ISSN 1828-5961

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Architectural archives in digital era: research and teaching strategies for the study of unknown heritage

Architectural drawing archives encompass a diverse range of materials—technical, artistic, textual, and bureaucratic—that reflect the interdisciplinary nature of architectural practice. These heterogeneous yet interrelated documents play a crucial role in the conception, development, and realization of projects, and demand tailored strategies for description, preservation, and dissemination. This contribution presents the methodological framework developed for the census, cataloging, and digitization of the Drawings Archive (AD) at the Department of Civil Engineering and Architecture (DICAr), University of Pavia. Initiated in 2023, the project addresses both research and teaching objectives, focusing on the integration of analog and digital archival practices. The pilot phase centers on the archive of Architect and Professor Giuseppe Sebastiano Locati, the most extensive collection within AD. Each drawing is analyzed in terms of graphic, technical, and historical attributes, allowing for the reconstruction of archival relationships and thematic groupings inspired by Locati's monographic logic (1936). This approach not only enables effective access to information but also redefines each drawing as a node within a dynamic system of knowledge. The project further investigates the role of digital tools in architectural historiography and heritage valorization. A case study on Locati's temporary pavilions for the 1906 Milan International Exhibition exemplifies the potential of digital reconstruction. Through student-led initiatives and international workshops, historical drawings were transformed into 2D and 3D models, allowing for immersive and interactive explorations of lost architecture. These virtual simulations serve as critical tools for the reinterpretation and reactivation of ephemeral heritage through digital storytelling.

Keywords:
Architectural drawings; University archive; census activities; unknown heritage; 3D models.

DOI: https://doi.org/10.20365/disegnarecon.34.2025.6

ISSN 1828-5961

INTRODUCTION

Architectural drawing, as an original source, plays a vital role in the creative design process and is essential for understanding and critically analyzing a building. This is particularly true for projects that have only been conceived or for lost architectures, where the drawing remains the primary form of expression. While it is the main form, it is not the only one, as drawings are often accompanied by various documents, including administrative texts and physical models. These elements are integral to the architect's creative process, from conception to (potential) realization. Together, they highlight the interdisciplinary nature of architecture, reflecting the complexity arising from the fusion of conceptual creativity and technical expertise. The significance of these materials, however, was only recognized after the widespread use of architectural drawing as a means of executing and communicating projects, making it a relatively recent development in the context of the construction of major buildings.[1]
Today, the conception of drawing as a synthesis, expression and artistic composition makes historical architectural drawings a cultural asset to be protected, both as technical documents, fundamental to the preservation of completed works and knowledge of those that were never built, and as works of art, produced by the masters of the past and characterised by an aesthetic value that is therefore recognised as inherent (Domenichini, Tonicello, 2004). It is from this conception, the need, unfortunately not always realised, to create scientific centres and university archives for their study and conservation. Preservation that today necessarily also implies the document digitisation processes, so that they can be transmitted, disseminated and made usable in the various possible ways, as is appropriate for everything that constitutes an integral part of the identity and cultural heritage of a country or a specific community. Digitisation today takes different forms: it is no longer limited to the 'digital copy' of an architectural drawing, but goes as far as its interpretation. This interpretation is manifested through the production of new content, expressed in the form of 3D models capable of making explicit the relationships between signs and drawings contained in historical archives.

PRESERVING TO TRANSMIT ARCHITECTURAL DRAWING

The research for the definition of digital documentation strategies aimed at safeguarding architectural drawings involves a series of necessary considerations, relating to physical-contextual as well as interpretative-conceptual aspects. The two seemingly distant issues are, however, closely connected, and need to be addressed prior to knowledge actions in the field.

PHYSICAL CHARACTERISTICS AND CONTENT TYPES IN ARCHITECTURAL ARCHIVE DRAWINGS

To preserve graphic content, it is essential to understand the materials and techniques used in its creation and reproduction. This knowledge enables the definition of appropriate methodological and technical approaches to prevent natural deterioration and facilitate digital reproduction. Architectural drawings, for example, convey the evolution of technical representation over time. These archives include various media, such as lead and graphite pencil, ink, printed or photographic images, and more recent digital drawings. Manual techniques [2], often borrowed from painting, such as watercolor, tempera, and oil, have been used in architectural representation, leading to the development of specific practices to ensure technical precision (Scolari, 1994). Over time, the choice of media has evolved, with papers and boards of varying textures and weights, often in large formats to accommodate site operations and competition evaluations.
Tracing paper, known for its transparency, became common for reproducing graphic elements. The need for duplication led to the development of copying techniques like heliographs and cyanotypes. Analyzing the material qualities of archival drawings can pinpoint their historical context, reveal the author or school of origin, and assist in identifying specific reproduction methods. In terms of content, large-scale plans and panoramic views help reconstruct historical configurations and territorial changes, while atlases, sketches, and elevations document the existence, transformation, and restoration of buildings. This information contributes to the historical understanding of buildings, cities, and territories, extending beyond stylistic analysis to inform architectural and urban evolution. Architectural archives are valuable resources for scholars, researchers, designers, and professionals who rely on these documents to inform their work.

