

Building Traditions and Technical Innovations in the Mediterranean. Architecture in 1930s Apulia: Gaetano Minnucci's Accademia Marinara in Brindisi

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BUILDING MODERN ARCHITECTURE IN ITALY BETWEEN TRADITION AND INNOVATION

In the 1930s Italian architectural culture posed itself the problem of the reappraisal of the morphological, structural and distributive aspects of the classical architectural organism. In most cases this reevaluation came about, beyond abstract declarations of principle, through a process of continuity with the past. Italian architecture in the 1920s and 1930s was an experimental field for building techniques using reinforced concrete, though it nevertheless conserved the formal and spatial aspects of masonry construction – the connotative features of which were not abandoned (continuity, box-like structure, mass) – and maintained an organic interconnection between space, structure and distribution. New techniques were interpreted as an updating and adaptation of masonry architecture rather than as alternative systems (D'Amato 2003). At the beginning of the 20th century the technique of reinforced concrete, coming especially from France, was grafted onto Italian building traditions. Between 1935 and 1943 autarchic policy promoted the combination in building of a framework in reinforced concrete and masonry construction, which was interpreted as a kind of massive curtain wall or “gap-filler” with the function of making the structure more rigid (Poretti 1996).

While Le Corbusier was theorising the conceptual distinction between load-bearing structure and enclosing wall, and putting his theory into practice by exposing the bare structural skeleton and dematerialising the wall with the *pan de verre*, or else through the abstract volumetric continuity of the *façade libre*, Italian architects, even those who embraced a LeCorbusian poetics of form, rarely assumed as a fundamental aesthetic principle of the new language the independence between load-bearing and enclosing structure. In Italian Modernist architecture the positioning of the pillars in reinforced concrete is usually ancillary to the spatial and distributive articulation. The bays of the load-bearing frame, which may vary in size, follow the line of the enclosing walls, thereby re-proposing the traditional logic of the “room” against the principle of the *plan libre*.

Even in its most abstract “declinations” – for example Giuseppe Terragni's Casa del Fascio in Como – the structural frame still belongs to the flat surface of the facade and interacts with it through numerous variations on a solid/void rhythm. Even when it is completely freed from the wall, the reinforced concrete frame still recalls the logic and features of a trabeated wall-system.

The frame re-proposes the syntax of the trilith, that is, the distinction between horizontal and vertical elements, obtained by a stone revêtement, or more decisively, by being modelled plastically, in a reinterpretation of the canonical architectural orders. In many works architectonic expression is based on the continuity of the wall, which hides the punctiform structure, while collaborating with it. In other cases the frame is absorbed in the enclosing wall, revealing traces of itself in the articulation of the facade, by creating a kind of ribbed wall. In some examples the frame is incorporated into the logic of the wall in an archivoluted system, suggesting the symbolic image of the wall-arch, without however contradicting the principle of sincerity in building: for example, the Palazzo della Civiltà Italiana in the EUR district (Rome), where two structural systems coexist in silent collaboration: frame and self-supporting masonry shell (Poretti 2003). When sincerity in building is more expressly pursued, the discontinuous skeletal structure and the curtain wall, though both are aligned with the facade in order to achieve the continuity typical of wall-systems, are materially and formally distinct. This type of experimentation would be intensified after the Second World War, for example in the work of Mario Ridolfi, which exposes the heterogeneous articulation of the wall. While in the 1930s decoration was entrusted to revêtement, it now becomes intrinsic to the building materials themselves.

This dialogue between wall and frame was to become a kind of *lietmotif* characterising almost all of Italian architecture from the 1930s to the post World War II reconstruction. Even the more experimental works in structural engineering are to be found in the course of tradition and interpret afresh the characteristics of continuity and mass in masonry construction, through the plastic use of reinforced concrete, as a material suitable for shaping both surfaces and open, grid-like structures, thereby going beyond its use in linear box-like structures (see for example Nervi).

GAETANO MINNUCCI AN “INTEGRAL ARCHITECT”

I would like to propose the reading of an emblematic case: the Accademia Marinara per l’Opera Nazionale Balilla (ONB) built in Brindisi (Apulia) between 1934 and 1937 by the Roman trained architect and engineer, Gaetano Minnucci (1896-1980). In this work many of the themes connoting Italian Modernist architecture, especially that branch moderately open to innovation, are developed. Indeed, along with this “provincial” work, Minnucci was also engaged in more important projects for Fascist Rome. From 1932 to 1935, together with Marcello Piacentini, he supervised the construction of the Città Universitaria di Roma. In 1939 he was Director of the Servizi Architettura, Parchi e Giardini for the Ente Autonomo Esposizione Universale in Rome (EUR).

Minnucci was a prominent figure in Italian architectural culture, contributing, at the end of the 1920s, to the theory of Italian Rationalism. He was a member of the Gruppo Urbanisti Romani (G.U.R.), which he founded in 1926 with Luigi Piccinato. In 1928 he organised, with Adalberto Libera, the Prima Esposizione Italiana di Architettura Razionale, which was held at the Palazzo delle Esposizioni in Rome. He also promoted, with Libera, the formation of the Movimento Italiano per l’Architettura Razionale (Italian Movement of Rationalist Architecture or M.I.A.R.).

