

# **Colour and Colorimetry Multidisciplinary Contributions**

**Vol. XVI B**

Edited by Veronica Marchiafava and Marcello Picollo



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## **6. Colour and Build Environment**

## The color of urban scenography in “Modern Genoa”

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### Abstract

Modern architecture in Genoa rests on three main reasons: the complex natural place, the industrial and port socio-economic matrix and the absence, until the 1960s, of a school of local architecture. The architects who with their attempt to approach the reality of Genoa, a difficult and stimulating site, and through the development of constructive characteristics typical of industry such as rhythm and seriality, invention, indifference to the formal rule and great impact, are to be considered fundamental on the urban landscape, they radically changed the perception of places. The great transformations move along the great historical-urbanistic changes of the city: 1926 - unification in the Great Genoa of 19 Municipalities; 1936-38 new docks in Sampierdarena and the new heavy traffic road Genova Serravalle; 1930-32 the Town Plan for central and Levante areas and public competitions; Regime and architecture: modernizing force that welcomes the currents of the artistic avant-garde in its ranks.

This study investigates the relationship between the city, the transition phase between the liberty influences and the search for the essential in the figure of Giuseppe Crosa di Vergagni and the choices of the Municipality of Genoa which determined the new urban spatiality with the architects who in the Fascist regime period remained unknown - Technical Offices of the Municipality and Mario Braccialini 1930-1955 very interesting public works, by architects remained unknown. (G. Gentilomo, L.Solari, R.Tassistro, G.Zappa).

In addition, the figures of Daneri, Fuselli, Morozzo della Rocca, Vietti with the open and radical evolution that leads to a change in spatiality and the years of the great urban opportunities indicated by the 1932 Town Plan elaborated by Zappa and Viale that lead to the creation of three unitary interventions: Piazza della Vittoria, Piazza Dante -Piazza Rossetti with the figures of Piacentini and Daneri. The color in these architectures, precisely because determined by the materials, plays a fundamental role in the definition of the volumes and in the components of weight-shape-light.

**Keywords:** color, materials, perception, rationalism.

### Introduction

In 1926, on the pages of "Rassegna Italiana", Group 7, made up of seven Lombard architects, including Luigi Figini, Gino Pollini and Giuseppe Terragni declared: the new architecture, the true architecture, must result from a strict adherence to logic, to rationality. A rigid constructivism must dictate the rules. The new forms of architecture will have to receive the aesthetic value only from the character of necessity, and only later, through selection, the style will be born. Since we do not pretend to create a style at all (similar attempts to create from nothing, lead to results such as "liberty"); but from the constant use of rationality, from the perfect correspondence of the structure of the building to the proposed purposes, the style will result by selection. It is necessary to succeed in this: to ennoble with the indefinable and abstract perfection of pure rhythm, the simple constructiveness, which alone would not be beauty. It has been said, "by selection": this word is surprising. We add: it is necessary to persuade oneself of the need to produce types, few types, fundamental. [...] It is necessary to be

convinced that at least for a time the new architecture will be made in part of renunciation. It is necessary to have this courage: architecture can no longer be individual.

In the coordinated effort to save it, to bring it back to the most rigid logic, to the direct derivation from the needs of our times, it is now necessary to sacrifice one's personality; and only from this temporary leveling, from this fusion of all tendencies into one tendency, will our architecture, truly ours, be born. [...] and we young people are ready to give up our individuality for the creation of "types": to the elegant eclecticism of the individual we oppose the spirit of mass production, the renunciation of individuality. It will be said that the new architecture will be poor; we must not confuse simplicity with poverty: it will be simple, and the greatest refinement lies in perfecting simplicity. (1)

## Urbanistic Conversations

The debate relating to urban planning in the first half of the twentieth century is widely covered in the new sector magazines: *Architettura* magazine of the national fascist architects union, *Rassegna Italiana*, *Rassegna di Architettura* monthly magazine of architecture and decoration, *Edilizia Moderna*, *Architettura e Arti Decorative* organ of the National Union of Architects, *Urbanistica* magazine of the National Institute of Urban Planning, *Casabella-Costruzioni*, *Casabella Continuità*, *Domus* and *METRON* international architecture magazine.

The selection of some articles, following a careful critical research on the "style" of the new Italian architecture, focuses on some sections of the magazines: City Plans and Architecture, Urbanism or Urbanisms ?, City Plans and Traffic, Urbanistic Conversations, Bibliography and Technical newsletters.

Cesare Albertini, in *Piani Regolatori e Architettura* of 1932, explores the causes of the mutual influences that the shape and layout of the streets can exert on the shape and aspects of the buildings as essential building blocks of the city that determine the physiognomy together with the streets and squares of inhabited areas.

