

ARCHITECTURE HERITAGE and DESIGN

Carmine Gambardella

XXI INTERNATIONAL FORUM

Le Vie dei  
Mercanti



World Heritage and Dwelling on Earth



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Carmine Gambardella  
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Le Vie dei Mercanti  
XXI International Forum

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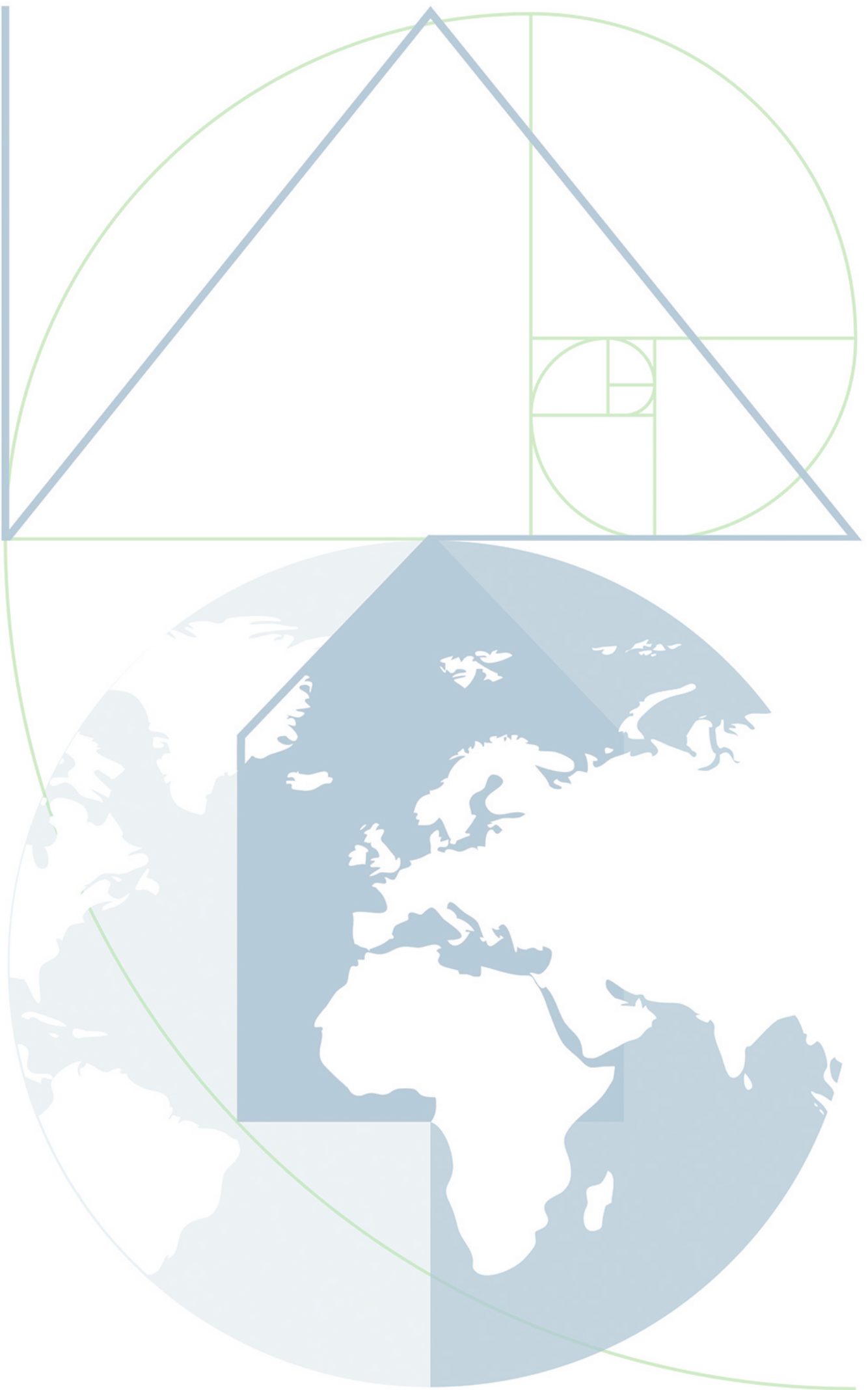
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Scholars has been invited to submit researches on theoretical and methodological aspects related to Smart Design, Planning and Technologies, and show real applications and experiences carried out on this themes. Based on blind peer review, abstracts has been accepted, conditionally accepted, or rejected. Authors of accepted and conditionally accepted papers has been invited to submit full papers. These has been again peer-reviewed and selected for the oral session and publication, or only for the publication in the conference proceedings.

### **Conference report**

200 abstracts and 330 authors from 30 countries:

Albania, Australia, Belgium, Bosnia and Herzegovina, Brasil, Bulgaria, California, Chile, China, Cipro, Cuba, Egypt, France, Germany, Greece, India, Italy, Japan, Jordan, Malta, New Jersey, New York, Poland, Portugal, Russian Federation, Serbia, Spain, Texas, Tunisia, Turkey

## XXI FORUM WORLD HERITAGE and DWELLING ON EARTH

Abitare la terra! Questo è l'obiettivo essenziale, sintetizzato dalla denominazione della conferenza, cui abbiamo continuamente teso con i Forum "Le Vie dei Mercanti" lungo gli ultimi ventuno anni. Ancora oggi, questa rimane per noi la stessa prospettiva di lavoro. Un intento da perseguire con ancor più forte convincimento e con persino maggiore efficacia, dal momento che tutti noi siamo coscienti di trovarci in uno stato di emergenza con lo scenario drammatico aperto dai cambiamenti climatici.

Quindi, come agire adesso rispetto a questo imperativo globale?

Per prima cosa, mi piacerebbe partire dal lavoro che abbiamo fatto in tutti i Forum annuali, dagli approfondimenti interconnessi sulla transizione ecologica, la contaminazione, il patrimonio culturale, i disastri ambientali, per ciò che concerne il loro impatto sul World Heritage. In tale modo, la preoccupazione per l'abitabilità della nostra terra ha non solo integrato capacità, esperienze, buone pratiche di ricercatori e accademici, ma ha anche creato una comunità scientifica con provenienze da ogni parte del mondo che fosse in grado di interagire in modo interdisciplinare. Ci siamo fondati sul convincimento che un'azione collaborativa richiedesse, oltre una prassi di controllo, una profonda fiducia nella capacità umana di riuscire a difendere il proprio patrimonio ereditario rigenerandolo con forte determinazione. Questa è la migliore strategia per trasmettere al futuro i beni che ci ha consegnato la storia e che noi dobbiamo difendere. Lo scopo perseguito è ovviamente non solo di quello potere agire in anticipo rispetto a un disastro ambientale, ma anche di promuovere nel nostro mondo un processo progettuale in grado di ridisegnare la relazione tra ciascun uomo e l'ambiente in cui vive.

