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The preserved drawing: a critical inquiry for the culture of architectural representation

Architectural archives are solidifying their identity as the custodians of architecture's ideational and realization processes and their transformations. The documentation they hold, while bearing witness to past processes, reveals values intrinsic to the source itself. This essay focuses on the role of preserved drawings, especially in the digital transition, where their static nature evolves into dynamic and interpretive use.
Its classification and description within archives, although still lacking a specific form for architectural drawing, follows international and national standards (ISAD(G), ISAAR(CPF), ICCD), aiming for uniformity and interoperability.
The contribution of architectural representation experts is clear. Through semantic graphic analysis and the implementation of digital transcriptions (such as vectorization and 3D modeling), they can enrich documentary units with unprecedented informational layers. These processes reveal intentions and solutions not immediately evident in the original, generating new informational content.
The evolution towards integrated systems, such as SIA and I.PaC, in Italy promises to overcome existing fragmentations, making the vast national archival heritage more accessible and interpretable through cross-domain knowledge graphs and advanced AI-based services. The multidisciplinary synergy among drawing researchers and other professionals is indispensable to ensure that architectural drawing remains a living and dynamic source, fully valued for its scientific research and cultural representation.

Keywords:
architectural drawing; archives; archival descriptions; drawing preservation; culture of architectural representation

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INTRODUCTION

Architectural archives have only recently acquired their own identity within the broader scope of cultural heritage (Guccione, Pesce, Reale, 1999; Reale, Pesce, 2006; Farroni, Faienza, Mancini, 2022; Carassi, M., 2023). They are considered places for the preservation of the ideational and realization processes of architecture, as well as their transformations over time, connected to the socio-cultural and economic context (Farroni, Faienza, 2024). The documentation preserved within them testifies to a past process, but it also expresses values linked to the nature of the source itself (Guercio, 2024; Reale, 2024).
This author aims to focus on the role of the preserved drawing and the manifold actions that affect it, particularly in the digital transition. In this transition, the static nature of the original document, which can be interpreted differently by scholars, is replaced by the proposal of dynamic information and interpretation (Farroni, 2024; Vernizzi, 2022). This new perspective can generate unprecedented forms of relationships, usability, and knowledge, based on both established and experimental archival structures, and following standardized norms, paths, and codes [1].
Therefore, beyond being a narrative and speculative tool for the architectural process, from its ideational phase to construction, the drawing has, over time, acquired the full dignity of a documentary source (Grossi, 2019). It actively participates in the creation of new "architectures of knowledge." However, significant effort is still needed to fully express its potential in descriptive proposals, platform exposure, and digital resource ecosystems. This is attributable to the continuous transformation of digital systems affecting archives, libraries, and museums [2], as well as the as-yet unguaranteed data interoperability due to the absence of definitive standards. Despite these challenges, it is possible to outline some fundamental considerations to lay solid foundations for digitalization processes concerning architectural collections and archives in general, and drawings in particular.

THE NATURE AND ONTOLOGICAL VALUE OF ARCHITECTURAL DRAWING

The peculiarity of architectural images is that they can refer to build works and unbuilt works, thus representing projects, surveys of buildings, cities, and territories. Furthermore, they can belong to one author (the producing subject) or multiple authors. Moreover, if the work is realized and existing, the drawing will acquire an additional degree of connectivity, in this case external to the archive, spatialized in another location. The image (Fig. 1) illustrates some possible relationships between the drawing, its context in the building process, and the various types of sources directly connected to them.
The documentary value, in addition to enhancing the development of architectural representation culture, can contribute to defining the relational and collaborative nature of the knowledge construction process (Roncaglia, 2023). It is necessary to understand the preservation of architectural drawing as access to complex knowledge, which relies on a rigorous archival structure.
Thus, for the author, preserving a drawing today implies a reference to Alberti's conception of architectural drawing and its foundational role in the culture of representation. Indeed, for a contemporary critical inquiry into the preserved drawing, Alberti's vision provides a significant epistemological basis. It legitimizes the analysis of the drawing as privileged access to the design intention and the structural logic underlying the work. The preservation of the *lineamenta* enables access to the intellectual heritage of the project. Leon Battista Alberti does not describe drawing as a mere graphic transposition of reality, but rather as a prescriptive and programmatic act. He attributes to the *lineamenta* (the essential principles of drawing) the "function and task" of precisely defining fundamental elements, such as position (*locum*), quantity (*numerum*), measure (*modum*), and ordering (*ordinem*), of architectural components. This categorization emphasizes the drawing's ability to anticipate and establish all spatial, dimensional, and organizational qualities of the

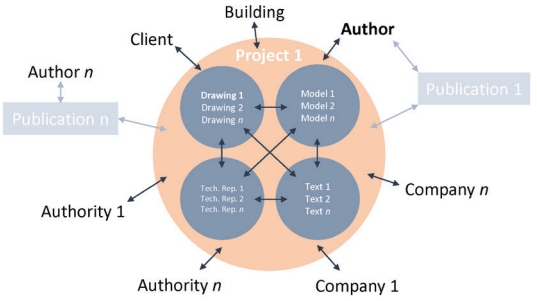

Fig. 1 - Diagram of the relationships between the designer, the graphic sources, the context of the building process, and the different types of sources that have a direct connection with them.

work (Samsa, 2012). Therefore, recontextualizing the drawing within an archival setting necessitates an awareness of its informational and connectivity levels, which can be manifold and complex.
Perhaps the most significant scientific point is that the ontological aspect of the architectural work is defined through the drawing. This allows the drawing to elevate itself from a narrative and executive tool to a primary intellectual construct, where the design idea achieves autonomous conceptual completeness while being embedded within a hierarchical system of information. The built edifice, which for Alberti becomes, in this perspective, the physical manifestation of a reality already fully defined at a graphic and ideal level, is, within the context of the preserved drawing, a manifestation of a phase of knowledge linked to the archival graphic source correlated with other sources. This can highlight the continuity of the design process or the discontinuity of choices made, as well as the eventual realized work.