DRAWINGS AND IDEAS. COPIES OR ORIGINALS?

As Franco Purini argues[3], the architectural project drawing is more than a technical tool; it is a theory, an 'anticipation of a future,' much like the very idea of architecture. When these two elements—idea and drawing—merge, they transform into architecture. Drawing, therefore, is not confined to design or construction; it expresses the architectural idea and vice versa. This insight emphasizes that studying archive drawings is essential to understanding the ideological process behind architectural works. The expressive power of the graphic sign in architectural drawings stems from an ideational process that precedes the construction, reflecting a conceptual, rather than purely physical, systematization of architecture (Bini, 2024). If the graphic sign represents the unique language of its creator, the drawing embodies the work, fully imagined but 'open,' unbound by the constraints of physical execution and defined by its cognitive dimension, even if it may never be realized (Barreca, 2023).
Thus, architectural drawings themselves are works of art, unique and original. However, the advent of printed copies and digital reproductions has raised questions about the originality of architectural drawings [4]. In the digital age, we attribute a unique identity to each digital copy, making it a form of "original." This challenges the concept of originality, particularly in the case of archived drawings that were not hand-drawn by the original architects.
As Mario Perniola argues: 'The fundamental theoretical problem of the image is its relationship to the original.' [5] What, then, is original? In the digital age, we speak of the 'uniqueness' of copies, attributing a specific identity to each product, to the point of making the digital copy a unicum in its

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ISSN 1828-5961

own right, another original. And is this condition of balance in the interpretation of a document (is it a copy or is it original because it is something else?), made explicit and extreme in our time, equally valid for those drawings, preserved in archives, but not directly executed by hand by the professionals of past centuries?[6]
Negatives, heliographs, and blueprints are often regarded as copies of architectural drawings, but these reproductions are frequently used as study tools and modified by architects, thus transforming them from copies into original documents. Similarly, when a blueprint or survey is the only available graphic source, it assumes the value of an 'original document'. In the digital era, the distinction between 'original' and 'copy' takes on broader cultural significance, affecting not only historians and architects but also the entire scientific community. This issue is central to the complex process of cataloguing architectural drawings.

ARCHITECTURE ARCHIVES IN THE DIGITAL AGE

Architectural archives, due to their complexity and material diversity, present both theoretical and practical challenges in cataloguing documents as originals or copies. The attribution of value is constantly influenced by advancements in digital technology, which impacts the analysis and cataloguing of historical documents, especially drawings [7]. This ambiguity makes it difficult for researchers to make definitive descriptive choices, as such decisions affect the perceived value of the drawings for future users. Therefore, careful consideration and a well-defined methodological strategy are necessary.
The need to develop specific strategies for describing and characterizing architectural drawings—both in relation to the drawings themselves and their duplicates or "other originals"—has been recognized since the advent of copying techniques such as heliography and blueprint production. In today's digital era, the transition from physical to digital preservation has become essential, making it crucial to adopt strategies that ensure the knowledge and preservation of architectural archives (Gigante, 2007; Parrinello, et al., 2024).
Given that most documents in these archives are drawings, fundamental aspects must be considered when choosing the appropriate digitization methodology:

- The type of material (e.g., matte or transparent: cardboard, photographic paper, film, etc.)
- The technique used for the drawing (e.g., pencil, ink, watercolor, photography, print)
- The condition of the document (e.g., fragile, folded, rolled, wavy, etc.)

These factors, combined with the storage environment, influence the approach to digitization. While established technologies (e.g., photoreproduction, scanning, photogrammetry) are adaptable to the rapid evolution of hardware and software, identifying the best strategies for various types of drawings remains challenging. [8] However, the results of these methods have opened new research opportunities, particularly in archive organization. Previously, documents were difficult to connect due to differences in size and material, but digital databases now enable the creation of an "open archive"[9], allowing for the identification of connections between drawings, their authors, and new research directions. Though digital integration does not solve all preservation issues [10], it marks significant progress in ensuring document accessibility and enhancing their value

REQUIREMENTS, CASE STUDY, AND RESEARCH OBJECTIVES

In light of these considerations, this study focuses on the analysis of architectural drawings that remain the sole witnesses of works that have since disappeared. The objective of this analysis is to investigate, through the application of specific digitization strategies, not only the drawings themselves but, more importantly, the ideological concepts and creative methods underlying them (Lebiedź, 2024). Examining drawings related to architectural works that are no longer visible further underscores the importance of graphic sources in studying the relationships between author and document (Parrinello, 2024), as well as between different documents, and between archive documents and new representation techniques (Maggio, Garozzo, 2024). In the latter case, it also prompts additional reflection on the concept of original-copy and/or original-other original.