Ribadendo in ciascun Forum che "il futuro è un eterno presente", abbiamo continuato a guardare a ciò che verrà con ottimismo, con la speranza che, cominciando sin d'ora con azioni effettive e coscienti, noi potessimo porre le basi per il mantenimento di un equilibrio globale. La recente pandemia ha mostrato come, al di là delle strategie resilienti per neutralizzare processi produttivi che si sono mostrati ostili al benessere ambientale, dovessimo ricercare una nuova omeostasi nel nostro ambiente abitabile. Solo lavorando insieme in questa direzione, potremmo efficientemente riadeguare via via le reazioni, in modo da neutralizzare persino gran parte degli impatti ambientali nella ricerca di un nuovo equilibrio.

L'argomento del Forum di quest'anno invita i ricercatori a riflettere sulle buone pratiche implementate con progetti operativi, strategie o proposte progettuali. Obiettivo principale è contrastare il processo che ha portato le persone e l'ambiente in cui vivono alle condizioni inaccettabili che riusciamo fisicamente a individuare con chiarezza nel degrado territoriale e paesaggistico. Inoltre, bisogna pensare a nuove strategie per un progetto difensivo che possa realmente dimostrarsi efficace. Ma ciò che è ancora più importante, una volta resosi conto dell'urgenza della situazione, è che l'enorme responsabilità ambientale ci impone di non fare affidamento su soluzioni semplicistiche. Non c'è alcuna semplice prestazione tecnologica che da sola possa essere assunta tout court come soluzione definitivamente ottimale, ma bisogna intervenire attraverso una dinamica osmotica di conoscenze e tecnologie. Solo attraverso un processo di conoscenze continuo le persone possono misurare lo stato del loro benessere e allo stesso tempo agire come garanti della qualità terrestre. Una nozione di "misura", fondata su una dinamica perpetua di conoscenza, può mostrarsi affidabile promuovendo nuovi modelli di sviluppo fondati su un rinnovato Umanesimo.

Prof. Carmine Gambardella  
General Chair XXI Forum 'World Heritage and Dwelling on Earth'  
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## XXI FORUM WORLD HERITAGE and DWELLING ON EARTH

Abitare la terra! Dwelling on Earth! That is the essential goal, synthesized by the title of this conference, towards which we have been working with “Le vie dei Mercanti” forum over twenty-one years. It still remains today the same perspective for us. An intent to be pursued with greater commitment and providing even higher effectiveness, as we all are now aware of being in an emergency with the dramatic scenario opened by climate change.

Therefore, what are we to do now with respect to this global imperative?

First, I would like to start from the work we have done in every annual forum, the interconnected focus on Ecological Transition, Contamination, Legacy, Knowledge and Disaster, as regards their impact on World Heritage. In that way, the concern for the habitability of our Earth has not only integrated skills, experiences, good practices of Scholars and Academics, but has also created a scientific community from around the world for discussing such multidisciplinary topics. We had the conviction that collaborative action requires not only practices for control, but also a reliance on human ability to ever succeed in defending his patrimonial value with the strong determination to re-design our everyday places. This is the best way for transmitting to the future the values that heritage has passed on to us and we must protect. The pursued goal is obviously not only to act in advance with respect to an environmental disaster, but also to promote in our world a design process in order to re-design the relationship between each man and his living environment.

Emphasizing in each forum that for us the future is as an eternal present, we have continued to look at the future with optimism, with the trust that, beginning now with effective conscious actions, we can put the basis for maintaining a global equilibrium. Recent pandemic has shown that, apart from resilient strategies for neutralizing productive processes which showed to be hostile to the environment, we need to search for a new homeostasis into our habitable environment. Working towards this direction, we could effectively adjust responses to environmental changes, in order to neutralize even most of their consequences for reaching a new equilibrium.

So, the topic of this year’s forum invites researchers to reflect on good practices implemented with operative projects, design proposals or strategies. The main goal is reversing the trend which has led people and the environment in which they live to the unacceptable conditions we can physically recognize into territory and landscape decay. Then, we must think about new strategies for an adequate defensive design which can ultimately provide an efficient aid. But which is more important, once we have suddenly become aware of the urgency of the situation, the new enormous environmental responsibility requires us not to rely only on simple solutions. There is no easy technological performance to be assumed as a definitively optimal solution. Only the continuous practice of a “measure” that has been built upon continuous education process may give reliance; people, only with an adequate formation, can measure the state of their wellness and at the same time they can act as the guarantors of earth quality, for a new development model based on a renovated Humanism.

Prof. Carmine Gambardella  
General Chair XXI Forum ‘World Heritage and Dwelling on Earth’  
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# World Heritage and Dwelling on Earth World Heritage e Abitare la Terra

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Le Vie dei  
Mercanti

XXI INTERNATIONAL FORUM

18 • 19 • 20 May 2023 Napoli Capri

## The measurement of decorum as a practice of knowledge in the expanding Naples of the early twentieth century: some examples

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### Abstract

Adopting the goals of the Forum and with the intention of preserving the assets that history has given us, this paper proposes a path of analysis aimed at the knowledge and enhancement of some Art Nouveau architectures built in the expanding Naples of the first half of the 20th century, where the architectural sign of the full-field decorations creates a cultural relationship between man, architecture, and the environment. In order for these assets to become a collective resource, it is vital to promote increasingly in-depth knowledge analysis, also thanks to the most recent digital survey technologies, and greater dissemination to develop new strategies for a sustainable future of the city in defence of the urban environment.

The analysis of building facades leads to identifying the features of an urban environment that can be recognized as identifying a place and as a cultural attraction in the context of a development strategy. Therefore, it is necessary to spread and consolidate the imperative of dwelling on earth with respect to history, projecting into the future the assets we inherited to defend our cultural identity and for sustainable development.

Three buildings were chosen as case studies: Palazzina Rocco in Chiaia, Villa Loreley in Vomero, and Villa Pappone in Posillipo, investigated with the aim of "measuring" decorum as a practice of knowledge of a rich architectural heritage, an authentic attraction that can be used in the cultural and tourist chain of Naples.

**Keywords:** Liberty decorations in Naples, Palazzo Rocco, Villa Loreley, Villa Pappone, integrated survey.

### 1. Introduction

In the urban fabric of the city of Naples are numerous architectural works built in the Liberty/Floral style of the early 20th century, which finds expression in many Italian cities and several European countries, with differences specific to their places of origin [1]. The less speculative nature of the homes built during this period, especially in the hilly areas of new expansion, made it possible to create low-density apartment buildings and villas, where there was a greater opportunity to experiment with new architectural and decorative forms.

The Liberty style in Naples is the signature of famous architects, who also operate nationally, including Adolfo Avena, Giulio Ulisse Arata, and Gregorio Botta, and who spread the new language in the building practice, which still has traces in an urban fabric that has since developed chaotically [2]. Examples include Villa Margherita on Via Francesco De Mura 4 in Vomero, the Liberty villa on two levels in Via Crispi 76 in Chiaia, and the Floral villa in Via Marechiaro 40, which, even though they are not among the most representative and emblematic buildings of the new style, show a skilful integration of the old and the modern, with the use of decorative elements.

