



**VOL. 10, NO. 1 (2024)**

**CONTEMPORARY URBAN STORYLINES**

**TEMA**

**Technologies  
Engineering  
Materials  
Architecture**

**Journal Director:** R. Gulli

**Guest Editors:** C. Bartolomei, A. Ippolito, S.H. Tanoue Vizioli

**Assistant Editors:** A.C. Benedetti, C. Mazzoli, D. Prati

**Cover illustration:** La Serenissima Building, Milano, Italy. © Riccardo Gulli (2023)

**e-ISSN 2421-4574**  
**DOI: 10.30682/tema1001**



e-ISSN 2421-4574

ISBN online 979-12-5477-444-1

DOI: 10.30682/tema1001

**Vol. 10, No. 1 (2024)**

Year 2024 (Issues per year: 2)

**Editor in chief**

Riccardo Gulli, Università di Bologna

**Associated Editors**

Annarita Ferrante – Università di Bologna

Enrico Quagliarini – Università Politecnica delle Marche

Giuseppe Margani – Università degli Studi di Catania

Fabio Fatiguso – Università Politecnica di Bari

Rossano Albatici – Università di Trento

**Editorial Board Members**

Ihsan Engin Bal, Hanze University of Applied Sciences – Groningen

Cristiana Bartolomei, University of Bologna

Antonio Becchi, Max Planck Institute – Berlin

Marco D’Orazio, Università Politecnica delle Marche

Vasco Peixoto de Freitas, Universidade do Porto – FEUP

Stefano Della Torre, Politecnico di Milano

Giuseppe Di Giuda, Università di Torino

Luca Guardigli, Università di Bologna

José Luis Gonzalez, UPC – Barcellona

Alfonso Ippolito, Sapienza University of Rome

Francisco Javier Neila Gonzalez, UPM Madrid

Alberto Grimoldi, Politecnico di Milano

Antonella Guida, Università della Basilicata

Santiago Huerta, ETS – Madrid

Richard Hyde, University of Sydney

Tullia Iori, Università di Roma Tor Vergata

Raffaella Lione, Università di Messina

John Richard Littlewood, Cardiff School of Art & Design

Camilla Mileto, Universidad Politecnica de Valencia UPV – Valencia

Renato Morganti, Università dell’Aquila

Antonello Sanna, Università di Cagliari

Matheos Santamouris, University of Athens

Enrico Sicignano, Università di Salerno

Lavinia Chiara Tagliabue, Università di Torino

Simone Helena Tanoue Vizioli, University of São Paulo

Claudio Varagnoli, Università di Pescara

Emanuele Zamperini, Università di Firenze

**Assistant Editors**

Cecilia Mazzoli, Università di Bologna

Davide Prati, Università di Bergamo

Anna Chiara Benedetti, Università di Bologna

**Journal director**

Riccardo Gulli, Università di Bologna

---

**Publisher:**

Ar.Tec. Associazione Scientifica per la Promozione dei Rapporti tra Architettura e Tecniche per l’Edilizia

c/o DICATECH - Dipartimento di Ingegneria Civile, Ambientale, del Territorio, Edile e di Chimica - Politecnico di Bari

Via Edoardo Orabona, 4

70125 Bari - Italy

Phone: +39 080 5963564

E-mail: [info@artecweb.org](mailto:info@artecweb.org) - [tema@artecweb.org](mailto:tema@artecweb.org)

**Publisher Partner:**

Fondazione Bologna University Press

Via Saragozza 10

40123 Bologna - Italy

Phone: +39 051 232882

[www.buonline.com](http://www.buonline.com)

**TEMA: Technologies Engineering Materials Architecture**

Vol. 10, No. 1 (2024)

e-ISSN 2421-4574

**Editorial**

5

**Contemporary urban storylines***Cristiana Bartolomei, Alfonso Ippolito, Simone Helena Tanoue Vizioli*

DOI: 10.30682/tema100000

**De vliesgevel in the Netherlands between construction and representation. Past and present-day experiences in social housing**

9

*Alessandro Dalla Caneva, Angelo Bertolazzi*

DOI: 10.30682/tema100009

**Between memory and reason: the brick wall**

19

*Adriana Rossi, Luis Manuel Palmero Iglesias, Sara Gonizzi Barsanti, Santiago Lillo Giner*

DOI: 10.30682/tema100002

**Built forms and underlying geometries in 20th-century architecture: Muuratsalo House and Leicester Engineering Department Building**

31

*Maria Grazia Cianci, Daniele Calisi, Stefano Botta, Sara Colaceci, Sagrario Fernandez Raga, Carlos Rodriguez Fernandez, Michela Schiaroli*

