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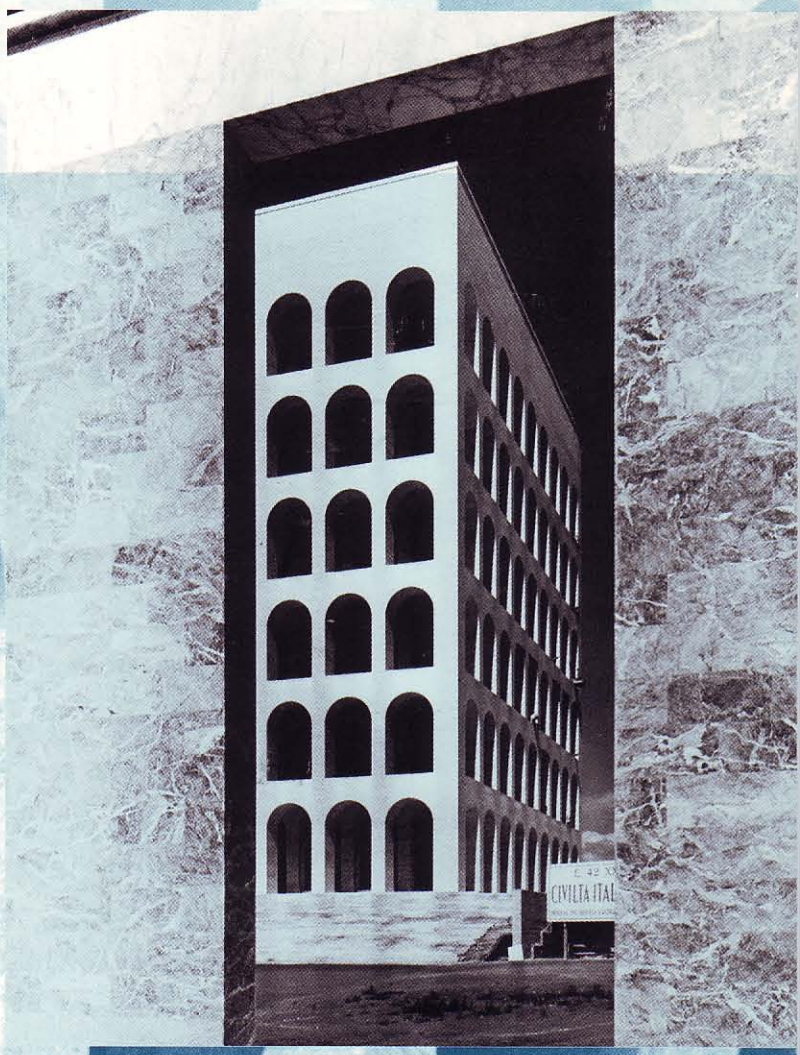
Stone in Modern Buildings

Principles of Cladding



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Stone in Modern Buildings
Principles of Cladding
Proceedings of the Sixth International DOCOMOMO Seminar
November 30, 2001, Rome, Italy

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Contents

Post Office Building, Naples

Giuseppe Vaccaro, Gino Franzi (1928-36)

The building had a key role in the passage from traditional to modern architecture in Italy at the beginning of the 1930s. It appears to have been experimental in formal and functional conception as well as in its construction techniques. It is one of the first buildings where the integral facing of marble slabs is applied to an edifice with a supporting skeleton in reinforced concrete.