BETWEEN NEEDS AND NEW POSSIBILITIES

This research stems from the widely shared and increasingly pervasive need, even within the humanities, to digitize our surroundings to focus on the meaning and identity that contemporary reproduction and virtual access strategies can confer upon architectural drawings of structures no longer visible in reality (Gold, 2013). Indeed, the digital space enables an unprecedented interaction not only with the information inherent in physical space but also with the data encoded within drawings. Additionally, the digitization process allows us to move beyond the traditional notion of duplication as a mere "copy" to generate what can be described as "simulacra of reality." (Parrinello, 2023). If this is true for existing architectural works, it is equally relevant for those that no longer exist but whose memory persists in the marks and drawings preserved in architectural archives (Münster, 2013). These archives, therefore, (take on a new role: from repositories of the past to dynamic containers of knowledge, rediscovery, and collective heritage. They become hubs for developing innovative methodologies for studying, preserving, and reinterpreting historical drawings.
Based on these premises and drawing on the critical synthesis proposed by Professor Massimiliano Savorra [11], the following presents a classification of some of the most effective digitization techniques, now well-established and extensively discussed in the literature (Palestini, 2022; Drysdale, 2024), applicable to archival documents.
This classification organizes methodologies into five broad categories, ranging from document reproduction to interpretative and innovative forms of representation:

1. Document Digitization – Involves the digitization of texts, books, drawings, and general documents using scanning and photogrammetric techniques to preserve archival materials.
2. Architectural Drawing Reproduction – Focuses

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on studying and reproducing architectural drawings to gain insights into the architect's creative process.
3. Comparative Analysis with Built Architecture – Starts with the analysis of architectural drawings and compares them with constructed works, using digital simulations to identify discrepancies between design and realization.
4. Digital Replication for Architectural Applications – Focuses on replicating architectural drawings digitally and projecting them onto existing structures, such as creating virtual replicas of deteriorated elements for preservation in controlled environments.
5. Interpretative and Interactive Digital Models – Goes beyond reproduction, interpreting historical material through audiovisual techniques or 3D models to enhance communication and the dissemination of scientific research on architectural documents, even those no longer physically accessible.

THE DRAWING ARCHIVE OF DICAR AT THE UNIVERSITY OF PAVIA

This research examines the latest possibilities offered by methodologies within the final macro area to explore both theoretical and applied aspects of the relationship between lost cultural heritage and digital space. The digital transposition of archival drawings thus becomes a process not only for understanding architectural forms but also for analyzing how spaces were used and how they were perceived at the time of their physical existence. In this context, what better case study than architectures designed to be temporary, of which only archival documents remain? With that purpose in mind, a research project was launched in 2023 to study, collect, catalog and digitize the documents of the Drawings Archive (AD) of the Department of Civil Engineering and Architecture (DICAr) of the University of Pavia.

This is a university archive whose formalization is relatively recent and whose contents are still partly unexplored. These premises have imposed the structuring of a comprehensive methodology, from the collection of drawings, to systematization in a dedicated physical space, cataloging and then digitization to ensure their preservation and use.

Figure 1. The spaces of the DICAr Drawings Archive are furnished with drawers, light tables, shelves, desks and workstations for viewing the various documents collected.

Figure 2. Some examples of the types of documents that constitute the DICAr Drawings Archive. The drawings shown in the picture are architectural surveys and dissemination posters of events, produced on paper and on transparencies. The techniques vary from pencil and ink drawings to printed.

