steps in the history of the evolution of the relationship between architecture and the construction industry in our country.

From this point on, prefabrication in Italy appears to be able to determine a more precise and specific autonomy, so that, as I have already mentioned above, the research and application of prefabrication become a relevant part in the experience of many authoritative interpreters of modern Italian architecture, to the point that within this shift there appear at least two different and distinct attitudes. On one side there are the experiences of Vittorio Gregotti, Pierluigi Spadolini and Gino Valle, who despite being different, are similar in the degree to which they look at the bigger picture of construction before defining the single elements. It is as if the experiences of these authors were mainly “industrial” in the sense of the search for a certain acceptance of the base element as a product of a matrix. This can be observed, for example, in the project for a complex of rental properties in Novara designed by Gregotti, where the prefabricated element, albeit obvious, is never to be identified except as part of a set.<sup>2</sup> On the other side instead there are Zanuso, Magistretti and Mangiarotti. Their professional work related to the use of prefabricated systems tends, as it were, to ‘bend’ prefabricated elements to the needs and service of their ideas and project proposals. It is as if there was a need to design, a kind of handmade nature that puts

the very process of production into question every time, and therefore constantly rethinks the product. In the project for Corso Europa in Milan, for example, Magistretti assembles a number of construction systems, almost all prefabricated, almost all of prefabricated design.<sup>3</sup> With a particular compositional skill, he builds into the front of the building a sort of catalog of prefabricated elements and construction techniques, where it seems he attempts to tame elements produced elsewhere, to bring them to a size and attention to detail in keeping with the place and the type of building to which they should contribute to shaping. Mangiarotti, by contrast, seems to accept the large size and the consequent reduction in the number of elements and, in his project for a church at Baranzate di Bollate captures and clearly brings out the characteristic features of prefabrication and, what was then, the distinctive “skeleton” nature of the building. He too, however, moves in the direction of the search for a drawing or a profile, in his own particular style, that makes the elements stand out. In a way, he treats the prefabricated elements with discernment as an object to be produced in a series, and achieves on the roof of the nave of the church a sort of short circuit between architecture and product design. In those years of experimentation and multiple opportunities, there was set up a kind of prefabrication “to measure”, or rather, a design that was articulate and modern, induced by the architecture and not penalized for it, as it seems to me is happening today.

In reality, today, the prefabrication of building components is a very complex subject and the brief specification above perhaps explains some of the reasons that have made our country as it is, but without yet making it clear what their status is today.

Currently, buildings are generally constituted by a series of sets of elements, disciplines and processes that are often very autonomous compared to what the final outcome of the building itself is, which in its completion as a combination of space and material, includes them all.

Every environment, every combination, albeit connected, lives a life that is more and more separate and autonomous with respect to production techniques and installation.

Every combination is as if it were regulated by its own specific code of prefabrication and the realization of its basic individual elements. This implies that virtually all, or almost all, operations of dry mounting are configured and fall fully within a system of prefabrication. So it is clear that, today more so than in the past, the contribution of prefabrication is no longer detectable in the structure or in the macroscopic parts of the building, but is instead pervasive and present in almost all areas. I believe that this is leading to a sort of detachment and separation between those designing the individual pieces and those who compose them into forms which define the space. It seems that the unity between product design and the subsequent architectural construction is essentially lost and that, although it could be considered, in many cases an expression of the mannerisms of modernity, it did have the undeniable merit of holding together production, product design and architecture.

How do we now reconcile some of the needs of prefabrication that require large quantities of elements produced per time units and a strong repetition of such elements in a market where the demand for pieces made to measure instead predominates, where the exception has become the rule, and where, for necessi-

ty or for marketing, the issue of certification and zero kilometres tend to undermine the basis of the principle of prefabrication and therefore the construction of elements in a place other than the construction site?

Certainly there was a time that any work to be carried out was done *in situ*, depending on the latitude, a makeshift, temporary furnace or sawmill was used, which was dismantled once the work was finished. It was a sort of type of nomadic prefabrication, which moved depending on the needs, something which today, with the extremely high costs of installation governing any job, and with projects being of such great dimension, has become practically impossible.

The global market today then opens up new opportunities but at the same time in order for prefabrication to be “exported” it has to be reduced in size and weight and it must become packable, even before being mountable. In addition, with the spread of building systems in prefabricated wooden elements, the need for “design” and the happy intuition of the architects mentioned above has become even more evident regarding the construction of an idea of prefabrication upon “design”.

A new opportunity for prefabrication and architecture itself comes from a necessity for reunification between the disciplines of architecture and product design, which have been separated for far too long. Not so much in the direction of the production of objects designed by architects, as in the search for a common space, a common field of action and design of architectural components, the “bricks” at the base of a potentially new way for prefabrication that is able to combine the best instances of our architectural, professional and entrepreneurial culture.

1.

Pierluigi Spadolini, *Umanesimo e Tecnologia*, curated by Francesco Guerrieri, Electa, Milano 1988.

2.

Editorial, *Case d’Affitto a Novara*, in “Casabella Continuità”, 241, 1960.

3.

Fulvio Irace and Vanni Pasca, *Vico Magistretti, Architetto e Designer*, Electa, Milan 1999.