Dynamic, undulating, and asymmetric ornamental lines with a strong reference to natural forms characterise each element of Liberty architecture. Based on the selected case studies, this paper considers decoration as the main character of architecture, an element that "captures the eye," creates

emotions, and imprints identity onto the surface on which it develops. However, the decoration was banned by Adolf Loos in his work "Ornament and Crime" of 1908, in which the author proposed eliminating ornamentation in the design phase, laying the foundation for a new way of thinking and doing architecture [3].

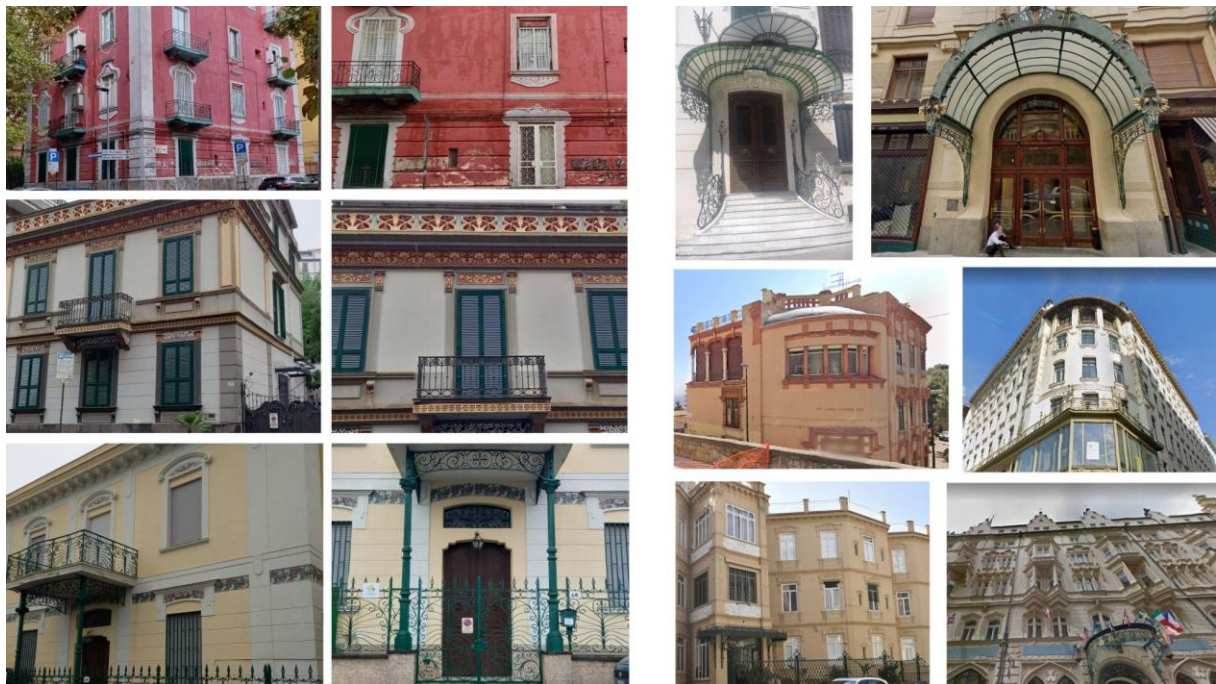
Recalling this essay, this contribution, which develops within a research on the features and expressive varieties of the new Liberty architectural language in Naples, aims, like Loos, to eliminate ornament from the Liberty architecture façades -after having surveyed and drawn them- to measure the impact that decorum exerts on them and to decode the language that decorum expresses.

Based on these premises, the main façades of three Liberty architecture buildings are analysed and compared in this study, namely Palazzina Rocco, Villa Loreley, and Villa Pappone, which were already partially investigated in previous studies using Image Based Modelling techniques.

## 2. The case studies

The case studies are located in three different hilly areas of the city of Naples: Palazzina Rocco was built in 1909 by Emanuele Rocco in Chiaia in via del Parco Margherita; Villa Loreley, designed by Adolfo Avena in 1912, is located in Vomero in via Gioacchino Toma; and finally, Villa Pappone, designed by Gregorio Botta in 1912 on behalf of Francesco Pappone, was built in Posillipo in via Salita del Casale. The choice of these buildings is because each is located in a different area of new urbanisation of the city and expresses a different compositional character that the new liberty style acquires in Naples. For example, Palazzina Rocco stands out for its volumetric variety with a mixtilinear façade profile decorated with light floral motifs, phytomorphic designs and classical stuccoes independent of stylistic reminiscences which recalls the façade of the Hotel Paris in Prague in via U Obecniho domu 1; Villa Loreley, on the other hand, expresses a transition phase between the eclecticism of the late nineteenth century and the neo-eclecticism of the early twentieth of the XX century with decorations towards the monumental that recall the Art Nouveau palaces across the Alps, such as Casa di Muse by Otto Wagner in Vienna in via Kostlergasse 1 [4]; finally, Villa Pappone, in Posillipo, is closer to the European trends of Art Nouveau; its entrance canopy recalls, for example, the barrel-vaulted iron and glass one of the building in 1090 U Prasné Brany Staré Mesto street in Prague, but also the numerous cast iron and glass entrance shelters to the Paris metro by Hector Guimard [5] (Fig.1).

The study only focuses on the façades facing the main street, for decorative expression finds its highest manifestation where there is greater visibility. This choice coincides with the main façade for Palazzina Rocco and Villa Pappone. In the case of Villa Loreley, however, all façades were considered primary since the building is located on a hairpin bend.



**Fig. 1:** Examples of Art Nouveau architecture in Naples, from the top, left: villa Margherita in via Francesco De Mura 4 in Vomero, two levels liberty villa in via Crispi 76 in Chiaia, floral villa in via Marechiaro 40. In sequence on the right: villa Pappone-Prague building, Villa Loreley-Vienna building and Palazzina Rocco-Hotel Paris in Prague.



The most evident issue is Palazzina Rocco, where on the South side, not visible from via del Parco Margherita, only the openings on the top level are decorated.

### 3. From image-based modelling to drawing

The processing of metric data, previously obtained through image-based modelling techniques, allowed the two-dimensional representation of the façades of the buildings in their entirety, the interpretation of the distribution patterns of the façades and the detailed drawing of the decorative elements. Based on this work, we studied the buildings' main compositional, formal and geometric elements. The following paragraphs describe the main phases of the photogrammetric survey of the buildings and their graphic representation.

#### 3.1 Architectural survey of the façades

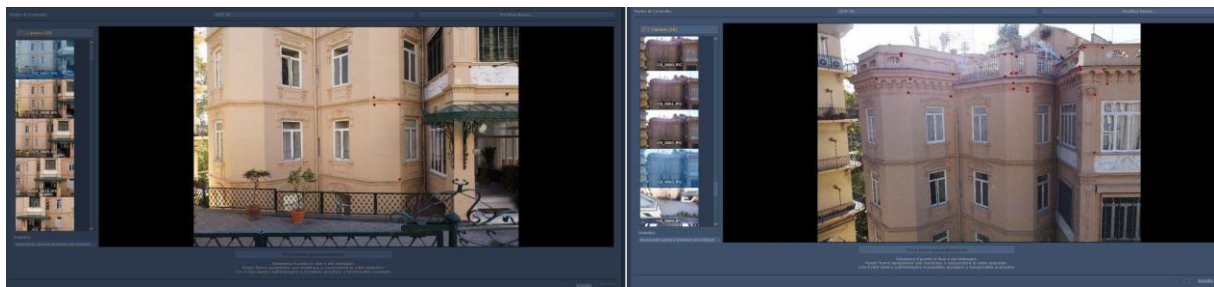
Applying direct and indirect methods, we used an integrated methodology to investigate the façades of the case studies to understand, acquire and represent information about each building at an appropriate scale [6].