THE ARCHIVAL SCOPE OF DESCRIPTION: THE DRAWING AMONG RECORDS, RELATIONSHIPS, AND TRACINGS

Beyond what has already been stated, the preserved drawing is often inconsistent in its narration. Documentary units are composed of various types of drawings, images that often do not find

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their identity alone, but are linked to other sources, such as reports, texts, photographs, models, or invention drawings that allow for the creation of a more complete drawing for architectural definition. Architectural project drawings are often grouped in preservation in a manner that is inconsistent with the moment of their creation or their association with a specific design phase, as they originate from the dismemberment of collections due to various causes. While archival structures, in their vertical and horizontal development, ensure chronological placement and informational hierarchy within the structure created for the sources, when the drawing is considered for its documentary value, critical selection is necessary to transform information into the unitary and identity-forming knowledge of architecture.
Having established that the preserved drawing within the archival context is considered a primary document, it can also be stated that it is a complex entity. Each typology carries within it references to the architect's idea and the relationships that link the project to its context, its history, and its realization. The drawing, therefore, is an essential source for understanding design intentions, formal and technical evolutions, and the cultural dynamics of an era and an author.
History also teaches that drawing is closely tied to technical tools, modes of representation, graphic techniques, and the cultural gaze and vision of the time. Thus, every drawing expresses the cultural thought of the author and the author's consideration of the drawing as a link between idea, vision, realization, and memory (Palestini, Vernizzi 2022).
In light of these considerations, this documentary typology constitutes a patrimony of historical and cultural relevance, and, similarly to other classes of sources, is the subject of specific and ongoing preservation procedures. Its placement occurs within archival structures, where management is supported by inventories and archival records that conform to current methodology and standards, although not all descriptive parameters are currently located.
The classification and description of architectural drawings within archives represent an articulated process (Domenichini, Tonicello, 2004; Audisio, 2011) aimed at ensuring the accessibility and intelligibility of an intrinsically heterogeneous documentary corpus. Although there is no universal and rigid set of parameters, the methodologies adopted refer to international and national archival standards. Commonly employed criteria for classification range from parameters intrinsic to the drawing – such as its physical and technical characteristics – to the indication of its state of preservation, up to the integration of archival context and content parameters. The critical analysis of these standards, combined with a survey of Italian architect collections cataloged on national and international institutional platforms, proves essential for a comprehensive understanding of the sector.
Institutional platforms are managed at a national level and constitute the access, consultation, and data integration point made available by individual preserving entities. In particular, the leading platforms considered about architectural archives are: SIUSA (Unified Information System for Archival Superintendencies), SIAS (State Archives Information System), and SAN (National Archival System) (Reale, 2024). It is essential to understand the distinction between back-end and front-end in the digital archiving of drawings, as the platforms do not display all metadata and relationships in the user interface. In particular, the SIUSA, SIAS, SAN contain descriptions of the high levels (background, series), the documents (or drawings) are described in inventories or other tools (databases, etc.), to which reference is made by the systems.

Archival and Cataloguing Standards: A Synthesis of Principles and Applications

The objective of standards is multifaceted, aiming to ensure uniformity, consistency, and interoperability of information across institutions and IT systems. This, in turn, enables the description process, which is essential for the usability of sources. Their definition has been accelerated by the widespread adoption of IT tools for managing cultural and archival heritage.
International archival standards form the backbone of global document management and description, which is crucial for ensuring consistency, interoperability, and accessibility to documentary heritage. Primarily developed by the International Council on Archives (ICA) (https://www.ica.org/), they are structured as an integrated system. At the core of archival description is ISAD(G), which provides general rules for structuring information about archival fonds at every level. At the same time, ISAAR(CPF) focuses on standardizing the description of corporate bodies, persons, and families (the creators), key elements for understanding their context of creation. ISDF complements these functions, and ISDIAH supports custodial institutions, further enriching the contextual framework.
In the digital environment, interoperability is ensured by standards like EAD (Encoded Archival Description) and EAC-CPF (Encoded Archival Context - Corporate Bodies, Persons, and Families). Both are based on XML, allowing for the encoding and exchange of descriptions and authority records between different systems, facilitating online publication and federated searching. Crucial for the quality of future archives is ISO 15489, the international standard for records management, which guides the correct management of documents from their creation, ensuring their authenticity and integrity over time. Finally, RiC (Records in Contexts) [3], an emerging conceptual model from the ICA, aims to integrate and unify all pre-existing standards into a single ontology, preparing the ground for the management of linked and semantically complex archival data. These standards are not merely technical rules, but dynamic tools for preserving, accessing, and sharing documentary knowledge on a global scale.

National Archival Standards: The ICCD and Architectural Drawings

At a national level, the Central Institute for Cataloguing and Documentation (ICCD) [4] plays a fundamental role in standardizing the description of Italian cultural heritage. The Institute has

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developed a complex system that ensures homogeneous and shared cataloguing, with data then centralized in the General Catalogue of Cultural Heritage. This system is structured on three main pillars: descriptive models, represented by forms, which form the basis for information recording; terminological tools, which include definitions, controlled vocabularies, and thesauri, essential for standardizing language and ensuring semantic consistency of descriptions; and finally, methods and procedures, which offer guidelines for organizing cataloguing activities and for using the proposed systems. The primary objective of this framework is to develop an information management system that leverages the synergistic interaction of these three areas. The cataloguing standards include specific information sections and particular application methodologies, designed to express both the intrinsic relationships between assets and those between assets and their territorial context. The General Catalogue is structured into disciplinary sectors; the system is flexible, also providing for the possibility of introducing new forms should cataloguing needs arise for assets not previously considered.

The Specificity of Architectural Drawings in ICCD Forms

Within the disciplinary sectors of the National Catalogue, architectural drawing is classified under historical and artistic assets. However, it currently lacks an autonomous and specific descriptive form that fully captures its peculiarities. This situation has led the author and her research group, within the research strand on archives [5], to the necessity of proceeding by analogy, adopting and adapting other existing forms. The primary forms used for the description of architectural drawing are the D Form (drawings) and the OA Form (work and art object). Understanding how their "tracings," meaning the conceptual models for data structuring, are applied to this type of asset, is therefore essential.
ICCD forms are designed with a hierarchical and highly detailed internal structure, organized into paragraphs that group homogeneous sets of information. These paragraphs are, in turn, composed of fields, the constituent elements of information, which can be simple (a single entry) or structured (comprising multiple entries), and which may include subfields as further elements of structured fields. Flexibility in filling in fields and subfields is guaranteed by their configuration, which can allow for free text or, more commonly, be accompanied by controlled vocabularies.
"Controlled vocabularies" refer to structured and standardized systems of terms and concepts, whose primary purpose is the standardization of document description and indexing. The adoption of such vocabularies aims to ensure consistency, precision, and retrievability of information, preventing the use of synonyms, homonyms, or non-uniform lexical variants. However, for the description of architectural drawing, the definition and application of such vocabularies still require careful consideration to optimize their effectiveness (Fig. 2).
The D Form (drawings), about movable assets of historical-artistic interest (drawings), is used for the description and cataloguing of drawings

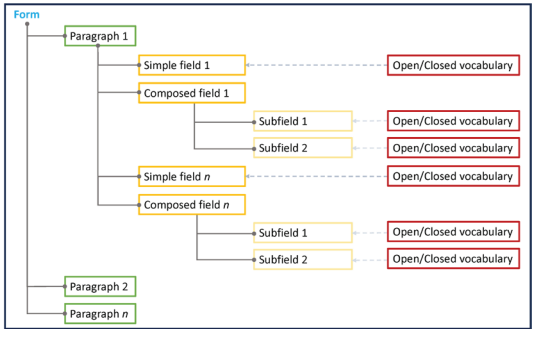

Fig. 2 - Diagram to show the structure in paragraphs, fields/sub-fields and the relationship with the controlled vocabularies.

