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Die Zukunft der Nachkriegsmoderne Hg. von Klaus Tragbar

Die Architektur der Nachkriegsmoderne stellt besondere Anforderungen an Bauforschung und Denkmalpflege. Müssen ihre Methoden dem oft seriellen Charakter der Bauten angepasst werden? Wie werden diese Bauten, die noch in großer Zahl vorhanden sind, denkmalpflegerisch bewertet? Welche Herausforderungen bringt ihre Sanierung mit sich? Können einzelne Bauteile aus serieller Produktion ersetzt werden, ohne die Denkmaleigenschaft zu gefährden? Welche Risiken bestehen hinsichtlich mancher aus heutiger Sicht toxischer Materialien? Welche Strategien der Wissensdistribution müssen für die Bauten der Nachkriegsmoderne angewendet werden? Ausgewiesene Fachleute haben im Rahmen der MONUMENTO Salzburg 2018 und 2020 diese grundsätzlichen Positionen der Denkmalpflege anhand ausgewählter Projekte diskutiert.

Mit Beiträgen von:
Wiepke van Aaken, Konrad Assem, Tobias Bader, Giulio Barazzetta, Berthold Burkhardt, Olaf Gisbertz, Stefan Hitthaler, Ulrich Knufinke, Christina Krafczyk, Achim Pfeiffer, Simona Salvo, Bernd Vollmar, Felix Wellnitz und Daniel Wendler



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Positionen und Projekte**

Hg. von Klaus Tragbar

Innsbrucker Beiträge zur Baugeschichte

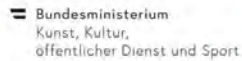
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Die Zukunft der Nachkriegsmoderne. Positionen und Projekte

Hg. von Klaus Tragbar

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Inhalt ÜBERSICHT



- 8 **I. Ein Vorwort oder: Bauforschung und Denkmalpflege
an Bauten der Nachkriegsmoderne**
Klaus Tragbar

6

POSITIONEN

- 14 **II. »Junge« Denkmäler in Niedersachsen. Drei Herausforderungen
beim Schützen und Erhalten**
Christina Krafczyk und Ulrich Knufinke
- 30 **III. Bauforschung 4.0 – Überlegungen zur bauhistorischen
Dokumentation von jungen Baubeständen**
Olaf Gisbertz
- 46 **IV. Sichtbeton gesichtet oder: Nägel mit Köpfen.
Zum denkmalpflegerischen Umgang mit gestalteten
Architekturoberflächen**
Bernd Vollmar
- 66 **V. Betonbauten des 20. Jahrhunderts –
eine Herausforderung für die Materialwissenschaft**
Tobias Bader
- 84 **VI. Architektur als Ressource. Bericht aus der Lehre zum
Bauen im Bestand an der Fachhochschule Dortmund**
Achim Pfeiffer

PROJEKTE

- 96 **VII. Die Bayerische Landesvertretung von Sep Ruf in Bonn**
Felix Wellnitz

- 112 **VIII. Back to the Future of a Laconic Masterpiece**
Giulio Barazzetta
- 134 **IX. The Conservation of the Pirelli Tower Curtain Wall.
An Italian Story**
Simona Salvo
- 152 **X. Gebraucht und doch wie neu.
Der Kanzlerbungalow in Bonn**
Berthold Burkhardt
- 170 **XI. Grundinstandsetzung Neue Nationalgalerie Berlin
mit Schwerpunkt der Stahlglasfassade**
Daniel Wendler
- 182 **XII. Begegnung mit Paul Baumgarten. Die Grundsanierung
des Bundesverfassungsgerichtes in Karlsruhe**
Konrad Assem
- 196 **XIII. »Si les maisons étaient construites [...] comme des châssis.« Die Fenster des Pavillon
Le Corbusier in Zürich**
Wiepke van Aaken
- 216 **XIV. UFO**
Stefan Hitthaler
- +
- 228 **XV. Architektenbiographien**
- 240 **XVI. Autorinnen und Autoren**

VIII.

Back to the Future of a Laconic Masterpiece

Giulio Barazzetta

VIII. Back to the Future of a Laconic Masterpiece

Giulio Barazzetta

Baranzate, Milan, 2015

114

A sunbeam slithers into the gap between the concrete beam and the wall of steel and glass. It projects onto the back wall, behind the altar, reaching the two columns of the presbytery that support the roof. The slender diagonal of light traces across the whole inner façade, crossing the opaline rectangles of the cladding, and halting at a distance of one panel from the floor. The same sunbeam breaks off from the rugged hammered concrete of the columns, with its raw material of diaphanous luminous smoothness that pervades the entire hall.

This game reveals the essential slimness of the supports of the main beam. Columns and rustic beams of ordinary reinforced concrete that support the coffered pattern of the ceiling, embroidered in the background shadow, resting on the smoothness of the prefabricated beams slimmed by the void shaped under their length, filled only at the position of the strength required for the intersection with the main beam.

The wall of opaline glass is suspended between transparencies. Continuous horizontal gaps detach it from the floor; vertically, it is interrupted at the position of the columns, separated above by the covering along the sides, while on the façade it is detached from the ceiling between the beams. This allows rays of direct light to enter where and when permitted by the coinciding of the openings with the path of the sun.

