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THE VALUES OF DRAWING IN THE ARCHIVES OF ARCHITECTURE
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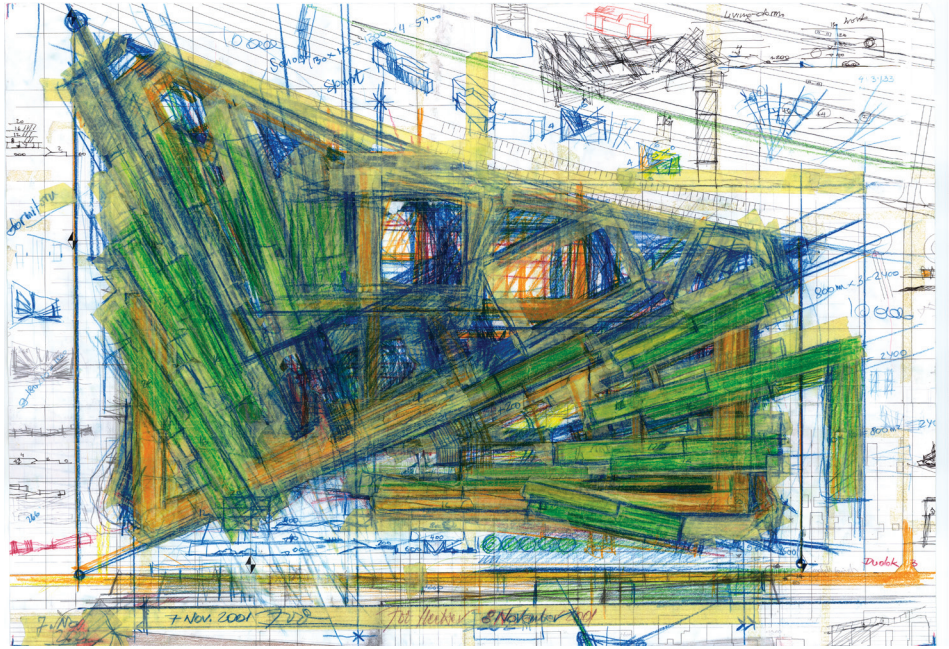

Zvi Hecker, Koningin Máximakazerne, Amsterdam Schiphol Airport, colored pencil on printed paper, 29,7 x 42cm, 2001
Image courtesy of Zvi Hecker Office Atelier and Zvi Hecker Stiftung, Berlin

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The values of Drawing in the Archives of Architecture between Enhancement and Innovation

Table of Contents

Editorials

Articles

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Unveiling Italian Architectural Heritage in Brazil through traditional and digital archives

The architectural heritage of a city reflects the culture that shaped it. In Brazil, between 1870 and 1920, European migrants, including many Italians, left a lasting mark on urban landscapes. Italians contributed as builders, engineers, and architects, introducing styles and techniques that shaped emerging cities. This influence is evident in Jaú and São Carlos (São Paulo), where Italian-inspired eclectic architecture remains visible.
This research, part of "KNOW.it – Transition in Digital Age: KNOWing our background to refine our future" PRIN 2022 PNRR project, explores and digitizes this heritage, focusing on formal and technical aspects. It highlights the importance of architectural drawings and aims to increase recognition of these cultural landmarks, emphasizing Italy's deep impact on Brazil's urban fabric. Despite their history, Jaú and São Carlos's architectural heritage remains largely unknown. Archives holding original designs help uncover works by lesser-known architects, shedding light on their stylistic traits. The study examines graphic documentation, project records, and supply chains to trace architectural vocabulary and construction methods. However, Brazil's documentary heritage is fragmented, with many records scattered or incomplete.
KNOW.it project began by cataloging archival documents. This paper focuses on these phases, followed by graphical analysis to define architectural language and styles linked to Italian workers. Digital models compare original designs with existing structures, deepening the study of Brazilian eclecticism.

Keywords:
archival research; architectural heritage; Brazilian eclectism; digital models; digital archive

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INTRODUCTION

The article illustrates the process of creating a digital archive aimed at documenting, knowing and communicating the architectural heritage of Italian origin, spread abroad but rooted in Italian culture.
The proposed study has been developed within the framework of the Project of Significant National Interest (PRIN 2022 PNRR) entitled "KNOW. it – Transition in Digital Age: KNOWing our background to refine our future". The research project is the result of a perceived need in the cultural heritage sector, which has also been highlighted in recent years by projects proposed by the European Community. The National Recovery Plan (PNRR) and the National Complementary Plan (PNC) have provided for investments and reforms aimed at promoting a lasting and sustainable development of the economy. In particular, the mission "Digitisation, Innovation, Competitiveness and Culture" supports digital innovation as the core of the transformation of business production processes. The Horizon Europe - Work Programme 2023-2024 Culture, Creativity and Inclusive Society foresees significant investment in the digitisation of cultural heritage (collections, monuments, buildings, etc.), recognising its benefits in terms of preservation, accessibility and support for cultural and creative innovation.
The aim of this investment is to make Europe's cultural heritage accessible through digitised objects and to transmit its social value not only in Europe but also beyond.
For this reason, the project intends to find a way to recover the architectural heritage of Italian origin, as a product of the culture that generated it, a task that can be difficult since this heritage is spread all over the world and, for the same reason, also little known.
Within this framework, the project proposes a "virtual return" through a hypermedia collection composed of digital models realised through ICTs, proposing an original form of communication through social objects and social networks to extend knowledge to different categories of users.
The pilot cases of the project are the Brazilian cities of Jaú and Sao Carlos, in the state of São Paulo, Brazil, which are little known, but which contain numerous testimonies of architectural heritage of Italian origin. The two cities were chosen with the aim of spreading knowledge of the expressive roots of the architectural language of the Italian designers and workers who contributed to its construction and development.
Within this process, archives play a key role. Indeed, local archives hold original designs that help to uncover the work of lesser-known architects and shed light on their stylistic traits. The study examines graphic documentation, project records, architectural vocabulary and construction methods.
Although Brazil's documentary heritage is fragmented, with many records scattered or incomplete, the information found highlights the role of the archive as a tangible historical memory, able to communicate the transformations of urban and architectural contexts, while understating the social and economic framework.
In addition, the article illustrates the workflow that was adopted to structure an interactive and dynamic digital archive that is able to communicate and disseminate the results of the research to a wide audience.