In this regard, reference is also made to the American city plans which, unlike the European cities, are not the product of historical and traditional factors, but were formed on the basis of a pre-established plan and it is of particular interest to understand what influences those plans had on the architecture and the appearance of cities. Philadelphia and Washington reflect the American ideal chessboard plan. In 1807 a Special Commission was commissioned to prepare the New York City Master Plan with different objectives guided by the simplistic concept that a city is made up of dwelling houses and that rectangular houses allow the most convenient use of the land. But this led to the lack of space for large public works and, as it was not possible to extend, the grandiosity was sought in the exceptional height of the buildings. Albertini criticizes the relationship between buildings and the chessboard pattern, with roads and intersections that do not allow to enhance the aesthetic appearance of the buildings. [2]

In April of the same year -1932- the directives of the Regime for the Cities Plans were published, which must include wide streets and squares. Look Great, displace, decentralize, restore. Respect the memories of the city, but do not make old stuff the object of bigoted veneration. [3]

In 1932 in Genoa a new master plan, called the "master plan of the central areas of the city", provided for various revolutions of the road structure and in the city building style, with the demolition of part of the historic center, necessary for the opening of new roads and the construction of some galleries including Galleria Colombo in 1937. The competition was won in August 1931 by the "Janua" group, made up of architects Giulio Zappa and Aldo Vitale. The Genoese architect Robaldo Morozzo della Rocca also collaborated in the study of the detailed plan for Zappa and Vitale, in his role as representative of the Superintendency.

In the drawings of the awarded projects, the solutions have similar characters but the winning project presents excellent traffic solutions and the good layout of Piazza Dante. [4]

His original project involved the construction of four high-rise skyscrapers: from the center of the square, towards the outside, it was however transformed by the intervention of the architect Marcello Piacentini, who, appointed consultant for the detailed plan of the area, outlined a different plan-altimetric approach, reducing the number of skyscrapers from four to two.

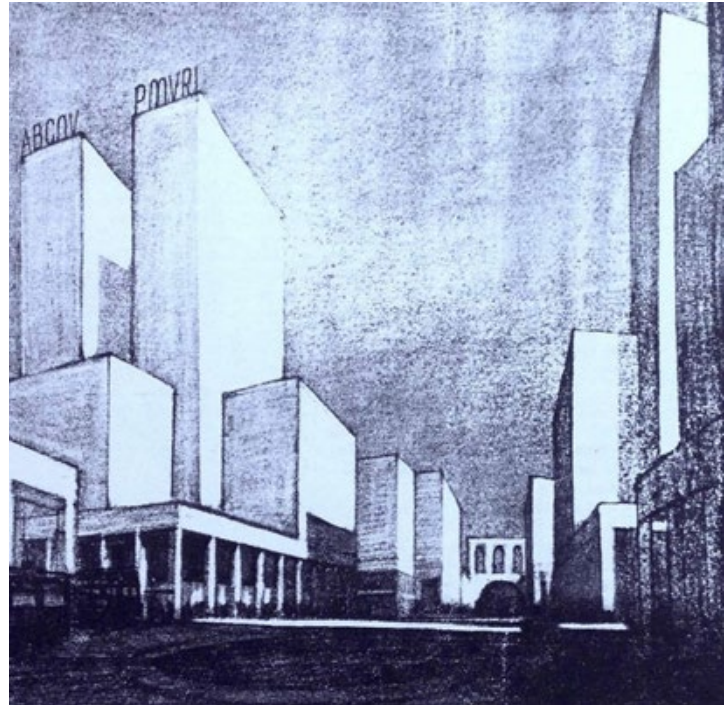
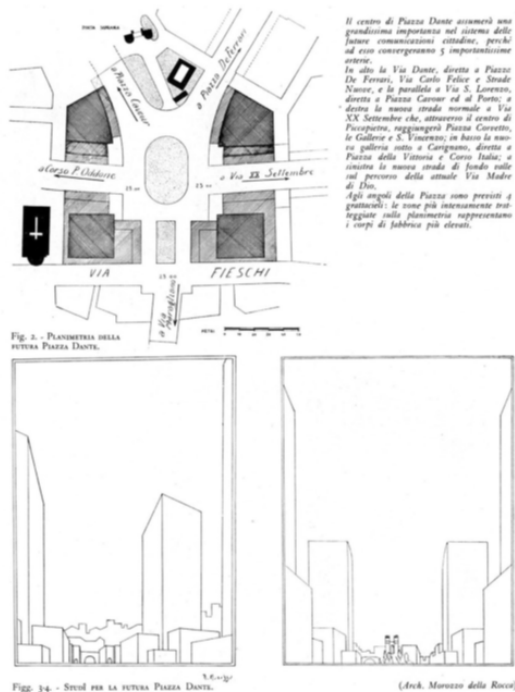


Fig.1- Plan and studies of the future Piazza Dante by arch. Morozzo della Rocca. Architecture, Magazine of the National Fascist Architects Union - Urban Planning The City Plan of Genoa - 1932 pag. 690.

