Building practices of the post-war reconstruction period in Italy: Housing by Mario Ridolfi at the INA Casa Tiburtino neighbourhood in Rome (1950–54)

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Ma ecco che un giorno cominciarono a impiastare di palaui tutto intorno, sulla Tiburtina, poco più su del Forte: era un’impresa dell’INA Case, e le case cominciarono a spuntare, sui prati, sui montarozzi. Avevano forme strane, coi tetti a punta, terrazzette, abbaioni, finestrelle rotonde e ovali: la gente cominciava a chiamare quei caseggiati Alice nel paese delle meraviglie, Villaggio fatato, o Gerusalemme: e tutti ci ridevano . . . (Pasolini 1959, 194)

THE TIBURTINO NEIGHBOURHOOD, BUILT BY PIANO INA CASA

In the early 1950s, during the difficult post-war years, a vast public housing program was begun in Italy, called Piano INA Casa. Construction of one of the first housing projects began in October, 1950, in the eastern outskirts of Rome, an area of approximately 9 hectares along the Tiburtina consular road, 7 km from the centre of the city. Approximately 770 homes were planned for 4000 inhabitants. The design group was guided by two masters of the «scuola romana», Ludovico Quaroni for urban planning and Mario Ridolfi for the architecture, assisted by young architects and architecture students.¹ The neighbourhood was considered a «manifesto» of both architectural neo-realism and of the ideology of Ina-Casa during that first seven-year period» (Tafuri 1982, 23) and in fact the architects interpreted the building model elaborated for the Piano Ina-Casa almost literally.

The decision to respect and exalt the morphological characteristics of the area, adopting an architectural language which took its cues from the vernacular architecture, made for an articulated and varied urban environment. The buildings —in the form of low towers, row houses, and blocks of flats— are arranged in an irregular scheme. Together with a rich composition of roads, pedestrian pathways, terraces, galleries, green areas, vegetable gardens and piazzas with shops, they create a familiar, domestic atmosphere, reminiscent of a rural village. The result sparked the curiosity of many, even offering inspiration to Pier Paolo Pasolini, an extraordinary observer of the social fabric of the post-war period, who set one of his most famous novels in the neighbourhood. Particularly effective was his description of the roads which entered «in curva in mezzo alle case rosa, rosse, gialle tutte sbilenche esse pure, con mucchi di balconi e abbaioni e sfilate di parapetti» (Pasolini 1959, 191), of «botteghe . . . ammassate in una specie di bazar a un piano al centro della borgata», and «case una addossata all’altra, a scalinata, in modo che il primo piano della seconda era all’altezza del secondo piano della prima, e così avanti: davanti alle facciatine colorate, c’erano tante scale esterne che le univano, con dei pianerottoli che facevano come da terrazze alle porte di ingresso, tutti sbarre e inferriate» (Pasolini 1959, 318). Ridolfi interpreted quite literally the indications of the Piano, which suggested «an alternating play of high and low, continuous and interrupted, long and short walls,
Figure 1
M. Ridolfi housing blocks at the INA Casa Tiburtino neighbourhood, Rome

Figure 2
Aerial view of the neighbourhood (1957)
terraces, overhangs and negative spaces (windows and loggias), arranged in the facades or in the views from entry points or from the main windows of the apartments».

In the overall context of the entire housing programme, the Tiburtino became a sort of pilot-neighbourhood, useful for testing both construction operations and the efficiency and extendibility of the urban, architectural and building model. More than with any other contemporary intervention, an assortment of forms and construction practices were developed which were to become the everyday armaments of the INA Casa building programme, the most immediately recognizable.

Though considered to be a «central episode of the reconstruction period in Rome» (Poretti 2002, 10) and one of the most significant expressions of architectural neo-realism, the neighbourhood provoked controversial reactions for the radical, almost anti-historic, positions it took. The designers themselves were the first to judge it, on the one hand, «out of its time», since neo-realism, which had found its most relevant expression in cinema, was already out of fashion, and, on the other hand, «out of time», because it proposed a collective living style and a romanticised, idealised identity of the rural worker to a class of blue-collar and office employees who for the most part aspired to leave that world and become a part of the emerging middle class.