ITALIAN IMMIGRATION TO BRAZIL AND BRAZIL'S ECLECTIC HERITAGE

Italian emigration to Brazil was one of the most significant migratory phenomena in Italian history between the 19th and 20th centuries. It is estimated that more than 1.5 million Italians migrated to Brazil between 1870 and 1920, profoundly changing the social and economic context of this South American country (Avagliano, 1976; Vecoli, 1995). In those years, Brazil was an attractive destination for Italian migrations due to two main factors.
Firstly, Brazil's growing demand for agricultural labour, particularly in the coffee plantations.
Secondly, the economic crisis that affected various Italian regions, especially Veneto, Piedmont and Lombardy (Vecoli, 1995; Tintori, Colucci, 2015).
Indeed, the economic policies introduced after the unification of Italy had a significant impact on the rural population, worsening their living conditions and driving many to seek opportunities abroad. The expansion of capitalism marginalized most peasants, pushing them further into poverty. For many, emigration became the only chance of social and economic salvation (Oliveira, p. 30).
Therefore, from 1887, the phenomenon of the so-called "great Italian immigration" intensified. In the same year, the Brazilian government launched a subsidy programme for foreign immigration, encouraged by the abolition of slavery in 1888 and the urgent need to replace the labour force in the coffee plantations (fazendas) (Rosoli, 1994). While rural immigration was the most prominent, the significance of urban immigration should not be overlooked. Many emigrants falsely claimed to be peasants to take advantage of the free passage offered by the Brazilian government (Oliveira, p. 42; Boca & Venturini, 2005).
Italian policy also encouraged emigration until the early 20th century, seeing it as a relief valve for unemployment. In addition, the presence of an already established Italian community facilitated the so-called 'chain migration effect', encouraging new arrivals.

REGIONAL DIFFERENCES IN ITALIAN IMMIGRATION: SOUTHERN VS. NORTHERN ITALY

Southern Italian emigrants often left with the intention of earning money and returning home, maintaining strong ties with their families. Marriage was important: many married before leaving, leaving their wives and children behind. The migrants included farmers, craftsmen, masons, marble workers, sculptors, domestic workers and small traders. Among professionals, there were doctors, lawyers, and engineers who sought better job opportunities abroad. A notable case was the city of Jaú, which, between 1870 and 1880, received a significant number of immigrants from the province of Cosenza, many of whom engaged in urban activities.
With regard to immigration from Veneto, for many

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ISSN 1828-5961

Venetians emigration had a symbolic value of emancipation: "The act of emigration took on the character of a celebration, and leaving the land meant breaking the material bonds of submission to the landowners and subordination to the homeland" (Oliveira, p. 39). The occupations of Italian emigrants varied significantly depending on their region of origin. Each area specialized in different trades and industries, reflecting the economic and social structures of their homelands: Liguria: Merchants, seamen, and farmers; Piedmont, Lombardy, Veneto: Farmers, laborers, factory workers, miners, lumberjacks, craftsmen, and bricklayers; Central Italy: artists, woodcarvers, designers, painters, sculptors, musicians, marble workers, and plasterers and Southern Italy: doctors, conductors, street vendors, laborers, haberdashers, fruit sellers, coppersmiths, and tinsmiths.

The classic itinerary of Italian emigrants involved departing from the ports of Genoa and Naples toward the Brazilian cities of Rio de Janeiro, Santos, and São Paulo. The journey, lasting between three to six weeks, took place under precarious sanitary conditions, with high mortality rates (Romani, 2020). Once in Brazil, immigrants often encountered extremely harsh working conditions on plantations, characterized by low wages and exhausting shifts, sometimes under semi-slavery conditions (Normano, 1934). Today, Brazil hosts the largest Italian-descendant community in the world, with over 30 million people of Italian origin (Ratti, 1931). The states of São Paulo, Rio Grande do Sul, and Santa Catarina have the largest communities, which keep traditions alive through cultural festivals, institutions, and schools dedicated to the Italian language.

ITALIAN INFLUENCE ON THE BRAZILIAN ARCHITECTURAL HERITAGE

Italian immigrants brought their cultural and technical knowledge and contributed to the urban and architectural transformation of Brazil. The eclectic architectural style that spread between the late 19th and early 20th centuries was the result of a fusion of neoclassical, neo-gothic, baroque and renaissance styles. Italian architects, artisans and engineers played a key role in the spread of these styles, contributing to the construction of public buildings, theatres and bourgeois residences (Lemos, 1989). In São Paulo, for example, Italian influence is evident in works such as the Municipal Theatre of São Paulo, designed by architect Claudio Rossi and inspired by the Paris Opera, with neo-baroque and liberty details (Lemos, 1989).

In addition to major projects, Italians also excelled in the decorative arts and in the working of precious materials. Italian stonemasons, sculptors and carpenters were responsible for the decoration of churches, palaces and public spaces, introducing refined techniques that contributed to the quality and durability of Brazil's eclectic buildings (Fischer, 2005). A notable example is the bourgeois villas of São Paulo, enriched with Renaissance-style details, including frescoes, balustrades, and imposing columns. Similar phenomena were observed in Porto Alegre, where buildings such as the Palácio Piratini reflect Italian influence in the monumentality and ornamentation of public spaces.

The legacy of Italian immigrants in Brazil remains visible today in the eclectic architecture of several cities. The combination of Italian craftsmanship with the Brazilian context created a unique architectural heritage, a tangible evidence of the creative combination of different cultures. Italian immigration to Brazil left an indelible mark on the country's history and culture, transforming its urban landscape, traditions and society. The Italian community continues to be a pillar of Brazil's cultural diversity, preserving its roots while contributing to the nation's heritage.

ITALIAN HERITAGE IN JAÚ AND SÃO CARLOS: ARCHIVAL DOCUMENTATION AND BUILDING CONSERVATION

At present, the documentation and analysis of Italian heritage in Jaú and São Carlos remain incomplete. Much of their history and significance is still largely unknown, even to local residents. The few works that have gained recognition are typically those by the most prominent designers. In this context, archives containing architectural designs that helped shape the identity of these cities play a crucial role. These archives shed light on the contributions of lesser-known architects, offering a deeper insight into their stylistic features and their impact on the region.

This study specifically focuses on archives from Jaú and São Carlos. The materials analyzed include not only graphic documents, such as architectural plans, sections, and elevations, but also supporting records like project commissions, supply chains, and information about the individuals involved in construction. These documents allow for a more comprehensive understanding of the decision-making processes behind architectural projects, the economic and social contexts that influenced them, and the interactions between architects, engineers, and builders.