The monumental structure of the Galleria Colombo by Tomaso Badano and Giulio Zappa served as a closing perspective and stood out thanks to the chromatic contrast between the black marble cladding and the white frame of the arches.

Piazza della Vittoria was born in the same decade as piazza Dante (1930), conceived in the original form by the architect Marcello Piacentini, who also redesigns the project for the triumphal arch (1924) to crown it, inaugurated on May 31 1931.

The two longitudinal elevations of the square are characterized by razionalist architecture that surrounds it, while from the north side a straight axis opens which, passing through via Giuseppe Verdi, connects it to the Brignole station. The south side ends with the Caravelle gardens, which create an elevated observation point. Piazza Dante and Piazza della Vittoria were connected through a road axis that includes the Galleria Cristoforo Colombo and the straight Via Ippolito D 'Aste, the result of the master plan of the central areas, aimed at expanding the boundaries of the city center to the mouth of the Bisagno stream, unifying them under a single style.

On the other side of the Bisagno stream, there is another important square in Genoa: it is Piazza Rossetti, designed in 1933 by the architect Luigi Carlo Daneri; called "social and seaside square" also in rationalist theme, it refers to Scandinavian models and completes the Genoese rationalist panorama. The three squares, together with the more eclectic Piazza De Ferrari, became the four focal points of the city center, each with a different function. In the original project they were thought to form a circumvallation around the new center of Genoa.

Genoa therefore sees the transformation of the city through the new squares. The first urban planner to propose a careful study of the concept of the square was Viennese architect Camillo Sitte, who in 1889 published the text "Der Stadtebau nach seinen Kunstlerischen Grundsätzen" ("The art of building cities"), in which it is placed great attention to the art of space, to squares as a fundamental urban element for city life.

Sitte's study of the squares is divided into various chapters, which, however, present a common crucial point: the shape. He measures the buildings, the streets, the layout of the monuments (churches, fountains, statues), hypothesizing the public space as the sum of several individual interventions, capable of creating a collective result, composed of a complex stratification of different languages, and it should be investigated how a work of art should be studied. The square, therefore, from an incubator of monuments, becomes itself a monument, transforming itself into an architectural unicum.[5]

### The formal and chromatic choices

In June 1936 the demolition and excavation works began which between 1937 and 1938 will lead to the construction of the "skyscrapers" in Piazza Dante.

The visual games and the perspectives allow to enhance the main historical-artistic buildings while the demolition of some ancient parts of the cities also allows the easy flow of penetration traffic flows. Piacentini describes his stylistic choices in *Architettura d'oggi* with the need to achieve integral unity and correspondence between form and substance, between architecture and construction, against the decadent dualism that took place to its worst consequences through eclecticism. The complex social, economic, industrial life of the twentieth century affects aesthetics: scientifically organized work leads to the type of mass construction. Only with these criteria can American skyscrapers, grandiose blocks of metropolitan housing be made. [6]

The formal values of the American skyscrapers, linked to the directives of the Regime, merge into the celebratory architecture by M. Piacentini.

The Commission on Building Districts and Restrictions, Board of Estimate of New York, expressed the concept of the zoning envelope as the most innovative aspect of the 1916 ordinance. Although, as the reformers noted, the principle of regulating bulk had precedents in Parisian and other European building codes, at the high-rise scale introduced in New York City, the formula for a maximum spatial envelope was entirely new. The idea of stepping back the upper floors of high-rises to allow more light to reach the street had first been suggested by American architects in the 1890s, and in 1907 and 1908, when several prominent figures, including David K. Boyd, had proposed a formula for setback massing. That idea, combined with Flagg's plan for allowing a tower on one-quarter of the site, became the basis of the zoning envelope. [7]



Fig.2- From left: Shelton Hotel, Barclay Vesey Building, New York Telephone Building, The New Yorker Hotel.



