



## HOUSING IN A BOX

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### Introduction. The Sun Is Mirrored Even in a Coffee Spoon

*Fulvio Irace*

“Ask a historian who invented the piloti, and he can tell you. But ask him who invented the (equally consequential) revolving door, and he cannot.”

The biting irony of Reyner Banham at the mechanisms of the established word of History is the starting point for this Issue of *Rassegna* named *Housing in a box* after Gio Ponti’s proposal for an “house in a cabinet,” pursuing the Saffa industry to foster a new production of prefabricated, portable houses.

The main core of the different contributions converges into that considerable body of experiments aimed to explore and encourage the efforts of architects, engineers and manufacturers in promoting a widespread knowledge and use of a Meccano like house, no more a static object but a demountable, assembled and mass-produced shelter.

But apart from the any content, the shared, general approach enlightens a methodological issue arising from Banham’s book *The Architecture of the Well-tempered Environment*, published in England in 1969 and traduced in Italian only nearly ten year later, in 1978. The time gap reflects a cultural gap denouncing technologic backwardness of Italy and a certain mistrust of any kind of history not based on the idealistic notion of Space.

What was about the novelty of Banham position? In short, as he pointed out, “the history of architecture found in the books currently available still deals almost exclusively with the external forms of habitable volumes.”

Despite a bitter criticism towards Sigfried Giedion’s groundbreaking *Mechanization Takes Command*, somehow Banham too was following that history of humble things which Giedion claimed had “shaken our mode of living to its roots.”

His stated goal to wright an anonymous history (akin to his mentor Heinrich Wölfflin “art history without names”), lead him to deep in the roots of the whole process on industrialization that ended up in the complete reshaping of the human landscape of the XX century.

This word of humble things is therefore the central point of convergence of all the essays in which our readers will find the emerging lines of a deep interest in processes more than in glamorous forms: engineers, architects, entrepreneurs and manufacturers are the characters playing on the scene the tale of Laugier’s *petite cabane*: a *cabane* non made out of trunks of trees but of mechanical parts, of brilliant copyrights, of prefabricated beams or panels.

The ethic dictates of the “house for all” merge with a hybrid esthetic of new “machines à habiter”: molded, assembled, pneumatic, precast, etc. coming out of ateliers more akin to laboratories that to traditional design rooms.

Nonetheless or goal was not actually to write an history of prefabrication: trough different case studies – from north to south Italy – we aimed to reproduce, as in a play of broken mirrors, the significance of fragment hidden under the official history, because, as Giedion put it, behind apparently banal things we are able to read the ener-

gies embedded in any single experiment or manufacture: impulses, ambitions, desires and even failures that, in their whole, give us the flavor of time.

## DEBATE

### Let’s Prefabricate the Future

*Maria Teresa Feraboli*

When the reconstruction of Italy began after World War II, it adopted the Ina-Casa plan. This was based on traditional building concepts motivated by socio-political and economic concerns, aiming to restore housing and solve the problem of the “house for all.” Gio Ponti’s plans for reconstruction (and those of other professionals such as Gaetano Ciocca and Ortensio Gatti) were ignored, because they suggested different collaborations between designers and companies in the name of industrialisation. Ponti tried to prepare the industry for recovery after the war, inviting it to diversify and directing it towards the unification and standardisation of building elements in order to solve the housing need. He involved the most important Italian companies such as Montecatini, Saffa, Reggiane and Breda to produce elements that could be coordinated and applied to a large range of housing projects, examples of which were then published by *Stile*. The implementation of the Ina-Casa plan, however, was holding back the interest of major Italian companies in the modernisation of the building sector, but interrupted neither the production of prefabricated houses nor the research of Ponti and Ciocca.