DOI: 10.30682/tema100010

**The presence of the past: analysis and representation of the *Strada Novissima***

44

*Agostina Maria Giusto, Emanuela Chiavoni*

DOI: 10.30682/tema100006

**Understanding and documenting decorated façades of the Coquimbo Region in Chile**

55

*Elena De Santis, Emanuela Chiavoni, Natalia Jorquera Silva*

DOI: 10.30682/tema100007

**Hierarchies and panoramic aspects of Anne Tyng's urban projects and the contemporary vision of the city**

65

*Cristina Candito, João Cabeleira, Alessandro Meloni*

DOI: 10.30682/tema100003

**When decorations have a function. Technology and aesthetics in contemporary façades**

78

*Michele Valentino, Enrico Cicalò*

DOI: 10.30682/tema100005

**Representation of the surface in architecture: from the Western solutions to the Eastern case studies of solid development***Federico Rebecchini, Emanuela Chiavoni, Alekos Diacodimitri, Maria Belen Trivi*

DOI: 10.30682/tema100008

88

**The symbiosis of the arts in the technological elements of building façades***Fabio Minutoli, Alessio Altadonna, Adriana Arena, Graziella Bernardo, Luis Manuel Palmero Iglesias*

DOI: 10.30682/tema100004

101

**Surfaces of 20th-century façades: reflections on their archaeological awareness***Daniela Pittaluga, Juan Antonio Quiros Castillo*

DOI: 10.30682/tema100001

112

# UNDERSTANDING AND DOCUMENTING DECORATED FAÇADES OF THE COQUIMBO REGION IN CHILE



e-ISSN 2421-4574  
Vol. 10, No. 1 - (2024)

Elena De Santis, Emanuela Chiavoni, Natalia Jorquera Silva

DOI: 10.30682/tema100007

This contribution has been peer-reviewed.  
© Authors 2024. CC BY 4.0 License.

## Abstract

The present contribution aims at documenting decorated earthen architecture in the Coquimbo Region of Chile, in the provinces of Limarí and Elqui, specifically in Tuluahuén and Pisco Elqui. The peculiarity of these decorated façades is their rich ornamental composition, resulting in interesting patterns and textural realizations. These decorated façades witness the significance of Chilean earthen heritage and thus deserve an in-depth investigation.

The vernacular buildings observed in the Limarí Valley present irregular and non-formal geometric decorations and graphic representation, engraved motifs and tiling, and wavy patterns, creatively interpreting the façade as the owner's canvas. The earthen architecture of Pisco Elqui shows a formal façade decorative composition, which could be associated with the presence of a school of masters and artisans with decorative expertise. The latter façades present classical features and stuccoes combined with geometrically composed pattern textures and engraved elements. The vernacular decorations of Limarí buildings' façades enclose immaterial values and express themselves through the anonymous touch of the inhabitants, revealing intimate stories and ancient local memories. The present paper also promotes the possibility of reviving this decorative tradition as a tool for contemporary projects for the renovation of earthen houses at the urban scale, enhancing the importance of using local and sustainable materials.

## Keywords

Façade decoration, Vernacular houses, Artisanal process, Cultural identity, Tangible heritage.

## Elena De Santis\*

*DSDRA - Dipartimento di Storia, Disegno e Restauro dell'Architettura, Sapienza Università di Roma, Roma (Italy)*

## Emanuela Chiavoni

*DSDRA - Dipartimento di Storia, Disegno e Restauro dell'Architettura, Sapienza Università di Roma, Roma (Italy)*

## Natalia Jorquera Silva

*Escuela de Arquitectura, Universidad de La Serena, La Serena (Chile)*

\* Corresponding author:  
e-mail: e.desantis@uniroma1.it

## 1. INTRODUCTION: HISTORICAL BACKGROUND OF COQUIMBO REGION EARTHEN ARCHITECTURE

The Coquimbo Region is part of the Chilean “semi-arid” north (Fig. 1). It is considered climatically in transition since it is located after the Atacama Desert and before the country's temperate and fertile central valley. This region corresponds to the narrowest part of Chile, with

an average of 150 km from the Andes mountain to the east and the Pacific Ocean to the west, with an altitude from 0 at sea level to 1400 m. It is crossed transversally by three rivers (*Limarí, Elqui, and Choapa*), which form the so-called *transversal valleys* that were inhabited in pre-Hispanic times – in chronological order – by the *Ánima, Molle, Diaguita, and Diaguita Inka* cultures, all of whom left its imprint in the use of earth-based construc-



Fig. 1. The Coquimbo Region and map indicating the specific location of the two case studies: Tulahuén and Pisco Elqui. Source: image by Elena De Santis, 2022.

tion techniques, mainly thatch (called *quincha* in Spanish), and in the use of rich geometric patterns present in ceramics for daily and ritual use.