Promoted by the minister of labour Amintore Fanfani, the purpose of the Piano INA Casa was to solve unemployment problems by hiring as much of the labour force as possible, including unspecialised workers, in the construction of housing for the working class. The idea was to finance the construction of entire neighbourhoods for the less privileged classes and for state employees, through contributions from employers, employed workers and the State. Inspired by principles of Catholic social solidarity, the law was applied through the «Gestione INA Casa», an agile body which directed the planning and coordination of the entire operation through a «Comitato di attuazione», an implementation committee, headed by the engineer Filippo Guala, and a «Consiglio direttivo», a managing committee, guided by the architect Arnaldo Foschini, head of the School of Architecture at the University of Rome and a leading figure of academic culture. With the aim of avoiding costly centralised bureaucratic structures, the Gestione entrusted design to independent professionals and assigned the working documents and construction to authorities already in operation both nationally and locally. These included the Istituto Nazionale per le Case per gli Impiegati dello Stato (National Institute for State Employee Housing), the Istituto Nazionale per la Previdenza Sociale (National Institute of Social Insurance), the Istituto Nazionale Assistenza Inforniti sul Lavoro (National Employment Accident Insurance Institute), and various Ministries, and on the local level, the Istituti provinciali per le Case Popolari (Provincial Public Housing Authorities), local administrations and building cooperatives.

The plan was part of a precise political and economic programme which considered the building sector to be the «driving force» for a general recovery of the country, a sort of «reservoir» of labour from which to draw, as necessary, during the various phases of the hoped-for industrial development. Thus it was necessary to maintain the building sector at a craftsmanship level: considering the industrial situation of the country, this would facilitate the small and medium-size industries distributed across Italy, all at a low level of mechanisation.

In order to keep building costs under control, the Gestione demanded well-defined design work, and maintained full control of all construction phases by means of constant monitoring at the site. Thus, updating and constant revision of design and building regulations were required.

Each and every design and building phase was carefully monitored by the Gestione through a decentralised organisation which entrusted every operation to the public body contracting the project, from selection of the architects, to tendering procedures and project management, to final inspection and assignment of the dwelling units. The selected designers were inserted in special lists. One third of the entire class of design professionals, often successful architects and engineers teamed up with new graduates, were given work opportunities through the programme.

In 1949-50, the Gestione published two booklets whose aim was to unify the buildings, both economically and from the point of view of architecture and planning. The booklets contained suggestions, regulations and examples, as well as typical projects, both in terms of architecture and
construction—with typological models and rules concerning techniques and materials—and in terms of planning. For the latter, the neighbourhoods inspired by the language of the «New Empiricism» elaborated in the Scandinavian countries were indicated. The architects were asked to avoid standardised layouts and types in order to «give the inhabitants of the new urban centres the impression
that their home is a spontaneous, authentic and permanent part of the local area». In terms of design programming, the Piano's building programme was defined as «psychological building», intended, that is, to provide the best possible environmental conditions for the daily lives of the workers. The architects were explicitly instructed to provide high-quality construction, to give the dwellings an «air» of dignity, and to ensure a comfortable environment. This is the manner in which the difficult and compelling theme of public housing was approached on a large scale, in line with the conservative spirit of the Piano which called for an programme rooted in the local area, with studies of the local architectural characteristics, climate and materials, taking into account «topographic characteristics, local resources, green areas, and views» (De' Cocci [1957], 96). The designers were required to carry out «in-depth studies of all technical and architectural details, in terms of layout and construction efficiency (economy of space, materials and time); from a human point of view (design of the units based on the well-being of the family); and from an aesthetic point of view (general architectural level of the building project)». The adoption of conventional construction methods was advised, in order to preserve the craftsmanship skills of the workers, as explicitly described in the strategy of the plan. The designers were pressed to «remind contractors of their obligation to perform all building processes correctly by means of carefully drawn construction details and proper headings in the specifications, included as part of the construction documents».4

During the two seven-year periods of application of the Fanfani Law, from 1949 to 1963, approximately 350,000 housing units were built. Entire autonomous neighbourhoods, often abounding with services, public spaces and parks, sprung up across the entire country, from large and medium-size cities to small mountain villages and the towns of the large and the smaller islands. The intense level of design and building activity, in terms of both size and quality, encouraged widespread debate throughout Italy and favoured unprecedented experimentation, which was, however, distant and different from that of the other European countries, where housing programmes were directly tied to the modernization of the building sector, through the study and application of advanced technologies regarding unification and prefabrication.