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The AD consists of numerous collections, whose materials had never been fully gathered [12] and were previously dispersed across various classrooms, offices, and storage areas within the University of Pavia. [13] The ongoing census activities at AD initially focused on the work of Architect and Professor Giuseppe Sebastiano Locati, whose collection is the largest in the archive. This approach helped establish a method that can be updated and adapted for other collections in AD. Each drawing in the Locati collection was analyzed graphically, technically, and historically to uncover connections among the documents, highlighting their shared origin and language. The items were then grouped according to thematic criteria and the content of the drawings. This method aligns with Locati's own approach in his 1936 monograph, where he viewed cataloging as a tool for understanding the evolution of an architect's thought and language. The archive reflects Locati's various roles as an architect, professor, researcher, and traveler. It includes pencil sketches, on-site monument surveys refined in ink and watercolor, architectural drawings for private clients, and presentation boards for public competitions. The archive also contains photographs, promotional postcards, and clippings from architectural magazines. Among Locati's many works, the technical drawings for the temporary pavilions of the 1906 Milan International Exhibition were selected. These pavilions, originally temporary structures, serve as an ideal case study for developing systems of knowledge, preservation, and renewed engagement with previously unknown heritage, as their reconstruction relies solely on archival documents.

Figure 3. Composition of historical images. On the left is the exhibition poster, designed by Leopoldo Metlicovitz. On the right two postcards created to publicise the Expo and conserved in the DICAr Drawings Archive.

THE TEMPORARY PAVILIONS OF THE 1906 MILAN EXPOSITION

The International Sempione Exposition was inaugurated in Milan on April 28, 1906, to celebrate the opening of the Italy-Switzerland railway tunnel (Redondi, Lini, 2006). The event represented an opportunity for the city to demonstrate its scientific, technical, and artistic progress (Audenino et al., 2008), engaging numerous professionals and leading to an urban renewal in the northwest area of Milan. The exposition was set between Parco Sempione, which hosted pavilions with artistic and historical attractions, and Piazza d'Armi, with pavilions dedicated to the theme of transportation. The two areas were connected by a newly built elevated electric railway. The pavilions were designed by young architects under the guidance of experts, including Sebastiano Giuseppe Locati, then director of the School of Drawing at the University of Pavia (Di Marco, 2005), who was appointed as the technical director for the Parco Sempione area. The significance of the Exposition has earned it numerous studies, exhibitions, and publications over the years; however, the temporary nature of the event makes its story today possible only through archival documents. [14] This condition, which highlights the value of historical preservation and archival documentation, also emphasizes the need to develop innovative methods of representation and enjoyment of the vanished heritage, making the 1906 Expo a privileged case study for initiating methodological experiments in the transition from archival drawings to three-dimensional models (La Placa, Galasso, 2024).

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ISSN 1828-5961

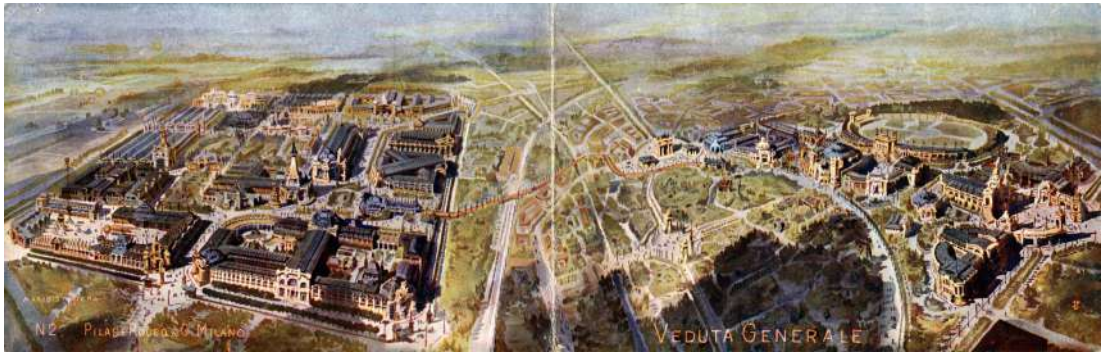

Figure 4. Period image of the 1906 International Exhibition in Milan. Bird's eye view of the two Expo 1906 exhibition areas in Milan. Available at https://retours.eu/en/28-expo-milano-1906/#3 (last access 23 March 2025).

