

Research and Archives of Architecture: the Roles and Disseminations of Drawing

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“Computer drawings are a necessary means of communication between the architect and his collaborators and eventually with the construction people on site. Sketches and hand drawings are in less demand these days, though their importance and usefulness have lost none of their validity. The significance and uniqueness of hand drawings lies not in the clarity of their message but in their inherent imperfection. They communicate with no one but their creator. As our mind is never in complete control of our hand, it is free to create signs, left open for interpretation. Not once was I surprised at how hand drawing can evoke possibilities that most probably, I would not have been able to imagine consciously.” [Hecker in Lepik 2012, p. 21].

The concept of archive is customarily associated with the systematic collection of documents to be kept as a testimony of writings or graphic elaborations that permit subsequent consultations.

Archival materials generally refer to episodes related to a recent or ancient past that assumes historical documen-

tary values to be safeguarded for the benefit of future research. Going beyond the rhetorical and outdated notion of a dusty space used for storage, archives with the aid of digitalization have transcended the physical limits of on-site consultation; it is, however, necessary to consider the further exploratory potentials concerning the research and communication of contents related to the materials deposited in them and, specifically, architectural drawings. What archives suffer most from is the static dimension, the risk that the collections stored in it remain an end in themselves despite the opportunities of online consultation, and that the circumscribed intersections with research often make them a mere instrument of inquiry. A greater openness to research can transform the potentials of the already precious documentary heritage they preserve into a cultural legacy to be analyzed and commu-

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Fig. 1. Zvi Hecker, Sketches for the residential blocks of the second parcel of the Ramot Housing II complex (1984-1985) in Jerusalem, Sketchbooks No. 6, 7, January-December 1982, pp. 56, 57 (courtesy of Zvi Hecker archive, Berlin).



nicated. Reasoning along these lines, archives can assume the most dynamic role as centers of support for operational research, providing documentary materials which can form the basis for multidisciplinary investigations.

Specifically, the role of drawing appears decisive, due to what it can offer in the reading of archival materials in its dual capacity: as a configurator of the idea that becomes form, expressed in the many testimonies of original documents conserved in the archives of architecture, and as a tool of analysis that allows us to go back and reconfigure its contents, even with the new languages of digital representation [Palestini 2016].

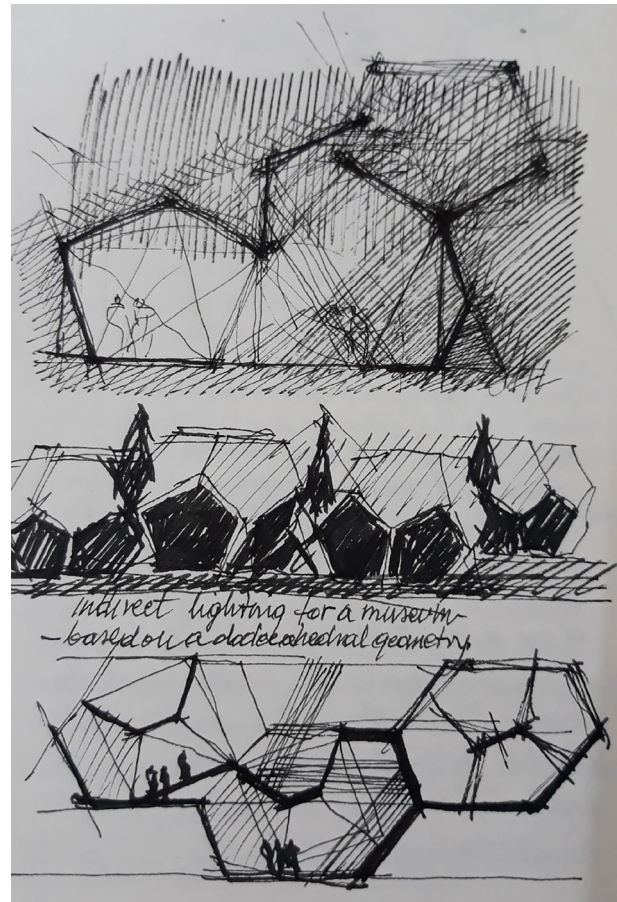
Addressing the topic of digital innovations, it must be emphasized that while they constitute an indispensable working tool for designing, there is a risk that they may lead to a weakening of the cultural and methodological role of architectural drawing. Zvi Hecker, the architect of Jewish origin [Bottero 1997] who shapes his architecture through drawing by establishing an uninterrupted dialogue in search of the form [Gofota 2015] that transcends the individual design to regenerate itself between one drawing and the next [Hecker 2000], states that we must beware of the speed of automated composition processes [Klein 2002].