From an operative point of view, there is a temporal succession of survey, processing and drawing operations due not only to logistical requirements connected to the accessibility of the sites but also to the fact that this research has emerged as a comparative study of three emblematic examples of Neapolitan Liberty previously investigated. In the preliminary phase of the work, we analysed the morphological and environmental features of each survey site, each with different peculiarities, to correctly plan the operational steps of the survey campaigns through the choice of instruments, the elaboration of eidotypes, the planning of photogrammetric surveys and drone flight stations.

In the case of Palazzina Rocco, which stands on an irregularly shaped lot enclosed on three sides by fences and terraces, two acquisition campaigns were necessary to complete the survey operations. For the first one, we used Unmanned Air Vehicle (UAV) systems to capture photographic images from all sides of the building. The drone was a DJI Mavic mini 2 Fly with an integrated camera and a 1/2.3" CMOS sensor, 35mm lens and 4k video, a model that enables flight operations in VLOS (Visual Line of Sight). For the second survey, we used a Nikon D7200 SLR camera with a 23.5 x 15.6 mm CMOS sensor with an 18-105 mm lens attached.

In the case of Villa Loreley, located in the bend of the slope via Toma, photogrammetric images could be taken with a Nikon D5200 SLR camera, APS-C sensor 23.6 x 15.7 mm, which mounts a Nikkor AF - S DX lens 18-55 mm, freely rotating the building and using the slopes and adjacent terraces to avoid effects of perspective distortion in the images. The same camera was also employed for the photogrammetric survey of the main façade of Villa Pappone. In particular, considering the complex and articulated nature of the rich entrance canopy with semi-transparent white and green glass, we decided to operate in overcast skies to avoid light reflections incompatible with the difficulties of the photo modelling software in processing images with transparent objects, mirrored or reflective surfaces. In contrast to the acquisition phase, the data processing phase for the three buildings followed a standard process in which the images were first processed in photo modelling software such as Matashape and 3DF Zephyr Aerial with ultra-high accuracy first to obtain a sparse cloud, and then a dense cloud. Since the product of the photogrammetric process has no dimensional correspondence with the actual object, it was necessary to scale the numerical models, on the base of external metric values acquired directly on-site. From the dense photogrammetric clouds, appropriately scaled and cleaned of spurious data, the mesh surfaces were elaborated, to which the photographic texture was then applied. The orthophotos were extracted from the models thus obtained and then used to create the survey drawings [7].

At the same time, a series of significant images for the study of the decorative elements were processed with the digital photo-rectification software RDF Didattica, performing projective transformations with the geometric method based on the direct measurements made (Fig. 2).



**Fig. 2:** Architectural survey of the decoration. Positioning of control points (Ground Control Point) on the facade of Palazzina Rocco for frame measurements with 3DF Zephyr Aerial software.

### 3.2 The drawings of the façades

Based on the orthophotos performed through the SfM software and appropriately scaled according to the measurements taken with the direct method, as well as with the help of digital and geometric photo rectification applications, it was possible to carry out the drawings of the façades not only in the functional and structural elements but also in the decorative apparatus. For these operations, it was also helpful to have the support of synthetical contemporary architectural blueprints of the second level of the buildings examined [8], updated based on the measurements taken.

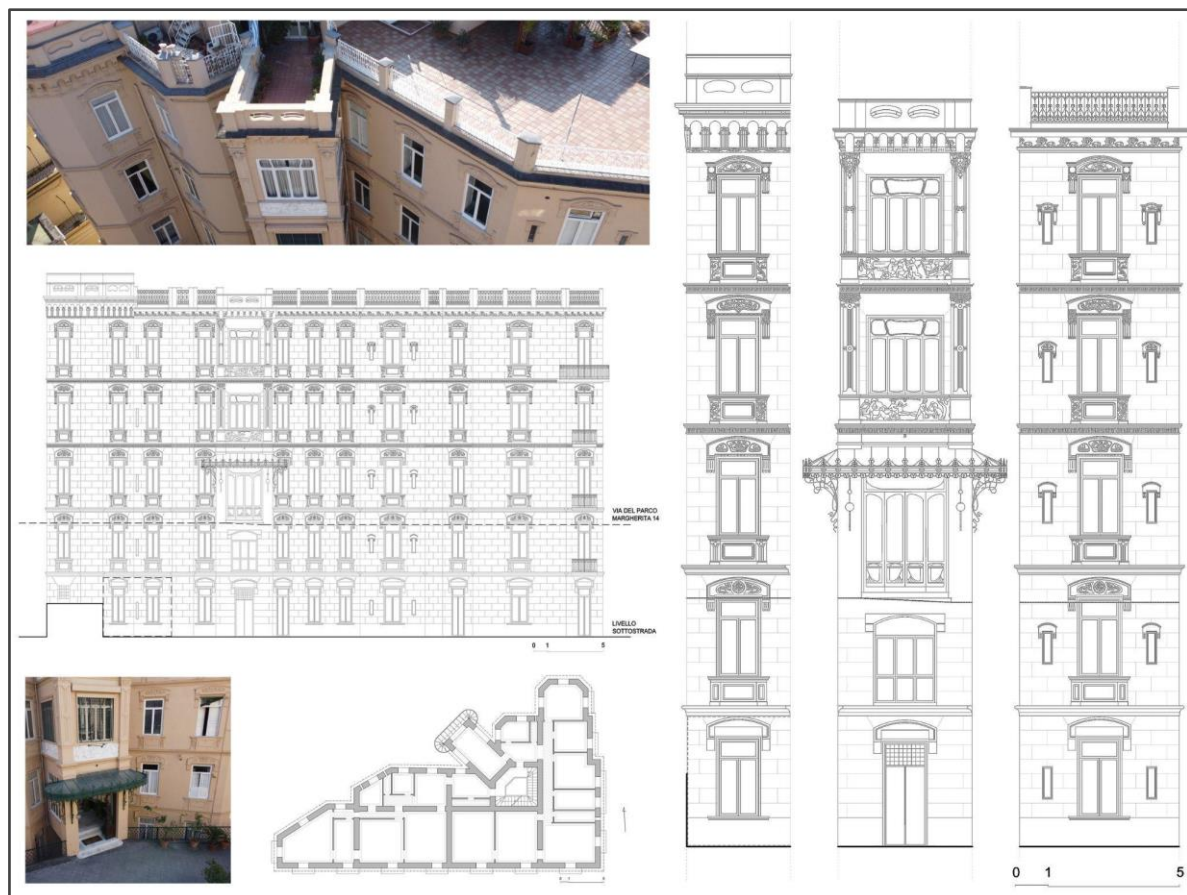
For better graphic clarity, in addition to the traditional representations in orthogonal projections, the design of the façades was also carried out in its entire development, considering a sequence of projection planes parallel to each side facing the street.