Fig. 3 - Synthetic model of a tracing of a documentary unit, as per the ICCD_D form model. Possible implementations are indicated in red.

RV/RELAZIONI
- PROGETTO
  - Codice del progetto
  - Denominazione del progetto
- PROGETTO ARCHITETTONICO
  - Codice univoco
  - Stato di realizzazione

OG/OGGETTO
- OGT/OGGETTO
  - OGTD/Definizione
  - OGTT/Tipologia
- SGT/SOGGETTO
  - SGTI/Identificazione
  - SGTT/Titolo
  - SGTS/Serie

LC/LOCALIZZAZIONE GEOGRAFICO-AMMINISTRATIVA
- LDC/COLLOCAZIONE SPECIFICA
  - LDCT/Tipologia
  - LDCM/Denominazione raccolta
  - LDCS/Specifiche

DT/CRONOLOGIA
- DTZ/CRONOLOGIA GENERICA
  - DTZG/Secolo
  - DTZS/Frazione di secolo
- DTS/CRONOLOGIA SPECIFICA
  - DTSI/Da
  - DTM/Motivazione cronologia

AU/DEFINIZIONE CULTURALE
- AUT/AUTORE (ideatore)
  - AUTS/Riferimento all'autore
  - AUTM/Motivazione dell'attribuzione
  - AUTA/Dati anagrafici-Estremi cronologici
  - AUTH/Sigla per citazione
- AUTORE (esecutore)
  - Riferimento all'autore
  - Motivazione dell'attribuzione
  - Dati anagrafici-Estremi cronologici
  - Sigla per citazione

MT/DATI TECNICI
- MTC/Materia e tecnica
  - Scala di rappresentazione
  - Metodi di rappresentazione
  - Unità di misura
- MIS/MISURE
  - MISU/Unità
  - MISA/Altezza
  - MISL/Larghezza

CO/CONSERVAZIONE
- STC/STATO DI CONSERVAZIONE
  - STCC/Stato di conservazione
  - STCS/Indicazioni specifiche

DA/DATI ANALITICI
- DES/DESCRIZIONE
  - DESO/Indicazioni sull'oggetto
- ISR/ISCRIZIONI
  - ISRC/Classe di appartenenza
  - ISRL/Lingua
  - ISRS/Tecnica di scrittura
  - ISRT/Tipo di caratteri
  - ISRP/Posizione
  - ISRA/Autore
  - ISRI/Trascrizione

DO/FONTI E DOCUMENTI DI RIFERIMENTO
- FTA/DOCUMENTAZIONE FOTOGRAFICA
  - FTAP/Formato
  - FTAZ/Nome file

CM/COMPILAZIONE
- CMP/COMPILAZIONE
  - CMPD/Data
  - CMPN/Nome

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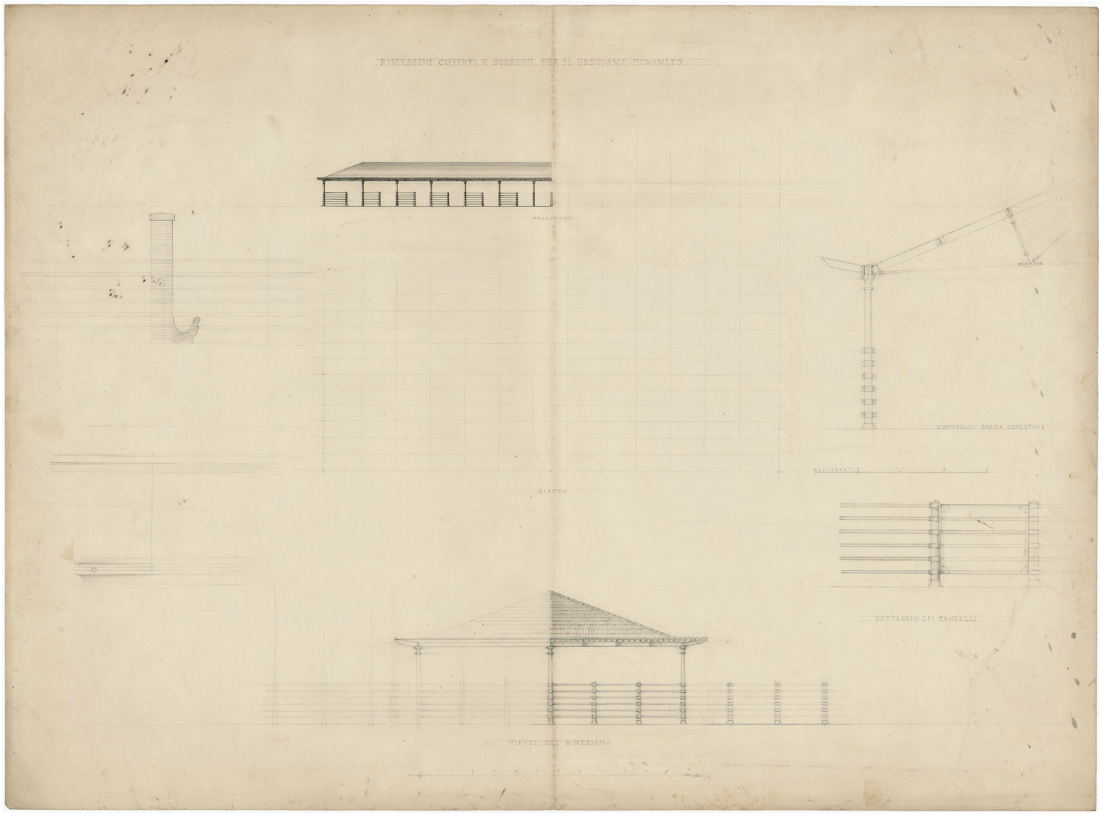

Fig. 4 - “Elaborati Grafici” series, “Progetti di Gioacchino Ersoch” subseries, “Progetti di Gioacchino Ersoch, Mattatoio di Testaccio” archival unit, specifically the “Rimessini per il bestiame indomito (s.d.)” Ersoch’s Florence Archive, GE-ELG/PE/22/10.