From the 16th century, after the Spanish invasion of the Americas, and as in other parts of the continent, the region was populated with urban settlements, with Catholic churches and colonial houses that repeated the pattern of grouping together and being built in adobe masonry, a technique that became the most common in the Colonial period. After that, from the second half of the 19th century, in the so-called *Republican period*, after Independence from the Spanish, the Coquimbo Region enjoyed a great economic boom because of mining production, leading it to become one of the main exporters of silver abroad. As a result of this, the ships that traveled full of export products returned to the port of Coquimbo loaded with American Oregon Pine wood and sea carpenters from North America, France, and England, who became architects and builders, modifying the local architecture, through the incorporation of decorative elements made of wood in Neoclassical style [8, 18].

All these historical-constructive phases were mixed, making the architectural heritage of the Coquimbo Region very unique and not found in other regions of Chile and Latin America, with typologies, construction techniques, decorative elements, and uses that demonstrate the cultural mixture. Unfortunately, much of this heritage is not officially protected and is in a state of decay. Therefore, to register and characterize this heritage as the first step towards its enhancement, the research project “Singular earthen heritage of the Coquimbo Region. Registration and characterization” was financed by the Chilean Ministry of Cultures, Arts and Heritage. The analysis of the decorative coatings of Tulahuén and Pisco Elqui is part of this investigation [7].

## 2. THE COMPOSITION OF THE DECORATED FAÇADES OF COQUIMBO

The picturesque façades of the Coquimbo Region witness the native artistic inclination of Chilean inhabitants towards the decoration of their houses. The façades that

have been observed can be included between the second half of the 19th century and the present day. During various on-site missions, many decorated façades of the Coquimbo Region have been documented as part of the Project funded by the Ministry of Culture, Art and Heritage of Chile “Patrimonios singulares de tierra no protegidos de la región de Coquimbo, Chile. Registro y caracterización” (“Singular earthen heritage with no legal protection of Coquimbo Region, Chile. Documentation and characterization”). These on-site, in-depth research activities aimed at recording the diverse earthen heritage within its decorative peculiarities and features; since Elqui and Limarí Valleys are quite well renowned for their earthen architecture, the explorative tours started from here. These expeditions aimed to record and disseminate such interesting heritage made of fragile materials, thus needing particular protection and valorization. Valle del Elqui and Limarí façades have been creatively decorated throughout generations, renovated with contemporary materials, and painted or engraved with local motifs expressing the local artistic culture. These colorful façades create a vibrant urban fabric and, therefore, need to be conserved as part of a long artistic tradition that tells the story of every single village [5, 6].

The phenomenon of decorated rural houses is very significant as it becomes a narration of a particular community. Each of the various houses preserves the mem-

ory of a generation and sometimes reveals mysterious bonds with the Diaguita culture. The pre-inca Diaguita people lived in these areas, and it is assumed, as far as we are concerned, that the symbolism of the artistic production of this ancestral indigenous culture could have been incorporated into the modern artistic expressions of the Coquimbo’s population. The text of the Chilean archaeologist Paola Gonzalez highlights the significance of Diaguita symbolism and the importance of geometry for their artistic ceramic production: «Diaguita art presents a visual logic characterized by the use of complex symmetries, movement illusion and vibration, variabilities and infinite geometric elements, horror vacui, hypnotic attraction» [10, 11].

Diaguita artisans explore the infinite possibilities of symmetric variation. This activity reveals a deep knowledge of the laws of geometry. Therefore, these symbols and patterns found on the Diaguita pottery could be used as a tool to interpret specific motifs found on contemporary decorated façades of Limarí Valley, as they show constant use of motifs and repetition of hypnotic patterns (Fig. 2).

The wavy pattern found on several façades of the houses, obtained through the use of a manufactured pointy tool that engraves the plaster, is an original expression of the cultural dynamism of this Chilean community rooted in the Diaguita’s artistic sensitivity.



Fig. 2. *Diaguita pottery, La Serena Museum. Source: picture by Elena De Santis, 2022.*



Fig. 3. Decorated façade of Tulahuén, Valle de Limarí. Source: picture by Elena De Santis, 2022.



Fig. 4. Engraved linear pattern of Tulahuén, Limarí Valley. Source: picture by Elena De Santis, 2022.

In the Coquimbo Region, in Limarí and Elqui Provinces, two case studies have been analyzed, respectively in Tulahuén, a small town close to Andean Cordillera (municipality of Monte Patria) and Pisco Elqui, in the Elqui Valley [12, 13].

In the realm of Limarí, the façade decorations are made directly on the plastered façade of adobe houses, using gypsum, clay, concrete, and other materials. The families of patterns that have been retrieved on the exterior façades can be cataloged as follows:

- the wavy and linear patterns engraved on the surface with the *sgraffito* technique on top of the plaster with cement-based binder: it is assumed that these patterns are the oldest as they do not have subsequent painting layers, and they appear quite rough and gross (Figs. 3 and 4);
- the geometric patterns repeated in a rhythmic sequence engraved with the *sgraffito* technique: the most used shapes are the square, rhombus, and more complex ones composed by repetition of square with smaller rhombus around (Figs. 5 and 6);
- the regular patterns simulating clay bricks in the basement;
- some internal patterned decorations worthy to be mentioned: one of the most significant is the painted pattern on lime/gypsum-based plaster in the interiors of a religious building, the church of Tulahuén, for which it has been elaborated a geo-

metrical study based on proportions, alignment and centrality of representation (Fig. 7);

