The Montecatini Building in Milan: an Original Union between Internationalism and Italian Constructivist Traditions

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Within the Italian architectural panorama, the Palazzo Montecatini represents a particular example of an autarchic building, highlighting an entirely new duality that is the result of design decisions, the use of avant-garde technologies and a clearly American inspiration. At the same time, the use of the construction materials and the final outcome that they generate make the building one of the most original Italian built works from the 1930s.

The design and the construction of the building took place during the phase that immediately preceded the autarchic escalation (the first regulating measures were imposed in 1937 with Decree n. 2105 from 22 November "Norme tecniche di edilizia con speciali prescrizioni per le località colpite da terremoti"). This phase was already characterised by a building policy for public works or works realised under State control, aimed at emancipating the building sector from foreign products and experimenting with materials and building systems that rendered the new economic strategy compatible with a more modern architecture. The Montecatini is a private company, though its President, Guido Donegani – who had access to some of the most important bureaucratic and corporate apparatus of the State and Party – accepted the autarchic imperative, not only as part of his responsibilities to the Fascist Party, but also to further the image of the company's variegated products. Gio Ponti, associated at the time with the office G. Ponti, E. Fornaroli, A. Soncini, was entrusted in 1935 with the role of managing the architectural design, construction, building systems and furnishings of the building. This was a role that required that he make reference to an "absolute modernisation", while choosing solutions that were "aesthetically acceptable". In addition to satisfying the company's logistic and representative needs, the new head office was also intended to become an architectural and technological point of reference in the eyes of the Client. This was pursued not only for Italy, but for the rest of Europe, offering a conspicuous contribution to the techniques of construction in Italy. The absolute modernisation thus had to be focused on experimentation and the adoption of solutions that anticipated the times, such that the Palazzo would offer a dynamic, innovative and technological image of the industrial group. That challenge was even more involving given that the adoption of the autarchic strategy did not comport the refusal of modernity but, on the contrary, was required to manifest its creative potential. It is for this reason the Palazzo would become the emblematic example of the relationship between architectural autarchy and corporate economy.

The objective of uniting modernism and the transformation of the building sector had been pursued in Italy since the end of the 1920s when, together with a general process of renewal that fed the

architectural debate (which would soon obtain the approval of the regime), the country was witness to the beginning of a shift towards the use of national building materials within the construction industry. The rich season of competitions – followed by very few realisations – and, during the next decade, the vast plan of public works promoted by the Fascists offered numerous opportunities to begin to experiment with the modernisation of construction techniques and architectural research that set the foundations for new generations.

The diverse interpretations of modernism that are thus generated can be traced back to a widespread crafts-based tradition, an approach that harkens back to the more authentic and original foundations of Italian construction during the 1930s (Poretti 1994). The most interesting results from this period, even if they often remained on paper, shed light on a process of renewal that, even while sensitive to international experiences, insinuated itself between the folds of the approach generated by traditional construction practices and a firmly entrepreneurial approach. Within such a consolidated context, the use of reinforced concrete – the fulcrum of the innovative concept of architecture – not only does not upset the organisation of the job site, but it not does substantially influence the architectural image, it does not lighten the building itself and it does not reduce the solid portions but rather flaunts the masonry nature of the construction. The potential offered by the structural frame, when it emerges, is perceived indirectly and, at the figurative level, changes were also made in order to satisfy the characteristics of traditional block construction. It is a process of renewal where the significant presence of new building products, which nonetheless invade the market and renew industrial production, must deal with a widespread re-evaluation of the classic repertoire of building materials, even if they are used in experimental ways. In the end it is a process where the autarchic imperative – in its most stringent phase even the reference to international experimentation begins to fade away – is *offered* as a precious opportunity for stimulating the evolution and the modernisation of building techniques and testing a modern and monumental style.

The Palazzo Montecatini is part of this evolutionary approach, though it represents an entirely singular and, due to the nature of the client, luxurious example. The Palazzo, even while employing the most up to date functional and constructional approaches possible within the Italian panorama at the time and, what is more, providing solutions to technical problems that were emerging during those years, remains an isolated example. However, if the building, even stripped of its sumptuous elements (and in any case never exuberant), does not aspire to assume – responding to the expectations of the client – the role of being a prototype, the spontaneous questions are thus: what type of modernity was compatible with an autarchy? To what degree can the building be considered an exemplary case of modern Italian construction? How does one combine international references with the prescriptions of an autarchy?

A BUILDING OF WONDERS

During those years of the regime the press normally documented the construction of public works, revealing numbers that would express both the large scale of the works and the fervid activity of

construction sites. This quantitative demonstration, with its clearly propagandistic flavour, was aimed – as is known – at obtaining political consensus by testifying to the efforts of the regime within society. The punctual notifications about the quantity of cubic metres constructed, the square metres of national materials used, the thousands of days of work, the hundreds of workers participating in building activities and anything else that could magnify the activities of the regime were systematically foisted upon the population and found, in the famous date October 28 – the date for inaugurations – their suitable celebrations.