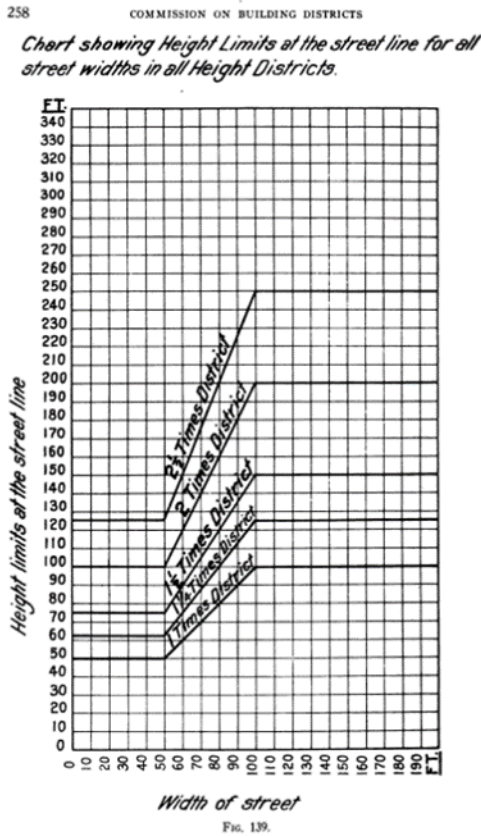
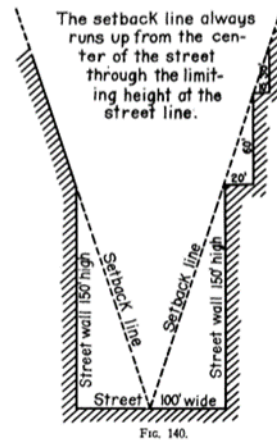


Fig.3 - Final report, June 2, 1916. Commission on Building Districts and Restrictions, Board of Estimate, New York, 258-9.

street in a one and one-half times district, he can add on an upper 30 feet provided he sets the upper 30 feet back 10 feet from the street line. He can make that setback right from the height limit in the form of a mansard which would slope back in a ratio of one foot horizontally to three feet vertically, or in a setback of three and one-third feet for each of three stories, or in a setback of 10 feet for the whole height of 30 feet; then he can set back again above the top of this set-back provided he keeps in the same set-back plane. In general the set-backs might be determined by a line drawn from the centre of the street up through the horizontal line in the street wall on the street line at the level of the height limit on the street

**SETBACK PRINCIPLE.**

*Typical example in a 1 1/4 times district, for streets 50' to 100' wide.*



line for that district and street. In the street in question this horizontal height limit line would be at a level of 90 feet. These two lines would determine a plane which might be called a setback plane, and no portion

The North Tower by Arch. Giuseppe Rosso, also known as " Dante Tower 2", is the first to be built between 1936 and 1938 by the construction company Gazzani and Lavarello (it will be the only building to respect the project envisaged by the master plan). With the subsequent construction of the South skyscraper, however, the primitive symmetric approach is lost and the side scene perspective is unbalanced in favor of the Piacentini skyscraper.

The rationalist style, also influenced by American lines, develops throughout Europe at times with futurist influences that can be found in the North Tower, especially on the side towards Via XX Settembre with the same chromatic formalisms of the French intervention of Villaeburne. [8]



Fig.4 - From left: North Tower in Genoa arch. Giuseppe Rosso 1936-1938; Tower Buildings Villeurbanne Lyon, arch. Leroux Giroud 1931-1934.

The North Tower is in reinforced concrete with cladding of different materials, including the stone of San Gottardo (for the base), the red of Verona in the atrium, the travertine for the exteriors and the green Alpi for the flooring. The structure consists of 21 floors: 7 floors make up the porticoed base, while the other 14 make up the tower that rises above. This last part of the skyscraper has obvious references to the Futurist movement, both in terms of the dynamic vertical momentum (the building in fact reaches 78 meters in height), and for the suspended walkways on the upper floors. After a few years, however, the South Tower stole the show, unbalancing the perspective view both for its imposing size and for the chromatic coating, which stands out more than the surrounding buildings. Torre Piacentini, built in reinforced concrete between 1938 and 1940, was in fact the tallest building erected in Piazza Dante, with its 108 meters high.



Fig.5 - Torre Piacentini: Regulatory plan of Genoa and insertion of the project in the district of Ponticello subject to building thinning for the construction of Piazza Dante.

The tower designed by architect Piacentini was built by the engineer Angelo Invernizzi between 30 July 1938 and 28 March 1940 with a reinforced concrete structure.

A variety of materials were used for the construction of the building: Mazzano marble in the plinth and Botticino in the upper cladding, Rosso Levanto in the frames of the entrances, Travertine in the internal claddings of the portico and Verde Alpi in the internal floors of the atriums.