Examining these documents also allows for the exploration of how architectural styles and construction techniques spread across different regions, particularly through the influence of Italian immigrants. Their technical knowledge, combined with local materials and labor, resulted in a unique architectural fusion that shaped the urban identity of these cities. However, Brazil's documentary heritage remains fragmented, with many documents scattered across various institutions or only partially preserved. This situation presents significant challenges for researchers, as accessing and cross-referencing archival materials often requires extensive investigation across multiple locations.

The main archives and libraries visited for the research are located in the cities of São Carlos, Jaú, and São Paulo (fig. 1), and they are as follows:

- BibIAU - Biblioteca do Instituto de Arquitetura e Urbanismo da Universidade de São Paulo (São Carlos - SP, Brasil);
- EESP USP - Biblioteca Escola de Engenharia de São Carlos da Universidade de São Paulo (São Carlos - SP, Brasil);
- Biblioteca CDCC - Scientific and Cultural Dissemination Center - Universidade de São Paulo (São Carlos - SP, Brasil);

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ISSN 1828-5961

- Fundação Pró-Memória de São Carlos (São Carlos - SP, Brasil);
- Archivio privato Santa Maria do Monjolinho (São Carlos - SP, Brasil);
- Biblioteca Municipal São Carlos (São Carlos - SP, Brasil);
- Biblioteca da Faculdade de Arquitetura e Urbanismo - Universidade de São Paulo (São Paulo - SP, Brasil);
- Biblioteca de São Paulo (São Paulo - SP, Brasil);
- Archivio Museu da Imigração de São Paulo (São Paulo - SP, Brasil);
- Museu Municipal José Raphael Toscano (Jaú - SP, Brasil).

As previously mentioned, the buildings investigated in this study are primarily located in the cities of Jaú and São Carlos, where significant differences were found regarding the availability of archival materials. The main distinction observed lies in the fact that, for the city of Jaú, it was possible to access graphic materials, specifically blueprint drawings, which document the architectural designs of the buildings in detail. These blueprints offer crucial insights into the technical aspects of construction, including structural elements, and decorative details that might otherwise be lost over time.
In contrast, for the city of São Carlos, no graphic materials of this type could be found, which suggests a different archival preservation history or possible losses over time. The absence of blueprints makes it more difficult to reconstruct the exact characteristics of historical buildings and requires reliance on other sources, such as photographs, written descriptions, and oral testimonies. However, for both cities, textual materials were found that document the significant presence of Italian architects, designers, and laborers who played a crucial role in the construction and urban development of these two Brazilian cities. Their contributions were pivotal in shaping the architectural landscape and the cultural imprint that still characterizes Jaú and São Carlos today.
Beyond the professionals involved, these documents also highlight the networks of patronage and financing that supported the construction projects. Wealthy Italian families, business owners, and local institutions often played a crucial role in commissioning and funding buildings that later became landmarks of the region. This socio-economic dimension is essential to understanding the broader impact of Italian architectural heritage beyond mere aesthetics. Another significant characteristic shared by both cities is the state of preservation of the buildings.
In both cities, it was possible to observe that the Italian heritage can be categorized into different types. First, there is the demolished heritage, referring to buildings that no longer exist on the site. This category includes structures that have been removed due to urban expansion, changes in land use, or a lack of preservation policies. Second, there is the still-existing heritage, consisting of buildings that remain visible but are in varying states of preservation. Some of these structures have been well maintained and restored, serving as cultural landmarks, while others suffer from neglect, exposing them to gradual decay. Lastly, there is a category of buildings that, while still standing, have been modified over time or partially obstructed by new structures, such as additional bodies or signage that cover or alter parts of the

Fig. 1 - Some of the archives consulted for the research.

DOI: https://doi.org/10.20365/disegnarecon.

ISSN 1828-5961

original facades. These modifications often reflect changing urban needs and economic conditions, but they also present challenges for heritage conservation, as they obscure or distort the original architectural features.
This research underscores the importance of archival materials in reconstructing and preserving the Italian architectural heritage of Jaú and São Carlos. While significant gaps remain in the documentation, the available sources provide valuable insights into the architectural, social, and economic dimensions of this heritage. The findings highlight the need for further efforts in preservation, digitization, and public awareness to ensure that this important aspect of Brazilian cultural history is not lost to time.

RESEARCH OBJECTIVES

KNOW.it project aims to establish and develop a framework for the study and valorization of the eclectic architectural heritage of Italian origin in the state of São Paulo, with the objective of fostering its preservation through the examination of a broad selection of case studies. The research focuses on buildings influenced by the Italian presence in the urban centers of Jahù and São Carlos, identified as a representative sample of the cultural dynamics that connect the history of Italy with that of Brazil, with architecture serving as a tangible expression of this relationship.
The study thus investigates the process of cultural hybridization resulting from the Italian migratory flow to South America, which has left a lasting imprint on the urban fabric of numerous cities. Italian emigration, which became particularly significant between the 1870s and 1880s, peaked in 1913, when approximately 873.000 people left Italy to settle in Latin America, the United States, and Australia. While Brazil actively encouraged the immigration of agricultural workers to support its coffee plantations (Hutter 1972, p. 68), historical records indicate that most emigrants were instead laborers. This migratory movement not only reshaped Brazil's social and economic structure but also influenced its architectural landscape, introducing formal languages and construction techniques rooted in the Italian tradition.
The project seeks to develop an innovative methodological framework for studying eclectic architectural heritage, with particular emphasis on the formal and constructive characteristics that reflect the influence of Italian architectural traditions and their impact on the evolution of local building techniques. The analysis extends beyond mere documentation of the existing architectural fabric to encompass the reconstruction of original design intentions, aiming to understand how the defining features of Italian eclecticism were adapted and reinterpreted in the São Paolo context.
A key objective is to establish a systematic process for the collection, organization, and structuring of existing data, addressing the challenge of information fragmentation and facilitating the creation of a rigorous and coherent archive. Understanding architectural heritage necessarily involves archival research, which seeks to recover diverse sources - including documents, drawings, photographs, and technical reports - that enable the reconstruction of a building's design and construction history. This documentary corpus supports the analysis of the current state of buildings, which are surveyed using digital acquisition tools to examine their construction techniques and architectural features in detail. Furthermore, digital surveying technologies facilitate the creation of both 2D and 3D models, which not only serve to document the present condition of this architectural heritage but also allow for comparative analyses with historical records, highlighting discrepancies resulting from construction processes or subsequent modifications (fig. 2).
Through this approach, the research aims to formalize a structured methodology for analyzing and interpreting Italian eclecticism in Brazil, thereby fostering a more comprehensive understanding of the phenomenon (fig. 3). All data collected, along with the digital models produced, are integrated into a digital platform designed to enhance the accessibility of this often-overlooked heritage. This