The façade is thus decorated by opalescence and reflections, by the shadows cast and the lights that project there, by the diaphanous appearance of the various strata that form its cladding. Enlivened from morning to evening by the constant automatism of the day, the wall changes its appearance with the variation of the natural light: flat glazings of fog and cloud, or cutting lights of winter skies, or the diffused light of hot summer days.

This essay represents the attempt of a conclusive reflection on such experience and postscriptum necessarily referred to texts by myself published on this subject; cf. Barazzetta 2004, Barazzetta 2014, Barazzetta 2014, Graf/Albani 2011.

GIULIO BARAZZETTA

The mutable tones of diaphanous white and metallic grey of the cladding also gather the reflections from the red dominant of the new tile floor, especially produced for this restoration by Casalgrande Padana spa. A shade that does not in any case reach the rose tone of the Kodachrome slide shot by Bruno Morassutti in the summer of 1958. Just as the glow of the present layers of glass can be only vaguely similar to that of the polystyrene of the past. The opening and closing images of this text include the chronology and the idea of this building. The photographs of Marco Introini (2010–2015) document the restoration works of the parish church of Nostra Signora della Misericordia of Baranzate – the so called ›Chiesa di vetro‹ – and have accompanied the time of the works. A methodical recovery that has expressly traced the shooting points that belong to the iconographic tradition of this work, established by the photographer Giorgio Casali in close collaboration with Angelo Mangiarotti and Bruno Morassutti throughout the construction (1957/58),¹ more shots of the yard and the completed work are Bruno Morassutti's 24 × 36 and 6 × 6 slides.²

1) The church of Baranzate is a prism of glass covered by reinforced concrete, with a height of little more than nine meters, 14 meters wide and 28 in length. Therefore the church has the following proportional ratios: 1/2 plan of the church and fence, 2/3 width to height, 1/3 height to length. The size of a chapel or an oratory – rather than a parish church – resting on a plateau two meters from the ground, connected to the ground level by a grassy slope.

Its fragile volume is inserted in an enclosure that borders the surrounding space, 30 meters wide and 60 meters long, constructed by a scarp wall towards the exterior of exposed concrete and pebbles, with a height of two meters. On the inner face this wall bears the tiles of the Via Crucis in stone sculpted by Gino Cosentino, surrounding the whiteness of the church hall.

After crossing the threshold of the wall in front of the church, we encounter two flights of steps placed side by side. To the left, a wide one is like a churchyard rising towards the glowing hall, while to the right a narrow one descends towards the shaded entrance, beside the pool of water in front of the baptismal font.

If we enter the church – as one should – from below, we have to go up the internal staircase to reach the hall of light above, from the

¹ For Angelo Mangiarotti, Bruno Morassutti and their structural engineer Aldo Favini cf. the biographies in the appendix.

² Cf. Università IUAV di Venezia, Archivio Progetti, Fondo Giorgio Casali and Fondo Bruno Morassutti.

shadow of the lower spaces with concrete walls. Under the roof, supported only by the necessary columns, enlivened by the effects of its shadow, the hall enclosed by a diaphanous curtain of light is a place of disembodied contemplation, a space protected by the absolute rigor of the structure.

The ›glass church‹ is a simple and extraordinary construction, in which technique is taken as the foundation of the architecture. Structure and bordering of space join forces in their harmonious diversity, while engineering and architecture are intertwined in the work.³

Considered the image of the debut of Italian prefabrication, this work illustrates the techniques of prestressed reinforced concrete and the implementation with careful craftsmanship of a model of ›industrial‹ construction, entirely programmed in the design, an exemplary prelude to the production of modular space and serial techniques of assembly.

In the end, it is a fine example of advanced experimentation with a technique of ›mixed‹ construction that optimizes productive results, performance of materials and the architectural character of contemporary construction, a work of architecture coherent with the idea of the series and modular variation, pertaining to industry in the production of useful objects: the possible interpretation of ›beauty‹ in the guise of mass production.⁴

In keeping with this idea, we should note that the readiness for replacement of its parts has been the substantial quality that has permitted restoration, shedding light – in this property – on a conception of autonomous and replaceable parts which sets the character of mechanization and industrialization.

The worksite has thus taken on the image of a flashback, in which the disassembly of worn parts has brought out not a ruin, but a structure laid bare, in its isostatic formal wholeness, and the reassembly of the renovated cladding has taken on the rhetorical form of a return ›back to the future‹⁵ that has realigned the progress of time, inverting the decay of the work, as in the film of the same name where the images of the protagonists alter their vigor with the shift between past and present. What has been achieved is the possibility of imagining architecture as a time machine, in this case in the variable permanence of a multiple form.

3 For the structural engineering of this building cf. Marandola 2015, 17–28.

4 Cf. the exhibition *Die gute Form* in Basel 1949, published in Müller 2015.

5 Film: *Back to the Future* (USA 1985).



1 Angelo Mangiarotti, Bruno Morassutti and Aldo Favini: Baranzate, *Nostra Signora della Misericordia*, 1956–1958, internal view, 1958

Together with the imagery of the structure under construction by Giorgio Casali, the slides by Bruno Morassutti shot during the worksite and published here for the first time have accompanied us on this journey (*Fig. 1*).