Tullia Iori

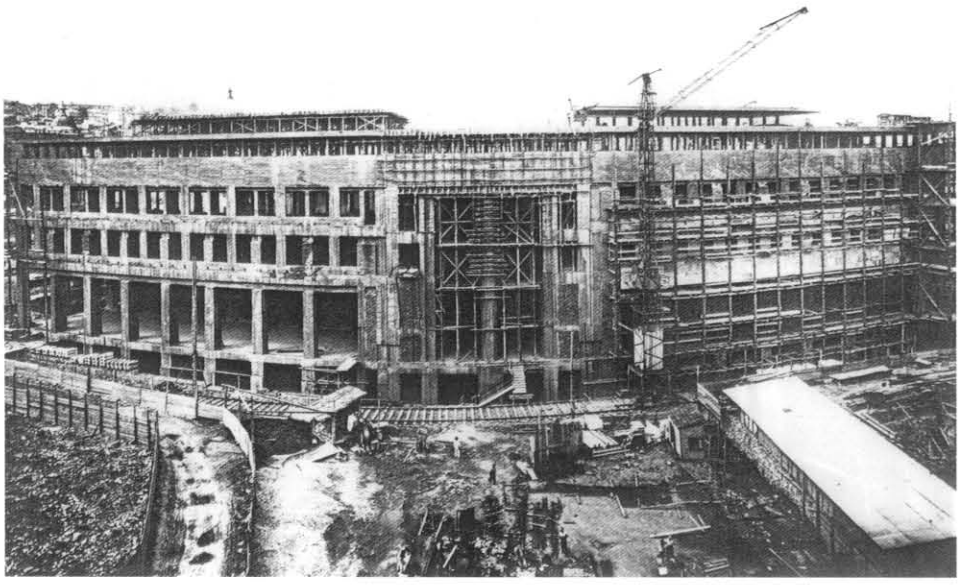
This essay examines the complex story of the marble cladding of the building, highlighting the difficulties faced by the architect Giuseppe Vaccaro and his colleague Gino Franzi in obtaining approval for a solution which was highly innovative from the figurative and constructional point of view.
The archive documents, retrieved by Sergio Poretti many years ago, and recent restoration work (2001) have clarified some interesting aspects concerning the way the cladding material was laid.

The project

The history of the building began with the first round of the competition in 1928, and it came to a close only in mid-1936. The day of inauguration thus came only after eight long years, many of which were spent arguing first about the architectural characteristics of the building and then about the choice of materials.

Meanwhile, no first prize was awarded in the two rounds of the competition. Vaccaro, who won the second prize with Franzi, was entrusted in 1938 with the design of the building, quite independently from the outcome of the competition. As Poretti[1] has already pointed out in his reconstruction of the issue, Vaccaro completely revised the competition project on a number of occasions: the building lost its traditional decorative structure and acquired a decidedly more modern configuration. This was mainly the result of his decision to clad the façades with a thin layer of highly polished marble, pierced only by the windows and the main entrance.
However, the new version of the project, which reflected the modified cultural climate which had come into being after the first MIAR exhibition, met with fierce opposition from local bureaucrats. In January 1932, Vaccaro was obliged to ask Mussolini to voice