The tower is alternately covered with courses of about one meter in lithoceramics (red clinker) and small courses of about 30 cm in Botticino marble.

The building also stands out for some decorations, the mosaics by Cesare Garusso and Oscar Saccorotti, while two bas-reliefs by Guido Galletti are carved in the façade of the plinth, one representing the navigator Cristoforo Colombo and the other the Balilla in defense of Porta Soprana. Palazzo Gaslini stands next to the Piacentini Tower. Similarly to the two main towers, Palazzo Gaslini, as well as the subsequent Palazzo INA, was designed to have a volume equal to theirs, so as not to create unevenness within the square project. Due to some dynamics, however, the building, under the supervision of Piacentini, did not exceed 40 meters in height, in fact, the unsolved physiognomy of the area, due to the indefiniteness between the square and the road junction, did not allow completion.



Palazzo INA is the mirror building of Palazzo Gaslini and, as the two towers can be considered twins, these two buildings also have a structural link between them, which makes the square harmonious, in particular the connection with Via Dante. As previously said, this building, like the Gaslini one, was thought as high as the two Towers, and here, this first project, is particularly noticeable, since the upper part, with the vertical momentum of the tower (dominated by a large white pergola), seems to evoke the originally planned height. its chromatic relationship, which provides a strong contrast between the red clinker and the white marble borders; for the cubature and overlapping terraces; for its curvilinear profile, which makes the relationship with the Gaslini building harmonious.

**Conclusion**



Fig.6 - Materials and chromatic map of the palaces of Piazza Dante

Modern architecture is all turned towards a violent expressionism, writes G. Samonà in Review of Architecture - The Functions of Ornate in Modern Architecture. *Everyone feels the need to crudely cut shapes and grooves, to make the architectural elements as harsh as possible. Therefore the bold modern polychromy was for the architect a powerful means of accentuation, especially since the*



*chiaroscuro obtained by contrasting masses is not today, in general, practically a means to emphasize the compositional lines, these always retain a complete and serene fusion, a harmony of meters and rhythms, which the colors, much calmer than those used today, will never be able to disturb. Because instead the architectures oriented, like ours, to manifest themselves with powerful contrasts, always made use of chiaroscuro.*

*But the most characteristic index of this feeling of square, straight, crudely rhythmic, is offered to us by the black and white drawing, which is today the most common graphic expression for architectural projects. This way of drawing, on the other hand, aims to emphasize the modeling of the composition with the utmost energy, aiming to obtain in the drawing the sharp effects that they intend to implement in true color.*

*If color helps to give life to architecture, distinguishing it from engineering, the decoration has been simplified to the extreme even in the careful processing to which the noble materials are subjected that become part of architectural elements, from semi-precious stones to polychrome marbles.*

*The new decoration enhances particular color tones in the marble that draws the most daring notes by contrasting rough and roughly hewn parts with smooth and shiny parts, which dramatizes the expression, for example by drowning a white frame in a very wide dark band.[9]*

The decorative function of color wants to give a sense of grandeur, coldness. The very particular polychromy, intended to enhance and underline the rough architectural squaring, has no comparison in the past.

## References

Albertini C., (1932), 'Conversazioni urbanistiche, Direttive', (3), *Rassegna di Architettura* , X 15 aprile n. 4.

Albertini C, (1932) 'Conversazioni urbanistiche, Piani regolatori ed architettura', (2), *Rassegna di Architettura* , XI 15 dicembre n.12.

Diotallevi I, Marescotti F.,(1941), 'Aspetti e Problemi della casa popolare. Costruzioni a blocco aperto' (8), *Costruzioni Casabella* , XIX agosto n. 164.

Final report, June 2, 1916. Commission on Building Districts and Restrictions, Board of Estimate, New York, 258-9, (7).

Fuselli E, (1932), 'Urbanistica. Concorso per il Piano regolatore della città di Genova',(4), *Architettura, Rivista del sindacato nazionale Fascista architetti*, X febbraio fascicolo II.

Gruppo 7, (1926), 'Architettura', (1), *Rassegna italiana*, dicembre 1926 n. 103

Piacentini M., (1930) 'Architettura d'oggi' (6) , *Architettura e Arti decorative* , IX luglio fasc. XI.

Samonà G., (1930), 'Le funzioni dell'ornato nell'architettura moderna', (9), *Rassegna di Architettura*, VIII 15 marzo n. 3.

Sitte C, (1889), 'Der Stadtebau nach seinen Kunstlerischen Grundsätzen', (5), Birkhauser, Berlin.