

The Napoli Centrale Station and the Contribution of Pier Luigi Nervi In The Second Half of the Twentieth Century

Carolina De Falco¹

Abstract

The construction of the new Napoli Centrale Station, following the announcement of the national competition in 1954, is of particular interest regarding the architectural history of the city. Research conducted in the Archives of the State Railways of Rome and at CSAC, the Research Center and Archive of Communication of the University of Parma, beyond explaining the debate and the different assumptions that preceded and illustrated the competition phase, has contributed to the knowledge of the different phases of the project, linked both to the design of the famous roof with tripod pillars, a distinctive point of the station of Naples, and that of the construction of the skyscraper in 1959, the second one in Naples, destined to become some offices and a hotel, which from the beginning seized also the tourist vibe of the city. Among the protagonists of the story emerge Pier Luigi Nervi and the confrontation with the chief engineer of the State Railways, Paolo Perilli and other professionals engaged in the complex construction site.

Keywords: history of architecture, Napoli Centrale Station, second half of the twentieth century, Pier Luigi Nervi

1. The Napoli Centrale Station

Regarding the history of architecture in Naples after World War II, of particular importance is the construction of the Napoli Centrale Station (Fig. 1), replacing the nineteenth century one, which included a modern skyscraper for offices and a hotel, the second one to be realized in the city. The new structure also involved a part of the urban fabric through the creation of the opposite facing piazza Garibaldi, still today undergoing a renovation project, with the construction of the Line 1 station of the underground - famous because of the project of the "Art Stations" - as designed by Dominique Perrault.

¹ Ph.D., Researcher Professor, History of Architecture, DICDEA, Department of civil Engineering, Design, Building and Environment, Second University of Naples, Real Casa dell'Annunziata, Via Roma 29 - 81031 Aversa (CE). Phone: + 39 (0) 81 5010470, Mail: carolina.defalco@unina2.it



Fig. 1: Napoli Centrale Station. On the left, frame of the skyscraper under construction
Photo Library of the State Railways of Rome, A/30977

The design of the station of Naples, counted by Bruno Zevi among the most interesting works of the 1955-65 decade, arose in the wake "of the rationalist and organic tradition"ⁱ, also involved some of the greatest exponents of Italian architecture and engineering, including the engineer Pier Luigi Nervi, author of the Palazzo dello Sport in Rome, the Palazzo del Lavoro in Turin and the Aula delle Udienze in the Vatican, who in Naples had started with the creation of the Funiculare Centrale Augusteo Station and the eponymous theater hall, between 1926 and 1929. The opportunities around the establishment of a new station, relocated at a retreat of 250 meters compared to the nineteenth century one, whose demolition would free the ground resulting in a large square, was preceded by a long and complex debateⁱⁱ, which ended on April 15th, 1954 with the publication of the notice of the national competition by the Minister of Transport for the design of the new passenger building.

The State Railway, encouraged by the positive experiences of the prewar stations in Florence and Venice and the most recent one of Rome, became themselves promoters of a more qualified and "responsible" architecture, entering thus into a prolific season of competitions. On January 18th 1955 the jury, chaired by the head of the Works and Construction Service, after examining the thirty-five projects presented, declared the competition concluded happily, both for the high number of participants, and for the commitment, professionalism, and rich graphics. However, since none of these showed simultaneously functional, structural and architectural features sufficient for a unique winner to be declared, the committee decided to award the first prize *ex aequo* to three projects. Marked by a motto and listed in order of arrival in the competition, the winning groups of the competition were therefore: *Transparency shelter (Trasparenza pensilina)* by Pier Luigi Nervi, Giuseppe Vaccaro and Mario Campanella; *Seagulls (I Gabbiani)* by Massimo Battaglini, Corrado Cameli, Marino Lombardi and Ugo Viale and *Granatello 1839* by Luigi Piccinato, Bruno Barinci, Carlo Cocchia, Giulio de Luca and Bruno Zevi. Despite the competition requiring the location of the administrative offices on the upper floors of the passenger building, all three projects had chosen to clearly distinguish the horizontal part of the station from the office part expecting the construction of a skyscraper, located on the left, in order to favor the view of Vesuvius.