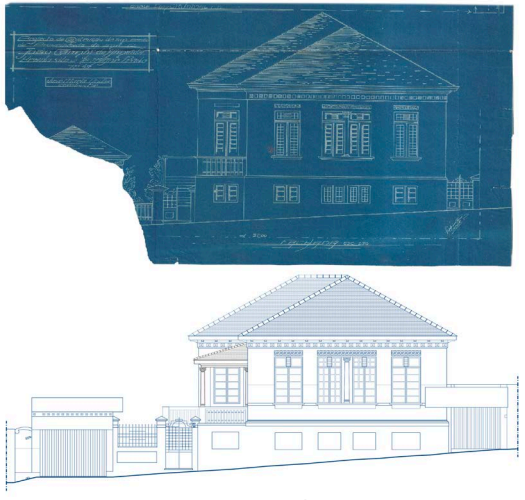

Fig.2 – Building in Rua Major Prado, 807 Jahù: graphical comparison of the design state from the blueprint available (source: Arquivo Municipal de Jaú) and the surveyed building in the year 2024. .

resource is intended to serve both scholars and the broader public, in accordance with an innovative 'Virtual Return' paradigm.
In this way, the research not only contributes to the protection and promotion of an often-neglected architectural heritage but also establishes a replicable model for the analysis and dissemination of knowledge on Italian cultural influences within a global context. These influences are intrinsically linked to an era of large-scale migration, which profoundly shaped the economic, social, and political landscapes of both the countries of departure and those of arrival.

METHODOLOGY

Based on these objectives, KNOW.it project will be divided into the following phases:
- reconnaissance of little known and dispersed overseas heritage of Italian origin;
- reconstruction of the memory of the architectural building tradition;
- construction of digital models of the current and

DOI: https://doi.org/10.20365/disegnarecon.

ISSN 1828-5961

past state of the surveyed heritage;
- definition of a hypermedia space capable of enhancing and supporting the digital space based on social objects;
- drafting an operational protocol for the dissemination of knowledge of the architectural heritage of Italian origin dispersed overseas.

Within the framework of the entire project, the study of the eclectic characteristics of Brazilian architecture (Fabris, 1993) follows a rigorous methodology to analyze architectural drawings, focusing on recognizing, classifying, and interpreting the material stored in archives. This methodology is essential for reconstructing the architectural heritage of Italian origin in Brazil, particularly in Jaú and São Carlos. The approach follows five key phases: the survey and classification of archival material; description of the characteristics of blueprints and graphic codes; cataloging of architects and projects; defining criteria for analyzing eclecticism; and the relationship between archival drawings and existing buildings.
The first stage, the Survey and Classification of Archival Material, involves a systematic reconnaissance of archives containing blueprints, sketches, and other project documents (Bortolucci, 2017; Bressan Pinheiro, 2006). Given the fragmented nature of Brazilian archival heritage, efforts are made to consolidate dispersed materials from public and private collections, municipal records, and historical societies. Each document is cataloged based on criteria that allow for the collection of information on the date of the drawing, the location of the archive, architectural style, and typology of the represented building, degree of preservation of the sheet, completeness of the drawing in terms of content (number, typology, and scale of the drawings), and relevance to the study of Italian-influenced eclecticism. This classification helps distinguish between authentic Italian architectural contributions and later reinterpretations.
Among the available archival material, an extremely important role is played by the so-called Blueprints—architectural drawings drawn up in the form of white ink serigraphs on blue paper cointaing information about the author (the architects or the builders) (fig.4).
These archival documents, containing drawings corresponding to those provided for in the preliminary design of the building, were delivered to the Prefeitura Municipal of the cities in order to obtain the building permit. Their analysis, in addition to offering a panorama of the most active architects, allows for an understanding of architectural intent and the classification of stylistic features used by the designers.
The second stage of analysis focuses on the technical characteristics of the drawing. The content of representation and the graphic conventions are examined: number and typologies of drawings (generally plans, main elevations, one section), scale of drawings (1:100 or 1:50), notation systems, line weights, hatching patterns, and measurement units are studied to decode implicit design information. Considering, instead, the drawn elements - such as cornices and decorative features - are also scrutinized to infer the construction methods employed by Italian builders (Ferraz de Lima, 2008). A key aspect of the methodology is the identification of Italian architects and their works. Many Italian professionals, often overlooked in historical records, played a significant role in shaping Brazil's urban fabric.
The third stage of the research methodology involves identifying Italian architects and their contributions, as many professionals from Italy played a fundamental role in shaping Brazil's urban landscape, yet they remain largely absent from historical records. To reconstruct their biographies, researchers examine historical registries, immigration records, and professional guild archives, tracing the architects' origins and career paths (fig.5).
Additionally, the attribution of projects is carried out by comparing archival drawings with existing buildings, allowing for a stylistic and technical analysis that connects the original plans to their executed counterparts (fig.6). This operation often proves to be difficult both because the buildings that were designed have often been demolished or

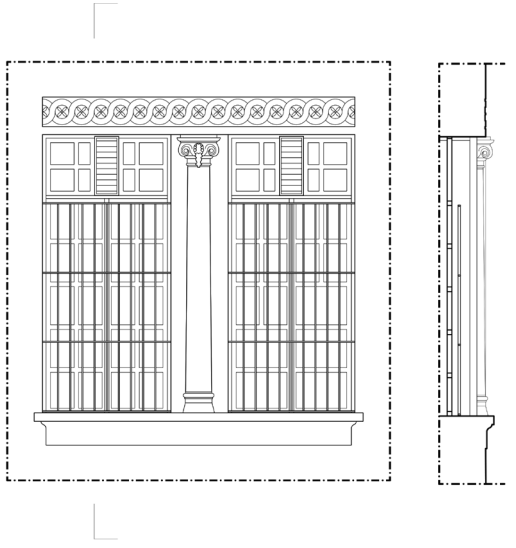

Fig. 3 – Building in Rua Major Prado, 807 Jaù: overview of architectural and decorative elements

Fig. 4 – Drawings by Beppino Terrieri. Source: Arquivo Municipal de Jaú.

DOI: https://doi.org/10.20365/disegnarecon.