Each façade was drawn in all its elements contributing to understanding the morphology of the compositional and architectural-decorative structure: from the base to the elevated part of the roof. For the rendering, we chose a scale ratio of 1:10 to allow a true-to-scale reproduction of the drawing with a greater reduction factor without compromising the representation of the details.

The drawing of the main façades of the case studies made it possible to assess the intensity of the expressive power of the ornament in the Art Nouveau style, which contributed to enhancing proportions and new architectural solutions. The drawings show an abundance of ornaments that characterise this architectural style, reaching an extraordinary semantic range, different for each building. The decoration of a window, a door, a base, is not repeated from building to building but always represents a unicum that can only be found in the facades of the same construction.

The themes of the decoration are typical of Art Nouveau and are presented in solutions that stand out in terms of shape and colour.

In Palazzina Rocco (Fig. 3), for example, the mixtilinear façade is marked by horizontal compositional elements: the string course frames, finely decorated with motifs that vary at each level following the broken profile of the façade without interruption, bending at the corners and also following the shape of the front section where the entrance portal opens.



**Fig. 3:** Palazzina Rocco. Views of the last level and the entrance area using a drone. graphic representation in orthogonal projection of the façade on Via del Parco Margherita. Floor plan of the typical floor. Architectural details of the façade.

The sandy colour accompanies the flat surfaces of the façade and the decorated reliefs, except for the bas-reliefs under the windows of the avant-corps of the entrance, which are entirely white. The surface forming the backdrop of the façade is treated with a delicate pattern of moulded stone slabs, a faux ashlar that can be seen only at close range and crosses the space between the individual bars.

The decoration of the windows, which is different for each level of the building, is immediately readable thanks to the axially of the openings and develops as tympanum and subwindow.

The volume of the square porch, which fits into a fold in the façade, expresses an essential compositional value for the entire front of the building, both because it contains an elegant canopy of glass and iron and because it has bas-reliefs with putti and floral bands that cover the underside of the large windows, which open on three sides with curved wooden frames that bear the same motif of curved lines as the entrance portal.

Another compositional element that characterises the morphology of the façade is a tower with rounded corners that, in continuity with the overall design of the façade, closes the corner that spans the side of the building.

The façade is not visible entirely, but only on the last three floors from the portal, below which two other floors are exposed to the road and detached from it. It should be remembered that the entire building develops on a slope of Chiaia hill. On the façade is a bar holder used during the occupation of the building by fascist officers [9].

On the other hand, Villa Loreley (Fig.4) is visible from all sides, as it is located in a hairpin bend that overcomes the steep slant on the southern slope of Vomero hill. On the garden side, the façade has four levels, three outside the hairpin curve and two at the beginning of the street. From the evolution of the elevation of the entire villa, it is easy to understand the alternation of linear and curved surfaces that compose the entire façade.



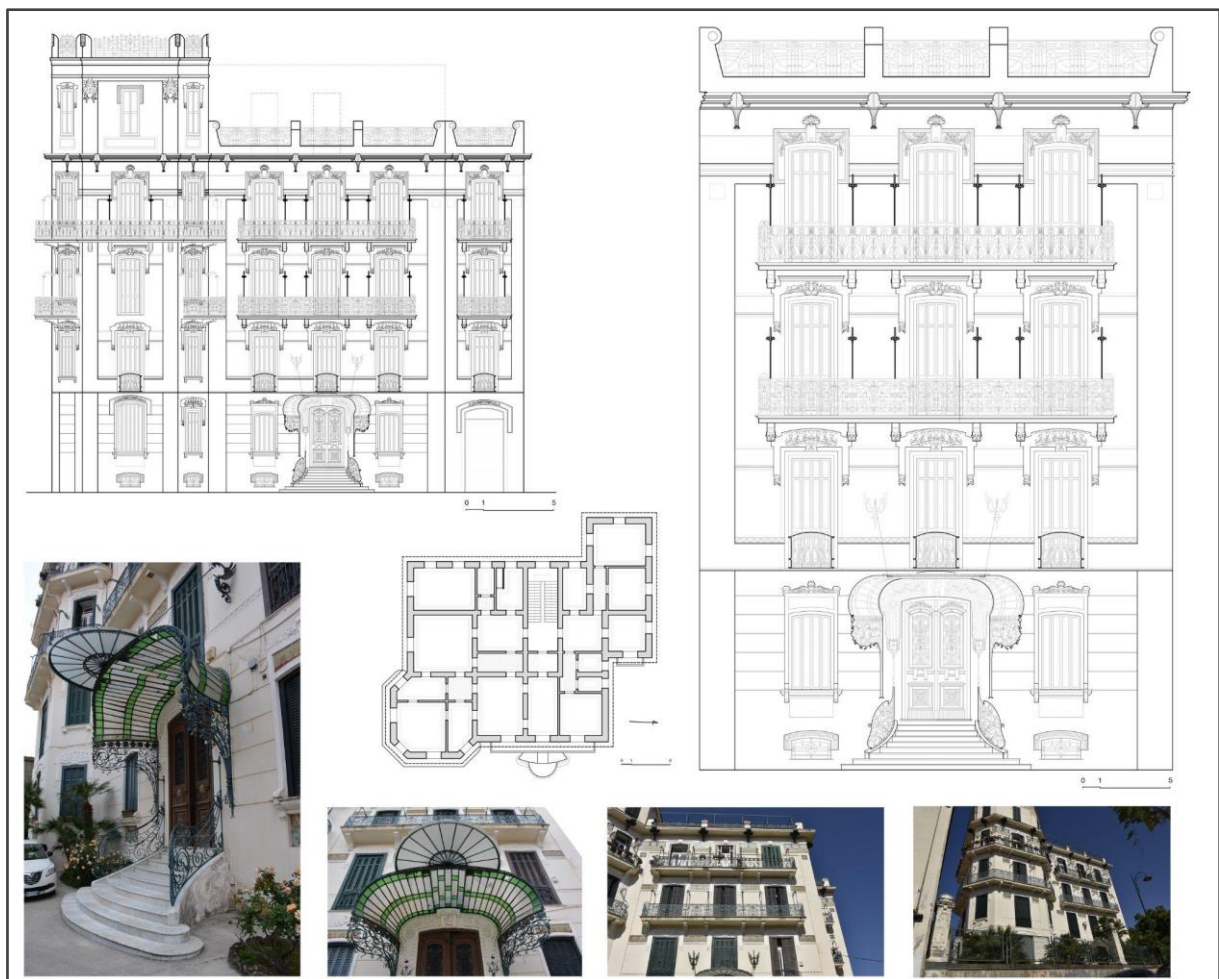
**Fig. 4:** Villa Loreley. Image of the building seen from via Palizzi with the loggia. Graphic representation in orthogonal projection of the façades on the bend of via Gioacchino Toma and on the private garden. Floor plan of the typical level. Architectural details of the façade.