2. The design of the roof with tripod pillars and the relationship between Nervi and Perilli

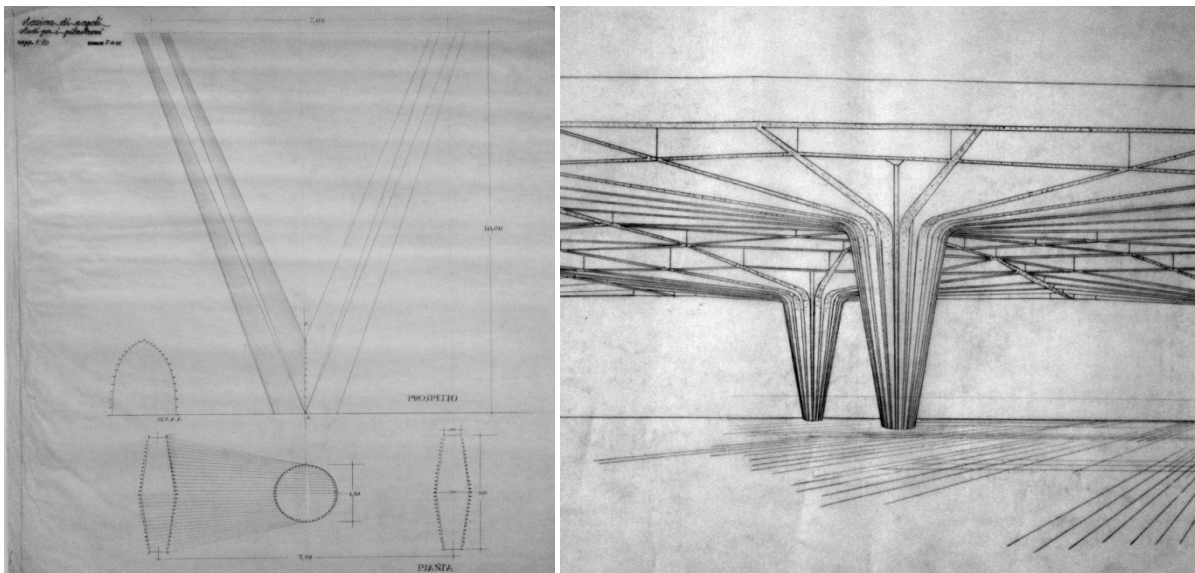
Especially sensitive to this need for this perspective, to the point of being mentioned in the motto, *Shelter Transparency (Trasparenza pensilina)*, is the first project, led by Nervi: "an open door of the city to the outside world", in which the atrium and the head of the gallery, essential parts of a station, are reduced to transparent buildings in concrete, aluminum and glassⁱⁱⁱ. This is noticed by Gio Ponti which highlighted the project, emphasizing the novelty: the designers have had the great merit of overcoming the old concept of train-stop, introducing transparency and introspection between the city and the railway^{iv}.

In any case, once the competition was closed, as was specified in the notice, the final design was accomplished through the interaction of the authors of the three winning projects with the engineers of the railway administration, reunited in the Architecture Group, headed by Paolo Perilli. The latter, who was also part of the contest jury, had already had design experience with some significant Italian stations which, in addition to that of Rome Prenestina, prior to the Battle of Padova, the completion of Venice Saint Lucia, and the reconfiguration of the terminal of Torin Porta Nuova, between 1948 and 1953.

As part of the project planning, specific analysis is due both to the study of the characteristic tripod pillars upon which the structure and the "form" of the Neapolitan station rests, and to that of the skyscraper project, both based on the fundamental participation of Pier Luigi Nervi.

The project competition of Nervi, Vaccaro, and Campanella, which thanks to the bold structure "probablement aurait beaucoup plu à Auguste Perret"^v, was designed according to a structuralist view, in the belief that modern architecture can draw durable validity only if it is firmly founded on our technical possibilities and by it may legitimately derive its forms. The hybrid formula of the competition, however, providing for the interaction of the architectural winners of the competition with the engineers of railways, shows a further creative phase.