IDENTIFICATIVO
Codice univoco
ARCHIVIO
Denominazione
PROGETTO
Denominazione del progetto
PROGETTO ARCHITETTONICO
Denominazione
Stato di realizzazione
OGGETTO
Definizione
Tipologia
SOGGETTO
Identificazione
Titolo
AUTORE (ideatore)
Denominazione
AUTORE (esecutore)
Denominazione
DATA
Estremi cronologici
MATERIA
Supporto
DIMENSIONI
Unità
Altezza
Larghezza
TECNICA
Descrizione
Metodo di rappresentazione
Scala di rappresentazione
Unità di misura
STATO DI CONSERVAZIONE
Descrizione
LEGAMI VERTICALI
Descrizione
LEGAMI ORIZZONTALI
Descrizione

IDENTIFICATIVO	
Codice univoco	GE-ELG/PE/22/10
ARCHIVIO	
Denominazione	Ersoch, Gioacchino
PROGETTO	
Denominazione del progetto	[Mattatoio di Testaccio, Roma]
PROGETTO ARCHITETTONICO	
Denominazione	Ex-Mattatoio di Testaccio, Roma
Stato di realizzazione	Realizzato
OGGETTO	
Definizione	Disegno architettonico
Tipologia	Prospetto, pianta, dettagli
SOGGETTO	
Identificazione	Prospetto, pianta, fianco del rimessino, dettaglio della copertura, dettaglio dei cancelli
Titolo	Rimessini coperti e scoperti per il bestiame indomito
AUTORE (ideatore)	
Denominazione	Ersoch, Gioacchino
AUTORE (esecutore)	
Denominazione	[Ersoch, Gioacchino]
DATA	
Estremi cronologici	s.d.
MATERIA	
Supporto	Carta
DIMENSIONI	
Unità	cm
Altezza	56
Larghezza	76
TECNICA	
Descrizione	Matita
Metodo di rappresentazione	Proiezioni ortogonali
Scala di rappresentazione	Non indicata
Unità di misura	m
STATO DI CONSERVAZIONE	
Descrizione	Lievi macchie e ingiallimenti sulla superficie del supporto
LEGAMI VERTICALI	
Descrizione	Mattatoio di Testaccio, Roma / Gioacchino Ersoch
LEGAMI ORIZZONTALI	
Descrizione	

Fig. 5 This model highlights some information to be implemented and its development as descriptive tracing, concerning the document unit in Fig.4.(Cr. Ibanêz, Pallocca)

of various kinds, from preparatory sketches for sculptural or pictorial works to architectural ones, in the absence of a dedicated form. Its compilation rules define in detail the information required for each field and subfield. The main paragraphs of this form typically include: identification of the asset (code, name, typology), current location and placement, data on the author or cultural context, dating, material and execution technique, dimensions, state of preservation, a detailed description of the work, presence of inscriptions or marks, historical-critical context, and finally, data relating to its legal and administrative status.
The areas with which the architectural representation expert is obliged to interact have been concisely summarized. The image shows a synthetic model of a tracing of a documentary unit, as per the ICCD_D form model. Possible implementations are indicated in red (Fig. 3).

Archival Analyses

The author has examined several archival records at the national level, considering the data presented on institutional platforms such as SIUSA, SIAS, and SAN. It is essential to note that the hierarchical structure proceeds from the fonds, followed by the series, subseries, archival unit (which, in this specific context, coincides with the architectural project), and the documentary unit that presents the drawing under study. For the documentary unit, the forms proposed by the Archivio Progetti of Iuav Venice and the MAXXI Architecture Archives Center, two significant institutions in the Italian context, were also considered. Within the fonds’ tracing, there are varying amounts of information, sometimes even related to the same subject, but this depends on technical obstacles in data presentation. In the case of the G. Ersoch Fonds in Florence [6], preserved with heirs in Florence and present in SIUSA, analyzing a drawing related to the “Elaborati Grafici” series, “Progetti di Gioacchino Ersoch” subseries, “Progetti di Gioacchino Ersoch, Mattatoio di Testaccio” archival unit, specifically the “Rimessini per il bestiame indomito (s.d.)” documentary unit [7] a preliminary

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synthetic model is proposed. This model highlights information to be implemented and its development through descriptive tracing (Figs. 4, 5). It is important to emphasize that the implementation of descriptive fields is linked to an analysis of signs and syntax. Therefore, we can speak of the analytical contribution of the drawing to the archival descriptive part.

THE ANALYTICAL CONTRIBUTION OF DRAWING: FROM TRADITIONAL READING TO DIGITAL TRANSCRIPTION

To establish inventory and description practices, the contribution of architectural representation experts can be added. Through the study of the semantic, aesthetic, symbolic, and coded value of representation, they can help restore to the drawing—whether a single piece or a corpus—the independent value it deserves, enriching the documentary unit with ulterior informational layers.
In general, the analytical contribution unfolds in two areas: one concerns semantic graphic analysis, which enhances both the description and the content of the work to which it refers; the other involves an approach capable of systematically detecting information, while simultaneously being able to detect information to reconstruct a comprehensive picture of the project, making connections and continuities between different documentary units visible. Thus, the restitution of ideational and executive authorship becomes essential, which involves the complexity of attributing and understanding the other hands and phases of the project through the drawings themselves. Also crucial are the relationships between types of elaborate and technical characteristics through the analysis of different forms of representation (plans, sections, elevations, axonometries, constructive details) and their technical characteristics (method of representation, scale of representation, unit of measurement), which can reveal unexpected knowledge. Therefore, methodologies for reading drawings involve techniques of formal, compositional, and spatial analysis. In contrast, the study of the aesthetic and semantic value of the drawing