2) Talking about the original design team I would like to emphasize a way of seeing references and images as tools, culture and method of the project rather than history and historiography. I mean that rather than to talk about shaping of a form, discussing on the relationships between this building and contemporary architectures, I prefer to list connections intertwined with the biographies of the designers.

Thus we can discover several images collected in various apprenticeships in collaboration with chosen masters, showing the links of their works and of their practice, poised between the aspiration of anonymity and an authorial stance.

Without analytically retracing all, we can start over from the experiences of Morassutti and Mangiarotti across the Atlantic between end of 1940s and beginning of 50s, Chicago and travels in USA are shared factors in the biographies of the two architects. Completing

our journey at the time of the end of Second World War, in Lausanne in the Champ Universitaire Italien, for Favini's training in the high skilled reinforced concrete engineering.

The stay at Taliesin East and West (1949/50) and the assiduous focus on the Usonian Houses and to the Johnson Wax Laboratory tower mark the experience of Morassutti with Wright. There is little doubt that the elementary tectonics composed of smooth white slabs, supported by walls and pilasters in stone, or other rugged load-bearing material, can still be seen in the semi-basement spaces of the foundation at Baranzate.

Just as we can hear echoes of Carlo Scarpa in the water that gushes and descends the wall next to the pool in front of the baptistery. It is also clear that the enclosure is indebted to the method of fabrication and slope of the enclosure of Taliesin in Arizona, which Morassutti himself constructed together with his companions.

In this wall, the river stones and the curved profile of the scarp, definitely to be attributed to the style of Mangiarotti, mingle with a shared artifact that marks the beginning of a partnership.

A shared debut also with respect to the Romanelli tomb (1955),⁶ a work in continuation of a professional legacy of Angelo Masieri, taken forward by Morassutti with Scarpa, which has a similar root and form, a work of elementary architecture that is also characterized by light entering through the gap between roof and walls as at Baranzate.

This was a work immediately prior the same time of the church, probably the first done together by Morassutti and Mangiarotti, in which we can also see a reference to the 50 x 50 House of Ludwig Mies van der Rohe (1951), perceptible in the centered supports on the sides. To continue with Mies, we can mention the time spent by Angelo Mangiarotti in the United States (1953/54) with Walter Gropius and at the IIT with Konrad Wachsmann. At the time the Crown Hall was under construction, but other buildings for the master plan of the campus had already been built and seen.

The Robert F. Carr Memorial Chapel on the campus was completed in 1952 and was certainly the model – as Mangiarotti confirmed – for the proportions and perhaps also the roof of Baranzate. Finally,

⁶ Cf. Martinis 2009.

the Farnsworth House (1951), though very different from the church we are examining here, had large panes of glass directly fastened to the structure in iron by flat casements held in place by large clearly visible bolts, and it is completely white, like the church of Baranzate in its original version (1958).

The structure in prestressed reinforced concrete, prefabricated and post-tensioned at the site – an experience in line with the contemporary advanced industrial design of engineering and architecture – appears to be contradictory but complementary to these American references.

119

In this regard, the figure of Aldo Favini⁷ is central, due to his role in the projects with Mangiarotti and Morassutti (*Fig. 2 and 3*), from the experimental experiences of reconstruction to the prefabrication of the 1960s and 70s. Favini was driven by a singular mixture of experiences that combine the formative encounter with Mario Ridolfi in Rome in 1930s, with that of the *Champ Universitaire Italien de l'Université de Lausanne* (1943–1945) for War Refugees, being assistant to Colonnetti's teaching in structure engineering and involved in the Rogers' *Centro Studi per l'Edilizia*, both extraordinary preludes to the Italian architecture of postwar era. Among the students there was also Angelo Mangiarotti.



2 Aldo Favini and the whole staff in his office in 1960s



3 Angelo Mangiarotti and Bruno Morassutti with a collaborator and a client at work in their office, 1958

3) From the start of the restoration in 2012 the church at Baranzate was a place comparable to a contemporary art installation, in its condition of decay. A figure aptly grasped by Armin Linke in one of his photographs, shown at *Giorni Felici* 2010 in the nearby Casa Testori in Novate.

⁷ Cf. <http://www.fondazionefavini.it> (11.6.2020), short film: *Ritratto di Aldo Favini*, 2013, www.youtube.com/watch?v=KJfhh_DGEZE (11.6.2020).

Its state was the result of the deterioration of the materials and the changes imposed across a span of more than fifty years. Additions of physical plant, sacred furnishings and others, also in the outdoor spaces, had accumulated to compensate for the inadequate size of the space; the requests for expansion and adaptation, on the part of the parish, had become pressing. From the early 1990s the deterioration of the cladding called for renovation, which began amidst controversy regarding the functional inadequacy of the building and the value of the work.

120

The original glass cladding of the cella, replaced in 1980, was so badly damaged and unsuitable for the use of the building as to permit nothing other than a careful replacement. The metal parts of its structure were so badly corroded as to preclude salvaging.

Only the appearance of the concrete of the roof, blackened on the inside and faded on the outside, was damaged, since the efficiency of the prefabricated prestressed roof was confirmed by a loadbearing test. The two main beams in ordinary reinforced concrete were in good condition, requiring only minimal intervention of washing and repair of the few portions where the iron reinforcements marred the outdoor surface.