The drawings of the early September 1955 show that Nervi was focused on his relationship with Perilli: the pillar that Nervi has invented one year before for the competition, tapered and ended by bracket, is now transformed in a V-shape (Fig.2), gained by the enervation of the round-shaped base, at 2.45 meters. Instead, a totally different thought can be seen in the other drawings about original pillars that Nervi subsequently draw, shared as an upside-down truncated cone, whose original "plated" shape is due to the juxtaposition of several upside down L-shaped bodies, which build an isostatic-nerved roof, re-used in Rome's Gatti Woolen Mill (Fig.3).



Figs. 2-3: P.L. Nervi: on the left: *Station of Naples. Studies of the pilasters. Rapp. 1:20. Roma 7-11-55*; on the right: a different solution. CSAC Archive (Parma, Italy), Pier Luigi Nervi fund, Stazione di Napoli, 150/4

In the years during which the birth of reinforced concrete gives way, for the most important Italian structural engineers, to new experimental perspectives, Nervi is collecting the major successes, and the work of intuition and comprehension of the static phenomena, to which generally his project undergo, and through which his pillars in Naples's station have been guided, leads him to seek for new shapes that, if on the one hand are not applied immediately maybe even depending on other designers, on the other hand give way to a brainstorming that will be developed subsequently^{vi}.

In the project of the Napoli Centrale Station Perilli though was the leader of the executive phase's conclusion, with the addition of the third stem to the v-shaped pillar, transforming it in a tripod, while the other hypothesis fell back in Nervi's catalogue towards solutions adopted subsequently, such as the ones for Turin's Palazzo del Lavoro. Each of the tripod pillars is built by three retracted stems that arise to form the vertices of a triangle, whose "net" works as a perforated concrete plate (Fig. 4).



Fig. 4: Inside of the Station. Detail of the roof and pillars. Photo Library of the State Railways of Rome, 19799

The outcome of Nervi, Vaccaro and Campanella's original project reflects the game of equilateral-triangular-pattern beams' intersection in the roof's intrados, voluntarily in the finally solution non-covered with countertop and left exposed, plastered and stained with clear colors, in contrast with the pillar's hammered grey-plastered concrete. The drawing triangles and stars on the ceiling also recalls, figuratively, as built by Kahn at the Yale University Art Gallery of New Haven^{vi}.

Even the set of thin covering plates, which are alternatively plane and raised (two closed faces and one opened), whose serrate profile gives the distinctive image of the station in the urban landscape, and recalls the so-called parabolic "waves" that have been invented by Nervi in 1955, in light-alloy sheets, aimed at capturing and filtering light towards the bottom.

It should be emphasized that the static design, however, was conditioned by functional, practical, and constructional needs, such as the need to illuminate with daylight throughout the covered area, the ease of maintenance, and the need to climb over the pre-existing underground railway without resorting to excessive bays. The complex calculation was verified by the construction of an actual model, according to a custom of Nervi, performed with reinforcements in wood and plaster coating. The mesh, obtained by the juxtaposition of triangles of 19.5 meters, offered the best solution, because it easily fit to the planimetrically articulated shape that had been given to the covered zone, while the alternating locations of the pillars obtained a dimensional offset that well conformed to the variety of the routes taken by travelers within the station.

The completion of the second phase of construction of the Napoli Centrale Station, linked to the little-known construction of the skyscraper, sees the major work of the architectural contest winners, in particular Nervi and Vaccaro, as opposed to the technicians of the Railways.

3. A skyscraper for the job and for tourism

In 1957, of the three functional areas that hold the station's functions, both the great central glass hexagon and the waiting lounges have already been drawn, while the building of the skyscraper and the services on its bottom are part of a second act.

Design and art direction of the external finishes of the station have been commissioned to Vaccaro, Battaglini and Piccinato, and the interiors to Cocchia, de Luca and Zevi, while at the beginning of 1959, «all of the aforesaid» were charged of designing the office and hotel building and, more specifically, the structural part was given only to Nervi, Viale and Campanella (Fig. 5).