**A MODEL OF «ADVANCED CRAFTSMANSHIP»**

In the Tiburtino project, there was a remarkable «consonance» between the economic, political and social objectives of the Piano and the efforts of the designers to create a concrete architecture which could interpret the «values» and the aspirations of the lower classes.

Even now that the neighbourhood is integrated into the city and no longer a frontier of expansion, it clearly stands out from the speculative building of the surrounding suburbs. In walking its streets, one senses a «rural» atmosphere, reminiscent of certain villages in the Rome countryside. This atmosphere is owed first of all to the layout (the «stage»), to use an expression by Zevi). The buildings constantly change direction in response to the topography of the site, creating appealing perspective views, while piazzas and wider places in the road, devoted to socialisation between inhabitants, flow into more intimate, domestic environments between the buildings, facilitating relations between neighbours. This rural air is also due to the «dialectal language» of the facades, where the typical characteristics of traditional masonry construction are proposed and reinterpreted.

The usual construction method was brick or stone bearing walls with bond beams, lintels and floors in reinforced concrete. Already well-established at the end of the nineteenth century, this traditional technique had revealed itself to be so perfectly adapted to the economic and productive situation of Italy that it developed and spread throughout the 1930s and '40s, during the height of economic autarchy. The preference given by INA Casa for this construction method, considered particularly suitable for buildings with just a few floors, were based on reasons of cost and «custom».

This was in fact the method adopted at Tiburtino, in accordance with the indications of the Gestione which suggested the use of bearing walls constructed with «the most suitable materials in terms of strength, durability, insulation, etc., and at the same time the most economical for the area in which the houses are to be built […] avoiding long and contorted layouts, eliminating large opening in the structures and large open floor spaces, […] avoiding] balconies with large overhangs».5 Ridolfi used the traditional masonry «alla romana», consisting of blocks of volcanic tufa
from quarries near Rome, alternated by rows of brick. The two 3-stories «balcony» flats and the 3, 4 and 5-stories «linear» blocks are built with a continuous wall structure. The central longitudinal wall and the facade walls support floors in reinforced concrete, with «pignatte» hollow clay filler bricks which, being limited in width, could be reinforced with just a few steel rods. However, this arrangement created limits in terms of dimensions, and in the number and position of the windows, and it «forced» the plan of the dwelling unit to fit into a predefined matrix which, for example, in the balcony flats was as small as 4.20 x 7.60 m. Ridolfi thus gave up on a more rational distribution of the rooms in order to simplify construction as much as possible and to reduce costs.
A reinforced concrete frame was used to build the four 7-stories «stella» (star-shaped) towers, and the 6-stories «amfora» (amphora-shaped) building, but only for its technological and economic advantages. Nothing was made of the expressive potential of the frame; on the contrary, it was sacrificed in order to visually harmonise the entire project, recomposing an overall wall image. Thus the orthogonal pattern of the bearing structure did not dictate the form of the buildings, but rather it was the structure which conformed to the walls, hiding itself within them: the pillars were placed according to the direction of the walls, and when the walls did not meet at right angles, the section of the pillar was transformed from a rectangle into a diamond, a trapezoid or a polygon with polar symmetry. When possible, the pillars were hidden inside cavity walls. Where their size was larger than the thickness of the wall, the wall was thickened deliberately. Thus the frame was not treated as a structure independent of the walls, but as a specialised part of them: «the reinforced concrete is an advanced evolution of the masonry» (Poretti 1997, 272).

In this way, the taller buildings preserved an aesthetic which allowed them to blend in with the lower apartment blocks. For instance the walls had to touch ground —no floors over pilotis to reveal the different nature of the supporting structure— and the windows could not be larger, nor could their vertical sequence or the relationship between positive and negative spaces vary from those of the lower buildings.