In the following decade, along with an intense activity in architectural design on all scales, he dedicated himself to technological, typological and “linguistic” experimentation and the classification of the new technical know-how, with the compilation of various manuals, both of a typological and technological nature. Minnucci wrote various entries for the *Enciclopedia Italiana Treccani*, especially on building types. In the 1930s he carried out typological research on school buildings. In 1932 he became a member of the Technical Department for the construction of the Città Universitaria di Roma and in 1936 he published the manual *Scuole, asili d'infanzia, scuole all'aperto, elementari e medie, case del Balilla, palestre e impianti sportivi*. From 1928 to 1934 he was a member of the editorial staff on the journal *L'Ingegnere*, where he was responsible for the “Notiziario Tecnico”. In *Architettura e Arti Decorative* (1930-1931) he was responsible for articles on the latest technological advances and research. In 1932 he wrote the column “Tecnologia e ricerche” for the journal *Architettura*, on which he was editor from 1932 to 1935. At the beginning of the 1930s he organised a Centro Nazionale di Studi di Tecnologia Edilizia at the Scuola di Architettura in Rome.

Minucci was also professor at the Faculty of Architecture in Rome. After working as an Assistant on the university courses of “Estimo e Tecnica delle Costruzioni” (under Prof. I. Costantini), “Tecnica delle Costruzioni” (under Prof. G.B. Milani) and “Composizione Architettonica” (under Prof. A. Foschini), from 1936 to 1938 he was Professor in charge of the Chair of “Impianti Tecnici”. In 1939 he was Associate Professor of “Architettura Tecnica” at the University of Padua, while from 1940 to 1962 he was Full Professor of “Elementi Costruttivi” and Director of the Istituto di Elementi Costruttivi at the Faculty of Architecture in Rome.

Minnucci epitomises that synthesis between architect, engineer and urban designer which Italian architectural culture, together with its professional world, were able to sustain until the beginning of the 1950s. In other words, he was an “integral architect”, a figure theorised by Gustavo Giovannoni in the 1920s to promote the university training of professional architects who would be able to combine scientific know-how and humanist culture on all scales of the project. The designer still had an “integral” approach to the project, which allowed him complete control over the work on all scales. This is especially evident in the building complex of the Accademia Marinara, where Minnucci was concerned with the urban, architectural and structural design, including the furnishings and decorative elements.

TOWARDS A NEW RATIONALISM IN CONSTRUCTION

Minnucci, together with Adalberto Libera, participated in the formation of the Movimento Italiano per l'Architettura Razionale (Italian Movement of Rationalist Architecture or M.I.A.R.) with the purpose of defining a cogent architectural language in keeping with the new times. In his Introduction to the catalogue of the Prima Esposizione Italiana di Architettura Razionale (First Italian Exhibition of Rationalist Architecture) in 1928, Minnucci states that the adjective

“rationalist”, as applied to modern architecture, indicates the “content of construction, technique and ratiocination that distinguishes it from other attempts which derive merely from the dogged quest for the new beyond any reality.” (Libera, Minnucci 1928). In 1973 Minnucci would write:

[...] ‘architectural rationalism’ was not for us a formula, a style, or a credo. Rather it was a matter of the call for a new attitude. A new spirit, a new conception of architecture that prompts one to act within the living society, and by participating in its development, contribute actively to its determination.

(Minnucci 1973, pp. 7-8)

In line with the dictates of Northern European Rationalism, Minnucci maintained that the new architectural aesthetic was to be sought, for example, in the terseness of industrial buildings, “the truest and surest expression of our age” (1926). But, above all, rationalism in building structure was the best means of searching for a new language:

Rationalist architecture – as we understand it – rediscovers harmonies, rhythms and symmetries in the new construction designs, in the nature of the materials and in their perfect correspondence to the uses for which the building was intended.

(Libera, Minnucci 1928)

This was in accordance with what had always happened in the past:

Neither the Egyptian pyramid, nor the Greek temple, nor the Roman arena are masterpieces of architecture because they have a certain type of capital, frieze or cornice. Their beauty lies in their structural organism, in the architectural creation of form, in its magnificent fusion with the material used. And we confirm these fundamental laws today by applying them to the new organisms and the new materials.

(Libera, Minnucci 1928)

In the interpretation of architecture as an “extremely precise synthesis of past and present” lies its continuity with history: “...this is our architecture, for ours is the Roman legacy of building might. Profoundly rational, utilitarian and industrial: this was the intimate character of Roman architecture.” (Libera, Minnucci 1928). The historical roots of a construction logic could therefore favour the maturation of an Italian identity which Minnucci felt to be in crisis at the end of the 1920s.

Today the task of the Italian intellectual architect, trained in research, is doubly difficult. The struggle against misunderstood and badly taught tradition and the struggle against the facile assimilation of foreign forms which are already in keeping with the times.”

(Minnucci 1926)

Minnucci showed a constant openness toward foreign, especially Dutch and German, architecture, which he encountered not only in the journals of the period, but also through his many trips abroad. The “simplicity, clarity and triumph of line and mass over the decorative architectural anecdote” were the aspects of international architecture which Italians should take as an example. Yet the aspiration toward internationality, as embodying a new spirit “belonging to the whole world today”, was not in conflict with the search for an Italian cultural identity, nor did it counter the need to identify national characteristics which did “not depend just on spiritual factors, but above all on material factors.” (Minnucci 1927).

MODERN ARCHITECTURE IN APULIA: THE ACCADEMIA MARINARA IN BRINDISI

In the 1930s the region of Apulia in southern Italy adopted the general features of Italian, especially Roman, architecture as a reference point. We can nevertheless recognise an individual identity, a regional “declination” as it were, which manifests itself, beyond the formal references to tradition, in the use of local materials and the updating of certain traditional building techniques.