Fig. 5: Model of the final design with the skyscraper in the foreground. Photo Library of the State Railways of Rome, 16278

The tall building's destination of use, planned since the beginning for compartmental offices is extended to hotel, pushed by a request from the Ente Provinciale del Turismo, 15 January 1959, in which, in addition to stating that "the noise produced by trains is not to be considered much higher than the traffic's one", the need of a strongly commercial and touristic city is highlighted^{viii}. On the other hand, the demolition of the nineteenth-century building, implying the enlargement of the new building's body in order to respond to needs of office space, provoked both the occupation of the ground on which the post office was located - whose demolition was the cause of the delay in the tower's realisation, not finished for the Olympic games 1960 - and the prevision of the Terminus' Hotel expropriation, which actually did not happen, and that immediately provoked the owner's reaction.

The need of enlarging the accommodation structures is clear to see also from the project hypothesis of a morning hotel, located -3,50 and -5,50 mt compared to the station, with "small but beautiful rooms for 'short stays' payed per hour"^{ix}. The prevailing hypothesis of the station as a cross-exchange point - railway, subway, bus - is characterized by a theory of space that comes from the layering of several underground levels and at the same height, concluding, as a wish of the general manager, a chapel, a 400 seats theater (demolished) and several shops. A forerunner and surprising commercial gallery, which has not been built but finds an ideal continuity in the projects of Società Grandi Stazioni and Perrault: "an elegant gallery covered in shiny tiles [...] After several catwalks we see an infinite set of perfectly lightened spaces. We're in a proper building, built in the bowels of the earth[...] Sparkling lights, air conditioning, heating and cooling systems. And we can find anything we want: clothing, souvenirs and jewellery stores"^x.

The station's tall building, second in height only after the skyscraper designed by Stefania Filo Speziale for the Società Cattolica di Assicurazione between 1954 and 1957, anticipates the setting of the European episodes that will be built after the second half of the 60's, such as the Gare Montparnasse in Paris, the Euston Station and the Canon Street Station in London. Memorandums to the Servizio Lavori e Costruzioni, in which "interferences in some zones, which are between the supporting walls and the foundations of the building, in Prof. Luigi Nervi's designing phase" are reported, testify the fact that during November 1959 Nervi was at work^{xi}.

The unique three-arm-star shape was not the original from 1954's project, in fact it can be stated that this last one is uniquely focused on the railway building, and not dedicating the same attention to the compartmental building, as it can be read on the project's report. In fact, while even the roof of the luggage space is planned by detail, with thin shed vaults in prefabricated elements, on the contrary it is asserted that the office building will have a reinforced concrete structure without particular specifications. For the rest, the building located between Meridionale street and Novara street is presented in the drawings as a nine-storey, courtyard building screened by a curtain-wall (Fig. 6).



Fig. 6: Napoli Centrale Station. View of the roof and the skyscraper. Photo De Falco

Beginning the second working phase, Nervi has not only almost finished the Pirelli skyscraper with Gio Ponti in Milan, but he has also opened, in 1958, the UNESCO headquarters, designed with Breuer and Zehrffuss. The Parisian Y-shaped building, raised on *pilotis*, has influenced without a doubt the choice of the Neapolitan building. The facades of it are strongly characterised by: the closed ones by the two-coloured polygonal patterns, while the others are screened by metallic brise soleil, or shake by several balconies. If the appeal to tradition is not misunderstood in the usage of balconies for a skyscraper, the attention to the facades' ornament has to be underlined, which leads to the differentiation in their treatment, same way as in the Parisian case.

The structure of the Neapolitan skyscraper starts from an hexagonal nucleus, blocked by the supporting piers of the elevator shafts, from which a double row of pillars placed in the same mesh that builds up the station starts, yet no longer placed in its center but at the summits of the equilateral triangles. Starting at +8.15 meters from the station's roof, there are the first sixteen floors of the skyscraper, slightly raised by *pilotis*. The structural choice of reinforced concrete has to be underlined, as it surpassed for the time the international model of the steel skeleton.