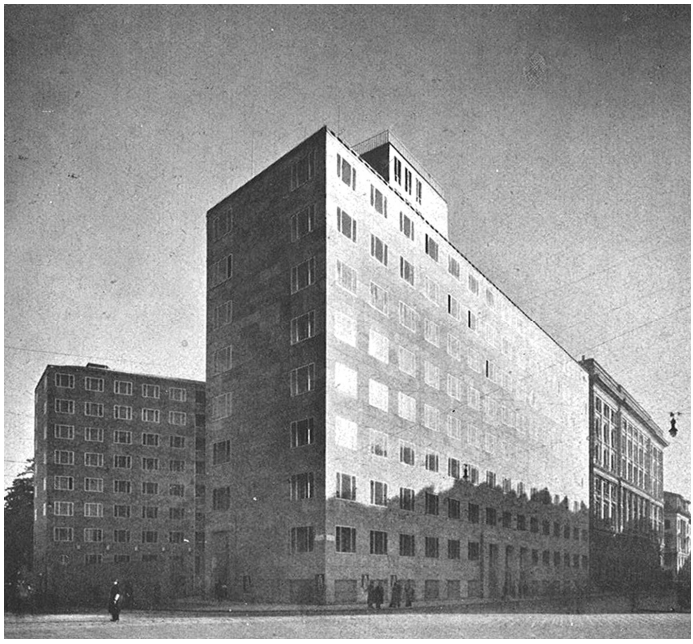

Figure 1. View of the Building (Casabella, 1939).

The Palazzo Montecatini, the head office of the most important Italian industrial group, even while not being a public work, does not remove itself from this practice, furthermore justified by the imposing nature of the work. On October 28, 1938 the company celebrated its 50th anniversary with the inauguration of the majestic building. The relative *numbers* – all public and promptly revealed in the exhaustive bibliography that accompanied the inauguration – were effectively extraordinary for their era. The records held by the building, together with its many cutting edge technologies, make it the symbol of the triumph of Italian technology and the synthesis of the most up to date solutions in terms of layout, technique and architectural design; the term "modern" appeared, at the time, to be almost reductive. Gaetano Minnucci, always attentive to the role of technique in the definition of architectural image and accustomed, in this regard, to update himself by travelling throughout Europe, was able to stop in Milan and discover, in 1938, what was presented as a sort of building of wonders, (a visit also included a "guided tour"). Minnucci, involved at the time in the

definition of the *Esposizione Universale Romana* that was to take place in 1942, and which was to demonstrate to the world the elevated levels of technological development achieved in Italy, was thus particularly interested in learning about the building about which, following his visit, he prepared a highly detailed report (Minnucci, s. d.).

The volume of the building is the result of the maximum occupation of the site allowed for by building regulations and existing conditions; the architectural design is courageously simple, if we consider that we are in the centre of Milan, devoid of useless artifices and concessions to environmental suggestions; the layout of the plan – from the workspaces to those for social and health services – is focused on the maximum efficiency and responds to the needs of a perfect planning process.

Based on an 'H' shaped plan with divaricated wings, the building is made up of three distinct volumes: the central, curvilinear volume is 14 m wide and 13 stories high, rising 60 m above the road bed; the side wings, with an average width of 16 m and a length of over 60 m (65.45 the one and 63.52 the other), are lower, at 8 stories, with a total height of 40 m. Excluding the atrium level, the internal distribution is generally repeated on all levels, with the only difference being the central volume that is destined for directors of the company, while the side wings house the offices of the managers and the employees.

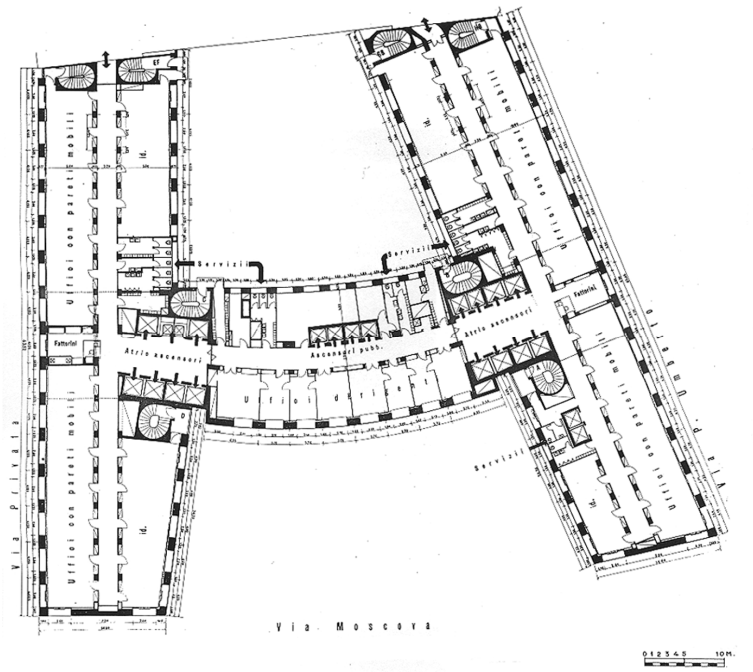

Figure 2. Typical Floor Plan (Il palazzo 1938).