The Accademia Marinara was designed as a boarding school for the paramilitary training of 600 young males between the ages of 6 and 18 (Minnucci 1934). The building is situated in a striking natural context, on the northern shores of the Seno di Ponente in the port of Brindisi facing the city’s historic centre, within a vast park (65 000 square metres) (**fig. 1**).

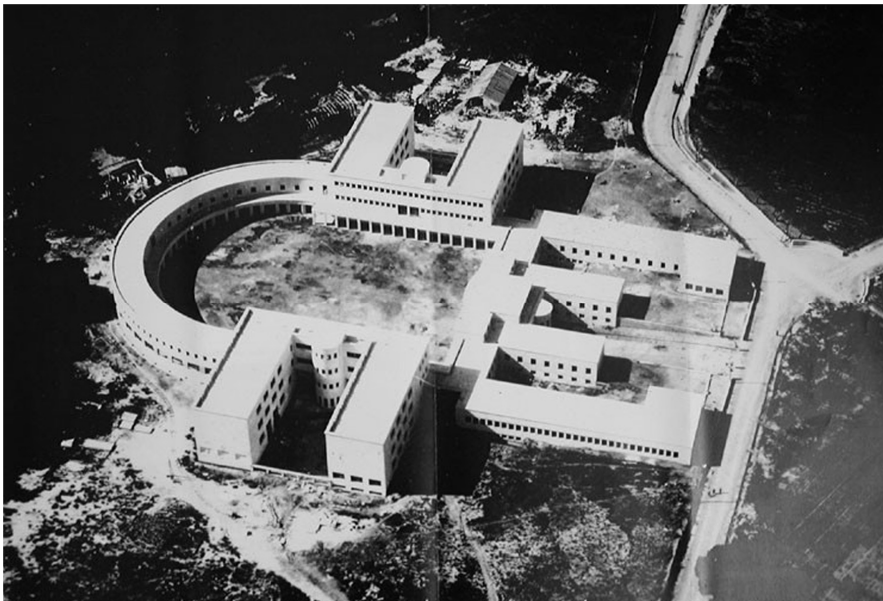


Figure 1. Accademia Marinara: general view (BpA BR)

The building complex comprises a spacious and articulated main block (7000 square metres) laid out symmetrically around a great court, which is encircled by porticoes and galleries decorated with low-relief panels representing nautical charts and naval heraldry. Above these are terraces and tribunes. The classical imprint of the plan, governed by axial symmetries and nodes, is linked to the functional organisation of the spaces. The relation to the land and the open horizons of the site prompted Minnucci to use mainly horizontal volumes and an open, though markedly symmetrical, geometry. The axial symmetry was partly due to the need to create two similar wings for the younger and older boarders respectively. The spaces are articulated in pure prismatic shapes, which vary in height according to the purpose for which they were built: dormitories, refectories, service areas, a gym, fencing-rooms, conference halls and a cinema, classrooms, offices and a chapel. The hierarchical principle that governs the interior is also to be found in the open spaces: for example the great court is more monumental than the lateral courtyards (figs. 2-3).

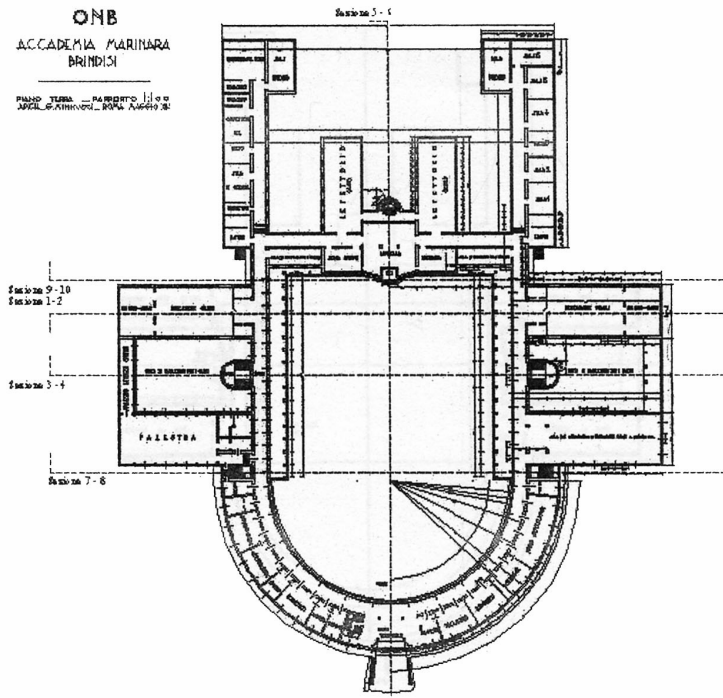


Figure 2. Plan of the second floor (AS BR)

In 1937 Minnucci designed a project for enlarging the Accademia, proposing a kind of “comb-like” arrangement to be joined orthogonally to the main body. This enlargement would have overcome the abstract, closed and block-like composition, which prompts one to read the original complex as a great isolated object. On the one hand, it would have extended laterally toward the landscape in an open serial plan, on the other, it would have suggested the continuity of an urban facade. By

blending in more harmoniously with its context, it would have constituted a potential generating factor for the future layout of the area. This project was never realised, however, except for a few additions at the front, which reduce the size of the access courtyard and create a more compact street facade (fig. 4).