### The Prefabricated Single-Family House at the Triennale di Milano

*Graziella Leyla Ciagà*

The prebuilt single-family house is investigated starting from the Triennale di Milano’s privileged observatory which, in over fifty years, has made an important contribution to the national debate on building prefabrication. Thanks to the setting up of materials and building systems’ exhibitions and above all the realization of experimental houses’ prototypes, the single-family prefabrication has been expressed in the social housing (Eighth, 1948), in the house for leisure (Fifth 1933, Tenth 1954, Thirteenth 1964) and in the emergency house and nomadic lifestyles housing (Seventeenth 1988). The research, conducted on archival records and specialized magazines, registered a progressive shift from the disciplinary sphere of architecture to the more specific one of design. Moreover, during the Seventeenth edition, the new needs of living in the contemporary city have been addressed. After twenty years, in the beginning of a new century, the exhibition *Casa per tutti. Abitare la*

*città globale* (2008) has relaunched the issue of prefabrication considered as a tool capable to give an answer to the millions of people who today live in the metropolis in situations of social marginality.

### A Tetralogy of the Prefabricated House in Italy

*Giulio M. Barazzetta*

A multiple prologue 1944-1967.

This intervention aims to reconstruct synthetically some of the main stages in the history of the application of frame systems in precast concrete components in Italy. A multifaceted and multi-place history: it starts with the research developed in the University Campus of Lausanne to arrive at the exhibitions of the Triennale di Milano; it begins with the establishment of study centers and professional associations to lead to the involvement of the Institutes for the Social Housing or some private companies.

### The Warm Box: Junctions, Pivots and Mechanisms in Carlo Mollino's Architectural Imagination (1932-1954)

*Sergio Pace*

"The house is a shell that must provide each organism with its free and 'well differentiated' individual life": apparently not so much concerned with standardization processes, Carlo Mollino conceived houses as human-sized warm boxes, forged on the individuality of the single person. Above all in furniture design, stranger to industrial production, he was attracted by the ability of small workshops in interpreting the project. He distrusted the universal measure of all standards and ensured the quality of the design by typifying each single building element, at the same time reducing costs, without undermining the originality of the design. In 1951-1954, this spirit animated a series of architectural projects. At the competition organized by Vetroflex (1951), he presented four alternatives for a prefabricated holiday cottage, whose main objective was the flexibility of its components. At the X Triennale (1954), he tried to participate with an experimental wooden prototype, which was to be built in the park of the Palazzo dell'Arte: this was the beginning of one of the most original episodes in his career, the one that led to the design of the so-called *casa capriata* (trussed house).

## RESEARCHES

### The Bespoke Prefabrication by Ferruccio Gay. A Small Experimental Villa in Rome

*Maria Argenti, Anna Bruna Menghini*

In the heart of Rome, on the side of the Oppian Hill facing the Coliseum and the Domus Aurea surrounded by more recent residential buildings, a prototype for a dismountable villa tells an unfinished story worth being

rediscovered. More of a possible story that never fully developed.

This small prefabricated construction, two storeys in height and with a hip roof, stands in the middle of a garden in a row of small apartment buildings between Via Ruggero Bonghi and Via Ludovico Muratori.

It was designed in 1908 by Ferruccio Gay, an entrepreneur in the field of carpentry. From the beginning of the century he dedicated his efforts to the construction of prefabricated *villini* (small villas), pavilions and schools.

This particular *villino* – the first prototype for a dismountable timber framed home – was assembled on a lot beside Gay's wood working facility; it was presented as a possible industrial response (through the large-scale production of prefabricated earthquake-resistant homes) to the growing demand for housing in the wake of the earthquakes that struck Messina and Reggio Calabria.

### The Printed House. Gaetano Vinaccia's Experiments with Affordable Housing Between Autarchy and Reconstruction

*Cettina Lenza, Angela Pecorario Martucci*

Gaetano Vinaccia (Naples 1889 - Rome 1971), multifaceted designer and experimenter, known above all for his early interest in bioclimatic issues, paid considerable attention to affordable housing, both through studies aimed at a careful exploitation of the interior spaces of houses, as well as with the production of numerous patents of structural elements. His work, which began in the 1920s with the patents of some reinforced concrete and bricks air chamber floors, intensified during the period of fascist autarchy, assuming new construction systems, such as the one indicated with the initials F.C.S. (iron, concrete and silicates) and reaching the "printed wall," capable of including the fixed furniture of the house at the time of construction. His experiments go on in the post-war reconstruction phase, when, critical of total prefabrication, Vinaccia continued with his proposals for structural prefabrication, patenting different types of laminar floors. The article reconstructs Vinaccia's research by examining his writings and unpublished patents, as well as the few cases of their concrete application, while placing it within its historical context.