4) In spite of all this, the church at Baranzate was still marked by the contrast between the opalescent enclosure and the roof in prestressed concrete, the luminous hall over the darkness of the semi-basement, and the well-defined volume of the church set into the boundary that contains it. It was precisely this outer enclosure that protected this place during the change of the countryside of the 1950s into the present portion of the Milanese metropolitan conurbation.

The 2003 indication of the Ministero per i Beni e le Attività Culturali establishing its importance as architectural patrimony, gave to the church of Baranzate the status of an artistic heritage, binding the restoration to the original project. The ministry argued: »The work is representative of structural research and space, which experiments with the most innovative construction techniques of the time, combined with the choice of an essential formal language and based on the use of light, resulting in great interest in the definition of the sacred space [...] The building is configured as the first church model on which it has been tested the use of prefabricated reinforced concrete structures [...] the particularity lies in the spatial

GIULIO BARAZZETTA



4 Angelo Mangiarotti, Bruno Morassutti and Aldo Favini: Baranzate, *Nostra Signora della Misericordia*, 1956–1958, internal view, works opening, 2013

quality generated by the construction technique with which the load-bearing structure [...] The value of the original building, also called 'glass church', is also exalted by the context within which this work is inserted: the church stands raised in respect to the country floor and is surrounded by a reinforced concrete wall clad with stones, that delimits the sacred area. Along this wall a Via Crucis of great suggestion is placed, realized by the sculptor Cosentino at the same time as the construction and in harmony with it [...] in the 1980s the bell tower was added to the project by the same authors, realized on the right side of the façade and in detached position, consisting in a light square-plan iron structure [...] and in complete harmony with the character of the church [...] «.⁸This corresponds also with an increased interest expressed in studies and publications about the role of the building in Postwar Architecture.⁹

Finally, by the lead of Bruno Morassutti a design team was formed, composed of the three authors flanked by other designers of their selection,¹⁰ with which they confirmed their authorship and formulated the profile of expertise required by the task of restoration, developed from 2006 to 2008. The continuity of their architectural design concept was implemented in the interplay of architectural, technological, structural and mechanical services developing, and was expanded by the supervision of the work of the new design team.

The restoration project authorized in 2008 became final in 2011 and was contracted in 2012 (*Fig. 4*). The worksite, coordinated by

8 Indication of the Ministero per i Beni e le Attività Culturali from 13 January 2003, regarding Legge 22.04.1941 n. 633 and Decreto Legge 03.02.1993 n. 29.

9 Cf. the research work in Geneva conducted by Franz Graf with Cristiana Chiorino's (unpublished) doctoral thesis and the project by Bruno Morassutti with Frank Mayer, teachers and students of the ZHAW of Winterthur, both concluded in 2004 and used as basic material for this project.

10 Cf. Appendix 2.



5 Angelo Mangiarotti, Bruno Morassutti and Aldo Favini: Baranzate, *Nostra Signora della Misericordia*, 1956–1958, internal view, works ending, 2014

Seregni Costruzioni srl Milan, began in summer 2013 and was completed in 2015, with the objective of a new opening for worship, which took place with a mass on Christmas Eve in 2014 (Fig. 5).

The project and its implementation have had the constant objective of restoring the architectural complex, taking as a reference point the building opened in 1958, in a particular condition of renovation that consists of the ›rewriting‹ of the same work, necessary bound to the terms of the ›conservation‹ of an architectural asset and ›adaptation‹ to the needs and comforts required by the usage conditions of a building previously experienced by the parish community as being impossible to utilize.¹¹

A restoration design carried on by the building's own designers proposes the definition of its terms: their design intentions in relation to a renewal, and the definition of the ›true‹ and the ›plausible‹ in this case. The comparison between the physical reality of the work and the historical reality of its illustration, as for other works of modern and contemporary architecture, is provided here by the vast critical and liturgical literature,¹² especially the extraordinary imagery by Giorgio Casali.¹³

The practice of such a ›remake‹ raises the question of the ›imitation‹ of the original to be reproduced with different technologies, but also the necessary distinction between the parts, the difference between ›new‹ and ›original‹ where there has been modification or addition of elements.

GIULIO BARAZZETTA

- 11 The rare circumstance of ›rewriting‹ coincided in Milan with the reconstruction of the Padiglione d'Arte Contemporanea reconstructed by Ignazio and Jacopo Gardella in Milan in 1996.
- 12 For the liturgical aspects and the role of this church in the renewal of the Council Vatican II cf. Santi 2011; Santi 2012; Santi 2014.
- 13 Cf. Università IUAV di Venezia, Archivio Progetti, Fondo Giorgio Casali.

In the project the representation of the cross-section and the construction details, usually keys for the construction of the body of the building, has been the tool of our work, permitting comparison between documents, remnants and old and new samples, between the projects from 1956 to 2008 and the material reality of the building from 1958 to the present.¹⁴

This problematic dialogue has emerged at the limits of the walls and the façade, in the strata placed between floor and structure, foundation and ground, identifying this gap as the place for new installations and new construction elements. The shift between old and new is found in this project in the space created between the interior and the exterior of the building, in-between materials.

123

An interpretation of the term ›restoration‹ that lies in the differences between the materials inside the construction. This has also happened by elaborating the recognition of the difference between the new elements and the original text, where they are visible. A criterion already applied in 1985 for the steeple constructed by Morassutti and Favini.