The bearing structure, built by the Daniele Castiglioni Company, is entirely in reinforced concrete. However, how is the *enormous expressive potential* offered by this material taken advantage of? Ponti does not adopt challenging solutions or construction techniques that, in those years, were widely experimented with, nor does he ground the project in spectacular design decisions or autarchic requirements. The framework in reinforced concrete is the unavoidable component that is hidden within the abstract figurative nature that characterises the building and that finds its total affirmation in the treatment of the ethereal facade.

The structure is compact and simple, with little reinforcing and not aggravated by heavy finishes. It is laid out with a general regularity and extremely limited spans – if we exclude some of the larger beams, the maximum distance between the columns is 2.6 m. The few projections are limited to the stair ramps and the small balconies for the emergency exits located in the interior courtyard. In the side wings, four rows of columns divide the plan into three bays: the central bay is 2.2 m wide and used as the corridor, while the 5.6 m side bays contain the offices; in the curvilinear building the structure is radial and the plan follows the same layout. The perimeter columns respond to the necessity of centralising the building systems: they are 64 cm thick with a front face of 1.5 m with a 'U' shaped form for their entire vertical height featuring cuts that create three chases for the passage of metal rainwater leaders and duct work. The interior columns, with much smaller dimensions, measure 30 x 45 cm and, in order to respect alignments, they are clad with a thick layer of masonry. The general regularity of the structure, declared on the façade by the reiteration of the module, hides the small variations in the spans that are compensated by a layer of hollow clay bricks to create the space necessary to house the standard sized and mass produced windows. In the central volume the windows entirely fill the space between the supporting elements, without making use of additional architraves (other than the perimeter beams), while in the side wings a lightweight parapet in reinforced concrete was added. Another variation deals with the longitudinal shift of the four rows of columns in the building along via Principe Umberto and the central volume that, together with the dimensional difference between the interior and exterior columns, betray the lack of repeated transverse structural connections. The floor slabs are of the most ordinary and simple nature, also given the small spans: they are entirely poured in place and composed of hollow clay bricks and transverse concrete beams poured on a masonry base, in order to provide a homogeneous underside.

The layout of the structural elements thus determines a predominantly longitudinal bearing network. The necessary wind bracing, not satisfied by the reduced inertia of the floor slabs, is handled instead by a series of shear walls and transverse connections located at the ends of the volumes, corresponding with the stairwells and the expansion joints that divide the complex into seven elements. In the tall, curvilinear element, with the highest exposure to the forces of the wind, in addition to being weakened by the mechanical chases and elevator shafts, the reinforcing elements are integrated with transverse beams and solid, heavily reinforced concrete slabs.

The structure appears to have been conceived based on the criteria of the reduced use of steel and concrete imposed by the autarchic regulations; however, emboldened by the objectives of the

maximum rationalisation and standardisation of construction processes, the enormous section of the perimeter columns remains constant for the entire height of the building, entirely indifferent to structural optimisation and construction economy. In a hypothetical observation of the building, stripped of its cladding, we would observe not a lightweight structural grid, but a stubby and over dimensioned network of reinforced concrete, in a proportion between solid and void that harkens back to a more continuous type of masonry wall construction. Nothing would allow us to consider the prevalence of the abstract composition that prevails in the finished building.

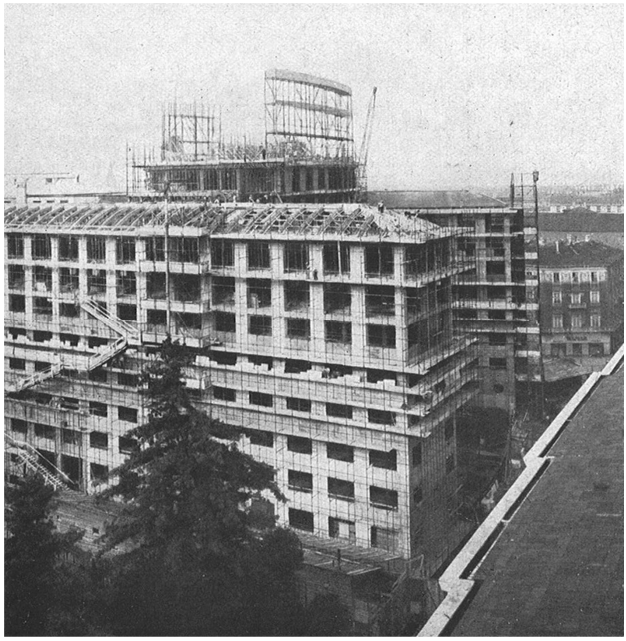

Figure 3. The Bearing Structure of one of the Side Volumes, complete with the parapets (Casabella 1939).

This leads to a spontaneous comparison with the *Palazzo della Civiltà Italiana* for the E42, built only a few years later. It is similar to this Milanese example in many ways, though its final result is entirely different. In Rome, the columns in reinforced concrete adopt an analogous geometry though they become thinner at each floor; however, this approach, which remains hidden behind the massive travertine cladding, does not give the building any sense of slenderness. On the contrary, the effect of the massive solid masonry is accentuated by the traditional design of the thick slabs of stone cladding, also used to create the vaulted appearance of the façade: the building thus offers a more intimately and authentically autarchic example of the type of Italian modernism that would prevail within the architectural panorama at the end of the decade.