ISSN 1828-5961

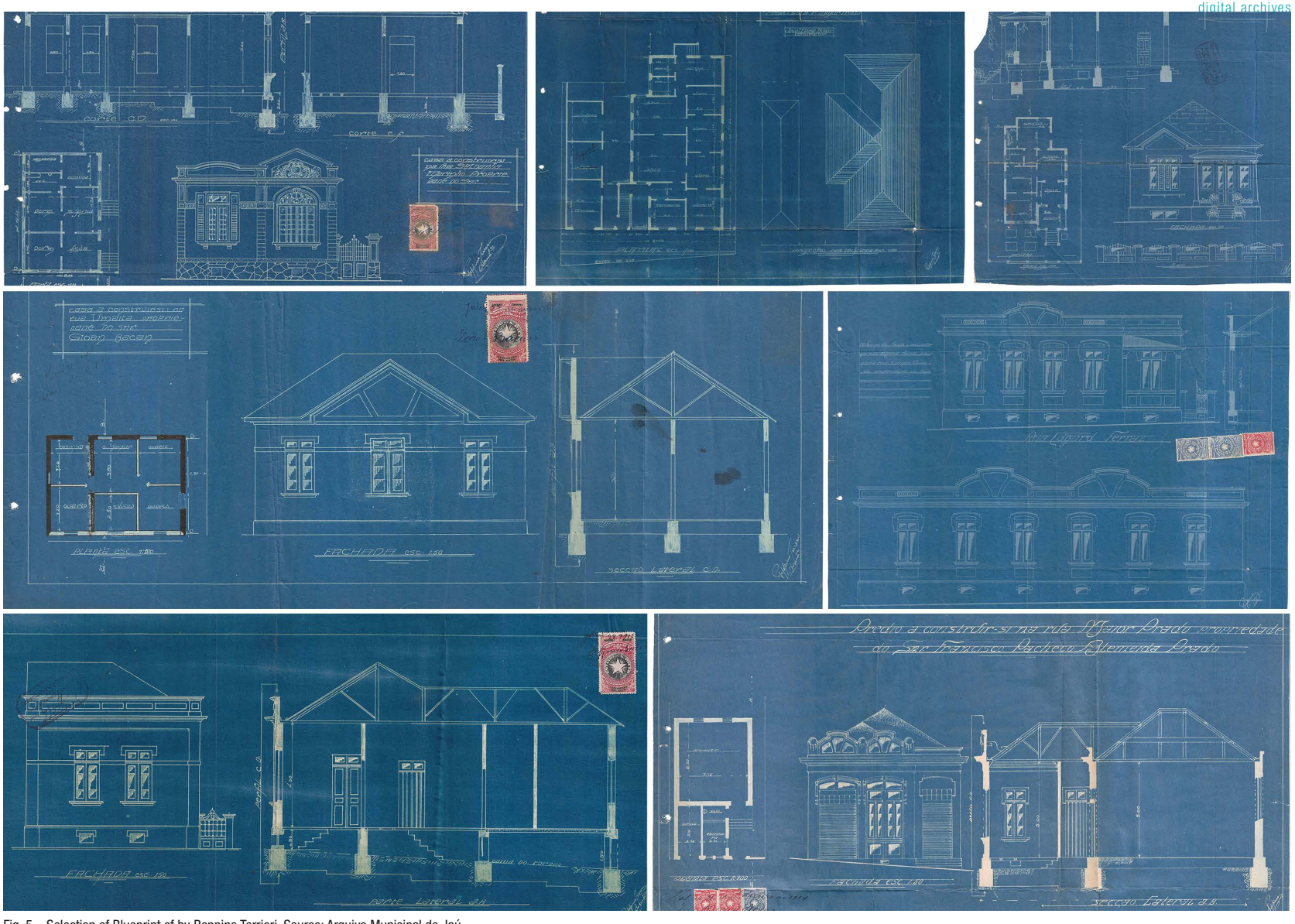

Fig. 5 – Selection of Blueprint of by Beppino Terrieri. Source: Arquivo Municipal de Jaú.

DOI: https://doi.org/10.20365/disegnarecon.

ISSN 1828-5961

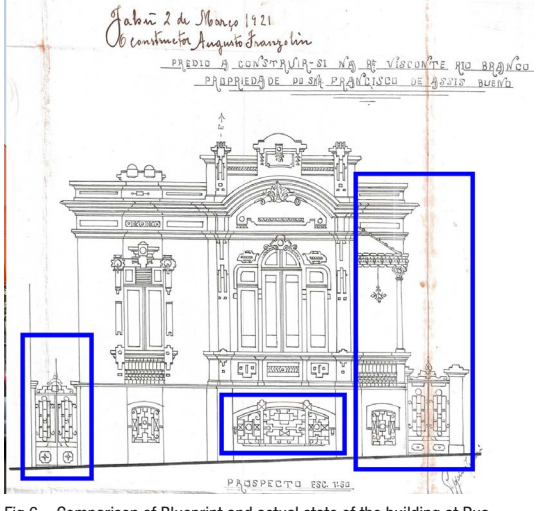

Fig.6 – Comparison of Blueprint and actual state of the building at Rua Visconde de Rio Branco, 273. Architect: Augusto Franzolin (source: Arquivo Municipal de Jaú).