The building under construction. From: Archivio G. Vaccaro, Rome

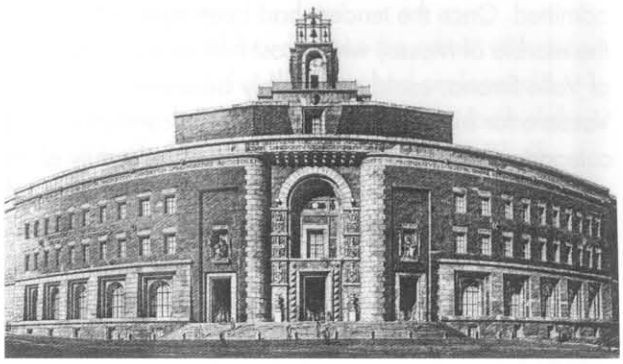


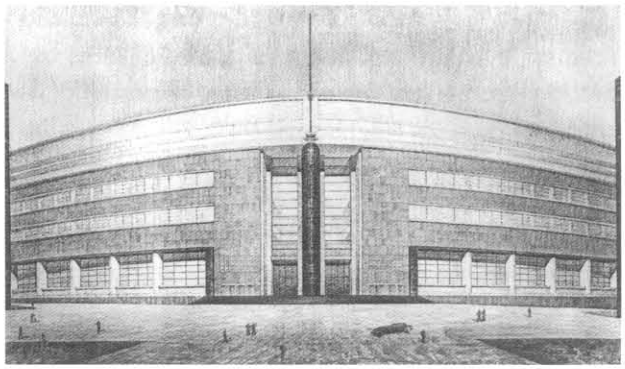
his opinion, and indeed in April he finally approved the project.
But this approval from on high was only the first victory in Vaccaro's war against the bureaucrats. The architect was soon forced to fight another, even longer and more tiring battle over the choice of marble, against the Servizio Lavori e Costruzioni (the public works and construction service of the Ministry of Communications in Rome) and the Sezione Lavori in Naples.

Valle Strona and Diorite

Right from the first versions of the project after receiving the commission, Vaccaro had decided to use two particularly precious materials for the façades: speckled grey "Valle Strona" marble and black "Diorite" stone.
In this new use of integral cladding, in which all trace of traditional decoration was abolished, the type of marble, its chromatic qualities, the cut, and the pattern of its veining played a very important role in the architectural expression of the building.
In the case of the Naples building, Vaccaro gave importance to the excellence of the materials, conferring nobility and elegance upon his project, which was now becoming increasingly simplified in its architectural lines.
The key role attributed to the precious cladding can be seen in the obstinacy with which he approached the attempts to dissuade him and the many more economic alternatives put forward by the Servizio Lavori.

As early as the end of 1931, the Servizio Lavori approved the gradation in the colours of the marble, even though expressing perplexity about the choice of Valle Strona which - extracted from a single quarry in Piedmont - was one of the most expensive types of marble available in Italy at that time.
The beauty of Valle Strona was undeniable and, in terms of its technical qualities as well, it was unrivalled. Even though the deposit had been exposed to the weather for centuries, the marble appeared "healthy and strong and in no way brittle or friable" to the geologist Maddalena who was sent to inspect the quarry in April 1932. Furthermore, its high flexural strength, which enabled the thickness of the slabs to be reduced, and its high specific weight, which pointed to considerable compactness, made the marble particularly suitable for external cladding.
The quality of the material did not, however affect the cost-related objections put forward by the offices in Rome and Naples.
Thus, while the main works were starting on the





Simplification of the façade:
the project for the second round of the competition;
the sixth versions of the execution plan.
From: Archivio delle Ferrovie dello Stato, Ministero delle Comunicazioni, Rome

The building just after its inauguration. From: Archivio G. Vaccaro, Rome

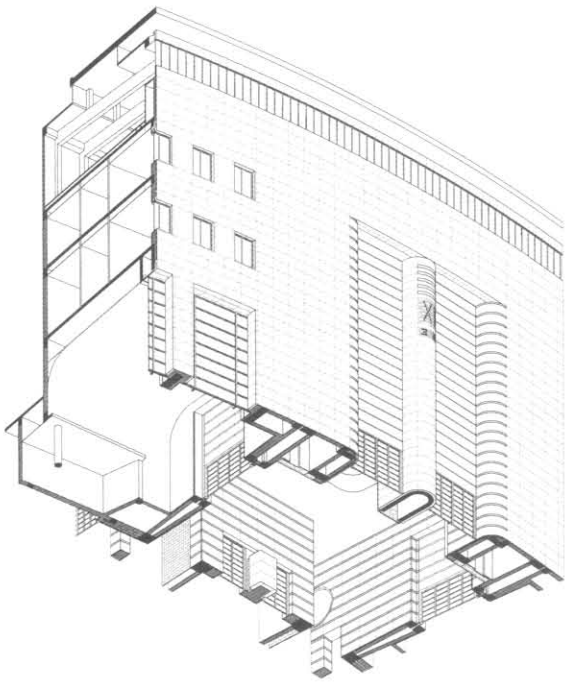
building, the Servizio Lavori in Rome started up a long study of "alternative" types of marble of the colour chosen by the architect. After contacting dozens of companies and asking them all for estimates, in January 1933 several samples were shown to the Minister of Communications, Ciano, who however approved the Valle Strona without too much ado. But the Servizio Lavori did not give in and managed to get Vaccaro to accept tendering for a contract, which took place in 1933. Five types of marble and one stone which, in the view of the Servizio, "could compete with the Valle Strona", were