In the Montecatini building, the structural grid remains unvaried on each floor, in the same way that the repetition, *all'infinito* of the façade module appears to be unchanged and unlimited: this choice,

for Ponti, represents the sacrifice of *architecture* in favour of *engineering* and, at the same time, for Pagano, that sense of unity that is instead the "highest aesthetic value of the building" (*Casabella* 1939). However, as a result of this contrasted idea of the image, G. Donegani (following the damage caused by bombing) could "logically" add another floor to the two wings of the building, without – according to Ponti – creating any damage (Ponti, 1957).

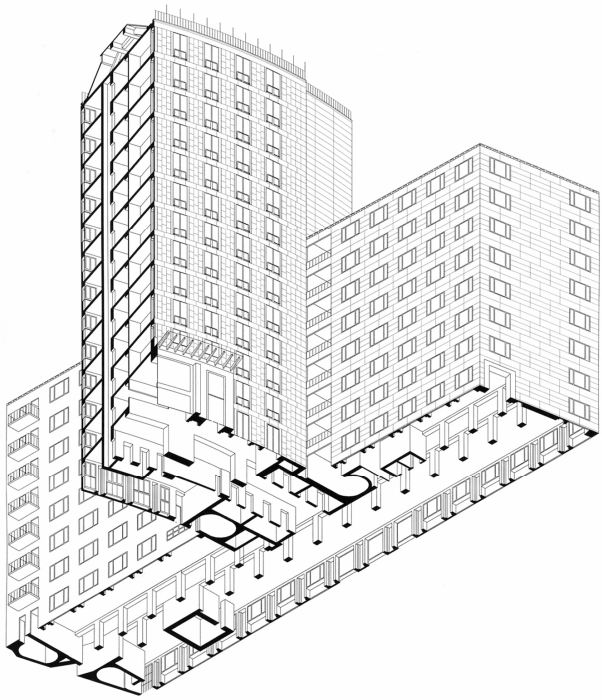

Figure 4. Axonometric Section (drawing by the author).

THE AMERICAN MODEL

If there is a reference that has accompanied Ponti during the design of the Palazzo in Milan, it is certainly traceable to the technological universe of the United States of America. The fascination for the images coming from industrial and modern America has captivated young designers since the beginning of the 1930s, who absorbed, through the filter of national culture, the suggestions from across the ocean, focused on the technological and structural possibilities being experimented with.

During the late phase of autarchic rule, the reduction of these suggestions is accompanied by the prevalence of a more traditional inflection of the architectural language. However, in the Palazzo Montecatini, this movement, even if negated in some cases, is not only received without any filters, but presents itself as a basic decision.

The wave of Americanism, which was certainly supported by Donegani, prevails in every corner of the building: in the organisational structure and the highly specialised design *parti*, typical of the design approach used in the American skyscraper, in the typological reference to the skyscraper itself, even if the expression of verticality is re-dimensioned by the massive articulation of the volumes; in accepting the building as an industrial product, evident in the modularity of the architectural image and the use of serially produced construction elements, such as the aluminium windows or the movable walls; in the "democratic" organisation of the work environments, which do not present substantial differences in finishes, technological solutions and services between the employees' and managers' offices; in the plans for the recreational activities – including a library, a gymnasium, fencing halls, various types of stores, a barbers shop, a hair dressers and pharmacies – and in the spaces dedicated to social assistance, as well as the health services, including, surprisingly, a breast feeding room. The conceptual innovation of the "work day" as pursued by this Milanese building cannot but generate some surprise, confirming that anticipation of the times that was mentioned at the beginning of the text, and which for Italy in 1938 represented, certainly, an absolute and isolated novelty; we must await the full maturation of the Olivetti experiences in Ivrea, that began in those years and which lasted until after the war, in order to find, in Italy, a design approach towards the working environment that is so attentive to the needs of the working class.

At the technological level, the American suggestion is reflected in the adoption of building systems that are so complex and extensive that they will remain, for many years, unique in Italy, in the use of construction systems and materials that have already been confirmed across the ocean, in the rhythmic combination of standard units and in the free plan. As part of this approach, an exemplary element remains the centrality of the module-office, which is reflected in the ordered presentation of the elevation. The unit, whose dimensions are 4.2 x 5.6 m, is based on the functional optimisation of a space for four employees.

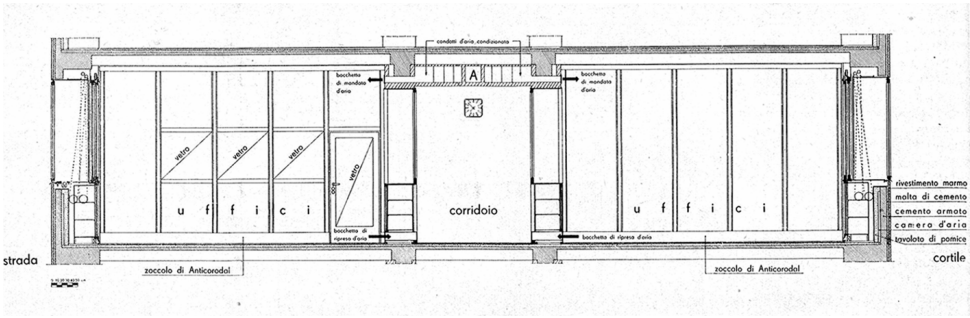

Figure 5. Cross Section of the Offices (Il palazzo 1938).