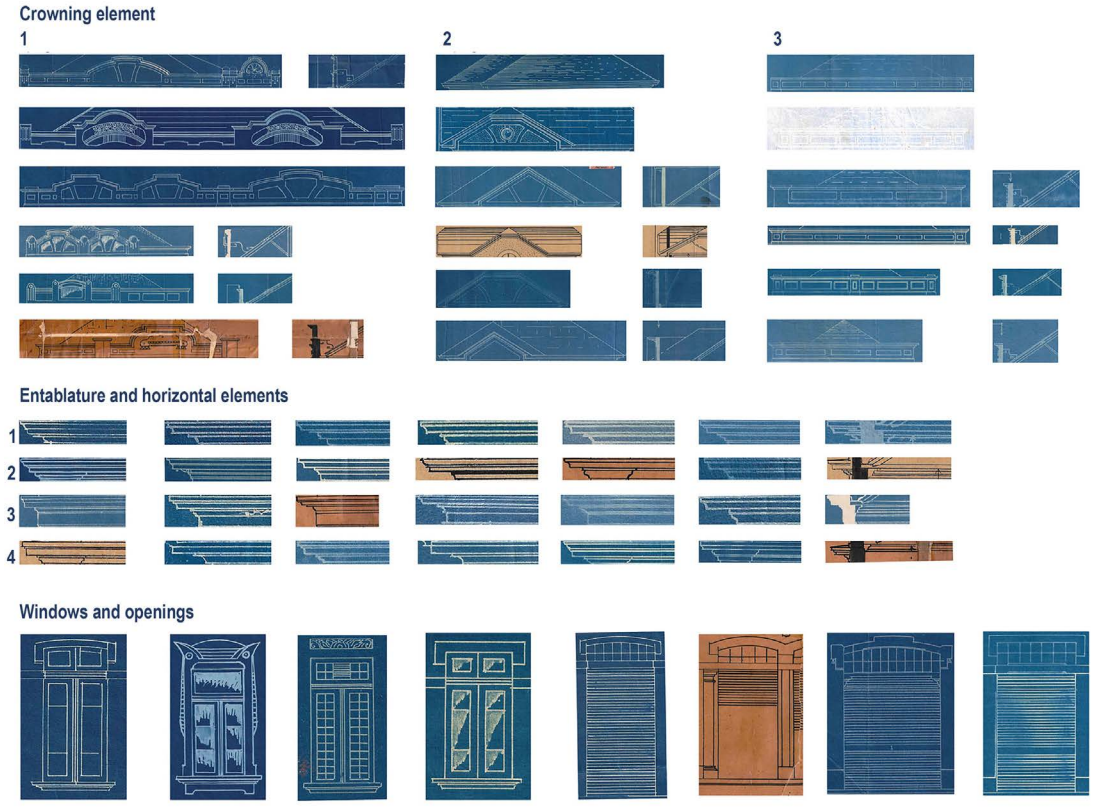

Fig.7 – Morphological classification of decorative elements in Beppino Terrieri's drawings. The elements are extracted from original drawings by Beppino Terrieri, preserved in the collection of the Arquivo Municipal de Jaú.

completely modified over the centuries or modifications were made by the workers during construction and because, sometimes, an incorrect location is reported. Beyond individual works, network analysis provides insight into the professional relationships between architects, engineers, and artisans, shedding light on the exchange of knowledge and techniques. This cataloging process ultimately deepens the understanding of how Italian architectural traditions were adapted and transformed within the Brazilian context.

The fourth stage of the methodology is the definition of criteria for analyzing the eclectic architectural style in Jaú and São Carlos. Given its diverse influences, classifying eclecticism requires a structured approach. The study establishes a framework to distinguish the defining elements of Italian-influenced eclecticism, starting with compositional aspects such as symmetry, façade articulation, and ornamental details inspired by Renaissance and Baroque traditions. The choice of materials is another fundamental component, as Italian builders introduced European construction techniques and materials, including brick, stucco,

DOI: https://doi.org/10.20365/disegnarecon.

ISSN 1828-5961

and ironwork, which were then adapted to local environmental conditions. Furthermore, decorative motifs such as floral friezes, pillars, and balustrades reflect a synthesis of Italian aesthetics and Brazilian craftsmanship (fig.7). By comparing these characteristics with contemporary Italian buildings, the research ensures a precise evaluation of stylistic continuity and adaptation over time.

Finally, the study explores the relationship between archival drawings and the current state of the buildings. This involves converting 2D blueprints into 3D digital models, offering a means to visualize the original design intentions and assess their execution in reality (fig. 8).

By overlaying historical plans with contemporary surveys—integrating laser scanning and photogrammetry—researchers can identify modifications, structural damage, or the loss of original elements. These analyses inform preservation strategies that rely on historical documentation and material studies to propose conservation approaches tailored to each site. By integrating archival research with digital tools, KNOW.it project fosters a more comprehensive understanding of Italian architectural heritage in Brazil. This process not only facilitates the recognition and conservation of this heritage but also enables its broader dissemination through digital archives and social platforms, ensuring greater visibility and appreciation for these historical landmarks (Dodebei, 2006).

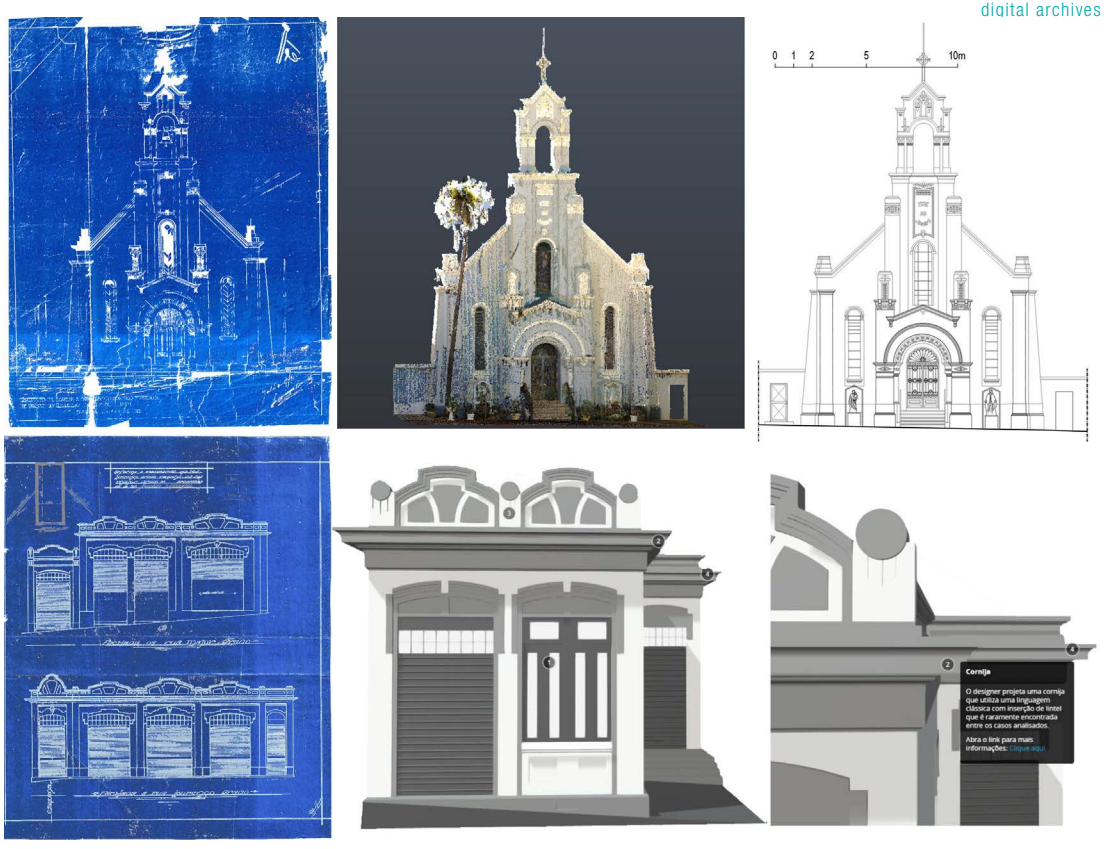

Fig.8 – From 2D Blueprint drawing to 2D and 3D digital model. On the top: Collejo San Josè (Jaù), blueprint (source: Arquivo Municipal de Jaú), 3D view from point cloud and 2D model of the main elevation. On the bootom: Building in Jaù, façade on Rua Major Prado and façade on Rua Lorenzo Prado Prado (drawing by Beppino Terrieri, source: Arquivo Municipal de Jaú), and 3D model for building analysis.