The discussion of the project alternatives has also revealed that in such cases compliance with standards ›at all costs‹ should be avoided, and in any case would not effectively be necessary given the heritage listing and the characteristics of the building, its necessities of use and the particular regulations in effect for places of worship.

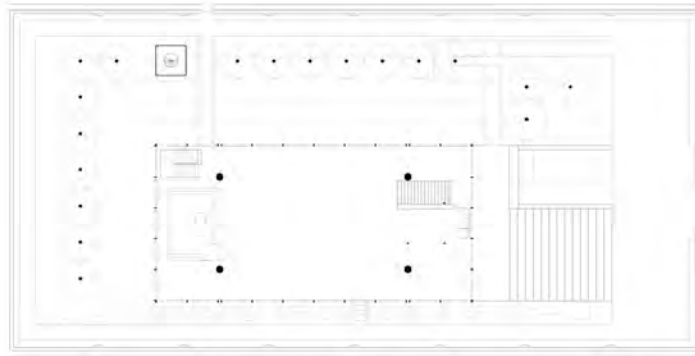
Such compliance would imply the risk of a shift in the character of the building towards a high-tech construction, the result of a fundamentalist transfer of advanced technologies.

Such a procedure would have altered the constructed form, which has instead been obtained by the combination of current traditional materials and new ones, assembled on an artisanal worksite with innovative techniques, a primary feature of the essential architecture of this construction.

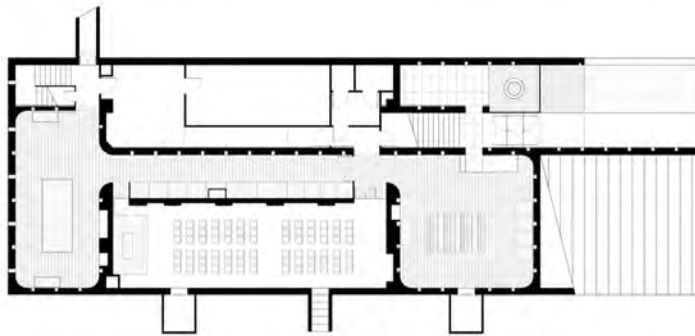
The restoration that has been accomplished, due to its status as a ›remake‹, had the priority of preserving the aesthetic and perceptual qualities of the cladding, fundamental in the combination with the roof in prestressed reinforced concrete for the conservation of the architectural characteristics of the hall, constantly relying on the

¹⁴ The original drawings of the architectural project from 1957 and the construction site in 1958, as well as the bell tower of 1985, which are conserved in Università IUAV di Venezia, Archivio Progetti, Fondo Bruno Morassutti, are in comparison here with those produced by the 2006-2008 project and the final project contracted for the site completed in March 2015 (cf. Appendix 2).

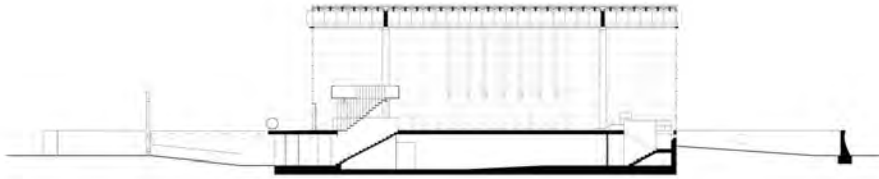
forceful disciplinary integration of the project in the necessary adaptation of the physical characteristics of the spaces and the construction. The new services systems have been designed considering as sizing factor the relevant shielding performance and insulation of the new relation to the conditions of use, verified with users in its current operation. Frequency modes and times of use of its spaces have been recorded in a survey conducted with the parish which formed the shared basis of a design that is not slavishly regulatory and performative. The energy production, powered by renewable source of groundwater, has been dimensioned for the necessary consumption to current discontinuous use and to the future one resulting from the configuration new added spaces (*Fig. 6–10*).



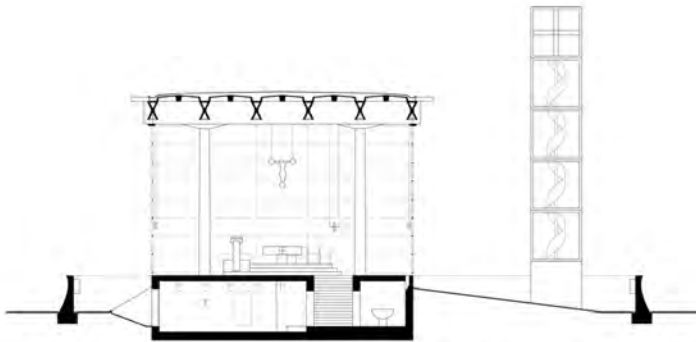
6 Angelo Mangiarotti, Bruno Morassutti and Aldo Favini: Baranzate, Nostra Signora della Misericordia, 1956–1958, restoration project SBG architetti, 2014, general site plan



7 Angelo Mangiarotti, Bruno Morassutti and Aldo Favini: Baranzate, Nostra Signora della Misericordia, 1956–1958, restoration project SBG architetti, 2014, basement floor plan