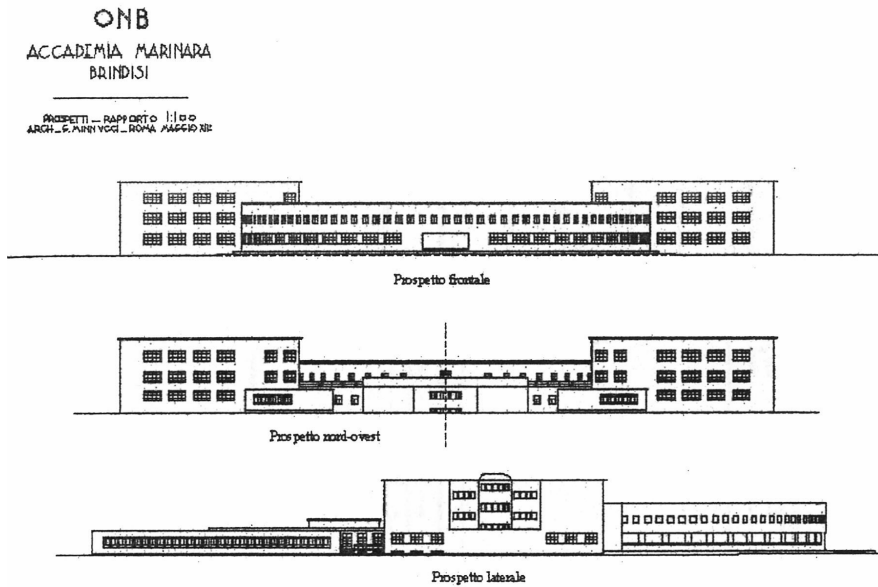


Figure 3. Façades (AS BR)

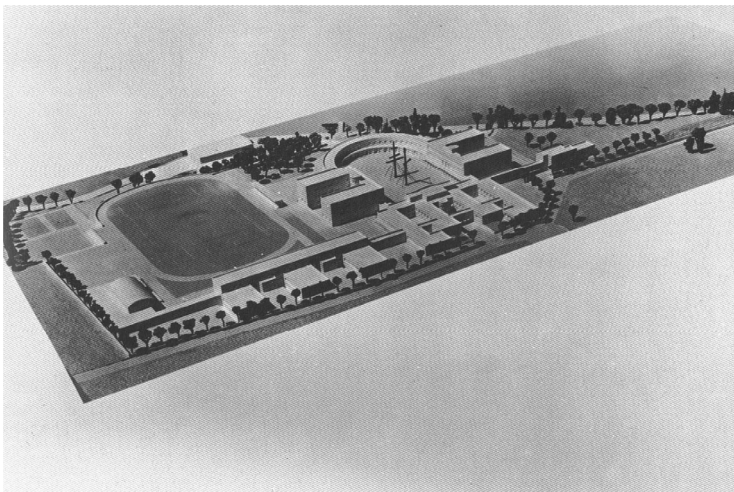


Figure 4. The project for enlarging the Accademia (AS BR)

ARCHITECTURE AND STRUCTURE BETWEEN MASS AND VOLUME

The compositional principles that inform the Accademia had already been expressed, albeit indirectly, at the beginning of the 1920s, when Minnucci had identified in modern Dutch architecture a solid reference point for the new Italian architecture:

Simplicity and rejection of the past, artistic effect achieved through the movement of mass and the terminal lines of the building, decoration obtained from the masonry itself and the building materials and so from the construction elements: from the colour of the available material(s), the form and arrangement of the wall apertures, the colour and form of the fixtures.

(Minnucci 1923)

Minnucci's aim was to combine northern European Rationalism with a re-visitation of the "white volumes" of the Mediterranean tradition.

The different parts of the building are functionally and structurally distinct stereometric volumes, and the whole is composed of stark, unmediated juxtapositions and intersections. Yet if we look more closely, the parts are all linked by the classical principle of the "articulation of mass". The concept of the facade is not forsaken, while the relation of the building to the ground is emphasised by a heavy continuous base that follows the sloping curves of the parkland.

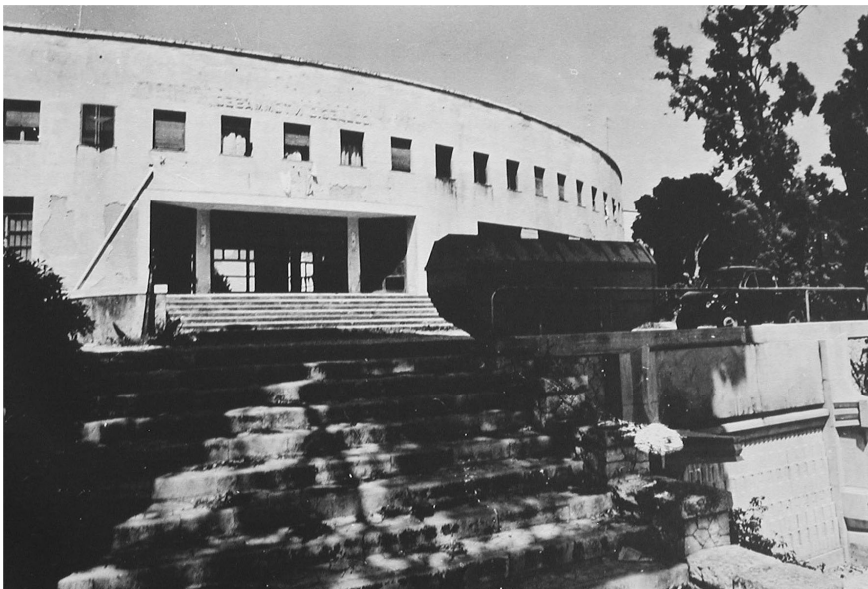


Figure 5. Main entrance (BpA BR)

The building is characterised by vast expanses of white-washed walls devoid of mouldings and cornices and marked only by the rhythm of solids and voids. These bare surfaces are articulated by the hemicycles of the stairwells jutting into the lateral courtyards and the back of the great court.