The example will be featured in the *Manuale dell'architetto* prepared by the CNR in 1946, where the caption that describes the organisational layout of the typical office highlights it's American roots in the use of movable dividers; in the Palazzo, in particular, it is possible to unite up to seven

modules. For this solution Ponti will generate, instead, an entirely European originality (Ponti, 1952).

The flexibility of the spaces, that will later be rapidly employed in many office buildings, was made possible thanks to new construction systems that translate, in this case, into the use of a standardised, movable partition wall. The wall was studied by the supplier, PAS, which had used the Snead American system, making the necessary changes (Minnucci, s.d., Casabella 1939).

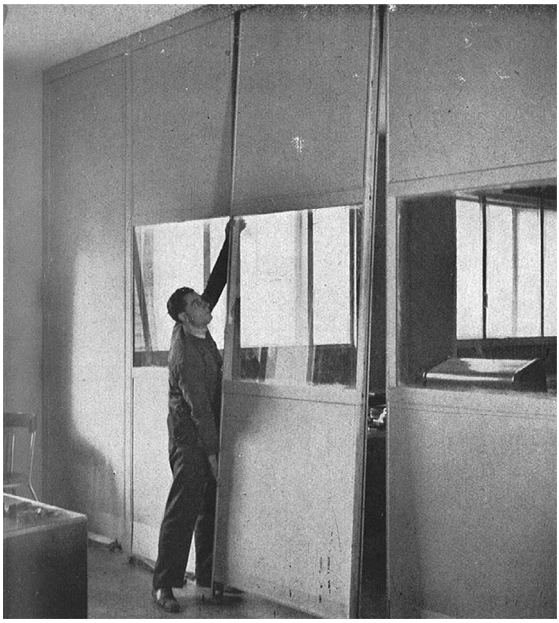

Figure 6. Installation of the Moveable Partition (Il palazzo 1938).

Light, a-phonic, dismountable, with interchangeable panels, totally mass produced, the wall is made of 5 panels, each of which is composed of a frame in steel sheeting, clad with two sheets of coloured faesite, 12 mm thick, and separated by a 5 cm air space. The panels are joined to one another by hooks and held by steel rails attached to the columns, the ceiling or the floor. Joint covers between the panels and a baseboard in anticorodal, fixed with a clip system that was patented in Italy finish the wall that, by means of only eight screws, can be mounted and disassembled in a few minutes. The refined technology of the movable wall must, however, come to terms with the unforeseen site conditions and the capacity of the trades, not always properly trained and, as a result, in order to guarantee the programmed acoustic reduction of the walls – that could be compromised by errors during assembly – it was necessary to integrate the assembly with traditional systems, that is filling the air space and the voids between the various components with insulating materials.

Once again American, this time by the Westinghouse Company, are the materials used for the elevators and the goods lifts, as well as the air conditioning systems. With regards to the latter, in the monograph published in 1938, haste was made to declare that the methods of controlling the climatic conditions in the spaces was "far from an American type application that generally calls for the abolition of the window in order to render the spaces absolutely hermetic"; however, notwithstanding this, there is another dependence on the technological research imported from the New World. These are the studies carried out in the A.S.H.V.E. Research Laboratories in Pittsburgh, related to the parameters that affect the thermal well being of the individual, and the applications that are already quantitatively relevant in the United States. There the control of temperature and the quality of air is held to be by now indispensable, especially in the work place, in determining the typology of air conditioning system, the design of which is prepared and provided by the American company Capriel (Minnucci, s.d.). The Palazzo is thus the first in Italy to adopt an integral system of climate control and, as a result, the first – not to abolish *as the Americans do* – but certainly to limit the role played by the window, with just under 5 sq m for a surface area of 23, largely the role of lighting sources and emergency openings in the event of the breakdown of the air conditioning system. Finally, the windows are in aluminium, in line with the widespread technique in the United States – where the pioneering phase of windows in light alloys was already complete and where the designers, for some time, had considered the industry to be a useful interlocutor – but which in Italy was still highly experimental.

BETWEEN THE FUTURE AND THE PAST

Beyond the clearly declared propagandist intentions, each phase of the construction of the Montecatini, as is known, was a true laboratory for technical innovation (*Il palazzo*, 1938). However, in this text, there are two aspects of particular interest: the windows in aluminium alloy and the external cladding in slabs of Cipollino Apuano stone. In fact, they amplify the echo of the dialogue between the innovative approaches and the preceding experiences, a dialogue within which it is possible to recognize the solid ties with the national construction tradition and, at the same time, to notice that material evanescence upon which the abstract tonality of the building is focused.

The first Italian patents for aluminium windows date back to the beginning of the 1930s and, other than introducing lighter frames, they focus attention on the possibility of simplified serial production (Mornati 2003). The line of research, however, remains secondary, even when the autarchic objectives become more stringent. It is neglected in favour of the studies of thin steel frames that, from the beginning of the 1930s, replace the normal steel profiles, becoming the standard for the construction of steel windows and doors. What is more, the thin steel frames, also used in the Milanese building, is propagandised as autarchic because it reduces, by more than 50%, the use of steel with respect to standard steel profiles. The extended application of lightweight aluminium profiles in the Palazzo is thus to be seen as an important novelty, not only from a

quantitative point of view, but also in technical and architectural terms. It represents, in substance, the possibility of applying a technology that is no longer so futuristic, but which can actually be used and transfer to construction practices.