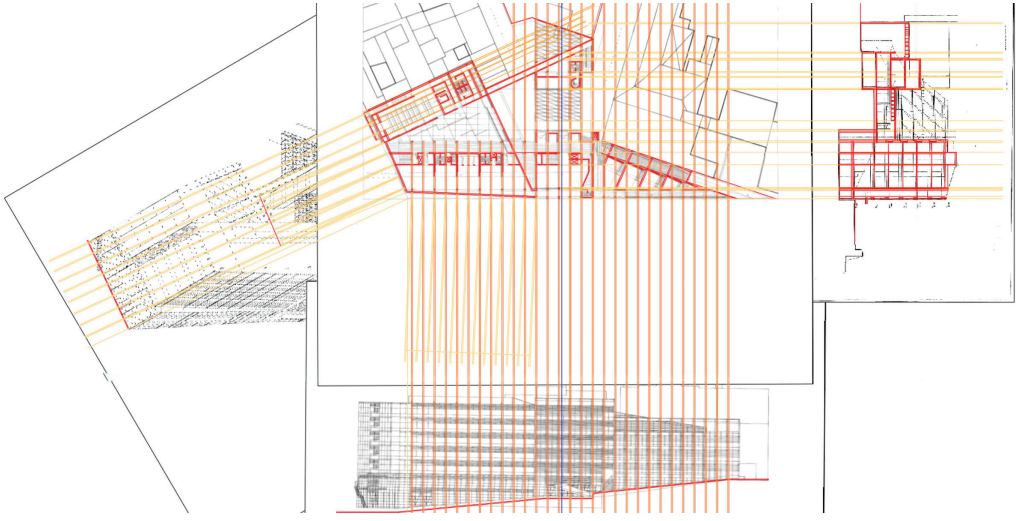

Fig. 6 - Example of scaling, identification of alignments, axes, and geometries with dimension verification for a coherent representation. Architectural project at Piazzale della Rovere in Rome for senior residences, Atelier ABDR 1985. (Cr. Ibanêz, Pallocca)

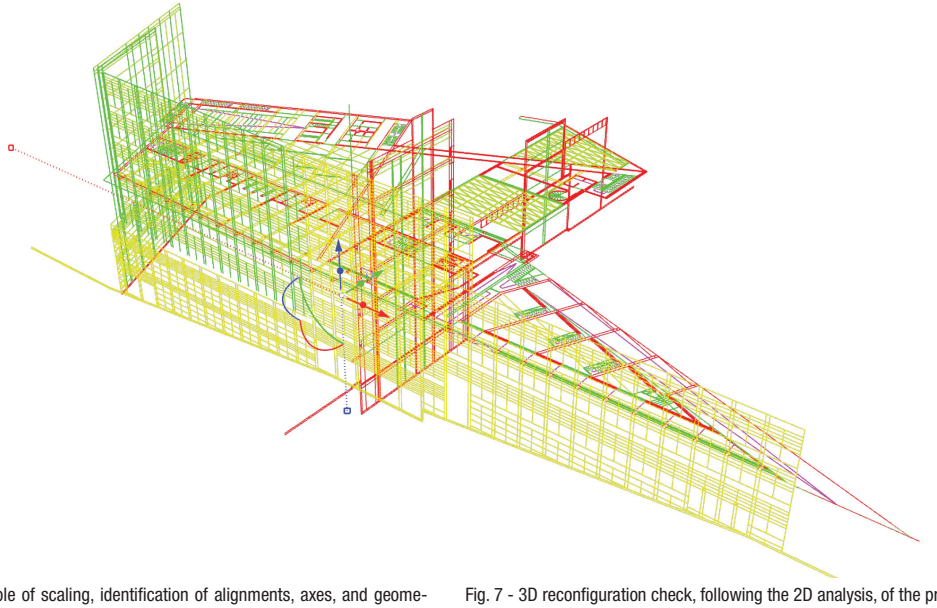

Fig. 7 - 3D reconfiguration check, following the 2D analysis, of the project in Fig. 6. (Cr. Ibanêz, Pallocca)

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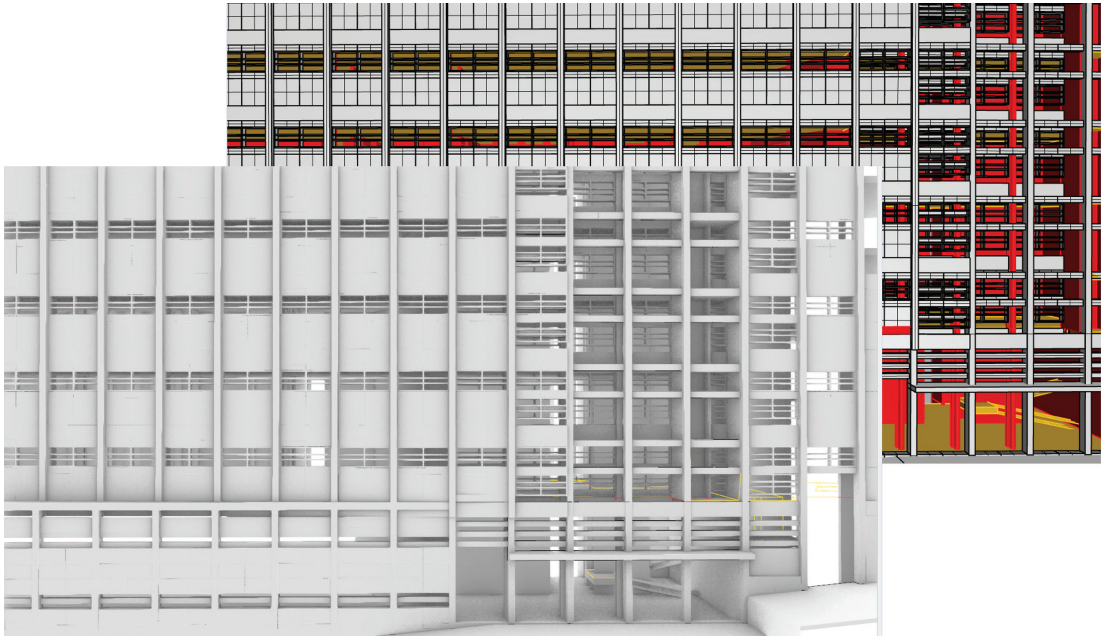