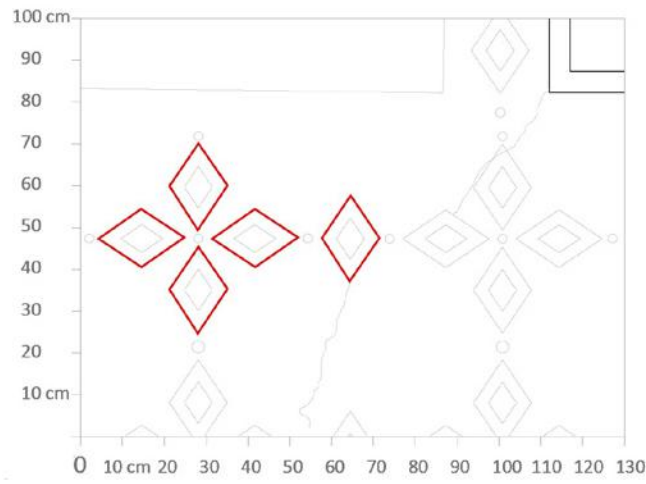
- wallpapers with flowery motifs applied directly on the plaster of internal vertical surfaces: this is another interesting decorative technique found in one of the oldest vernacular houses of Tulahuén.

As mentioned before, the rural villages of Limarí Valley have a more naïf and simple characterization of the façades because, most of the time, the owner realized the external decorations. This approach conveys to the façade a unique character that expresses the personal aesthetic view of the inhabitants. Limarí Valley's society is mainly dedicated to agriculture and mining activities; therefore, the anonymous artists thought to be the creators of these particular façades patterns mainly belong to the workers' class. Figure 5 shows the rhomboid mo-

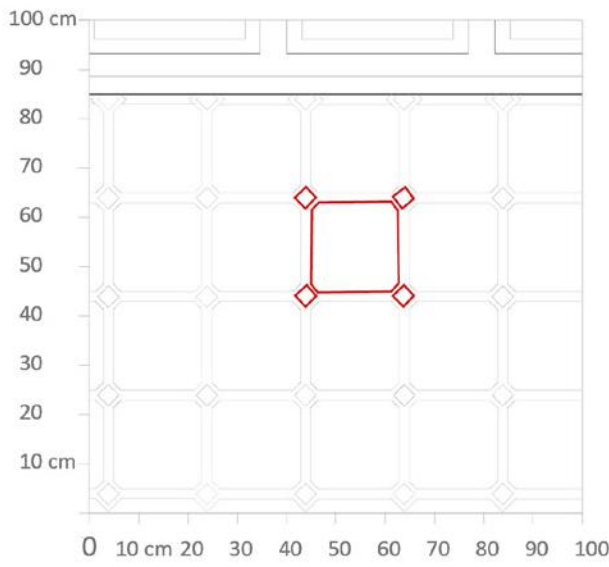


Fig. 5. Decorated façade of Tulahuén, Limarí Valley. Source: picture by Elena De Santis, 2022.

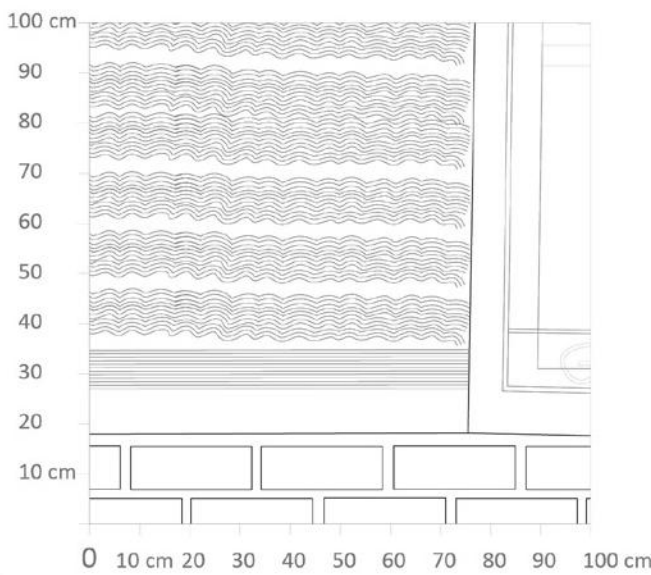




*pattern*



*tilings*



*texture*

Fig. 6. Pattern, tilings, and texture of façades in Tulahuén, Limarí Valley. Source: images by Elena De Santis, 2022.