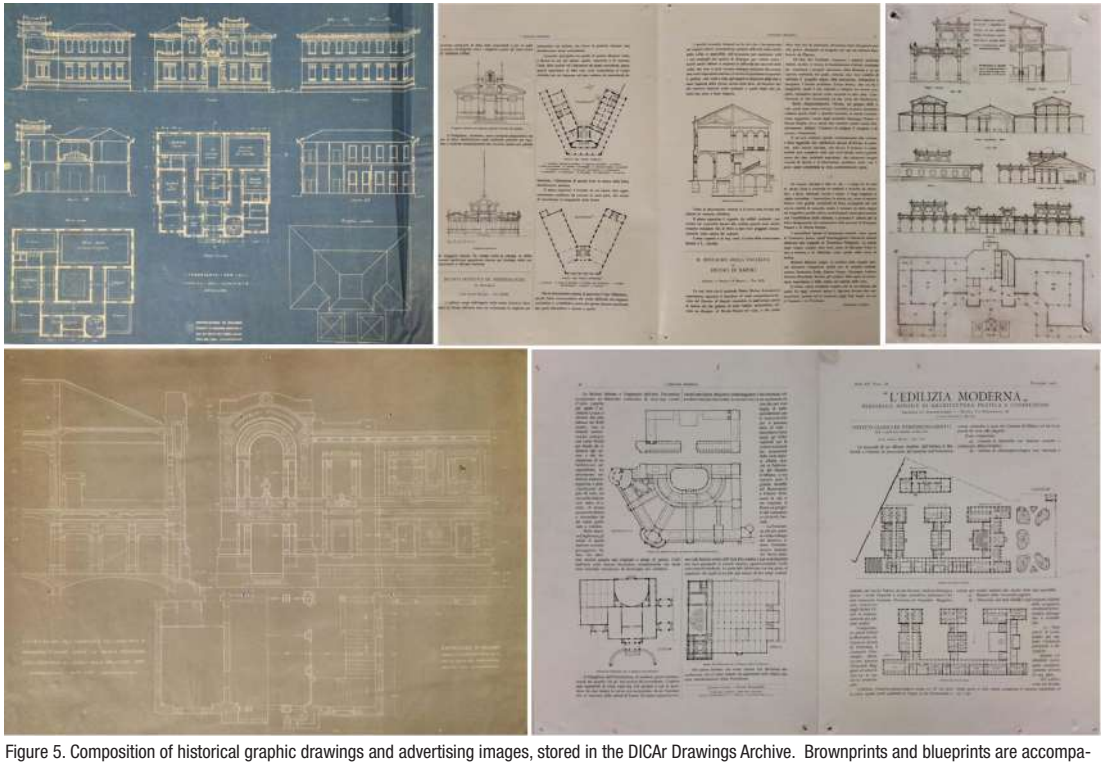

Figure 5. Composition of historical graphic drawings and advertising images, stored in the DICAr Drawings Archive. Brownprints and blueprints are accompanied by pages from the magazine 'L'Ediliza Moderna.

METHODOLOGIES AND EXPERIMENTS BETWEEN RESEARCH AND EDUCATION

To offer an innovative, engaging, and interactive narrative of the 1906 Expo, an experiment was launched that integrated both educational and research activities, developed within the framework of the LaBUR / Laboratory Built, Unbuilt, Rebuilt project. The laboratory allowed for a deeper study of ephemeral architectures, demolished structures, and projects conceived for competitions but never realized, highlighting the role of digital modeling as a tool for the conservation, critical analysis, and enhancement of architectural heritage that no longer exists, with a particular focus on the pavilions of the 1906 Exposition. The use of digital models indeed allows for the translation of traditional two-dimensional representations into three-dimensional configurations, transforming the drawings into volumetric study prototypes. This facilitates the understanding of architectural morphologies while simultaneously making explicit the dynamics of the design process (Palestini, 2024).
However, to gain a deeper understanding of the underlying logic behind the practice of drawing, the methodology must necessarily start from a detailed graphic analysis, aimed at preserving the expressive integrity of the original representations and systematically making explicit the informational content they contain.
In this way, the practice of drawing, understood in its broadest and most current sense as a digital representation, offers an unprecedented contribution to architectural archives, enabling the visualization, through a single 3D model, of the relationships between different drawings of the same project and allowing for specific comparisons between the "first" [15] drawings and later graphic interpretations.

FROM ARCHIVAL DRAWINGS TO VECTORIAL REPRESENTATION

The analysis of the documentary sources related to the 1906 Expo began at the AD of the DICAr at the University of Pavia, and was progressively expanded to include the historical archives of Milan, Lombardy, and later the national archives. These archives house a wide range of materials,

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ISSN 1828-5961

Figure 6. Process of documenting archive drawings using photogrammetric technique.