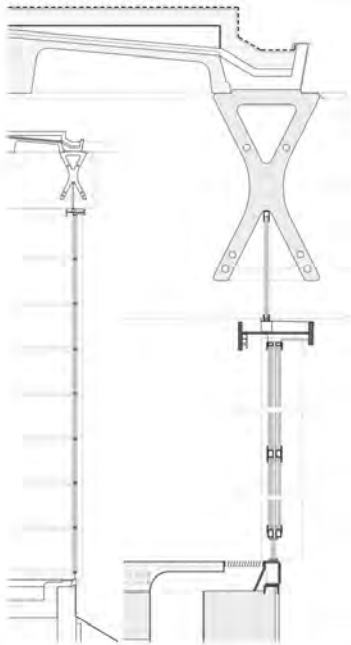


8 Angelo Mangiarotti, Bruno Morassutti and Aldo Favini: Baranzate, Nostra Signora della Misericordia, 1956–1958, restoration project SBG architetti, 2014, longitudinal section



125

9 Angelo Mangiarotti, Bruno Morassutti and Aldo Favini: Baranzate, Nostra Signora della Misericordia, 1956–1958, restoration project SBG architetti, 2014, cross section



10 Angelo Mangiarotti, Bruno Morassutti and Aldo Favini: Baranzate, Nostra Signora della Misericordia, 1956–1958, restoration project SBG architetti, 2014, façade cross section and cladding details

BACK TO THE FUTURE OF A LACONIC MASTERPIECE

5) For the cladding in need of replacement, this criterion implied careful sampling of the degree of imitation, of the necessary appearance to suggest the play of light, balancing material options in terms of stratigraphy and characteristics of the glass.

Since it was not possible to salvage the original parts of the wall – metal carpentry of simple design, welded and painted, assembly of casements currently available on the market – the new load-bearing metalwork has been designed and produced to be as similar as possible to the original, with simple sections in stainless steel, dry mounted, seeking a guarantee of durability and reliability that was one of the main priorities of the client.

Given the mechanical and aesthetic characteristics linked to the usage conditions of the load-bearing sections, the project has limited the thermal barrier only to the glass and its frame, which represent – together with the roof and base – the better part of the surfaces of heat transfer. Various studies have proposed solutions of façade with integral thermal break. However, these studies have omitted the globality of the building to be preserved and its peculiar use, have not considered structural aspects together with the character specific architectural of the cladding of the church of Baranzate and the role that the upright profile undertakes. The actual part that plays the uppercut in the exercise of the building should be evaluated together with the other thermal bridges that cannot be eliminated, such as the whole crowning of the façade in prestressed reinforced concrete, also considering the its punctual recurrence with its low percentage of presence in the façade than the large glass surface, which is the main problem in terms of energy and radiation, finally the justification of the possibility of condensation formation, its location, its actual incidence in environmental conditions, the means to put there remedy allowed by the architectural project and the new services.

The cladding, made in 1958 (*Fig. 11*) and left in place until the bombing in 1979, was an assembly of an expanded polystyrene panel set between two panes of glued lined industrial glass with prismatic cross-sections.¹⁵ Its installation was the result of experimentation with various solutions: layers of non-woven fiberglass between different panes of glass, then wired glass with polystyrene insulation between the panes. In 1980 the first destroyed cladding was replaced by another sandwich panel made of the same wired glass and polycarbonate hollow sheet filled with high density polyurethane insulation (*Fig. 12*).

¹⁵ Reassembled by Cristiana Chiorino in the aforementioned doctoral thesis, documented from the footage of the finished building and from traceable archaeological fragments recovered around the hall until the end of this works, also witnessed by the report of Enrico Malli, collaborator of the two authors from 1955 to 1960 and, until her death in 2015, by architect Anna Mangiarotti, essential guide in the examination of samples and in general in flanking executive design and works management.



127

11 Angelo Mangiarotti, Bruno Morassutti and Aldo Favini:
Baranzate, Nostra Signora della Misericordia, 1956–1958, first
cladding, 1958



12 Angelo Mangiarotti, Bruno Morassutti and Aldo Favini:
Baranzate, Nostra Signora della Misericordia, 1956–1958,
existing cladding, 2004

BACK TO THE FUTURE OF A LACONIC MASTERPIECE



13 Angelo Mangiarotti, Bruno Morassutti and Aldo Favini:
Baranzate, *Nostra Signora della Misericordia*, 1956–1958,
restoration project SBG architetti, 2014, final cladding, 2015

During the process of experimental definition of this project different technologies of glass and sandwiched insulation were tested, producing many successive assembly samples that led to the creation of a façade panel with multiple layers using only glass with high energy performance.

The resulting solution,¹⁶ implemented in the end, is based on low-emission filters and composed by alternating chambers and layers with different surface treatments to produce a sum of physical effects to achieve proper thermal insulation and protection from solar radiation (*Fig. 13*).

Replacing the material truth of the destroyed original with a copy plausible in its image and its diaphanous, opalescent perceptible quality, at least in tune with the idea pursued in the successive constructions of the authors, the reproduction of the appearance and perceptual sensations relies on dense irregular lines etched on the external surfaces, and the white coloring combined with corrugated printed glass of the internal surfaces.¹⁷

¹⁶ For technical details cf. Appendix 1.

¹⁷ For a comprehensive chronology cf. Appendix 2.