### The Prototypical Prefabricated Ferrocement House by Pier Luigi Nervi

*Tullia Iori*

Between 1945 and 1949, Pier Luigi Nervi developed the "Nervi System" for the construction of large roofs. In this phase of intense experimentation, he took every opportunity to test the two main inventions at the base of the system: ferrocement and structural prefabrication. The studies he dedicated to "prefabricated houses" are little known, although one of the experimental houses still exists.

The first "expandable" houses designed in 1945, to which rooms could be added the family growing, were affected by the enthusiasm that animated the debate on prefabrication as a rational tool for reconstruction after the war. The house actually built in 1949, instead, was

born close to the approval of the Fanfani Plan which, in fact, for the next 14 years excluded prefabrication from the allowed construction strategies.

The pioneering houses tell a piece of the story of Nervi's experimentation with its original construction system, useful to understand other aspects as well. The contribution is dedicated to this purpose.

### "Building Systems Instead of Models". The Case Romagnoli Project by Alberto Rosselli

*Maura Percoco*

"We continue to imagine buildings and apartments as if our lives, habits and needs are fixed and unchanging. Instead, reality teaches us that situations change very quickly and profoundly affect the structures of the city and homes." Based on these considerations, Alberto Rosselli sees prefabrication as an opportunity to reimagine the notion of space in relation to the complexity of dwelling and re-evaluate the logic of their design in accordance with a principle of indefiniteness and openness toward change and, therefore, toward life.

His proposal is to overcome the traditional antinomy between domestic space and objects and integrate them into a single and indivisible idea of architecture, interior design and furniture based on the concept of a system of open, versatile and highly modular components.

The "Romagnoli Prefabricated Housing" project from 1969-1970 represents the most advanced result of this research. Despite remaining on paper, it promoted an original solution in debate on the relationship between technology and architecture in the late 1960s: considering housing like a consumer product, repeatable though unique, and aligned with a revised notion of the city as a service infrastructure.

### A House Shaped by Air

*Giulia Ricci*

Dante Bini (1932) is one of those figures not properly recorded in the most accredited narratives of the history of Italian architecture in the second half of the twentieth century, despite his great impact on the construction

industry and the widespread diffusion of his patents throughout the world. Critics have only recognised his role as an inventor in more recent times: the residence for Michelangelo Antonioni and Monica Vitti in Costa Paradiso, Sardinia, was the fuse for the rediscovery of an architect who, throughout his career, explored the possibilities of using air pressure in the field of building technology. The house for the director and actress, for example, is a Binishell, a construction system designed for thin, self-forming reinforced concrete structures. Binishell is just the first of 127 Binisystem patents that the Emilian architect has registered to date. This essay looks back over part of Dante Bini's career, focusing on his patents for the economic and rapid construction of residences between the 1960s and 2000, also designed to offer a housing solution to the disasters that the current climate crisis is imposing.

### Movable and Transformable. A Short Story of Folding, Flexible, Transportable Furniture

*Valentina Marchetti*

In the Italian design history, the transformability of furniture is mainly addressed in three moments. Between the late XIX and early XX century, folding furnitures could be considered as the result of sporadic technical applications, however during the Thirties they assume greater importance in relation to colonial politics, which push many Italians to move to new possessions and it let's rise up new living necessities. During the reconstruction, the theme is taken up in relation to a culture of forced nomadism typical of the precarious post-war housing conditions. Lightness, portability and economy become fundamental characteristic for the furnitures' productions and the houses' reconstruction. Finally, with the economic recovery, the transformable furnitures lost their "necessary" character, becoming experiments or isolated design research related to new ways of living in the house. In this fragmented scenario, the Apta series by Gio Ponti and the furnitures proposed by Joe Colombo and the new avant-garde movement are maybe the last example of an integral notion of living, in which the system of transformable furniture becomes an essential part of a lifestyle radically different from the past.