To tell the truth, the interest in aluminium is not so recent; it had already been appreciated in economic terms due to the abundance of bauxite on Italian territory. In architectural terms, it reveals itself to be an optimum material for manifesting the modern soul of the autarchy and, at the same time, supporting national industry.

The company quickly took advantage of the opportunities favoured by the autarchic plan, thanks to which was made manifest a notable increase in demand. Aluminium, already produced by the Montecatini company since its entry into the industrial centre in Porto Marghera, in reality was not included in the first chapter related to the construction of the Palazzo, prepared in April of 1936 (Zucconi 1985); a few months would pass before aluminium began to dominate the list of materials, soon becoming part of each part of the building. The construction of the latter coincided with a moment of increased expansion of investment and increased productivity by the industrial group, to the point that it predefined, in a Report by the Board of Directors in 1939, serious consequences if the consumption were reduced and if they did not absorb the production of the new factories (Villari 1978).

This led to the use of the highly Italian aluminium, pure or as an alloy, as the characterising element of the aesthetics of the Palazzo, through the use of absolutely innovative techniques and never before seen quantities in the construction industry: 250 special profiles, fabricated with 160 specially prepared dies (i.m.p. 1939), used to construct interior and exterior windows and doors, railings, gates, roofing surfaces, systems components, elevator and *paternoster* cabins, light fixtures and furnishings that, together reflect the autarchic triumph and express the industrial face of the nation. Since 1938, the publicity of aluminium was entrusted almost exclusively to the Palazzo Montecatini.

The windows in Anticorodal alloy, specially designed by the designers and produced by the Bombelli Company, featured a double frame: one was placed flush with the exterior wall, with operable leafs that opened within the thickness of the window opening; the other was flush with the interior walls, with sliding leaves that moved laterally into the air space or overlap with the fixed central leaf. The technique of working the alloy was defined based on the research developed by Montecatini's Istituto sperimentale dei metalli leggeri. The anodic oxidation was carried out following the completion of the working of the alloy and the thickness of the oxidised layer and the degree of compactness were determined in order to improve resistance against the atmospheric agents. The frames were strengthened by aluminium clad galvanised steel bars; other steel bars were used to strengthen the alloy profiles of the operable leaves, in particular the windows and doors of the central volume, given their notable height. The aluminium profiles and those in steel

were assembled based on a complex geometry that created, in any case, the double stop and three air spaces, guaranteeing the necessary thermal insulating properties.

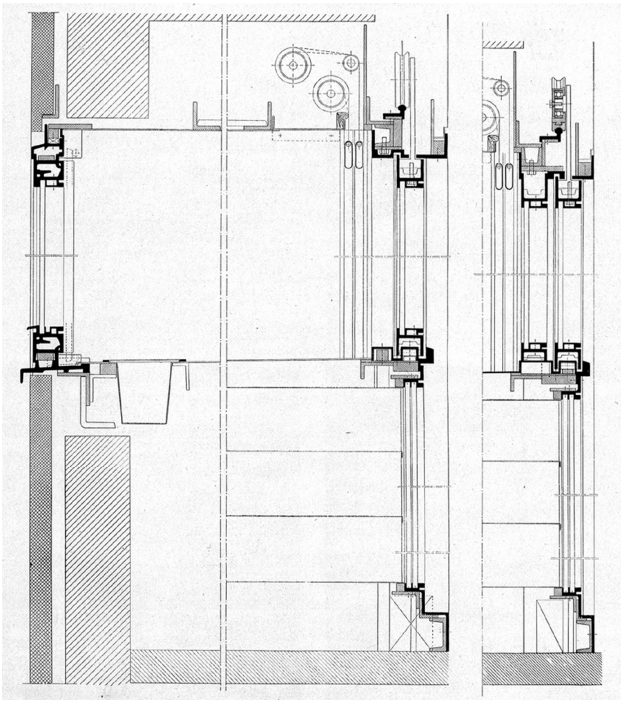

Figure 7. Vertical Section of the Office Windows (Il palazzo 1938).

How was this innovative charge of the aluminium fixture, which evoked one of the components of international Modernism, exalted the industrial and technological sprit of innovation and, given the brilliance of the surface, participated in a new way in the definition of the architectural image, perceived in Italy?

In reality, the new material did not significantly modify the widespread tendency to use the traditional window and door in wood. The narrow steel profile, for its part, even while not containing an equal degree of aesthetics, was appreciated for its technological properties and was used essentially for large glazed surfaces or in situations where the expression of function was to prevail over aesthetics. Aluminium and its various alloys instead found scarce applications in the field of windows and doors, while they were used more for other construction elements and furnishings (the rainwater leaders in the Casa del Fascio by G. Terragni, the cladding of openings in the Mathematics School by G. Ponti), where its industrial attributes assumed the tone of being a modern decoration. It was necessary to wait until the 1960's in order to observe – with completely different results, unfortunately – the widespread diffusion of the aluminium profile.