Only a very attentive eye might capture a few differences: in the star-shaped towers, the spaciousness of the loggias and the height of the window at the stairwell; in the «amphora» building, the diamond-shaped loggias and the jutting terraces, where the perforated brick dividers attempt to tone down the «modernity» of the excessive overhangs, the few isolated pillars, and the too-large rooms.

If the construction system presented neither innovative features nor structural boldness, what are the elements that distinguish the Tiburtino neighbourhood; the elements which, in general, make the INA Casa projects recognisable?

Just as the technique of masonry wall construction with inserts of reinforced concrete had demonstrated itself to be adaptable to various styles, from the eclecticism of the end of the nineteenth century, to the style of the twentieth century, to fascist architecture, it was now being adapted to support an innovative «realist» language. The new language restored a sense of honesty, communicativeness and concreteness to housing construction which had been lost with the figurative abstractions of rationalism and with the rhetorical monumentality of the architecture of the regime. However, it wasn’t enough to simply «unmask» the wall to reveal its intimate constitution (because emphasis of its constructive nature would in itself remain inexpressive). It was necessary to invent a new language, indirect and artificial, based on the reinvention of the construction detail, to be achieved through the modernisation of the rules of traditional Roman building practices.

The central theme at Tiburtino thus became the configuration of the façade. Its recurrent elements —stairs, balconies, loggias, windows, roofs, enclosure walls and gates— were carefully designed by Ridolfi in dozens of drawings. They constituted a sort of vocabulary of construction and formal «inventions», a successful fusion between the geometries of the Scandinavian New Empiricism and an appropriately re-elaborated «Roman» building dialect. A «popular» (or «populist») style was created, both new, and at the same time, déjà vu, because it was the «result of a blend of highly cultured languages and of innumerable dialects produced through history» (Dal Co 1997, 18).

A traditional, yet «reinvented» composition of the façade could be observed: travertine bases, regular windows rhythms, roofs covered with tiles «alla romana», brick eaves on wood «palombelli», gutters and downspouts in zinc-plated steel, picturesque brick and tile chimneys —all of these were back. But invention also took place, with the same careful attention, in the design of the exterior spaces, characterised, in particular, by the stairs, by the iron gates and by the walls surrounding the gardens in polygonal blocks of volcanic tufa, bordered with bricks and iron lances.

The facades were simply plastered and then painted with a lime-based paint in various hues, making each building more individual and recognisable. But the plaster finish did not serve to confer an abstract sense to the surfaces, but rather the structural physicality of the wall was emphasised for its «difference» in relation to the non-bearing elements of the building. Such non-bearing elements included the wrought iron work of the parapets, and the brick dividers (made
Figure 12
The star shaped tower on via L. Cesana: detail of the stairwell’s wall made of perforated bricks (2000)

Figure 13
M. Ridolfi details of the wrought iron work of the parapets (1951)

Figure 14
M. Ridolfi details of window with the iron parapet, so called «a ringhierino» (1951)
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Figure 15
The linear blocks on via D. Angeli (1957)

from solid bricks or «pignatte», perforated bricks) used to air laundry sinks, attics or roof-terrace, in imitation of the picturesque «fienarole», the hay barns, or the «colombare», the dovecotes, of the farmhouses of the Roman countryside.

The major design effort was concentrated, however, on the design of the windows, which Ridolfi carefully defined in several versions, based on the model of the traditional Roman window with wood shutters. His window was no longer a geometric figure piercing a bare wall, but rather a complex «machine» in which each component once again took on the shape best suited to its function, and in which each mechanical part was technically designed to optimise functionality and durability. With this approach, Ridolfi responded perfectly to the requirements of INA Casa, who had entrusted to the «precision and professionalism» of its architects the resolution of technical and economic problems, «with the same efficiency with which they are solved using unified elements and standardised production». However, Ridolfi himself had developed his first ideas concerning the standardisation of doors and windows in the early 1930s during the construction of the Rea building in Rome (1934–36), and now found, during «reconstruction», the most suitable moment to present them, through his drawings published in 1949 in the Manuale dell’Architetto, and to apply them to the concrete case of the Tiburtino project.