Fig. 8 - Example of relationship between different types of output involving techniques of formal, compositional, and spatial analysis with the input of primary source. Architectural project at Piazzale della Rovere in Rome for senior residences, Atelier ABDR 1985. (Cr. Ibanêz, Pallocca)

examines its expressive and communicative aspects (Anceschi, 1992) (Figs. 6, 7, 8).
This section concerns the observation of architectural image. Additionally, there is the possibility of implementing the documentary value through digital transcriptions of the drawing, specifically, reasoned (non-automatic) vectorization and 3D modeling, which inevitably trigger interpretative processes. Critical analysis, beginning with a 2D redrawing, incorporates geometric, functional, and morphological analysis, revealing intentions and solutions that may not be immediately evident in the original drawing (Apollonio, 2012; Palestini, 2016; Farroni, Faienza, 2023). Suppose two-dimensional redrawing is understood as a critical analysis of primary sources. In that case, the result must have a coherent informational level, meaning it is verified in its variables, such as the graphic scale of elements (Figs. 9, 10), alignments, dimensions, and geometries. The goal is a consistent representation of the architectural project in line with Alberti's vision of the lineamenta. The 3D reconstruction of primary sources is a consequence of the 2D one. However, it can also be enhanced by knowledge external to the drawing, such as primary and even secondary sources, which are part of the archival unit's corpus. It is also worth noting that not all drawings related to a project provide the same level of detail. Different drawings of the same archival unit can lead to various interpretations.
The result of this process introduces new informational content that is currently not contemplated in archival and cataloguing structures. Some of this can be entered into the open fields of notes.
It is essential to note that the archival world is embracing digital content, facilitating a seamless integration of knowledge. In the Italian context, the ICAR (Central Institute for Archives) will launch the SIA Archival Information System in July 2025, aiming to create a unified access point for consulting the national archival heritage. SIA is a web application developed for managing archival domain entities. It is structured to allow different entities, organized into "tenant" work environments, to manage their own informational and digital resources, sharing certain entities that define the documentary context [8].
The descriptive areas that the system allows to manage include archival complexes, archival and documentary units, agents (creators, custodians, but not only), research tools, historical-institutional contexts, institutional profiles, projects, bibliographic and web references, archival and regulatory sources, events, thematic areas, compilers, and physical locations [9]. Its goal is to integrate descriptive resources and digital objects from various pre-existing systems, such as SIAS (State Archives Information System) and SIUSA (Unified Information System for Archival Superintendencies), making the search and use of documents easier and more intuitive for users and experts. SIA is designed to be a platform that unifies and makes accessible the vast Italian archival heritage's information and digital resources.
Furthermore, the Digital Library, through I.PaC "Infrastructure and Digital Services for Cultural Heritage" [10], is implementing its vision of interconnecting the Italian digital ecosystem. I.PaC is configured as the enabling infrastructure and technological pillar, representing much more than a simple online archive or a traditional digital library. It is a strategic and far-reaching initiative of the Italian Ministry of Culture, conceived as the technological engine and central data space for the entire digital cultural heritage of the country. Its conception and implementation are part of the broader National Digitalization Plan (PND), reflecting a modern and integrated vision of cultural heritage management in the digital age. I.PaC serves as an intelligent and dynamic repository where various Italian cultural institutions, including state archives, national libraries, civic museums, and private foundations, can deposit

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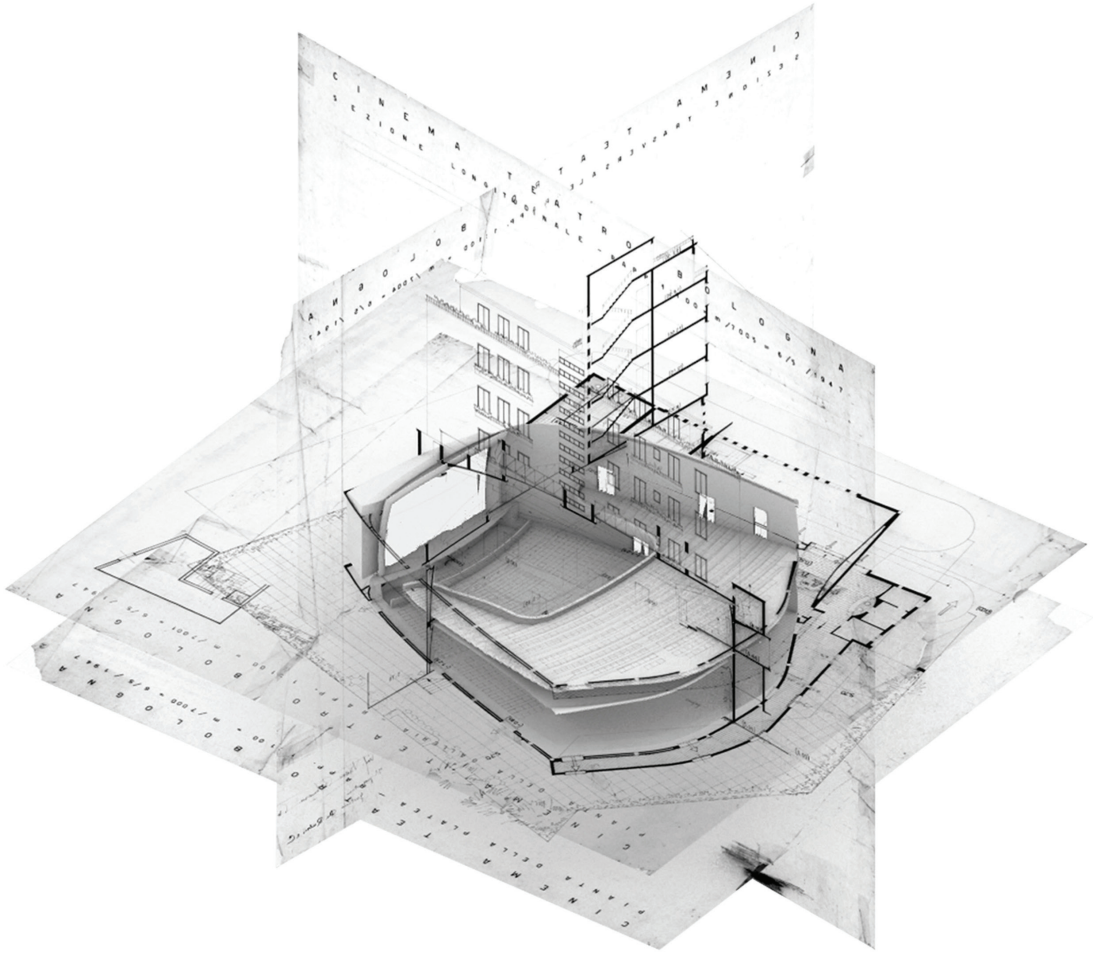