Figure 6. The exedra (BpA BR)

The language of the Modern Movement, expressed by the abstract and a-tectonic composition of the masonry wall devoid of any hierarchy, the non-legibility of the tectonic nodes and the elimination of decorative features, such as mouldings and cornices, here attempts to espouse the etymology and logic of traditional building. The apertures, arranged in a serial, repetitive order, nevertheless have different shapes which make the articulation inside legible and differentiate the building units. We move from traditionally proportioned windows to a sort of continuous perforation. The windows, arranged in horizontal rows, are set into the facade and subtly re-proportioned by the scansion of the slim pillars in an almost classical composition. The stark row of pillars around the courtyard is “declined” a-tectonically, by the lack of distinction between vertical and horizontal elements and the abstracting use of white plaster, though it nevertheless recalls the classical architectural element of the portico (**figs. 7-8**).

ARCHITECTURE AND STRUCTURE BETWEEN WALL AND FRAME

In terms of its construction, the Accademia Marinara documents the progressive move from a continuous, enclosing wall system to a discontinuous one in reinforced concrete. The building is the expression of a relation between architecture and construction that cannot be mechanically

translated into the exhibition of every structural element, but rather into the dialectic between load-bearing structure and enclosing wall surface.



Figure 7. The great court (BpA BR)

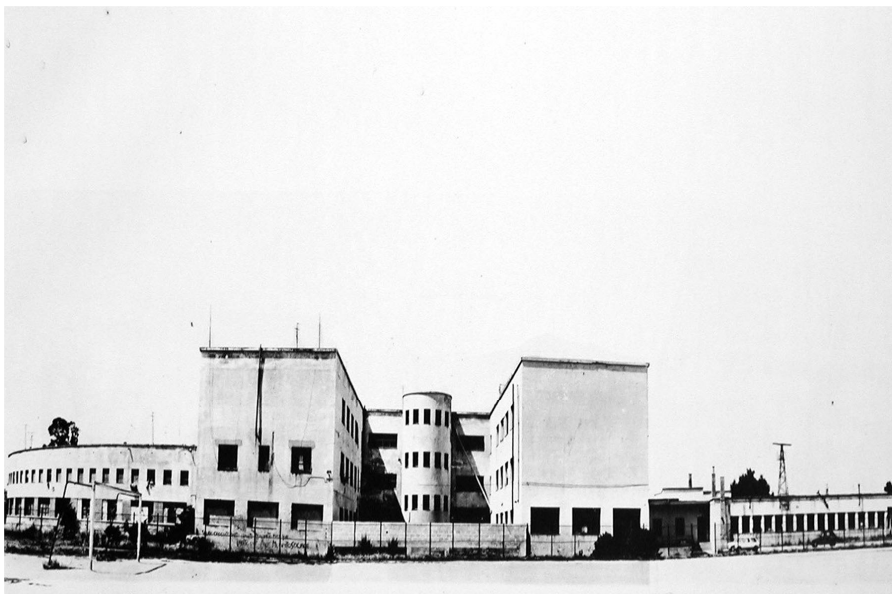


Figure 8. The lateral court (BpA BR)

The use of different building techniques for the different building units corresponds to a hierarchical criterion, aimed at the individual characterisation of the various parts of the building complex. Some parts are composed of a load-bearing structure in masonry, with ceilings in reinforced concrete beams and hollow brick-blocks, while in others, which are wider, Minnucci has made expressive use of reinforced concrete in the form of giant paired pillars and beams, visible on the inside of the building. As a whole, however, the building conserves the characteristics and legibility of masonry construction (box-like quality, correspondence between load-bearing and enclosing structures, hierarchical relation between the service and other areas), though the forms are spare and abstract. We can identify three important nodes that exemplify the whole construction system:

Exedra

The narrow body of the exedra, which housed offices and general service areas, has load-bearing structures in masonry, using the local tufa stone, and ceilings in hollow brick-blocks laid with continuous seams. The walls are plastered, and have a stone base (**fig. 9**).