Figure 8. The Exterior Aluminium Windows of the Side Volumes (Il palazzo 1938).

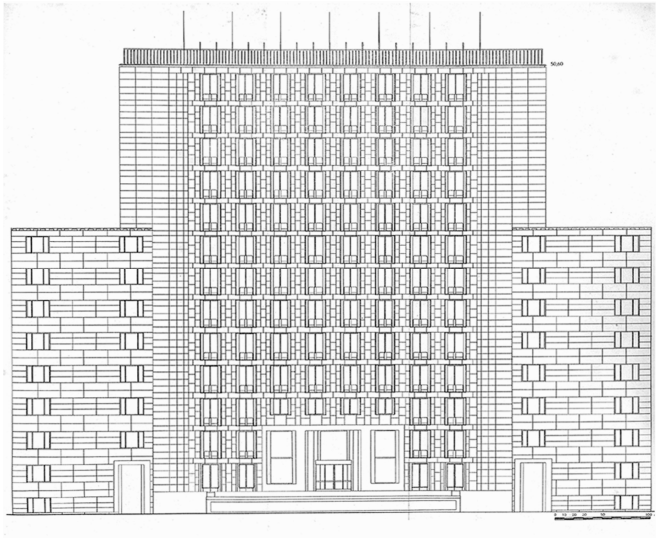

Figure 9. Elevation drawing along via Moscova (Il palazzo 1938).

The rigorous geometry of the shiny rectangles that are infinitely repeated on the façade do not help formulate such a new language unless the modern industrial product is associated, in an absolutely equal manner, with the most classic of materials: marble. This product is equally proudly Italian and consonant with the autarchic requirements. For economic reasons it occupied an important position amongst the national construction materials, and managed to gain favour from both architects who were still anchored to tradition as well as from the young, modern architects: the first saw the extensive stone cladding as nature's defence in construction terms while the second, proposing more unusual uses with the objective of taking advantage of the intrinsic expressive qualities were able to free themselves from the accusations of internationalism that were associated with smooth stuccoed surfaces and recover that classical component of traditional construction that characterized Italian Modernism (Poretti 1995).

Here however, unlike the many applications in public buildings during those years, the stone cladding assumes an entirely particular meaning. In the first place it was economic, given that the Cipollino Apuano and the other numerous types used in the building were from the quarries acquired by the Montecatini in 1935 (Setta 1986). What is more, they offered a technological meaning given that the laboratory that the Palazzo represented allowed for the technical refinement of a technique for anchoring the stone slabs – where the site supervisor, Mr. Pietro Bosisio assumed a substantial role – which brings an end to a problem that was becoming dangerously widespread. In fact, during those years the thin slabs of stone that horizontally and vertically clad modern buildings with independent skeletons in reinforced concrete, after having caused no shortage of difficulties for the building contractors, demonstrated, in only a few short years, a dangerous tendency for detachment. Following the investigations to identify the reasons for this detachment, it was determined that a number of factors led to this problem: they included the reduced thickness of the slabs (2 to 3 cms) in relationship to the dimensions and, more generally, the absences of joints between slabs, eliminated in order to obtain the uniform aspect of an abstract skin; the joints, furthermore, revealed themselves to be essential for absorbing the differences caused by thermal expansion of the slabs and the bearing structure to which they were connected using traditional methods. Based on the studies made by the engineer Antonio Consiglio, Bosisio defined a complex support structure that was focused on two principal regulations: the insertion of a proper joint between the slabs and the transfer of the weight of the slabs, not onto the slabs below – as was normal with slabs of greater thickness – but onto to continuous hooks that were connected to the bearing structure.

For the Montecatini job the dimensions of the slabs reached up to 210 x 90 cm, with thickness of 4 cms. The slabs, with rounded edges, were not installed touching one another, but rather with a congruous joint of 6 mm. Each slab was fixed by eight annealed brass hooks, with a diameter of 6 mm; one 'T' shaped end was inserted into the niches made on the back of the slabs, the other was wrapped around 10 mm steel bars, set into the columns, though independent of the reinforcing steel. In correspondence with the architraves of the windows, a steel 'L' angle was anchored to the

structure, to support the weight of the stone cladding above. Finally, a 3 cm thick cementitious mortar was poured behind the slabs, the adherence of which was increased by horizontal cuts made in the back of the stone. The joints between the slabs were sealed with a grey-green Igas mastic, composed of asbestos fibres and plastic materials, produced specially for the job. Its characteristics of elasticity, impermeabillity and rubbery consistence made it stable even at high temperatures.

Other than the technological aspects, it is the treatment of the façade that constitutes an absolutely original solution. Aluminium and marble create the plane of a chessboard where the serial nature of rhythm and the absence of even the most minimal emphasis, exaggerated by the monumentality of the masses appear to cancel the third dimension: the structure appears to be clad with a two-dimensional surface that is not articulated into voids and solids, but into opaque and transparent portions (Ponti 1957).