Fig. 9 - 3D reconfiguration check, following the 2D analysis, of the Riccando Morandi's project of Cinema Bologna in Rome, 1948. (Cr. Stoduto)

their digitized data. This process occurs while maintaining the managerial autonomy of each entity but simultaneously ensuring that the data is organized and interoperable at a national level. I.PaC's primary role is to provide a wide range of advanced digital services, often enhanced by Artificial Intelligence (AI), to manage, process, enrich, and make these digital resources usable and accessible.
Among its most innovative functionalities is its ability to create "cross-domain knowledge graphs." This means that I.PaC is not limited to cataloging individual digital objects but is capable of establishing and visualizing unprecedented and complex connections between different types of cultural heritage assets.
Italy is, therefore, moving towards several objectives: making the vast and fragmented Italian digital cultural heritage more accessible (Guercio, 2024; Lodolini, 1997), usable, and interpretable for a highly varied public, and aiming to overcome existing fragmentations among different institutions and their information systems, promoting new forms of interaction, research, and knowledge production through the use of cutting-edge data and technologies.
The contribution of Drawing researchers is therefore essential to other professionals in a moment of great transition, not only in terms of processes but also in strategies and objectives of architectural culture specifically.

CONCLUSIONS

The current state of architectural archives in Italy reflects a diverse reality, but one that's constantly evolving. Traditionally, material preservation has been entrusted to various institutions, including state archives, cultural institutions, private architects' foundations, university archives, and museums. This fragmentation has often made research and access complex, but it has also allowed for the safeguarding of significant heritage. In recent decades, interest in these collections has grown considerably, driven not only by a greater awareness of their historical and artistic value but also by the increasing need to use these sources for the protection, restoration, and enhancement of built heritage and the landscape. Architectural archives, along with engineering and business archives, are now recognized as strategic locations for understanding events related to the transformation of territory and built environments, and as a reference point for interventions on existing heritage and for new design.
In this scenario of profound digital transformation, the preserved drawing emerges not only as historical testimony but as a dynamic entity

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capable of generating new architectures of knowledge. Its inherent complexity and ontological value, already recognized by Alberti's conception of *lineamenta* as a prescriptive and programmatic act, require an approach to preservation and description that goes beyond mere documentary staticity. The challenges related to the not always coherent narration of documentary units and the fragmentation of collections underscore the urgency of a critical selection that transforms information into a discernible and unified understanding of architecture.

The integration of architectural representation experts' contributions through semantic graphic analysis, the restitution of authorship and technical relationships, and the implementation of digital transcriptions, such as vectorization and 3D modeling, proves fundamental. These processes, while inevitably triggering new interpretations, allow for the revelation of intentions and solutions that are not always evident in the original drawing, thereby enriching the informational levels of documentary units.

In this context, the evolution of international archival standards (ISAD(G), ISAAR(CPF)) and national standards (ICCD with its D and OA forms and the need for specific controlled vocabularies for architectural drawing) is crucial to ensuring consistency, precision, and interoperability. The emergence of platforms like SIA and I.PaC, with their ability to manage cross-domain knowledge graphs and offer advanced digital services based on artificial intelligence, represents a significant step towards an integrated digital ecosystem. These systems aim to overcome existing fragmentations and promote new forms of interaction, research, and knowledge production.

The contribution of researchers in the field of Drawing is, therefore, essential in relation to other professionals involved in cultural heritage management. Their expertise is indispensable for navigating the complexity of drawing, extracting its most profound knowledge, and effectively integrating it into new digital infrastructures. Only through this multidisciplinary synergy will it be possible to ensure that architectural drawings continue to be a living and dynamic source, fully accessible and valued for scientific research and the culture of representation as a whole.

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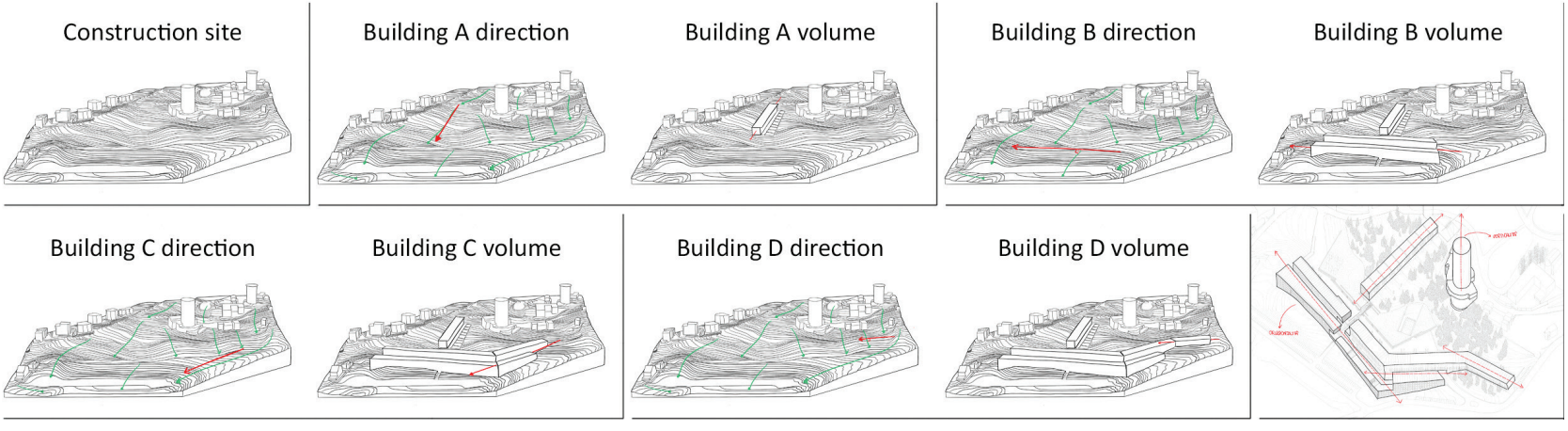
Fig. 10 - Example of critical analysis of primary sources in 3D. Cellini's project for sestriere ski resort in Italy. (Cr. Gaggio, Piccolo, Ranalli)



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NOTE

[1] In reference to this topic, the "Recognizing Connections: Museums, Archives, Libraries" Conference, held on December 6, 2024, at the National Central Library of Rome, was significant. R. Balzani discussed "The Diachronic Evolution of Digital and its Impact on Archives, Libraries, and Museums." G. Roncaglia discussed "The Impact of Digital on Knowledge." M. Bagnoli addressed the theme "From Digital Libraries to Digital Spaces: Collections, Holdings, Services.