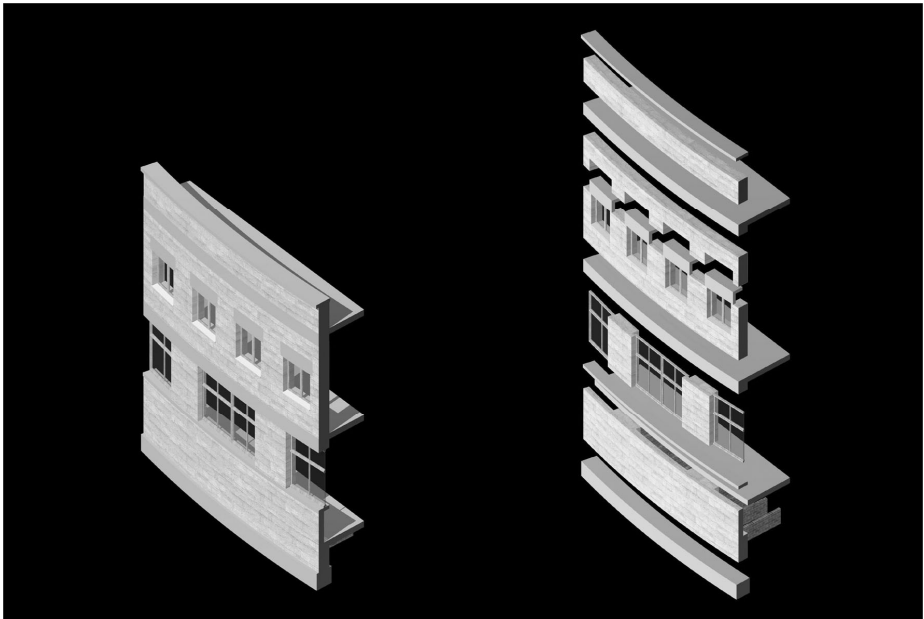


Figure 9. The wall of the exedra (Altamura, Cafagna, Destino, Fiore, Fischetti and Fragassi 2003)

Large building units

The four main units comprising the wings of the complex, which housed the gym, theatre and recreation rooms on the ground floor, and the dormitories and refectories on the upper floors, are constructed with a framework of paired pilasters and beams that define bays of 4.80 x 11.80 metres. This structure is visible inside the great halls and rendered box-like with masonry walls, in-between

which are wide apertures with cement architraves. In this case the structural solution plays a markedly formal role (figs. 10-11).

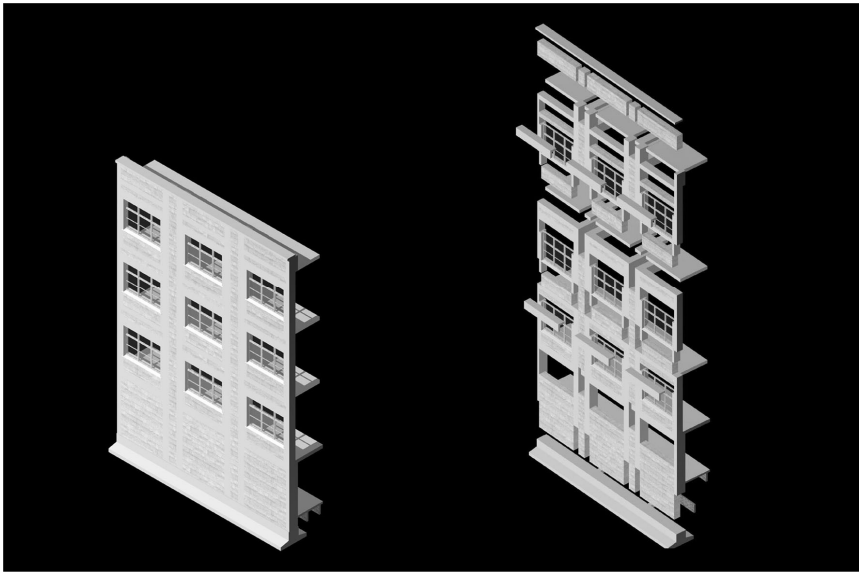


Figure 10. The wall of the large building units (Altamura, Cafagna, Destino, Fiore, Fischetti and Fragassi 2003)

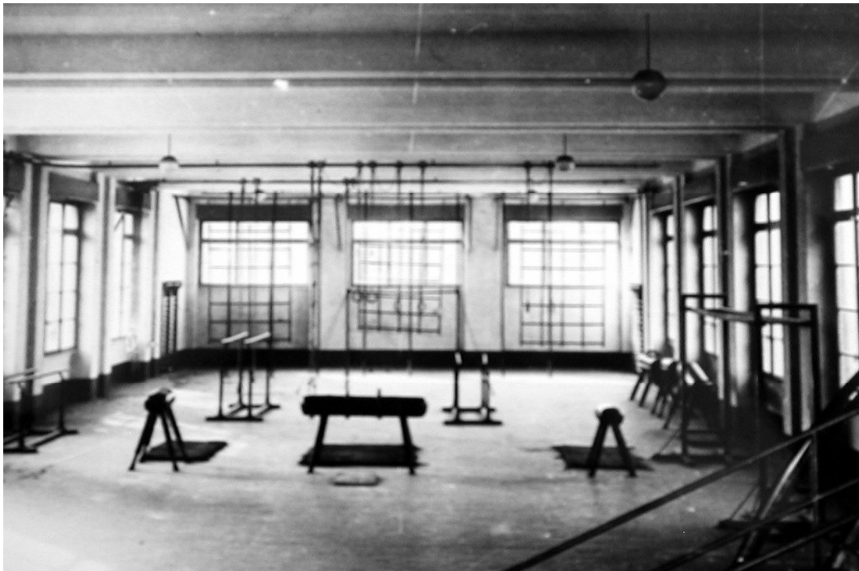


Figure 11. The gymnasium (BpA BR)

Chapel

This is a mixed structure, in tufa masonry, with two columns in reinforced concrete (fig. 12).