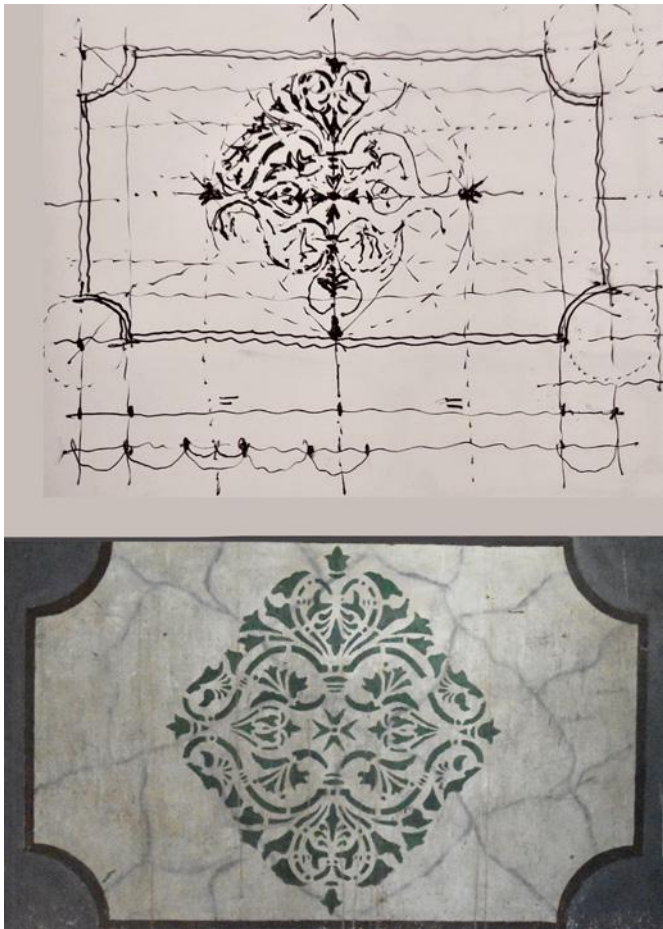


Fig. 7. Study on the geometry and symmetry of the pattern, Church in Tulahuén. Source: images by Emanuela Chiavoni, Elena De Santis, 2022.

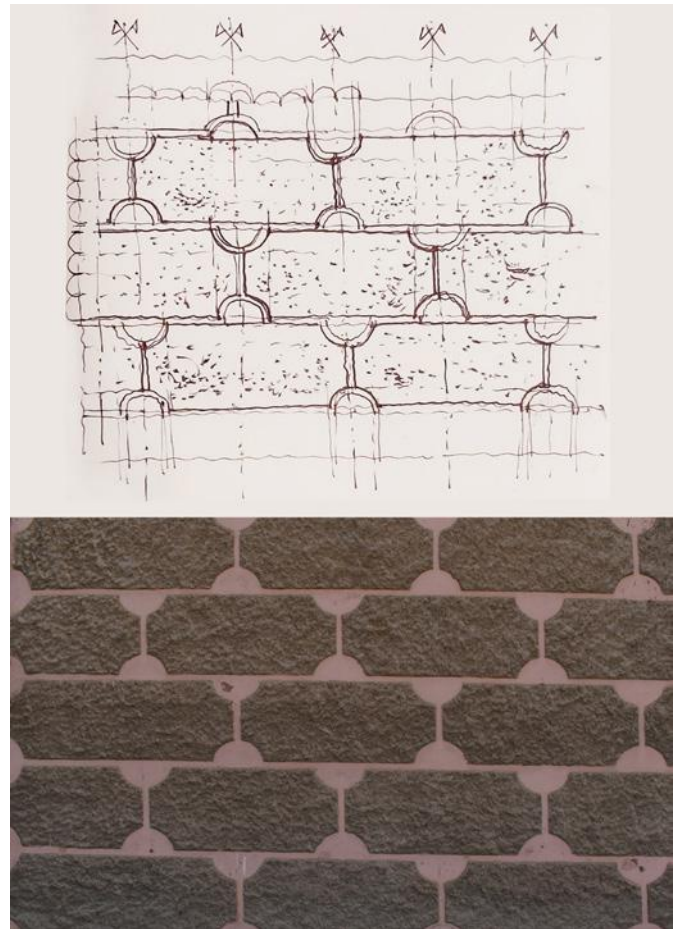


Fig. 8. Study of a decorated façade of Pisco Elqui, Elqui Valley. Source: images by Emanuela Chiavoni, Elena De Santis, 2022.

tif wrapping the windows and the doors of the building, generating an interesting patterned engraved surface.

Therefore, the historic center of Tulahuén is a unique example of a small rural town with plenty of buildings with exceptional aesthetic vocation. The principal witnesses are the great variety of decorative patterns/tilings and textures that have been identified, along with many façades decorated with textured plasters with a strong evocative value. Some graphic elaborations and representations of these decorations have been produced to highlight the peculiarity of the motifs (Figs. 6–8).