[2] In this regard, it is essential to remember the establishment and initiatives of Mab (http://www.mab-italia.org/webarchiving/sito/index.html), and the ongoing planning of the Strategic Digitization Plan (https://digitallibrary.cultura.gov.it/il-piano).

[3] https://www.ica.org/resource/records-in-contexts-conceptual-model

[4] http://www.iccd.beniculturali.it

[5] The research area covers various levels, from basic research with funds from the Department of Architecture, to participation in the project "From paper to digital: creation of new content for architectural drawing archives" for the "POR-FSE 2014-2020. Incentives for innovation doctorates for businesses" scholarship from the Lazio Region with the participation of DM Cultura, up to the Prin 2022 project titled PADARCH... of which the author is the Local Unit Manager for the University Roma Tre.

[6] The Fonds is currently being acquired through donation from the heirs to the Department of Architecture of Roma Tre, and the author has overseen the procedure in collaboration with the SAB Toscana and SAB Lazio.

[7] The Fonds is currently being acquired through donation from the heirs to the Department of Architecture of Roma Tre, and the author has overseen the procedure in collaboration with the SAB Toscana and SAB Lazio.

[8] https://icar.cultura.gov.it/sistemi-e-portali/archivi-nazionali/sia consulted on July 19, 2025, 6:03 PM.

[9] Ibidem.

[10]https://ipac.cultura.gov.it/ consulted on July 19, 2025, 6:18 PM.

REFERENCES

Apollonio, F. (2012). *Architettura in 3D. Modelli digitali per sistemi cognitivi*. Milano: Bruno Mondadori.

Anceschi, G. (1992). *L'oggetto della raffigurazione*. Milano: ETASLIBRI, 22-24.

Audisio, L. (2011). La catalogazione del disegno di architettura nell'era digitale. *Disegnarecon* 4(8), pp. 116-123.

Carassi, M. (Ed.) (2023). *Riordinare e inventariare gli archivi di architettura*. Torino: Hapax Editore.

Domenichini, R., & Tonicello, A. (2004). *Il disegno di architettura. Guida alla descrizione Copertina flessibile*. Il Poligrafico.

Farroni, L. (2024). Per un ampliamento dei contenuti dei fondi di architettura: la ricostruzione virtuale di progetti di architettura. In Farroni, L., & Faienza, M. (Eds,), *Gli archivi di architettura nel XXI secolo. I luoghi delle idee e delle testimonianze*. Roma: RomaTrE-Press, pp. 134-145.

Farroni, L., Faienza, M., & Mancini, M.F. (2022). Nuove prospettive per i disegni degli archivi italiani di architettura: riflessioni e sperimentazioni. *diségno* 10(2), pp. 39-50.

Farroni, L., & Faienza, M. (2023). I disegni del progetto di architettura del Novecento: dall'analogico storico suggerimenti per la transizione digitale. In Cannella, M., Garozzo, A., Morena, S. (Eds.), *Transizioni. Atti del 44° Convegno Internazionale dei Docenti delle Discipline della Rappresentazione*. Milano: FrancoAngeli, pp. 1267-1280

Guccione, M., Pesce, D., & Reale, E. (Eds.) (1999). *Ministero per i beni e le attività culturali. Soprintendenza Archivistica per il Lazio. Censimento degli archivi privati di architettura, a Roma e nel Lazio: da Roma capitale al secondo dopoguerra. Primi risultati*. Roma: Gangemi Editore.

Guercio, M. (2024). Problemi aperti e strategie per conservare le memorie digitali: le criticità degli archivi di architettura. In Farroni, L., Faienza, M. (a cura di), *Gli archivi di architettura nel XXI secolo. I luoghi delle idee e delle testimonianze*. Roma: RomaTrE-Press, pp. 28-33.

Grossi, M. (2019). Tutelare gli archivi di architettura. In Ordine degli Architetti Pianificatori Paesaggisti e Conservatori di Roma e Provincia (Ed.), *AR Magazine 121, Roma sognata. Gli archivi di architettura dal Nolli alle nuove poetiche radicali*. Roma: Architetti Roma Edizioni, pp. 88-91.

Lodolini, E. (1997). Archivi privati, archivi personali, archivi familiari, ieri e oggi. In Mibact, *Il futuro della memoria. Atti del convegno internazionale di studi sugli archivi di famiglie e di persone*, Capri, 9-13 settembre 1991. Roma: Ufficio centrale per i beni archivistici, p. 35.

Palestini, C. (2016). Le ragioni del disegno come strumento di analisi e comunicazione per gli archivi di architettura del Novecento. In Bertocci, S., Bini, M. (Eds.), *Le ragioni del disegno. Atti del 38° Convegno Internazionale dei Docenti delle Discipline della Rappresentazione*. Roma: Gangemi Editore, pp. 925-932.

Palestini, C. (2022). Ricerca e Archivi di Architettura. I ruoli e le disseminazioni del disegno. *diségno*, 10, pp. 7-17.

Samsa, D., 2012. Ontologia e deontologia nel «Disegno» dell'Alberti. In *Albertiana*, n. XV (2012): 57-92.

Reale, E. (2024). Gli archivi di architettura nei sistemi archivistici nazionali: dal censimento alla valorizzazione. In Farroni, L., Faienza, M. (Eds.), *Gli archivi di architettura nel XXI secolo. I luoghi delle idee e delle testimonianze*. Roma: RomaTrE-Press, pp. 54-67.

Reale, E., & Pesce, D. (2006). Gli archivi di architettura nei progetti della soprintendenza archivistica per il Lazio e della Direzione Generale per gli Archivi. In Bruschi, A. (Ed.), *La memoria del progetto. Per un archivio dell'architettura moderna a Roma*. Roma: Gangemi Editore, pp. 65-78.

Vernizzi, C. (2022). Disegni di architettura e archivi digitali: acquisizione, strutturazione, conservazione. *diségno*, 10, pp. 27-38.

SITOGRAPHY

http://www.mab-italia.org/webarchiving/sito/index.html consulted on July 19, 2025.

https://digitallibrary.cultura.gov.it/il-piano consulted on July 19, 2025.

https://www.ica.org/ consulted on July 19, 2025.

https://www.ica.org/resource/records-in-contexts-conceptual-model consulted on July 19, 2025.

http://www.iccd.beniculturali.it consulted on July 19, 2025.
https://icar.cultura.gov.it/sistemi-e-portali/archivi-nazionali/sia consulted on July 19, 2025.

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