On the rear level of the façade are the windows and the windows/balconies, most of which have architraves and are decorated with massive geometric motifs reminiscent of elements of Catalan architecture, with vegetal decorations introduced only on the top level. The axially of the windows reveals precise vertical bands of decoration that appear seamlessly between the second and third levels. It is noticeable that, in contrast with Palazzina Rocco, the decoration of the windows tends to decrease as the height of the façade increases.

An arched loggia of classical scale, opening on the uppermost level, marks the corner of the building towards the hill, while the façade towards the valley has a front part on which a curved balcony opens, accessible from two rooms with two windows, side by side in a mullioned frame enclosed by a single lowered arched cornice. A thin frame with polystyle columns at the base, typical of Catalan architecture, marks the entrance portal, which opens into a curved surface that follows the path of the hairpin curve and is surmounted by a "multi-light" window [2] characterised by four rounded and two half-rounded corner pillars. This short sequence of decorative elements ends with a semi-dome with majolica roof tiles, typical of the Neapolitan tradition [8]. The building's crowning element is a prominent cornice onto which the decorations of the windows and balconies below are grafted.

Finally, the façade of Villa Pappone (Fig. 5) facing Salita del Casale di Posillipo, an emblematic example of Neapolitan floral decoration, is punctuated by horizontal elements consisting, in this case, of the wrought-iron balustrades of the balconies arranged both on the last two levels and the crowning of the building, as well as by majolica bands that develop on the lower floor between the interspaces of the windows/door windows, marking the crowning and the base of the windows on the ground floor only. Different floral motifs for each floor are reproduced in the square tower with rounded corners that closes the façade on the left side. Above a simple base with horizontal bands, the decoration of the three levels is enclosed by a slightly thick frame, interrupted at the windows/ door windows of the first and third floors. The entrance to the building is marked by an elegant canopy of iron and two-tone white and green glass, supported upwards by bronze gryphons and downwards by a rich wrought-iron framework running in large volutes like a railing to the shell-shaped marble steps below.



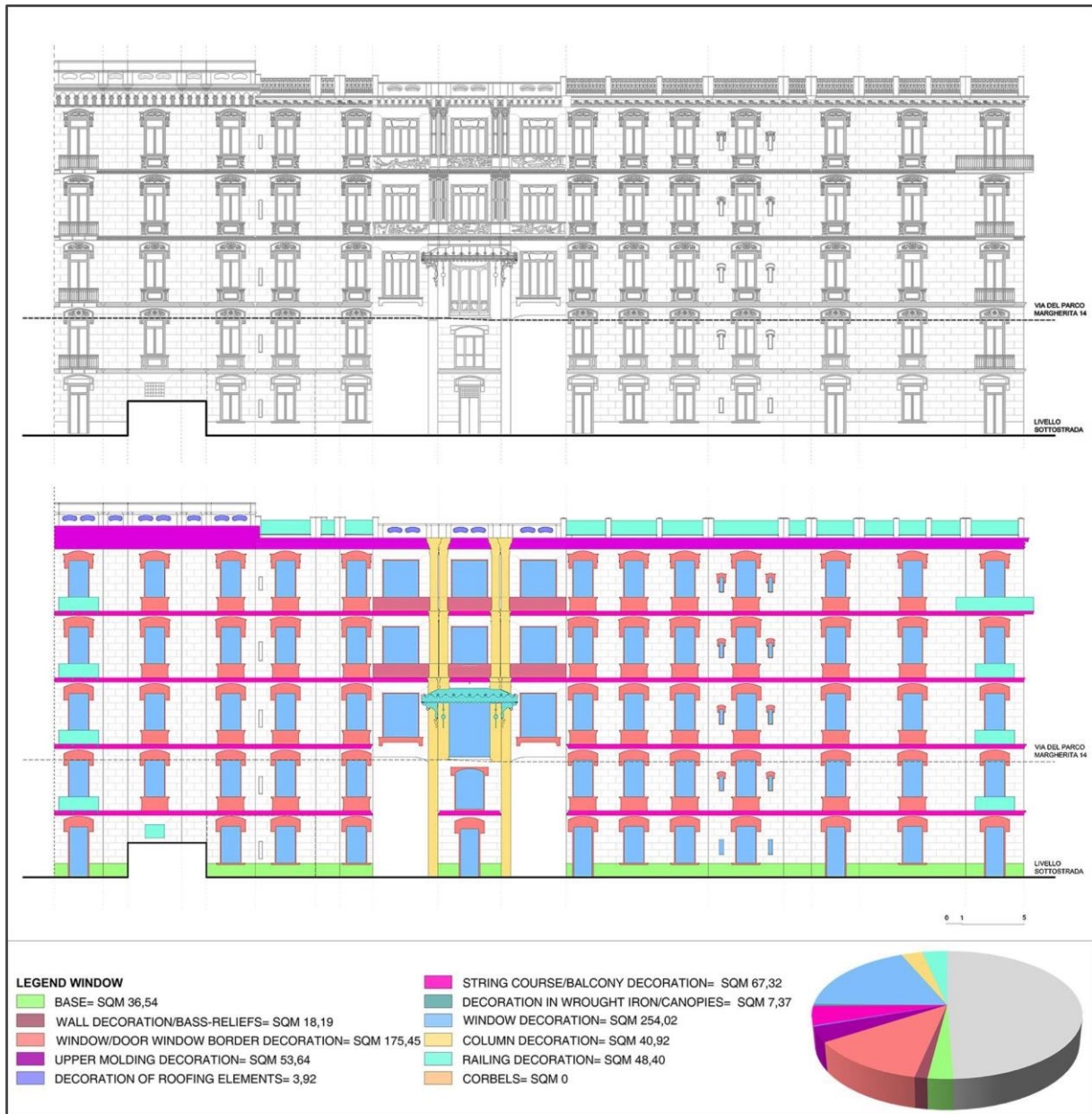
**Fig. 5:** Villa Pappone. Graphic representation in orthogonal projection of the façade. Floor plan of the typical level. Detail of the main front with the entrance. Images of the entrance canopy and the building seen from Salita del Casale. Graphic representation in orthogonal projection of the façade. Floor plan of the typical level.