Regarding Elqui Valley’s textures and patterns, the ones that have been documented present a formal geometric composition, and this configuration might derive from a school of masters, artisans, carpenters, and artists who have been active during the last century. The structure of the decorated façades of Elqui Valley typically presents two main contrasting colors, a repetitive rhythm (Fig. 8) and neo-colonial features such as lesene, imitation ashlar,

bands, cornices, and fine decorated fixtures (Fig. 9). An interesting element that proves the existence of a school of masters and architects is the signature of the executor traced on top of the main access door (Fig. 10). In this specific case A.M. stands for *Architect Miranda*, who designed this decorated building in Pisco Elqui in 1935.



Fig. 9. Decorated façade of Pisco Elqui, Elqui Valley. Source: picture by Elena De Santis, 2022.

### 3. THE SIGNIFICANCE OF REPRESENTATION AS A GENERATOR OF CULTURAL VALUE

The role of drawing for understanding heritage is always unique and irreplaceable; during the process of involvement and dialogue triggered by the act of drawing between the researcher and the architecture, preliminary attention towards the care and the valorization project of the object itself begins. Whoever draws has a privileged, sensitive, emotional, and technical observation, which permits acknowledgment and understanding of the architectural typology, materiality, and the relevant urban context [1].

Through direct observation, it is possible to consciously or unconsciously understand the cultural values and the different social, historical, and religious significance transmitted by the building. Therefore, these peculiarities are critically interpreted and registered throughout the drawing to reach deep knowledge.

The urban complex space, where the built heritage and the street pattern coexist within solids and voids, must be considered a fluid and unstable realm of local memories with constant recalls of the personal historical tradition linked to cultural heritage.

The researched element is at the base of the interactive relationship between the drawer and the object. When the investigation is undertaken by research experts who, through the drawing, correctly interpret shapes, geometries, and relations that tie the decoration within the structure and façade proportions, it is possible *to read* the invisible, the underlying, such as the cultural identity and the historical inheritance to which they are referred.

This evidence is an inexhaustible source of aspects in which practical capabilities, artistic sensibility, the concreteness of realizations, and the delicate recognition operations highlight the know-how, social awareness, symbolic, religious, and urban population features [14].

It is essential to retrace the procedure used to make the façade ornamentation. Generally, the first creative idea arises from the drawing – often a simplified and active drawing – verified during the making process, while afterward, it is through a critical investigation act that it is possible to appreciate the rhythm, harmony, geometric rigor, and the symmetries and asymmetries, and clearly capture the effects and peculiarities.

Interpreting patterns, textures, and fabrics allows the reflection on graphic quality, geometric correctness, and mathematical precision but also enables the association and comparison between the various patterns and nature or other existing elements. Most of the time, indeed, it is the rigor of geometry that controls the representation of ornaments [4].

As mentioned before, in order to reproduce shapes repeating themselves according to a linear, vertical, and horizontal rhythm with specific proportions and sizes, cut-out shapes, rakes, and moldings: these specific tools used in the Coquimbo Region facilitated the possibility of creating these reproductions, keeping, in the repetition, in the translation or overlapping layers, the equality of the pattern and the distances among the parts (Fig. 10).

With the survey, initially pursued in an expeditious manner and then supported by measurement tools, there is the chance to assess detail proportions and small fragments of ornaments and using photographs, sometimes taken using a grid to control the relationship among points, it is practicable to control structures, forms, geometries. As an additional verification, the *spolvero* technique (sprinkling) allows tracking the façade's details on the paper sheet at a scale of 1:1. In Limarí and Elqui provinces, the façade decorations have been inserted in the perimetral area of the façade or around the edges, following horizontal lines marked by thickness differences; in both cases, artistic and regular values arise, simple geometries, simplified representations, easily manageable in the complex decorated *canvas*. Throughout these

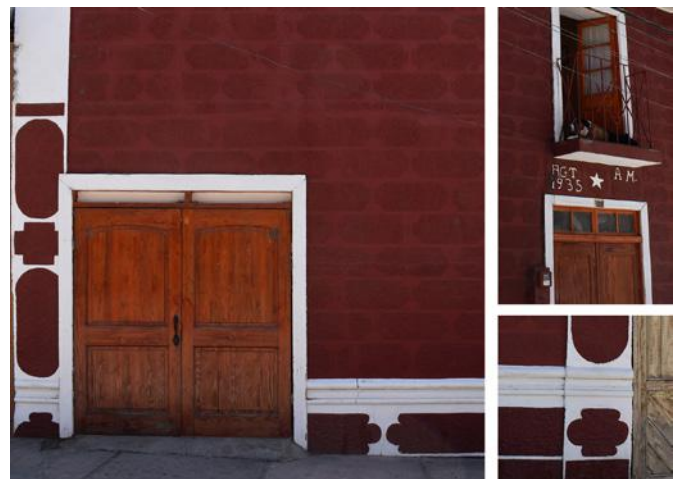


Fig. 10. Red decorated house in Pisco Elqui, Elqui Valley. Source: picture by Elena De Santis, 2022.

investigations, it is possible to assume the artisanal production beyond the ornamental realizations and, with the tactile sense, appreciate the diversity of thickness in the three-dimensionality, the material consistency, and the roughness.