Indeed, the role of drawing as a tool for the prefiguration, elaboration and communication of an idea appears increasingly relegated to a design modality of the past. Currently, the heritage that documents the traditional process from an idea to the configuration of an architectural project, up to its possible realization, survives only on fragile paper supports and testifies to an autonomous way of thinking and designing, not subordinated by the transformations of the digital age.

In this sense, the archives of architecture define the privileged place for documenting the creative path formulated by those designers [Bruschi 2007] who have employed traditional drawing as a working tool.

At a time in history when the performances of digital drawing satisfy the needs of increasingly accelerated timelines, favoring the use of global design systems related to Building Information Modeling, there is a risk of losing the graphic expressiveness inherent in the humanity of the sign, in the importance of its imperfection that allows the meditations developed in the evolution of a design to emerge as an added value [Galliani, Piva 2005]. Graphic innovations have also involved the way of conceiving designs, overturning the approach to the genesis

Fig. 2. Zvi Hecker, Sections and project elevation for a museum based on the dodecahedron, Sketchbook No. 2, October 1979 - June 1980, p. 71, detail (courtesy of Zvi Hecker archive, Berlin).



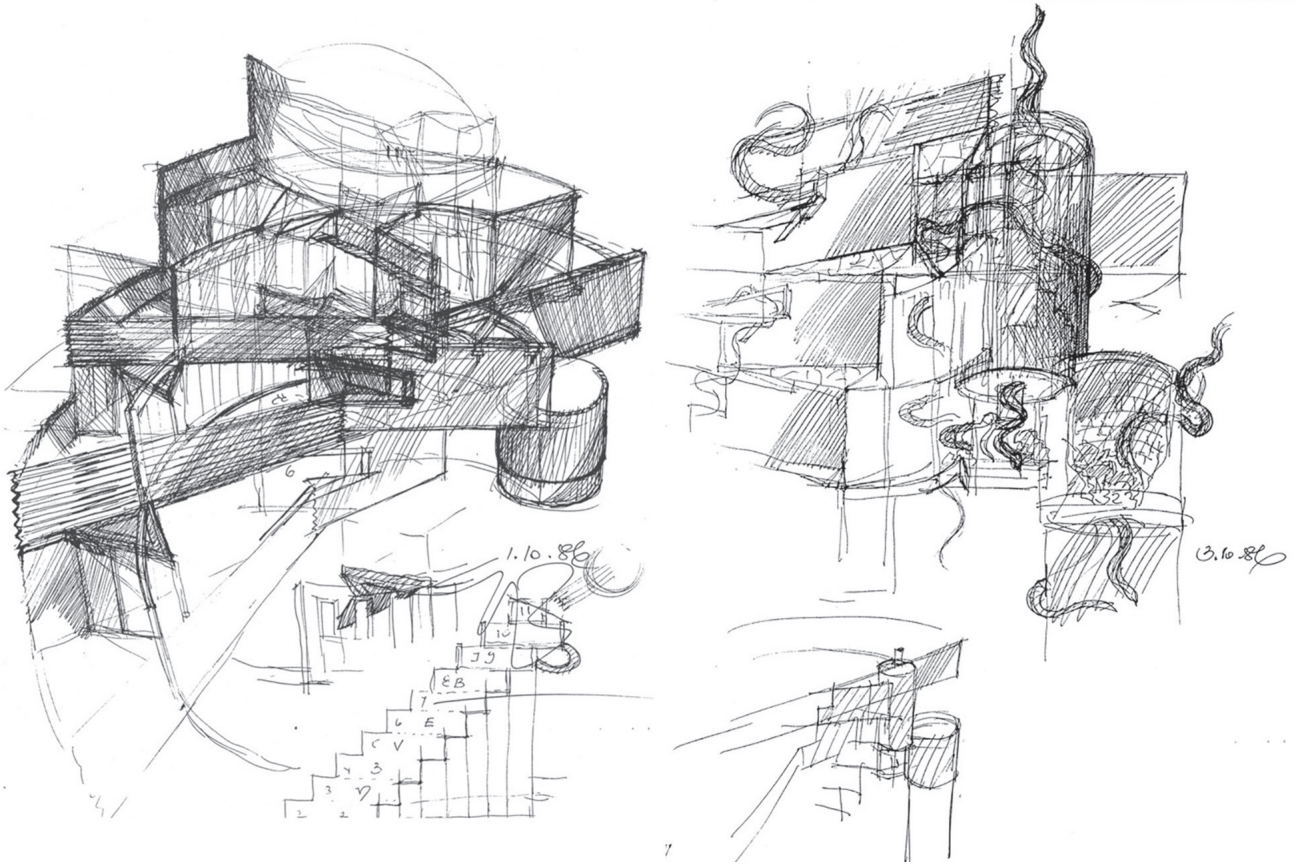


Fig. 3. Z. Hecker, sketches on the spiral shape with studies of 'snakes', elements that penetrate and generate continuity between the different bodies of the Spiral House in Ramat Gan, Tel Aviv, Israel, from Sketchbook No. 12, 1986 (courtesy of Zvi Hecker archive, Berlin).

of the form, entrusted from the beginning to digital modelling, from which two-dimensional aspects are deduced, obtained from three-dimensional formats through softwares that unify the sign in an impersonal manner. The prefigurative aspect is also entrusted to photorealistic renderings that on a par with photographic images do not allow us to distinguish physical reality from virtual space [Sacchi, Unali 2003].