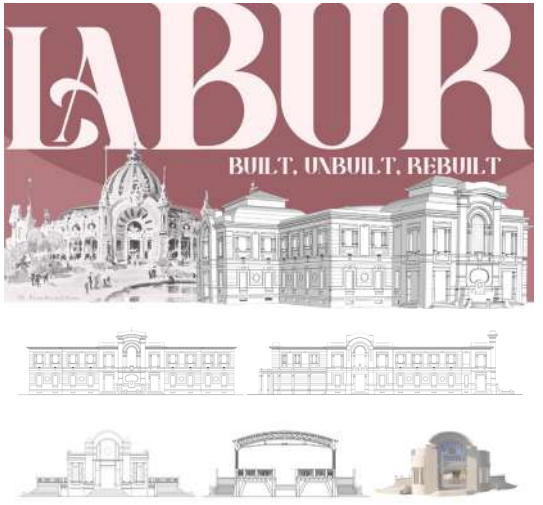

Figure 7. The LaBUR Laboratory. Vector redrawing and 3D modelling from archive drawings. Top right the model of the Aquarium building, below, digital drawings and 3D model of the Parco Sempione Station.

including texts, notes, magazines, slides, and historical photographs (related to the construction site and completed works), postcards, and promotional inserts from the Expo, as well as technical and design documents (including floor plans, environmental and architectural sections, aerial views, and study perspectives of the two project areas). All materials were photographed, following the specific guidelines and in accordance with the permissions of each archive, to keep a record, while technical drawings were digitized using true digitalization techniques. When possible, since they were large-format documents, often rolled paper, as well as transparencies or blueprints, roller scanners or planetary scanners owned by the archives were used. However, in most cases, photogrammetric acquisition and reproduction techniques had to be employed. High-resolution digitization enabled the use of the drawings as the basis for the analysis and vectorization of the architectures (Doria, Picchio, 2020).
For digital redrawing, Autodesk AutoCAD software was used, with which specific layer sets were defined and organized based on the characteristics of the original drawings. Each of the ink line [16] thicknesses on the archival paper supports was matched with a corresponding digital graphic mark, adapted to AutoCAD's virtual environment. To ensure consistency across the overall work, an initial list of "base layers" common to all digitized documents was created, to which additional layers were added, generated according to the specific needs of the vectorial translation (Parrinello, Porcheddu, 2023). The more complex layering structures involved the decorative components of the façades, where the stratified organization of the elements allowed for the restoration of depth and plane overlap, which was essential for the subsequent three-dimensional modeling of the Exposition pavilions.

FROM DRAWING TO MODEL
The investigation carried out on the technical documents related to the pavilions revealed the presence of informational gaps, making it necessary to supplement them with other iconographic sources. Postcards, historical photographs, and period posters allowed for a more comprehensive reconstruction of the architectural layout of the exhibition buildings, providing additional data on the materiality of the structures, the overall spatial configuration, the decorative elements, and the exhibited objects. Furthermore, these sources contributed to understanding the ways in which the buildings and associated infrastructures were used, allowing the pavilions to be contextualized both physically and socially. These knowledge elements provided a fundamental support for three-dimensional modeling, inviting the design of an immersive virtual environment capable of offering the contemporary user a reconstructed experience of the 1906 Exposition. The 3D modeling was carried out using a combination of specific software, chosen based on the level of detail required for each architectural element. The load-bearing structures, including masonry, openings, and roofs, were primarily developed with SketchUp, while the decorations and ornamental elements were modeled using Rhinoceros Software, taking advantage of NURBS