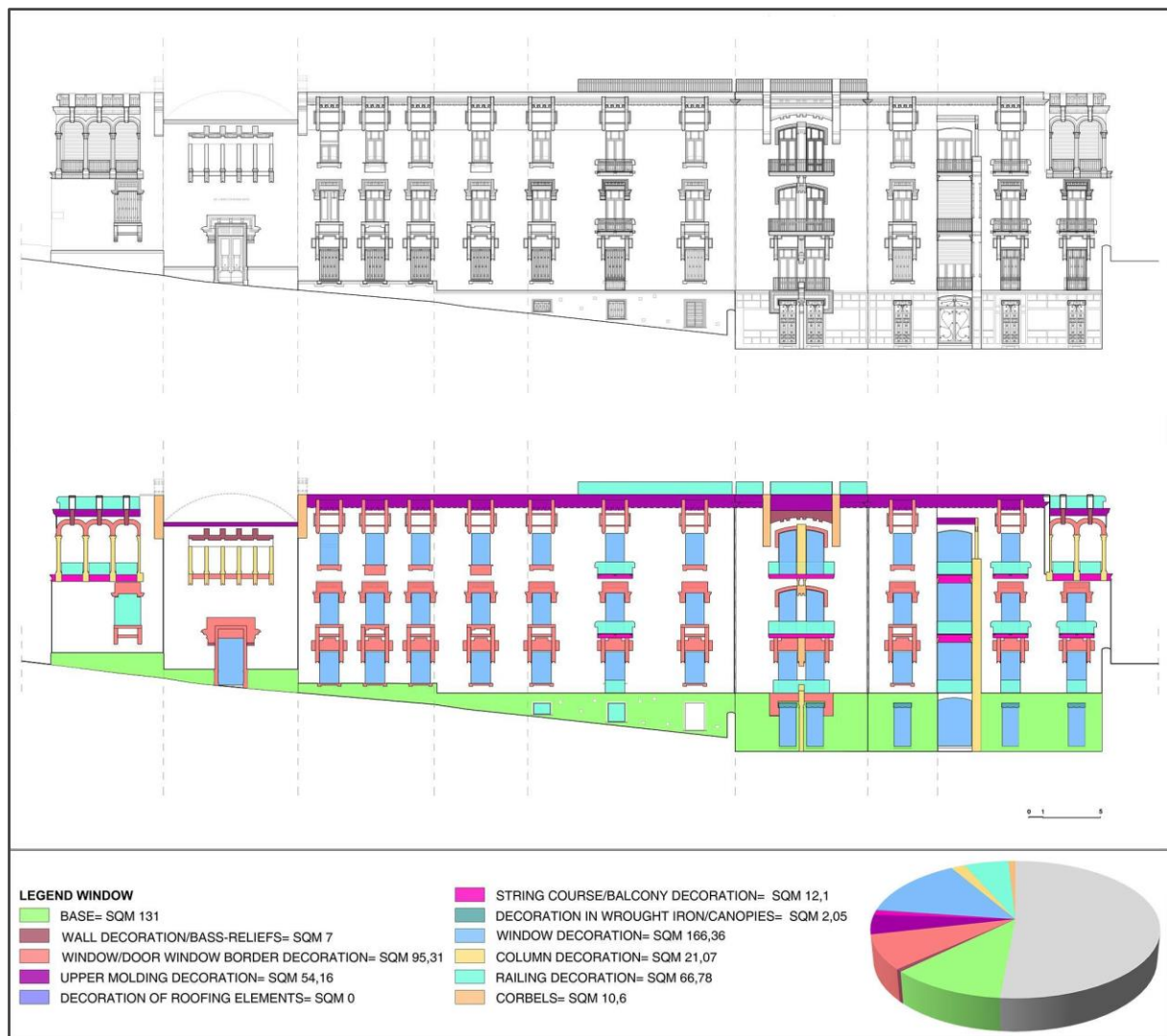
The building is crowned by a protruding cornice supported by large iron leaves corbels that bend to support the overhang. Along the balconies are additional iron support elements, alternating on the balustrade. Crucial to the design of the façade of Villa Pappone are the decorations of the windows/door windows, which present different floral and geometric ornaments on each level, enriched by particular darkening elements and by wooden window frames that follow the shape of the lowered arch of the openings. The colour of the shutters and railings, jointly with the shiny colours of the majolica contrasting with the ivory backdrop, make the façade polychrome, with shades tending towards green.

#### 4. The measurement of decorum

From the surveys and renderings of the façades (Figs. 6-7-8) of the case studies, it can be seen that the main decorated elements on the façades are as follows: windows, balconies, entrance portals with their respective finishing details, which are also subject to decoration, such as fixtures, grilles, shading elements and canopies over the entrances; followed by loggias, stringcourses, the background surface of the upper floors, the base or plinth, cornices, upper moulding, roofing elements and the corners.



**Fig. 6:** Palazzina Rocco. Comparative analysis between the development of the facade on via del Parco Margherita with architectural details and the synthesis scheme of the decorated surfaces. Histogram representing the incidence of decoration in relation to the facade area represented.



**Fig. 7:** Villa Loreley. Comparative analysis between the development of the facade on via Gioacchino Toma with architectural details and synthesis scheme of the decorated surfaces. Histogram representing the incidence of the decoration in relation to the area represented.

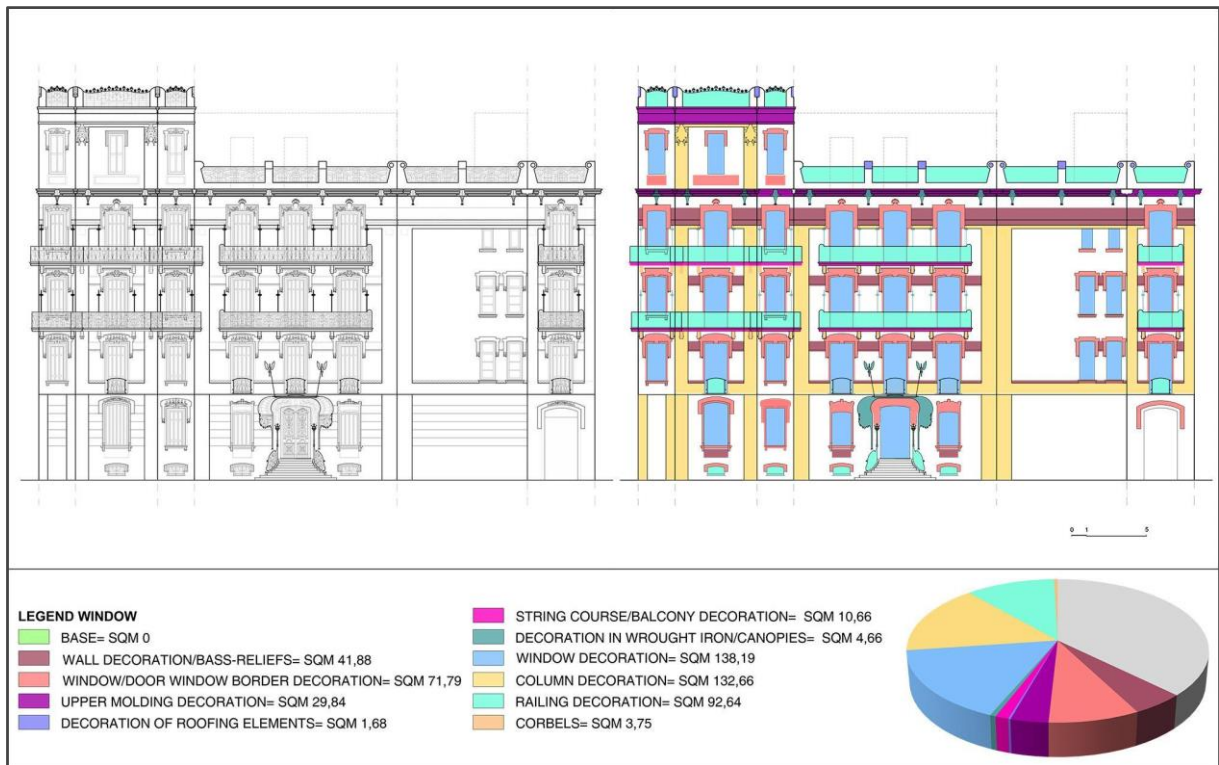
Finally, other parts that become decorative objects overlay the façade: mascarons, brackets, poleholders, and railing stops. The analysis shows that the most commonly used materials are glass, iron, majolica, plaster, stucco, wood and cast iron, which, with their colours, element by element, have a significant impact on the visual perception of the entire building and influence its interpretation. The different articulation of the colours in the analysed buildings leads to different perceptual outcomes.