RESULTS

The work carried out so far has yielded a series of useful and preparatory results for the successful completion of the project, in line with the previously defined objectives. To ensure the proper organization of projects, blueprints, photographs, and bibliographic and archival materials collected or produced, it was necessary to first develop a cataloging system. From the outset, efforts were made to create a structure compatible with the future implementation of an online archive for dissemination. Following interviews with professionals from various best practices in the field of cultural heritage archiving (MAXXI Museum, ArchiDIAP, and the Istituto Centrale per la Grafica), the need emerged for a cataloging approach that would take the architectural project as its minimum unit and be structured to support a relational database, allowing for the identification of data correlations. Each project was therefore assigned a unique identifier, represented by an alphanumeric code (e.g., P-1, P-2, P-3), incrementally increasing as new elements were added to the catalog. It is worth noting that the cataloged projects include both existing buildings (with blueprints) and unrealized or demolished projects, located in the cities of Jaú and São Carlos. This choice allows for attention to be given to both the still-existing architectural heritage and that which has disappeared, offering a comprehensive narrative that integrates tangible elements with ephemeral testimonies. Projects deemed relevant to the

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research – i.e., those characterized by elements traceable to an Italian matrix – have been cataloged in a spreadsheet structured into sections. These sections will ideally correspond to visible and navigable parts of the future online archive, enabling systematic organization of information, texts, and retrieved or elaborated resources (photographs, archival drawings, and 2D and 3D models) (fig.9). Each file or document associated with a project has been assigned an identification code to facilitate archiving and retrieval. The drawings related to project P-1, for example, follow a progressive numbering system: P-1_00, P-1_01, and so forth. Some sections of the spreadsheet, intended for internal use, contain data regarding the individuals responsible for compiling the records, the type of survey conducted, and the detailed analysis of the project.

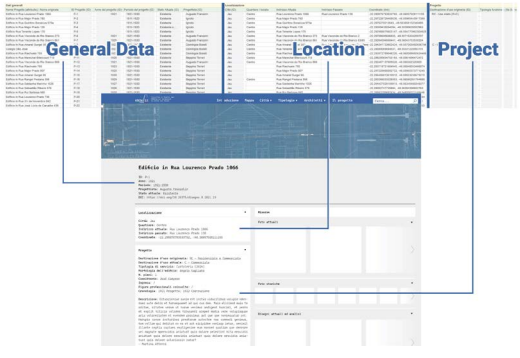

Fig.9 – Portion of the cataloguing spreadsheet with division into sections. These are related to the different areas of the future online archive, displayed below through a mock-up of a single project page.

The cataloging is divided into the following sections:

- General Data (Dati Generali): Includes basic information about each project, such as its name (whether assigned or not), the designer, the year of construction, and the current state of the building (existing, existing with modifications, demolished/unrealized).
- Location: Specifies the city where the project is located (currently Jaú and São Carlos, with the possibility of extending the research to other locations). Since many streets in Jaú have undergone changes in street numbering, both the current and historical addresses (retrieved from blueprints) are provided.
A Google Maps link and satellite coordinates are also included for geolocation on a navigable map.
- Project: Gathers specific information such as the intended use (original and current), the building morphology, the client (if known), chronology, a general description, and any collected testimonies.
- Analysis: Documents, through descriptive texts, a comparison between the current state of the building and its representation in the blueprints. The analysis explores details such as moldings, facade composition, and distinctive features, with a dedicated section for identifying novel or significant graphic solutions within the project drawings.
- Bibliography: Collects bibliographic references, including books, articles, documents, and web links.
- Resources: Lists all resources associated with each project, including archival drawings, historical and contemporary photographs, 2D and 3D models derived from surveys, and digitized archival documents. Each resource is assigned an identification code linked to the reference project.
The adoption of recurring information, selectable through drop-down menus in the spreadsheet, will enable the construction of a relational database essential for the development of the online archive.

This system will not only highlight previously overlooked correlations but also allow for the isolation of specific areas of analysis and filtering or sorting of results according to research needs. The proper cataloging of projects, supported by a rigorous indexing process, thus forms the foundation for organizing the vast and heterogeneous material collected and produced.
Referring back to the final section of the cataloging process – Resources – it is essential to focus on the models produced to date. Following several survey campaigns, it has been possible to elaborate drawings derived from laser scanner surveys or photogrammetric processing. The outputs obtained primarily focus on the facades and architectural details of the identified buildings, with particular attention to the distinctive elements of eclecticism.
The drawings have been developed following a unified graphic style to ensure coherence within the future digital platform.
Specific representation scales have been established: 1:50 for elevations and 1:20 for details, always inserted within layouts conforming to ISO DIN Series A standards (A4, A3, and A2, depending on the project's scale).
A predefined header provides essential information, such as the type of drawing produced, the project and drawing author, the date, and the type of survey conducted. Additionally, it includes the scale factor and details about the research project (fig.10). Guidelines for compiling project records and drafting models have been provided to the research team members.
The 2D models, created using AutoCAD software, share a common ctb file, as well as uniform line weights and graphic solutions for all produced drawings.
This approach ensures that every team member, regardless of their university or research unit affiliation, maintains consistent graphical representation in the models.
The design of a rigorous cataloging system and the definition of guidelines for model development have led to the production of hundreds of consistent drawings, distributed across dozens of cataloged projects.
These outputs will enable further analysis of the compositional solutions of Brazilian eclecticism by comparing historical drawings with the current state of the buildings. The produced materials will be collected in a continuously expanding digital archive, aiming to disseminate, both in academic circles and to the general public, an architectural heritage that has long been overlooked.