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ISSN 1828-5961

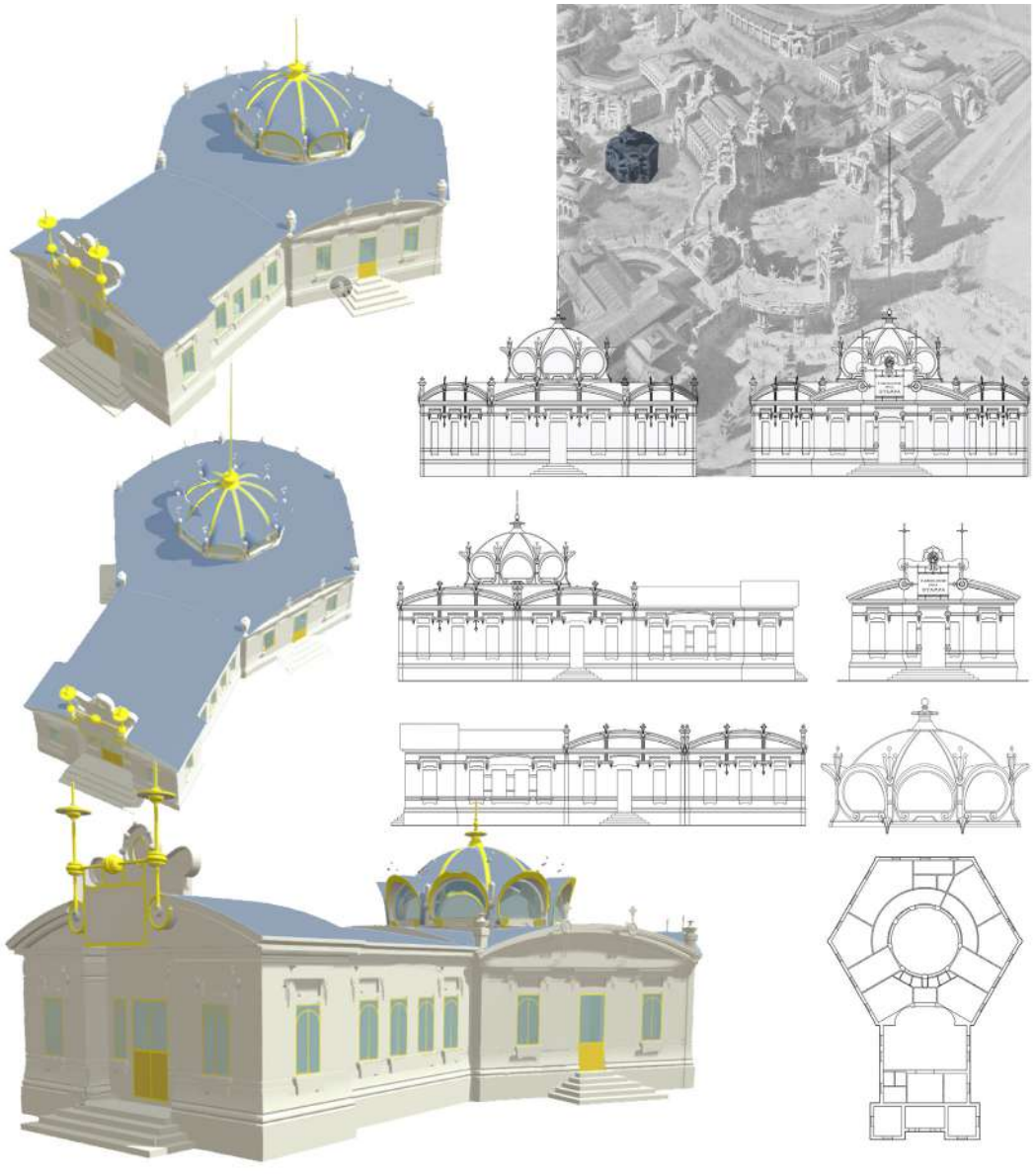

Figure 8. Example of digital reconstruction of the Press, Post and Telegraph Pavilion by Arch. Locati. The 2D drawings are redrawn on AutoCAD on the basis of the drawings stored in the DICAr Drawings Archive.

(Non-Uniform Rational B-Splines) representation capabilities. This approach allowed for the creation of hybrid mesh/NURBS models, capable of accurately describing the morphological features of each pavilion according to levels of detail calibrated to the needs of the reconstruction. [17] All the work was developed from the vectorial redrawing, ensuring dimensional consistency with the original designs (Picchio, Pettineo, 2023). The result of this first phase of research is an integrated system of three-dimensional models, whose value goes beyond the mere reconstruction of the state of affairs of the pavilions in 1906, extending to the representation of the construction phases and techniques adopted in their realization.
The different pavilions were then organized in virtual space, where it became possible to explore them in an immersive and interactive way, in a novel rediscovery of the 1906 Exhibition.
Historical research can thus be represented in digital environments, in 3D simulacra that become useful tools not only for the description of the state of affairs but also for describing processes related to the construction of architectures that no longer exist (Einaudi et al., 2020; Spallone et al., 2021).

REFLECTIONS AND CONCLUSIONS

The generation and cataloging of digital copies of archival documents provide them with renewed visibility, especially in consideration of the preservation difficulties encountered in public or private collections, often compromised by space limitations, insufficient funding, or inadequate conservation conditions. In this context, the methodologies for digitizing archival drawings represent a response to the need to preserve invisible architectural heritage and adapt to new cognitive models (Picchio, Galasso, 2022). Although numerous studies are underway to develop virtual platforms that allow access to catalogs of digitized documents (Giovannini et al., 2021), the creation of virtual replicas of these drawings, and their transformation into digitally encoded physical volumes, remains limited. It therefore

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Figure 9. Road show pavilion. Three-dimensional reconstruction.

seems necessary, alongside the development of cataloging and vectorial reproduction systems, to explore the experiential processes of discovery and enjoyment of such documents in innovative virtual spaces.
Despite the perceptual differences between virtual reality and physical reality (Maldonado, 2015), it is now evident that virtual reality enables the acquisition of knowledge about the real world. However, virtual space is only recognized as such when its digital simulacra derive from a rigorous investigation, understanding, and transposition of the signs of the real world. Thus, the processes of analysis and recomposition of real-world signs in the digital realm facilitate the production of parallel virtual spaces, constructed through the integration of specific languages and codes (Ciastellardi, 2009).
The reconstruction and renewed enjoyment of these lost and rediscovered spaces in the digital realm, however, cannot be limited to the translation of lines into volumes: for a space to be recognized as such, it must be perceived and experienced. The virtual space must include experiential modes structured to allow dynamic user-architecture interaction, and certainly user-user interaction. In this way, the new virtual environments become places of movement and information exchange, taking on their own identity—related to monuments and landscapes of the past, but new and endowed with unique dynamic characteristics.