admitted. Once the tenders had been assessed, only the marble of Musso, which cost half as much as that of Valle Strona, could reasonably be submitted to Vaccaro for his judgment. However, he refused it categorically because of its "excessive uniformity of colour and lack of liveliness".
Finally, after a year of efforts, the Servizio Lavori technicians gave in. Once the problem of the Valle Strona contract had been solved, it was the turn of the Diorite. This, however, was concluded much more rapidly.

Later on, this obstinacy about the choice of such precious marble led Vaccaro to some harsh self-criticism.
In his presentation in *Architettura*[2], he later said: "while the splendour of the materials chosen undoubtedly confers nobility upon the simple architectural volumes, comparative considerations may regard it as somewhat excessive." The "comparative considerations" probably referred to his visit to the Casa del Fascio in Como: as quoted by Poretti[3] Vaccaro was surprised by the "modern and, at the same time, unfeigned classic harmony which Terragni was able to create" with much less prized, strictly plain-coloured, and certainly less lively Botticino limestone. He commented: "I'll have to remake everything in my mind!".
Actually, Vaccaro's insistence today appears to have been far more shrewd: while Terragni's Botticino has considerably deteriorated over the years, the "limpid veneer of precious briar" on the Naples building has remained virtually intact, thanks to the superior quality of Valle Strona, as well to the skillful and astute way in which it was mounted.

The characteristics of the cladding

The fact that the building was designed in the most crucial phase of the shift from traditional to modern architecture in Italy can be seen in the singular dualism in the solutions devised for assembling the marble.
On the one hand, the new approach to cladding required the surface of the façades to be perfectly smooth, without any relief. In this manner, the connections between the marble and the brickwork and reinforced concrete structure behind it had to be completely invisible in order to highlight the purely figurative function of the exterior surface.
On the other hand, the pattern of the slabs and the differences in size and thickness of the special pieces was still traditionally linked to the structure of the building - unlike what later emerged in the works of young Italian architects. In the latter, the thin skin of

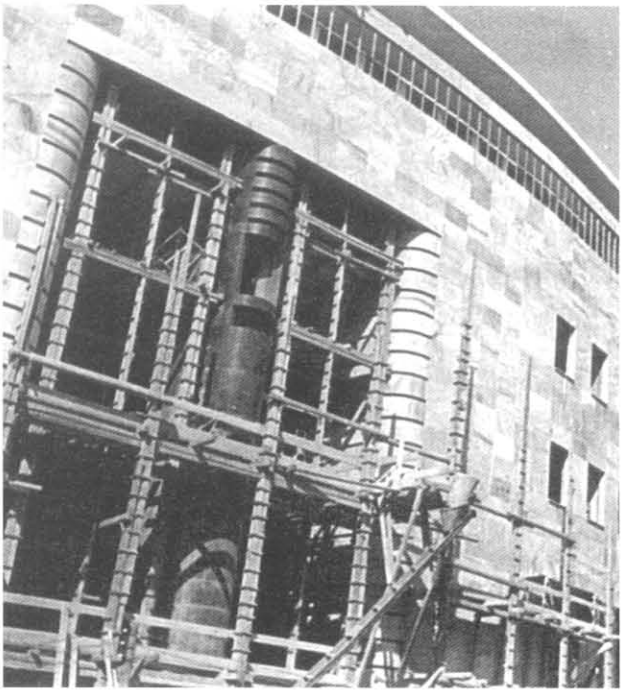


Axonometric section of the entrance hall of the building.
Drawing: T. Iori

marble appears as a sort of precious plasterwork which covers the skeleton, the walls and the smallest details of the façades uniformly and in an undifferentiated manner.