The drawing is always the common thread that bonds all the work, implying the decorated surfaces: from the first spontaneously traced sketch, the result of the first creative moment related to the concept phase, to the increasingly defined and examined drawing in its proportions, shapes, and connections between compositional spaces.

As far as we are concerned, in the case of the documented Limarí built heritage, it is not sure whether the preliminary design phase has foreseen a project idea to develop on the whole façade and afterward concentrated on the details' definition or the ornaments have been added subsequently, after the completion of the façade for aesthetic purposes. It is supposed that, as mentioned before, in the case of Pisco Elqui classical buildings, the decorations could have been linked to artisan and master schools and that, in the design phase, a foreshadowing of the façade as a whole could have been envisaged. On the contrary, in the case of rural constructions of Limarí, it is assumed that the decoration could have been done by coincidence, with potential connections to the personal and subjective taste of the owners.

With the representation comes surveying, measuring, and graphical processing to scale the built heritage on the paper sheet to investigate proportions, rules, and geometries objectively and analytically. Direct understanding is the only active method capable of comprehending the atmospheres that a specific place evokes, immaterial artifacts that tell environmental situations related to its specific context. Particular attention is given to understanding the diverse pattern scenario, produced with natural pigments and vibrant tones: chromatic contrasts stimulate the vibrations, differential values to propose emphasized tonal rhythm, or strong color contrast. The different chromatic variations and the effects of tonal vibrations depending on light and shadows enhance tactile characteristics of opacity, gloss, and roughness. Chromatic values, often conveyed with a perceptive impact,

accompany the geometric rigor of harmonic shapes, especially revived according to horizontal and vertical paths. Among colorations, natural pigments of local earth are retrieved along with red hues, orange and sepia colors, and all the brown shades of local clay.

All the artifacts witness expertise and refined capabilities, and it is necessary to analyze, document, and disseminate them to valorize their historical background and to promote their safeguard. Any cultural heritage needs protection, and, firstly, it must be identified through investigations that accentuate its nature, dimensions, and specific characteristics that make it unique.

All the dissemination operations and transmission of contents are helpful. Often, the community participates in the social scenario and engages in workshop activities so that citizens are responsible for their artistic treasures, being aware of their know-how and singular expressions. In Chile and the Coquimbo Region, local people and artisans frequently participate in open and inclusive construction sites to educate and better acknowledge the different patterns drawn on the façades, thus valorizing the tradition of their community [2, 3].

Sometimes, anonymous artists make the ornaments, referring to popular and cultural traditions of the context using suitable tools to engrave the façades; other times, the names of the architect and decorator are written on top of the houses (Fig. 10). Working with the drawing on the building skin is a process of urban landscaping, not only exterior but also a gesture precluding deeper attention to maintenance and care of the building to include the population in benefitting from the beauty of decorations.

#### 4. CONCLUSIONS

This documentation stresses the need to regenerate such fascinating heritage along with the decorative façades as these elements can become a social cohesion element that could generate long-term economic development and trigger sustainable tourism. These villages need to rediscover the artistic know-how of decorated façades reinterpreted with modern motifs and local, ecological materials compatible with the earthen heritage to which they are intimately linked.

This paper aims to know, document, disseminate, disclose, and promote a precious heritage of the Coquimbo Region, which is not widely recognized nowadays. The results are several and challenging as they are enriched by multidisciplinary approaches to research, resulting from practical and theoretical notions between drawing, restoration, and technology [15, 17].

The *Roman School*, which blends competence in history, representation, and restoration of architecture, has faced the protection of heritage from the beginning with the support of experimental integrated analogical and digital methodologies. Starting from acquired scientific data, recognizable and testable to represent the present state of building conservation, it becomes feasible to reflect on safeguarding and valorization strategies. Decorations embellish building façades and make them unique and distinguishable, with no standardization, enhancing urban beautification and contributing, for their diversity, to urban orientation. In addition, they shape distinctive urban skylines along the streets and in the squares because they appear as tiling and fragments always varied, which offer non-continuous visuals that vibrate with light, enhancing their materiality [9, 19].

Any façade could be attributed to a painting, a graphic, structured composition, especially those with decorations around windows or above gates and doors or along the corners of the façades themselves. Those directly engraved on the same material are perceivable through the play of shadows deriving from the difference of thickness or, sometimes, are highlighted by different color hues in a bichromatic manner.

Decorations can be considered as urban reiterated calligraphies that witness the memory of cultural heritage and fascinate for their original compositions. The role of representation is the narration and the storytelling of architecture, places, and memories, and the pathways that can be handled by integrating digital systems of representation and communication are multiple [16].