In Palazzina Rocco, for example, the decorative elements of the façade have the same colour as the background, resulting in a monochrome effect that seems to diminish the presence of the decoration on the façade and does not immediately enhance its value; in the case of Villa Lorelay, a strong chiaroscuro effect is perceived through the use of different shades of the same colour; finally, in Villa Pappone, the decorative elements are made more prominent through the combination of intensely coloured elements that contrast with the light background of the façade.

For the measurement of decoration on the façade of each analysed edifice, the development of the entire frontage was used, in which each portion of the façade was projected onto a plane parallel to it. Subsequently, the decorative surfaces were selected with different coloured hatching, based on the types of elements identified.

The comparison between the two facades, the first being a descriptive representation of the decoration and the second a synthesis, highlights the amount of ornament on the façade, which already at first glance, and confirmed then by critical data reading through the elaboration of a histogram, covers a significant percentage of the surface area compared to the entire façade.

The histogram drawn up for each façade of the examined buildings completes the analysis of the quantitative data of the realised decoration, confirming the significant role of ornamentation in the Liberty style and contributing to decoding the architectural language.

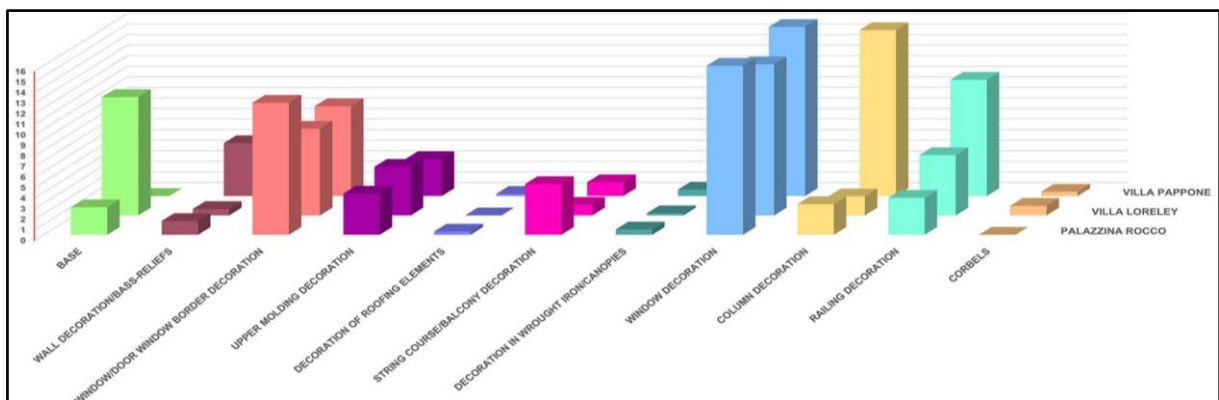


**Fig. 8:** Villa Pappone. Comparative analysis between the development of the facade on via Salita del Casale with architectural details and synthesis scheme of the decorated surfaces. Histogram representing the incidence of the decoration in relation to the area represented.

To compare the three investigated buildings, a single histogram is presented below as a synoptic overview of the decorative designs of the main facade elements as previously identified, which gathers the data for each case study of the recurring defined typologies (Fig. 9).

### 5. Conclusions

The operation of "measuring" the decoration and its impact on the design of the entire facade (Fig. 10), carried out on the buildings studied, has contributed to deciphering an artistic and architectural language of great importance in the definition of a building, namely the Neapolitan Liberty, by identifying some of the most commonly used decorative elements. For example, it was found that the decoration of the window/door window frame, together with the decoration of the fixtures, is present in a percentage ranging from 8.5% to 12.5% for the former and from 18.3% to 14.3% for the latter, varying slightly in the case studies. On the other hand, the corbels, absent in Palazzina Rocco and scarcely present in Villa Pappone, reach 0.9% in Villa Loreley.



**Fig. 9:** Summary histograms relating to the percentage incidence of decoration in relation to the total area represented for the three buildings examined, divided by typology.



ELEMENT	VILLA PAPPONE	IMPACT OF DECORUM	PALAZZINA ROCCO	IMPACT OF DECORUM	VILLA LORELEY	IMPACT OF DECORUM
	sqm	%	sqm	%	sqm	%
BASE	0,00	0,0	36,54	2,6	131,01	11,2
WALL DECORATION/BASS-RELIEFS	41,88	5,0	18,19	1,3	7,01	0,6
WINDOW/DOOR WINDOW BORDER DECORATION	71,79	8,5	173,45	12,5	95,31	8,2
UPPER MOLDING DECORATION	29,84	3,5	53,64	3,9	54,16	4,6
DECORATION OF ROOFING ELEMENTS	1,68	0,2	3,92	0,3	0,00	0,0
STRING COURSE/BALCONY DECORATION	10,66	1,3	67,32	4,8	12,10	1,0
DECORATION IN WROUGHT IRON/CANOPIES	4,66	0,6	7,37	0,5	2,06	0,2
WINDOW DECORATION	138,19	16,4	254,02	18,3	166,36	14,3
COLUMN DECORATION	132,66	15,7	40,92	2,9	21,07	1,8
RAILING DECORATION	92,64	11,0	48,40	3,5	66,78	5,7
CORBELS	3,75	0,4	0,00	0,0	10,60	0,9
TOTAL SURFACE DECORATED	527,75	62,7	703,76	50,6	566,47	48,5
TOTAL SURFACE NOT DECORATED	314,60	37,3	686,35	49,4	600,42	51,5
TOTAL SURFACE REPRESENTED	842,35	100,0	1.390,11	100,0	1166,89	100,0

**Fig. 10:** A synoptic panel of the decoration measures and relative percentage incidence in relation to the total area represented of the three buildings examined.

This comparison of the buildings made it clear which decorative elements are most frequently used in a façade. This comparison of the buildings clarified which decorative elements are most frequently used in a façade. On the one hand, it was possible to explore the individual architectural detail without removing it from its structural context. On the other hand, by measuring the decoration, it was possible to quantify its power to draw the eye of those viewing highly decorated architecture. These are architectures in which the decoration strongly impacts the overall surface of the façade: 50.6% in Palazzina Rocco, 48.5% in Villa Loreley and no less than 62.7% in Villa Pappone.

### Acknowledgements

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