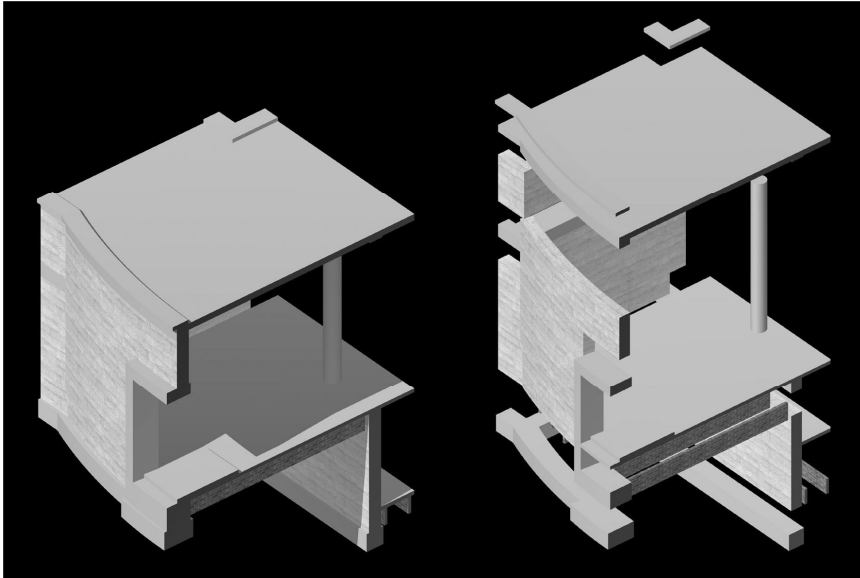


Figure 12. The chapel (Altamura, Cafagna, Destino, Fiore, Fischetti and Fragassi 2003)

THE PROJECT, THE CONSTRUCTION AND THE BUILDING SITE

The construction history of the Accademia Marinara reveals certain aspects of the organisation of building sites in Italy in the 1930s. In general these were managed by small artisan firms with low levels of mechanisation and a high percentage of manual labour. With the advent of an autarchic regime the problems inherent in this type of management were further increased. In this period the technological revolution in Italy was more concerned with construction elements and the use of new materials than with labour organisational methods (manual labour was still very low cost). In Apulia an exception was Saverio Dioguardi, architect and builder, who had his own well-organised firm and was interested in innovation and experimentation.

Minnucci himself was supervisor of works. The incompetence of the local building contractor, Giulio Scazzari, who had won the competitive tender, soon became apparent. Scazzari had organised a team of artisans, based on the use of unskilled labour and subcontracting. His firm arbitrarily suspended work on 6 November 1935, after which the contract was recinded on 3 January 1936. As supervisor of works Minnucci presented a report, in which he denounced “various defects in the structures, as well as cracks and lesions” (Minnucci 1936). This was corroborated by the report on the load tests, which confirmed “negligence and carelessness of execution on the part

of the construction company” (Arcangeli 1926). Irregularities were to be found, especially in the mixing and casting of the cement, faulty installation of the beams, some of which had buckled because of the subsidence of the formworks, exposed and rusting metal frames, pillars out of plumb, detachment of whole sections of wall and weak structural connections between the various building units erected at different times. So a structural consolidation was deemed necessary, consisting of “masonry reinforcement in brick and cement mortar in the weakest points and filling in the patches and cracks” (Minnucci 1936). On 14 March 1936 the Società Anonima Costruzioni Civili in Parma obtained the contract for completion of the building. Amongst the provisions adopted perhaps the most significant was the construction of brick and mortar walls between the paired pillars in the great halls.

RESTORATION AND REUSE OF THE STRUCTURAL AND ARCHITECTURAL ORGANISM

Until the 1970s the building kept its original function, with only partial adaptations: a naval college for the ONB (Opera Nazionale Balilla – National Youth Organisation), then for the GIL (Gioventù Italiana del Littorio – Young Italian Fascists); temporary seat of the Livorno naval academy from 1943 to 1946; hospice for 300 Dalmatian and Istrian refugees in 1946; subsidiary branch of various schools and a boarding school from 1947; a summer camp; and finally, after the property had passed to the Regione Puglia (Apulian Regional Government), a shelter for evicted families from 1979 to 1999. The former Accademia Marinara is now abandoned and is in an advanced state of dilapidation. There was even a plan to demolish it after it had been damaged by arson in 2001.

Since the 1980s there have been a series of proposals for its redevelopment. In 1980 the Genio Civile (Civil Engineering Corps) submitted a renewal project for its use as a sports centre, youth hostel and botanical garden. In 1994 the Istituto Autonomo Case Popolari (I.A.C.P.) proposed its use as a multi-functional centre for teaching, tourist, cultural and sports activities. In 1998 Brindisi Municipality proposed it as a tourist centre with a port, hotel and conference hall. In 2002 the same municipality made a request to purchase the building complex and include it in a redevelopment programme of the city waterfront.

The building was the subject of an undergraduate dissertation in the Faculty of Architecture at Bari Polytechnic in the academic year 2002/2003, as part of a teaching and research project (which has both a practical and a theoretical application) on the restoration of Modernist architecture in Apulia (**fig. 13-14**)

The restoration of Modernist buildings raises questions regarding the interpretation of the architectural object, as well as problems linked to the need for functional adaptations, modifications, additions, and technical choices, such as how to organise the restoration work and the techniques to apply in building rehabilitation. Starting from an interpretation of architecture as

an “organism” and from the conviction that it is possible to extend this concept to Modernist architecture – though this runs counter to the analytical and sectorial character of Modernism, which tends to separate its components – restoration implies a comprehensive understanding of the architectural object from an historico-documentary, formal, material and functional perspective.