### Authors contribution

While the authors shared the research in the methodology and overall contents, they contributed to the text as follows: the introduction has been outlined by N.J.S.; the

middle part of the manuscript, which describes in detail the different documented decorations, by E.D.S.; the final paragraph, also defining the expected result of the research, by E.C.

### References

- [1] Docci M, Chiavoni E (2017) *Saper leggere l'architettura*. Laterza, Bari-Roma, pp 1–212
- [2] Jorquera Silva N, Carrasco MC, Vega RC (2020) *Antiguo Arte del la pintura al Fresco sobre adobe*. Investigación financiada por el Fondo del Patrimonio Convocatoria 2020, folio: 36623. La Serena, Chile
- [3] Marchante P, Rivera Vidal A (2020) *Revestimientos en la conservación del patrimonio construido con tierra del Limarí*. Proyecto financiado por el Fondo Nacional de Desarrollo Cultural y las Artes (FONDART 2019). Santiago de Chile
- [4] Grunbaum B, Shephard GC (2016) *Tilings And Patterns*, 2nd ed. Dover Publications, New York
- [5] Petrina A, Gutierrez R (2011) *De aldeas a ciudades: los ladrillos cuentan la historia de la argentina*. Clarín, Buenos Aires
- [6] Gazaneo J, Scarone M (1965) *Tres asentamientos rurales*. IAA, Buenos Aires
- [7] Jorquera Silva N (2022) *Patrimonio chileno construido en tierra*. Arq Ediciones Pontificia Universidad Católica De Chile, Santiago de Chile
- [8] Cobo G (2002) *Arquitectura Serenense*. Editorial del Norte, La Serena
- [9] Santopuoli N, Seccia L (2008) *Il rilievo del colore nel campo dei beni culturali*. In: Carbonara G, *Trattato di Restauro Architettonico*. Secondo aggiornamento, Vol. X. Utet, Torino, pp 141–163
- [10] Gonzalez Carvajal P (2017) *Sitio El Olivar: su importancia para la reconstrucción de la prehistoria de las comunidades agroalfareras del norte semiárido chileno*. Editorial Subdirección de investigación Dibam, Santiago
- [11] Marchante P, Silva P (2017) *Los revestimientos en la conservación del patrimonio construido con tierra en Santiago de Chile*. In: Neves C, Salcedo Gutierrez Z, Borges Faria O. *17° SIACOT Tierra Identidades*. Seminario Iberoamericano de Arquitectura y Construcción con Tierra. FAADU-UMSA/ PROTERRA, La Paz, pp 400–404
- [12] Guzmán F (2013) *Las pinturas murales en la doctrina de Belén*. *Espacio Regional* 1(10):85–96
- [13] Morales Gamarra R (2001) *El color en los centros históricos: aproximación metodológica para su estudio y diagnóstico*. *Arkinka* año 6, n. 64
- [14] Carbonari F, Chiavoni E, Docci M, Gandolfi F, Gentile E, Ottavianelli A (2019) *“Estancias” argentine: preziosa eredità culturale di un patrimonio architettonico-artistico ignorato/“Estancias” argentine: the precious cultural legacy of a neglected architectural and artistic heritage*. In: Belardi P (a cura

- di) Riflessioni. L'arte del disegno/il disegno dell'arte/Reflections. The art of drawing/The drawing of art. 41° Convegno internazionale dei docenti delle discipline della rappresentazione, Congresso della Unione Italiana per il Disegno, Perugia 19-21 settembre 2019. Gangemi Editore, Roma, pp 501–508
- [15] Carbonari F, Chiavoni E (2017) Knowledge and Classification for the Interactive Dissemination of *Chorizo Houses* in Argentina. In: Ceccarelli M, Cigola M, Recinto G (eds) *New Activities for Cultural Heritage*. Proceedings of the International Conference HeritageBot 2017. Springer International Publishing AG, Cham, pp 79–86
- [16] Chiavoni E, Colaceci S, Ippolito A, Panetta VR, Rebecchini F, Ribichini L, Tarquini L (2022) Il rilievo di strada tra conoscenza e valorizzazione urbana: via dei Papareschi a Roma. In: Battini C, Bistagnino E (a cura di) *Dialoghi. Visioni e visualità*. Atti del 43° Convegno Internazionale dei docenti delle discipline della rappresentazione, Congresso della Unione Italiana per il Disegno. Franco Angeli, Milano, pp 427–450
- [17] Chiavoni E (2021) Esplorazioni grafiche in Argentina: tra arte, architettura e paesaggio. In: Cianci MG (a cura di) *Spessori. Il paesaggio come stratificazione*. Il Poligrafo, Padova, pp 253–261
- [18] Mostalac A (1992) La pintura romana en España. Estado de la cuestión. *Anuario del Departamento de Historia y Teoría del Arte IV*: 9–22
- [19] Santopuoli N (2015) Il rilievo del colore per il restauro delle superfici architettoniche. *DisegnareCon* n. 8/14 gennaio