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FUTURE DEVELOPMENT

KNOW.it project constitutes a significant initiative for the digitization of Italy's dispersed architectural heritage, with the objective of reestablishing a cultural link between the works created by Italian emigrants in Brazil and their places of origin. Central to this endeavor is the Digital Archive, which serves as a platform for the collection, organization, and dissemination of data, digital models, and multimedia content. The effectiveness of this archive depends not only on the quantity and quality of the gathered information but also on its capacity to engage a diverse audience, encompassing both the scientific community and the general public.

To maximize its impact, it is imperative to develop innovative strategies for accessibility and dissemination. The integration of virtual reality (VR) and augmented reality (AR) technologies would enable users to explore historical buildings immersively, facilitating the detailed analysis of their architectural and structural characteristics. Concurrently, the application of machine learning techniques could enhance the automated analysis of buildings, revealing stylistic connections and cultural influences among different works. The ability to navigate within three-dimensional models would further enable comparative studies of Italian and Brazilian architectural styles, elucidating their differences and points of stylistic convergence.

Another crucial aspect of the project is active community engagement. The establishment of a collaborative platform would allow scholars and citizens to contribute information and documents, thereby dynamically enriching the database. Citizen science tools could further facilitate the identification of significant buildings, fostering greater awareness of the value of dispersed architectural heritage. Additionally, the collection of firsthand accounts and historical materials would contribute to a more comprehensive reconstruction of the historical and social contexts underpinning the construction of these buildings.

The project's expansion could include additional Brazilian cities with a strong Italian influence, alongside integration with international archives to achieve a more extensive reconstruction of migratory flows. The inclusion of historical photographs and oral testimonies would further enrich the research, complemented by the establishment of a network of scholars and institutions collaborating in the exchange of knowledge and resources for an interdisciplinary and innovative approach.

To ensure the broadest dissemination of its findings, the project must implement an effective communication strategy. A structured presence on social media, combined with the organization of online events, webinars, and interactive workshops, would facilitate engagement with a wider audience and establish the project as a reference point in the study of Italo-Brazilian architectural heritage. Moreover, the publication of scientific and popular articles would enhance the project's visibility within academic and cultural communities, fostering new collaborations and synergies.

Finally, collaboration with cultural and academic institutions in both Italy and Brazil would promote the sharing of resources and expertise. Securing access to international funding would ensure the long-term financial sustainability and growth of the project. The development of virtual exhibitions and interactive exhibition pathways would further amplify the project's impact, engaging not only specialists but also a broader public interested in the history of Italian emigration and its architectural legacy.

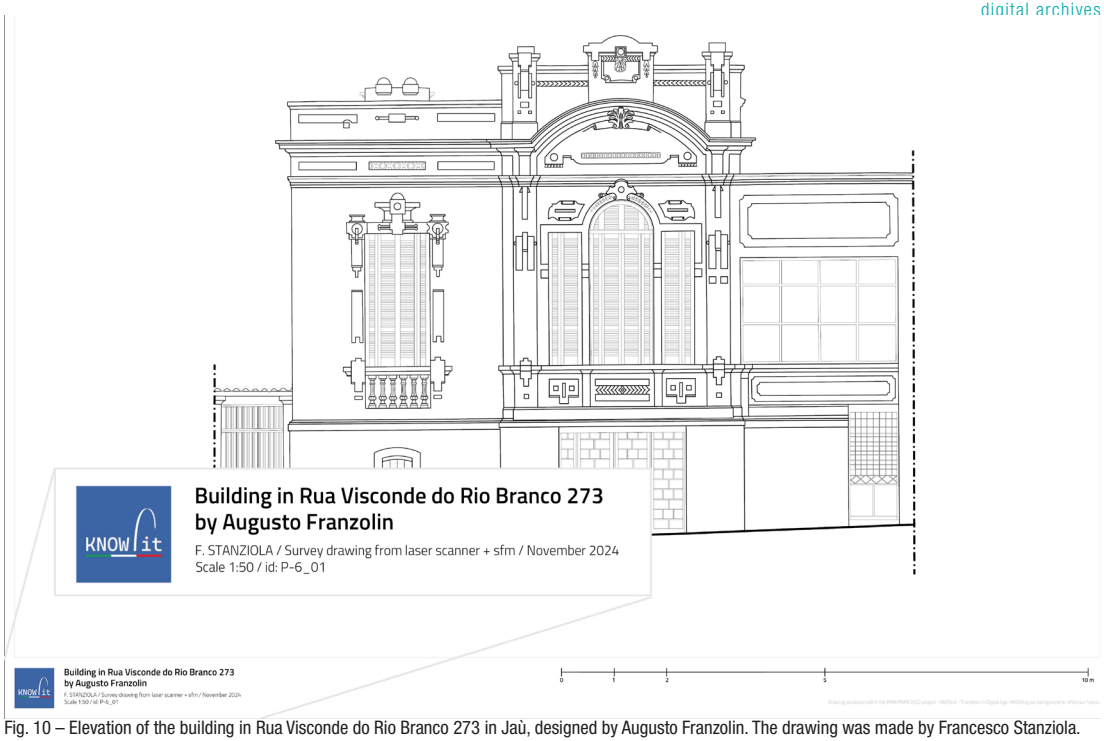

Fig. 10 – Elevation of the building in Rua Visconde do Rio Branco 273 in Jaù, designed by Augusto Franzolin. The drawing was made by Francesco Stanziola. Highlighted is the header showing the project logo and all the information related to the project.

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In conclusion, the KNOW.it Digital Archive represents a unique opportunity for the enhancement and preservation of Italy's architectural heritage abroad. Through the integration of innovative technologies and a participatory approach, the project has the potential to evolve into a comprehensive digital ecosystem dedicated to safeguarding and disseminating the historical memory of Italian architecture worldwide, ultimately restoring to communities a fundamental aspect of their cultural identity.

NOTE

[1]In complete agreement with the contents of the article, Alfonso Ippolito was responsible of "Introduction" and "Italian influence on the brazilian architectural heritage" paragraphs, Alfonso Ippolito was responsible for "Italian immigration to brazil and brazil's eclectic heritage" and "Regional differences in italian immigration: southern vs. northern Italy" paragraphs, Caterina Morganti was responsible for "Italian heritage in Jaú and São Carlos: archival documentation and building conservation" paragraph, Vittoria Castiglione was responsible for "Research objective" paragraph; Martina Attenni was responsible for "Methodology" paragraph; Federico Rebecchini was responsible for "Results" paragraph; Cristiana Bartolomei was responsible for "Future development" paragraph.

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