The idea that industrial production, and in particular prefabrication, could only produce anonymous buildings for the masses (and was therefore unsuitable to achieve the objectives of the Piano, directed at «individual families, whose home should accentuate and express their distinctiveness») resulted in a desire for «unification without industrialization» (De’ Cocci [1947], 97). Thus INA Casa, which from its conservative position refused, even in an elevation view, the house as a mass-produced industrial product, instead encouraged unification of the building elements. This was especially true for the window, one of the most costly elements (wood for the windows and doors accounted for 13% of the total cost of materials). Thus the size of openings had to be limited, and wood had to be used as efficiently as possible. INA Casa entrusted its architects with the task of closing the gap between standardisation and individuality.

While some professionals, such as Ciribini, indicate in the «industrial method . . . the only coherent and systematic solution which can legitimately be adopted» (Ciribini 1956, 4), and others, such as Rogers, see standardisation as a stage in the passage from craftsmen production to prefabrication, Ridolfi, as he affirmed in an interview in 1974, felt that prefabrication was «like a parking lot of houses» (Ridolfi 1974, 97).

Standardisation, for Ridolfi, did not imply a radical revision of the design criteria and the production cycle of building components. For him it was a simple «rationalization» of design and of the traditional building site, a «minor technology» to employ «in the construction of ordinary building projects or smaller applications, [where] the compilation of certain “types” which are repeatedly applied to many buildings is frequently used by diligent designers» (Ridolfi 1939, 16).

The dualism between unification and individuality of building works was thus resolved by imagining a sort of «craftsman-like virtuosity» in which the mechanical repetition of building practices could be overcome and in which those design and construction improvisations which result in a reduction of quality and efficiency of the component are eliminated. Thus,
for Ridolfi, the requirements of maximum generalization and maximum individualization were not in contradiction; in fact their conciliation was the only, extreme possibility to keep from severing the direct tie between the designer, the user and the object produced, in order to continue, that is, to design houses «like tailored suits» (Ridolfi 1974, 100).

Ridolfi’s drawings for Tiburtino clearly reveal this approach: while providing an «unrepeatable» solution to a technical/architectural problem, they constituted, at the same time, a «repertoire» from which the young architects in his design group drew, and other architects working on other INA Casa neighbourhoods as well; for everyone, his drawings became a sort of «style manual», the most fitting manner to build for the Piano Fanfani.

Ridolfi’s construction drawings look like «machine drawings» where each component has a very precise technical role, almost «necessary». Not only is the form of the building element drawn up, but also the exact profile of each of the pieces which make up the mechanism. This is because his drawings were not meant for the general contractor, nor for the job manager, nor for the production manager of a building components manufacturer, but for the master builder. Ridolfi tried to make the most of the master builder’s abilities, and to develop his «building dialect», reminding him of all the special skills, the «regole d’arte» which constitute the technical knowledge of a good craftsman. His drawings were thus true «assembly instructions» and, as such, also contained all of the information necessary for the correct installation of each piece. This return of the architectural project to the «minimum dimension» of the detail drawing represented for Ridolfi a return to the modesty of the architect as «tradesman», renouncing the role of inventor of languages and of «national styles».

Ridolfi’s fascinating hand drawings were thus the expression of a refusal to look ahead, to prefigure the progress in construction which was beginning to take place in other European countries; they were the expression of that stubborn isolation which characterised all of his architecture in the post-war period and were, perhaps, the last attempt made in Italy to maintain a direct relationship, of a «pre-industrial» nature, between the architect and the craftsmen on the job site.

This article is the result of research jointly carried out by the authors. The first paragraph was written by R. Vittorini; the second paragraph by R. Capomolla.

NOTES
1. The components of the group are: Mario Fiorentino, Federico Gorio, Maurizio Lanza, Piero Maria Lugli, Giulio Rinaldi, Michele Valori con Carlo Aymonino, Carlo Chiarini, Sergio Lenci, Carlo Melograni, Gian Carlo Menichetti.

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