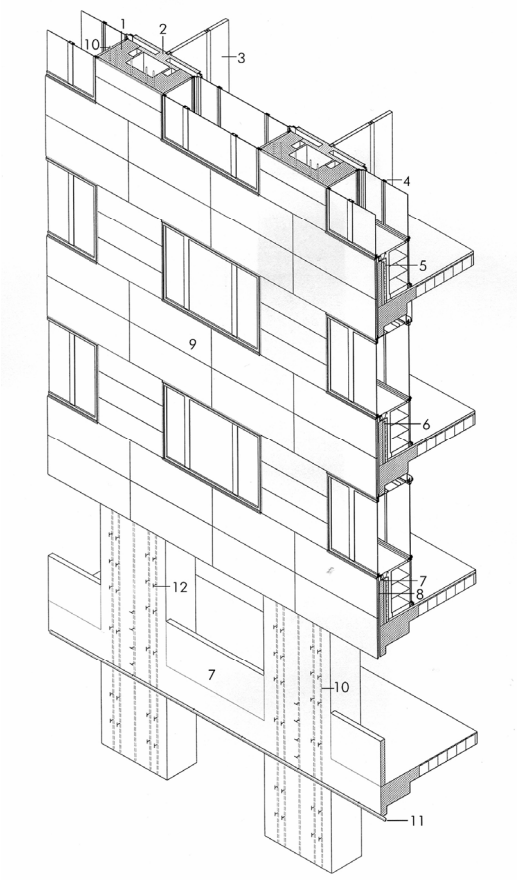

Figure 10. Part Elevation of one of Side Volumes. 1. reinforced concrete structure 2. masonry wall 3. moveable partition 4. aluminium window 5. pumice sheet 6. air space 7. reinforced concrete parapet 8. mortar layer 9. stone slab 10. steel bar 11. stainless steel angle 12. annealed brass stone anchor (drawing by author)

The weightiness of the stone is thus cancelled by the co-planarity of the elements that make up the elevation and the design of the joints between the slabs that, even with their non-planar thickness, appear like signs and not as discontinuities. The illusion is accentuated by the vertical alignment of the cladding joints that challenge the prevailing figurative nature, based on a technique that was adopted many times in those years and which Ponti brought to the limit when he placed the slabs at 45°, as in the atrium of the Montecatini or, in precedence, inside the Mathematics School. The cladding would reveal itself to be an architectural element that was suitable to affirm that abstract component of the architectural language that distinguishes the Lombard centre from other Italian modernisms. The illusory effect that is focused on the absence of weight and mass is even more evident in the interruption of the slabs in correspondence with the halfway point of the architraves over the windows; it is there, at this strategic point for the equilibrium of the stone, that the only system that assures the stability is to make recourse to an extraneous and invisible element, the 'L' shaped profile that demonstrates itself to be not only an efficient technical instrument, but an irreplaceable expedient for figuratively defining the façade.

AN A-TYPICAL EXAMPLE OF ITALIAN MODERNISM

It has been said that the Palazzo, at the time of its construction, was presented as a symbol of the autarchic turning point, even if – in a contradictory way – of a sumptuous autarchy, as commented by Pagano, before celebrating it in his magazine: in fact he hesitates, towards his "friend Ponti" who, not restricted by economic reasons, makes the autarchic cause an exhibition of luxury, creating "exceptional buildings and unequalled works of architecture" (Pagano 1938).

If, then, the building, through the resources and the imagination of the large private industry, substantiates the autarchic liturgy and, at the same time, produces the fundamental characteristics of Italian construction, where do we find – returning to the initial questions – the causes of its isolation within the international panorama in those years? Why does it not become a recurring example that is to be re-proposed for its literal style or its more sophisticated language than the E42, one of the most celebrated and large construction sites at the end of the decade?

The reasons are to be sought in the different models of Italian construction called for the regime at the end of the 1930s. The model that is pursued not only does not reflect so integrally those objectives of economic autarchy that were propagated, but intends to celebrate, with a clearly monumental intonation – even anti-economic – the noble origins of the Italic civilisation that passes on its values through the symbols of Rome and the glorification of the culture of the Imperial Age. The autarchic strategy is thus focused on the interior, not on the exhibition of avant-garde and futuristic technologies, or a showy internationalism, but on the more calm conduit of tradition and the symbolic monumentality of Augustus that, ratifying the continuity with the Roman world, would dictate the canons for the style of the E42 (Casciato, Poretti, 2002). The new course of architectural language thus demonstrates itself to be incompatible with the celebrative programmes

of the regime, as demonstrated by the failure of the completion for the Palazzo Littorio and the projects that were discarded for the E42.

Figure 11. View of the Main Entrance from via Moscova (Casabella 1939)

In the Palazzo in Milan, the invariants of classical monumentality – scale, the composition of the volumes, mass, symmetry, the realised ground floor – play liberally with the components of a metaphysical language: the obsessive iteration of the windows, the sensation of a weightless cladding, the absence of projections and margins in the facades and the hierarchies of the design of the facades. It is a basic contradiction that makes this building a different *monument*: the elements upon which it focuses the process of abstraction and which lead all to determine an architecture on paper that is devoid of gravity do not manage to alter the masonry connotation for which large portions of solid masonry between the windows make reference more to the scheme of the box than the structural frame, re-evoking heavy masses more so than the light walls of infill construction; it is a connotation that also leads to this heterogeneous version of modernity within the peculiar characteristics of the Italian architectural panorama.

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