Traditional methods were used to lay the slabs. The 5 cm Diorite and 3 cm Valle Strona slabs were laid one upon the other and fastened to the wall at the top and sides by galvanised iron bolts and cement filling in order to prevent tipping.
Here again, some contrivances were taken from consolidated traditional techniques and, considering the thinness of the cladding, they proved to be very effective. First of all, slim strips of lead were placed between the slabs to attenuate the risk of overloading while compensating in part for thermal deformation. Furthermore, even in the interiors the thin cladding was interrupted at regular intervals by blocks toothed into the masonry. As well as providing stronger support for the slabs above, they also reduced the height of the self-supporting areas.
Although from one project the next the cladding gradually ceased to imitate an alternate ashlar texture and acquired a simplified pattern "a sorelle", the separation of the slabs was intentionally stressed. So while Terragni was doing all he could to make the joints invisible in the Casa del Fascio, Vaccaro decided to make the edges of the Diorite slabs more visible by bordering them with white stucco.

However, it is the use of special blocks which point



The double window above the main entrance during construction. From: Archivio G. Vaccaro, Rome

most clearly to the transitional nature of the Neapolitan building. The thin slabs do not envelop all the elements indiscriminately, for the architraves and jambs consist of very thick blocks, which are noticeable for the way they break up the regular rhythm of the thin slabs.
In order to make the joints between the special elements and the structure invisible, late-19th century reinforced masonry construction techniques were used as a model.
The platbands of the large window openings on the ground floor, consisting of four blocks of Valle Strona marble, were thus reinforced with double-T iron girders recessed into the specially prepared blocks. Only the two enormous architraves of the twin entrance appear not to have metal reinforcements but simply cramps fastening them to the concrete beam behind. The two 7.2-metre Valle Strona monoliths were so large that they were not even available in the quarry, which had to be explored in a number of areas in the hope of finding pieces of the size required.
Further confirmation of the transitional role of the building can be seen in the jambs of the twin entrance. In a number of alterations to the original project during construction, Vaccaro perfected the peculiar band design in which 30 cm parabolic-shaped blocks of Valle Strona are alternated with thin strips of Diorite. The effect is that of a highly modern bugnato which, even though it recalls traditional solutions, helps reinforce the essentiality of the façade.

The restoration

To conclude, a brief word about the recent restoration work. Even though the cladding had performed perfectly over the years, in a few places some slabs showed signs of detachment and were at risk of falling.
The restoration work only involved the application of stay cramps from the exterior on both slabs and blocks, without dismantling the cladding. This means that the devices which Vaccaro had studied so carefully to make the attachments totally invisible have been annulled by a fastening process now commonly used in Italy. Although it is well camouflaged today, it will inevitably become visible as the stuccowork ages. Furthermore, the joints between the slabs and the blocks of Diorite have been edged with black stucco, thus cancelling the slendering effect of the base, of the pilaster and of the central pillar which Vaccaro had obtained by using white edging. The restoration work, which was unfortunately only partial and not part of an overall conservation project, was funded by Poste Italiane and supervised by the Naples Soprintendenza, since the building is subject to preservation restrictions.

Notes

1. S. Poretti, "La facciata del Palazzo delle Poste di Napoli e la questione dei rivestimenti lapidei nell'architettura italiana degli anni trenta", *Rassegna di Architettura e Urbanistica*, 84-85, 1994-1995, pp. 28-37.
2. G. Vaccaro, "Edificio per le Poste e Telegrafi di Napoli. Architetti Giuseppe Vaccaro e Gino Franzi", *Architettura*, fasc. VIII, August 1936, pp. 353-394.
3. S. Poretti, "La facciata del Palazzo delle Poste di Napoli", cit.

Corner view of the building after restoration. Photo: T. Iori