Two of the three arms of the "star" will be used as office spaces for the railway compartment and another one as an hotel, to which 160 of the 600 slots have been assigned. In the floors below, at the railway level, a post office, bank and luggage storage are provided, and also a bar and a cafeteria that are accessible from the outside. At the center of the composition, marked by a big tub, a luxurious hexagonal restaurant, which repeats the ticket office and the profile of the roof^{xii}. Some pillars have been treated in a particular way, thought to be in sight, so that the concrete could "express itself" and therefore "casted in specifically treated formworks, built with shaped boards and placed in order to create the ruled surfaces as shown in the drawings"^{xiii}.

The final output is yet the result of cooperation between architects and structural engineers that has been tested several times by Nervi. Vaccaro's proposal from 1961 is to be intended in such a collaborative spirit, which provided a 10 meter curtailment of two spans of the southern arm and the overall addition of an entire floor, all of which has been checked and approved by Nervi. The choice is justified both from "the overall volumetric balance of the building, and also in relation with the surrounding environment", and considering that "the aesthetic enhancement will be very important as the building will appear much lighter as a result of the curtailment and the raising"^{xiv}.

Not to be forgotten, in fact, the attention given to the urban condition of the square, today that the center of the square is about to undergo its umpteenth transformation and again the skyscraper is a recognizable mark of the Napoli Centrale Station.

ⁱ Zevi, B. (1979). *Bilancio del decennio 1955-65. La fine dell'anti-avanguardia*. Cronache di architettura. 11, 131.

ⁱⁱ To the whole story, even before the competition of 1954, I devoted an essay: De Falco, C. (2010). *La costruzione della nuova stazione nel secondo dopoguerra*, in *La stazione Centrale di Napoli. Storia e architettura di un palinsesto urbano*, edited by Lenza C.. Milano: Electa, 106-139.

ⁱⁱⁱ Nervi, P. L. & Vaccaro, G. & Campanella, M. (1955). *Progetto di concorso per il nuovo Fabbricato Viaggiatori della Stazione Ferroviaria di Napoli*, Ingegneri e Architetti, V, 6, 3.

^{iv} Ponti, G. (1955). *Progetto per la stazione di Napoli*. Domus. 306, March, 1.

^v *Concours pour la gare de Naples*. Architecture d'Aujourd'hui, 64, March 1956, p.6.

^{vi} The drawings are placed at the CSAC Archive (Parma, Italy), Pier Luigi Nervi fund, 150/4.

^{vii} He received the assignment in 1950, when L. Kahn receives a scholarship at the Accademia americana in Roma. Mc Carter, R. (2005). *Louis I. Kahn*. London: Phaidon, 64-82.

^{viii} *All'Ente provinciale per il turismo*, 15 January 1959. Archivio delle Ferrovie dello Stato di Roma (Archives of the State Railways of Rome from now on AFSR), *Servizio Lavori e Costruzioni*, series C IV, 59 (36), b.6804.

^{ix} *Nuove sistemazioni della Stazione ferroviaria di Napoli*, 10 agosto 1958. AFSR, Servizio Lavori e Costruzioni, series C IV, 59 (36), b. 1490 B, c. 607.

^x Chizzoniti, N. (1959). *Nel 1960 la vedremo così*. Il Giornale d'Italia, February 7th., 6.

^{xi} AFSR, *Servizio Lavori e Costruzioni*, serie C IV, 59 (36), b.5646 B, November 13, 1959, and the *Relazione delle strutture* presented in Roma on the 30th of November 1959: b.6783.

^{xii} The redevelopment plan of the station is still taking place by the Società Grandi Stazioni, which involves the restoration of the old hotel function of a part of the skyscraper. The zone of the big restaurant is under construction, while the external cafeteria houses a McDonald's.

^{xiii} CSAC Archive (Parma, Italy), P.L. Nervi fund, Stazione di Napoli, 150/4.

^{xiv} Vaccaro assures that «the statical possibility has been considered by Prof. Nervi and confirmed as possible»: *Napoli Centrale F.V. Proposta di variante al progetto*, December 11th, 1961. AFSR, *Servizio Lavori e Costruzioni*, C IV series, 59 (36), folder 6784, unnumbered.

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