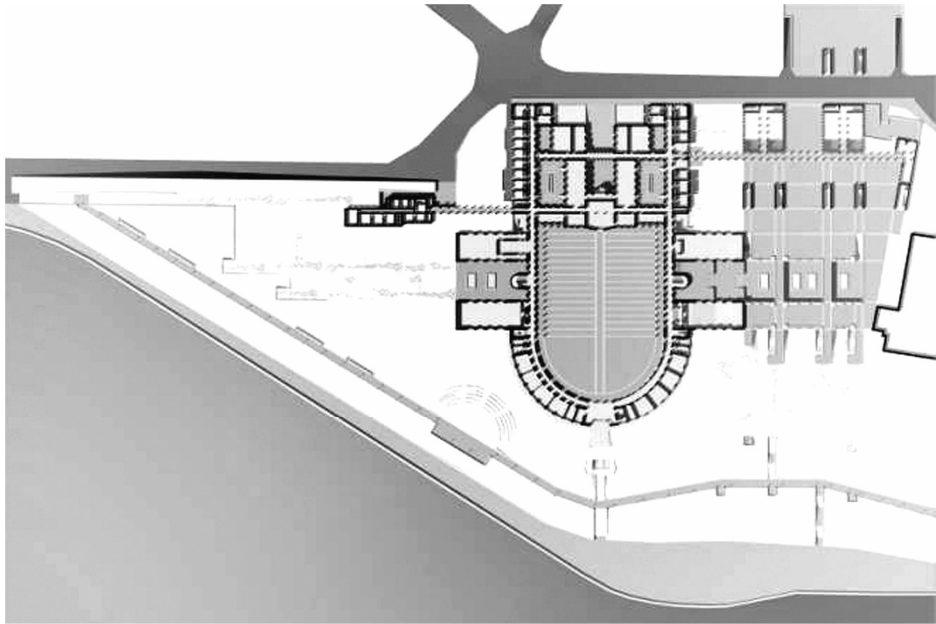


Figure 13. Project of restoration and reuse of the Accademia Marina. Plan of the ground floor (Altamura, Cafagna, Destino, Fiore, Fischetti and Fragassi 2003)

A building cannot be considered as a mere “shell”, simulacrum of itself, nor as a simple container of functions. And so the problem of authenticity arises: the authenticity – as well as the image – of the materials, structures and technological systems out of which a building is composed. This is a particularly vexed question for Modernist architecture because of its experimental nature. The case in point, for instance, constitutes a document of technical experimentation in the 1930s (including the later structural consolidation in reinforced concrete) and it should be preserved as such. In a “documentary” interpretation of architecture, even the design errors and construction defects should form part of the work’s history and so should be preserved, only limiting the detrimental effects of any further dilapidation. Yet it would be absurd to exclude *a priori* the technical and technological advances necessary to guarantee the continuing life and use of a building.

If architecture is a document that provides us with the cultural and historical context in which it was conceived and built, then it also bears witness to transformations over time. Recognising that architecture is an organism “in process”, in continual change, belonging organically to a given

place, leads to a type of restoration which is not rigidly respectful towards the work in its original state, but interprets the processes of transformation and accepts them as part of the life of a building and its context (Caniggia 1987).

On the basis of these assumptions, the graduate workshop has dealt with the building from the point of view of form and style, but above all from that of its typology and construction. Documentary and historical research has been accompanied by an examination of the work *as built* and its various transformations. A critical reading of the architectural organism, through a process of virtual “redesign”, has been used in order to comprehend its main characteristics and its structural, spatial and distributive typology, with the aim of suggesting a new use for it that would be compatible with its original typological design. Since the building must be read on an architectural, urban and territorial scale, the concept of restoration has been extended beyond its physical structures to its environmental context. The complex has the potential to initiate a process of renewal of a peripheral and run-down area, and to become an important node for the city of Brindisi. Thus it has been interpreted as both a “gateway” to the city and a “theatre” open to the city and the port.

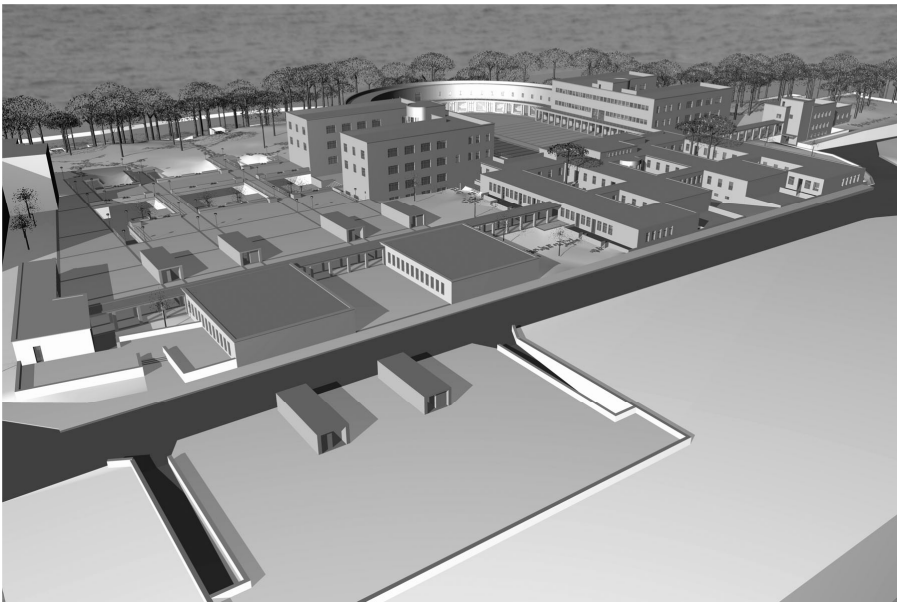


Figure 14. Project of restoration and reuse of the Accademia Marinara. General view (Altamura, Cafagna, Destino, Fiore, Fischetti and Fragassi 2003)

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