This effect is fully displayed also in its negative double: the lighting of the hall in the evening is supplemented by a slender line of added light hidden under the border beam of the cladding, which has given permanent reality to the hall transfigured into a diaphanous whitish lantern that brightens the space of the surrounding enclosure. Night-time shots of the church by Giorgio Casali were carried out with an optical bench and bright studio lights. How it is easily detectable by the central reprise of the ›interior by day‹ when the sky, between the white lining and cover, appears black. The resulting image makes the white of the panels shine on the inside as well as accentuates the diaphanous transparency of illuminated material from the inside out at night. To make this effect that represents the ›established‹ iconography of this building ›true‹, satisfying the parish community request of an interior lighting improvement as well, a light strip in the edge beam of the coating was inserted. The realization required careful experimentation on site, also of lighting from below, which were carried out with the help of iGuzzini lighting company.

129

A particularly striking ›night effect‹ admired by all at Christmas in 2014, during the first reopening of the church for liturgical services.

Baranzate, Milan, 1958

The postcard measures slightly less than 11 by 22 cm, in a 1:2 landscape format. The church of Nostra Signora della Misericordia at Baranzate is shown in a frontal view, from the entrance side. The wall of the enclosure occupies the entire long side of the image below (*Fig. 14*).



14 Angelo Mangiarotti, Bruno Morassutti and Aldo Favini: Baranzate, Nostra Signora della Misericordia, 1956–1958, inauguration postcard, 1958



15 Angelo Mangiarotti, Bruno Morassutti and Aldo Favini: Baranzate, *Nostra Signora della Misericordia*, 1956–1958, general view, 1958

The cella of the hall, white with the six X-shaped ends of the gray concrete beams that stand out on the black of the inner shadow, under the roof, dominates the image and reaches less than halfway up its height. The shot centers on the first span to the right and frames the cross on the axis of the third post of the cladding, dividing the façade at two thirds and also marking the boundary between the lower access in the base and the external steps of the upper hall.

The iron gate opens a passage in the enclosure wall, here again starting from one third of it, along one quarter of its width. The gate is therefore not centered, but the metal entrance door, rusticated by its decorative nails, starts precisely from the midpoint, coinciding with the middle axis of the enclosure and the center of the dark entrance to the semi-basement. This lower shadow zone, below the two thirds point of the façade of the upper hall glowing with its white cladding, is countered by the large sliding door of the façade, closed and perfectly framed by the left arm of the cross.

The church of Baranzate is shown in this shot commemorating its opening without any reference to the location but revealing its dynamic symmetry. A model inserted in a landscape rendered Arcadian by the presence of a poplar grove to its left.

Only in another photograph is the church of Baranzate seen from a distance. It stands at an angle in the countryside framed by the profiles of the mountains Grigna and Resegone, recalling the landscape of Alessandro Manzoni's novel *The Betrothed*. Rather than

being set into its enclosure, the hall seems to have been placed atop a large base, displaying the eloquent composition of its parts in the intentional device of coincidence between the top of the wall and the floor of the hall (*Fig. 15*).

These last two images fully reveal the aspiration of the work to achieve its own anonymous classicism.

APPENDIX 1

First production sample by three layers and two chambers, not produced,

January 2011; Glassferr srl:

Panel: 90 x 270 x 5 cm – 2,43 sqm

Weight: 65 kg/sqm 160 kg/panel

Cost: 320 €/sqm 780 €/panel

Test characteristics: 13.12.2010

Light reflection RL: 35.6 %

Light transmission TL: 5.6 %

Direct solar reflection RE: 28%

TED direct solar transmission: 3.2 %

FS solar factor: 9,7

Thermal transmittance glass Ug: 0.7 W/sqmK

Final four-layer three-chambered sample, in place since 2014;

Progetto Arte Poli srl:

Panel: 90 x 270 x 5 cm – 2,43 sqm

Weight: 89 kg/sqm 216 kg/panel

Cost: 320 €/sqm 900 €/panel

Test characteristics: 23.11.2011

Light reflection RL: 29.4 %

Light transmission TL: 2.2 %

Direct solar reflection RE: 30.8%

TED direct energy transmission: 1,6 %

Solar factor FS: 6,3

Thermal transmittance glass Ug: 0,7 W/mqK

131

APPENDIX 2

Design and construction timeline with cladding technologies:

1956–1958

Design and construction of the original complex: A. Mangiarotti, B. Morassutti and A. Favini. Original panel infill, experimental execution on site, documented in the filming of the finished building and the material remains, assembly of two sheets of industrial glass cast 'striped' with prism section, interspersed from a polystyrene panel low-density white foam. Thickness about 5 cm.

1979–1980

Redesign and reconstruction of the cladding.

Addition of the bell tower: B. Morassutti and A. Favini with A. Mangiarotti.

The original cladding demolished in the 1979, replaced in 1980 with panel composed of screened glass, mattress polyurethane/polyethylene, polycarbonate sheet alveolar. The structure of the façade aluminium coated iron profiles natural anodized. Thickness 5 cm.

2006–2008

Architectural design and supervision restoration (Project). G. Barazzetta, S. Gianoli,

SBG Architects: architecture; A. Mangiarotti, I. Paoletti: technology; T. Negri: structures; G. Chiesa, M. Maistrello: installations; with the supervision of the authors A. Mangiarotti, B. Morassutti and A. Favini.