ACKNOWLEDGEMENTS

I would like to thank Prof. Massimiliano Savorra, responsible of the LaBUR Laboratory and the AD of the DICAr at the University of Pavia, for the support provided in historical research and for granting permission to use the images. I would also thank the first-year students (academic year 2022-23) of the Bachelor's degree course in Building Engineering and Architecture, who actively participated in the LaBUR, within the History of Architecture I Laboratory (Supervised by Prof. M. Savorra, Assistants PhD. S. La Placa and Arch. P. Barazzoni), contributing to the analysis and production of the digital models of the exhibition pavilions. The archive collection cited is that of the Locati Collection within the Drawing Archive of the DICAr - Department of Civil Engineering and Architecture of the University of Pavia. The establishment of this archive is currently being formalized. Finally, I would like to thank Prof. Francesca Picchio, responsible of the DAda-LAB Laboratory, for coordinating the research activities related to the documentation and digital representation of archival documents.

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ISSN 1828-5961

NOTE

[1] For an in-depth analysis of the relationship between the use of drawing and architectural execution, see Ferlenga 2023.

[2] For an analysis on the topic of hand drawing or drawing before the digital era, see, as an example, Calia, Conte, 2023

[3] Purini offers a reflection on project design and its value, not only technical but also, and above all, theoretical. See: Purini, Il disegno come teoria, in "Rivista di estetica", 71 (2019).

[4] The advent of reproduction techniques effectively changes the relationship between the original drawing and its copy, defining a new form of representation that seems to replace the original, yet is neither exemplary nor authentic: the simulacrum. For further reading, see Perniola, 2011, p. 8.

[5] See: Perniola, 2011, p. 75.

[6] For a treatise on the topic, see Benjamin, 2022.

[7] In the field of art, reference is made, for example, to the topic of NFT (Non-Fungible Token) production: a certified digital resource on digital registers (blockchain) used to digitally encode the ownership of digital artworks. See: Withaker, Burnett Abrams, 2023.

[8] Recent studies on the digitization of archives have explored the integration of photogrammetry techniques, virtual models, and information-based applications for the enhancement and dissemination of archival heritage (Spallone et al., 2021).

[9] For the latest experiments on the topic of digital archives, see, by way of example: Farroni, et al., 2022 and Charitidis, et al., 2024.

[10] This refers to the issue of the durability of new media, their future legibility or illegibility. For a treatise on the topic, see: Guercio, 2013.

[11] For further reading, see: M. Savorra, S. La Placa, forthcoming.

[12] Before this research activity, the AD documents had never been properly cataloged. An initial collection and temporary storage began in 2019–2020, by Proff. Luisa Erba and Francesca Turri, but was halted by the Covid-19 pandemic and not resumed due to staff changes.

[13] The AD systematization project aims to preserve and make this heritage accessible to students and researchers, supporting historical knowledge of the territory. Over 2,000 documents have been cataloged and placed in a temporary consultation space designed for their classification. The first cataloging effort focused on the Locati collection (Savorra, La Placa, 2024).

[14] Among the public archives and private collections preserving material from the Expo 1906, the following are notable examples: the Genoa Municipal Archive, the Gallery of Modern Art in Turin, the Alinari and Brogi Archives, the State Archive in Florence, and the Basile and Ducrot Archives in Palermo, the conservation institutes of Castello Sforzesco, the Historical Archive of the Politecnico di Milano, the Archive of the Veneranda Fabbrica del Duomo, and the Pirelli Archive.

[15] "First" deliberately refers to "not necessarily original." The method once again touches on the reflection about identifying what is truly original in an architectural archive.

[16] The digitization mainly involved documents drawn in pencil and ink on relatively thin paper. However, in some cases, due to a lack of alternative documentation, the same methodology was applied—though not without difficulties—to transparent sheets and/or blueprints.

[17] To represent architectural elements visible only in photographs and promotional postcards, an interpretative process of the available data was necessary. This inevitably raises the issue of the reliability of the three-dimensional reconstruction, for which references was made to Brusaporci, 2017 and Apollonio, Giovannini 2015.

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