The panel with low-emission filters, composed of the juxtaposition of rooms, from the sum of layers, of glass surface treatments interior with silkscreen imitation of polystyrene original. Sampled and tested but not installed, approved in its external appearance to improve for the predominant green shade. Structure of non-thermal break coating produced in the workshop, thermal break only the panel frame made of galvanized and painted steel, assembled at the yard. Thickness 7 cm.

2012–2015

Architectural design and supervision of the restoration (Construction: contract and building site).

S. Gianoli, SBG Architects, works management; Studio Zani: security; G. Corbetta and G. Maggi, Archdiocese administrative office: project management and assistance; Seregini Costruzioni srl, Milan: General Constructor; Poli Art Project srl, Verona Pictures: coating.

Façade realized with steel structure stainless steel AISI 304 shot-peening variable diameter, treatment transparent epoxy protective of stain-resistant finish.

Panels:

1st layer exterior = extra-clear tempered glass 6+6 mm with etched grooves on the face external and pvb white interposed, cavity with inert gas, low-emission glass 6 mm, cavity with inert gas.

2nd layer = low emissivity glass 6 mm, cavity with inert gas.

3rd layer = 6 mm low emissivity glass, cavity with inert gas.

4th layer = inside extra-clear tempered laminated glass with 6+6 mm ridged glass with embossed glass etched on the outer face and white pvb interposed. Thickness about 7 cm.

REFERENCES

- Barazzetta 2004 – Barazzetta, Giulio; Morassutti, Mangiarotti, Favini. Milano anni '50. *Tecnica e architettura*, in: Casabella 721, 68.2004, 82–93
- Barazzetta 2013 – Barazzetta, Giulio: *Costruzione e progetto nelle opere di Angelo Mangiarotti, Bruno Morassutti e Aldo Favini*, in: Desideri, Paolo/De Magistris, Alessandro/Olmo, Carlo/Pogacnik, Marco/Sorace, Stefano (Ed.): *La concezione strutturale. Ingegneria e architettura in Italia negli anni cinquanta e sessanta*. Torino 2013, 35–48
- Barazzetta 2014a – Barazzetta, Giulio; Mangiarotti, Morassutti, Favini. Il restauro della Chiesa di Baranzate, in: *Firenze Architettura* 18.2014, 1/2, 24–33
- Barazzetta 2014b – Barazzetta, Giulio: Il restauro di un involucro degli anni '50, in: *Archi* 17.2014, 5, 96–103
- Barazzetta 2015 – Barazzetta, Giulio (Ed.): *La chiesa di vetro di Angelo Mangiarotti, Bruno Morassutti, Aldo Favini. La storia e il restauro della chiesa di Baranzate*. Milano 2015
- Barazzetta/Dulio 2009 – Barazzetta, Giulio/Dulio, Roberto (Ed.): *Bruno Morassutti, 1920–2008. Opere e progetti*. Milano 2009
- Barazzetta/Vercelloni 2012 – Barazzetta, Giulio/Vercelloni, Matteo; Angelo Mangiarotti, Bruno Morassutti. *Architettura e design tra artigianato e industria*, in: Casabella 812, 76.2012, 98–108
- Graf/Albani 2011 – Graf, Franz/Albani, Francesca (Ed.): *Glass in architecture of the 20th century. Conservation and restoration*. Mendrisio 2011
- Mangiarotti 1955 – Mangiarotti, Angelo: L'altro lato di Chicago, in: Casabella 207, 19.1955, 51–63
- Marandola 2015 – Marandola, Marzia: Il dispositivo architettonico e costruttivo, in: Barazzetta 2015, 17–28
- Martinis 2009 – Martinis, Roberta: Lavori per la famiglia Romanelli, in: Barazzetta/Dulio 2009, 60–65
- Müller 2015 – Müller, Lars/Museum für Gestaltung Zürich (Ed.): *Max Bill's View of Things. Die gute Form – An Exhibition 1949*. Zürich 2015

Santi 2011 – Santi, Giancarlo: Nuove chiese in Italia (1861–2010). Sette lezioni. Milano 2011
Santi 2012 – Santi, Giancarlo: L'architettura delle nuove chiese in Italia. Magnano 2012
Santi 2014 – Santi, Giancarlo: Arte e Artisti del Concilio Vaticano II. Milano 2014

CREDITS

Fig. 1: Bruno Morassutti 1958; *Fig. 2:* Politecnico di Milano, Archivi Storici, Fondo Aldo Favini 1960s;
Fig. 3: Giorgio Casali; Università IUAV di Venezia, Archivio Progetti, Fondo Bruno Morassutti 1958;
Fig. 4: Giulio Barazzetta 2013; *Fig. 5:* Marco Introini 2014; *Fig. 6–10:* SBG architetti 2014;
Fig. 11: Giorgio Casali; Politecnico di Milano, Archivi Storici, Fondo Aldo Favini 1958; *Fig. 12:* Giulio Barazzetta 2004; *Fig. 13:* Marco Introini 2015; *Fig. 14:* Giorgio Casali; Fondazione Angelo Mangiarotti 1958; *Fig. 15:* Giorgio Casali; Politecnico di Milano, Archivi Storici, Fondo Aldo Favini 1958