Without denying the importance of computerized drawings in today's architectural profession, it is important to reiterate the values of the intuitive synthesis of traditional drawing, of drawing while thinking. Therefore, it becomes a priority to do research on the graphic-documentary materials kept in architectural archives: these can represent an active testimony not only for preserving, but also for analyzing the valences contained in the graphic elaborations that have led to the composition of the form, achieved through the steps clarifying the design.

In this logic, the meanings of an architectural design appear inseparable from its elaborative phases, from the graphic corpus that from sketches to the executive design leads to the final result, encompassing everything that leads to the composition of the work including the intermediate solutions, those left on paper [Farroni, Mancini 2019].

The graphic notes, the afterthoughts, the layering of signs constitute the humus of the composition, and take on the role of clarifying the various moments of the design process, the mediations with the client, the method adopted for reaching the final choices and the substantial dialogue between the author and the work, which together constitute the decisive steps in the evolutionary history of a project design.

The non-realization of a work, therefore, does not detract from the graphical-ideative path implied in the architectural project, which independently expresses visible and intangible information useful for gaining knowledge regarding the history of architecture, construction techniques and technologies, the development of theoretical thought, the poetics of individual designers and the relationships with the territories of reference.

Analog drawing, with its power of evocative transfer, rich in expressive possibilities related to its being imprecise and non-exact, allows an understanding of the different options developed during the entire design process.

The described process that an architect habitually follows, or followed, to study the configuration of an idea,

Fig. 4. F. Cellini, project sketch for an unbuilt bridge in Venice, 1985 (Cellini private Archive). From UID website, *Il disegno negli Archivi di Architettura*.

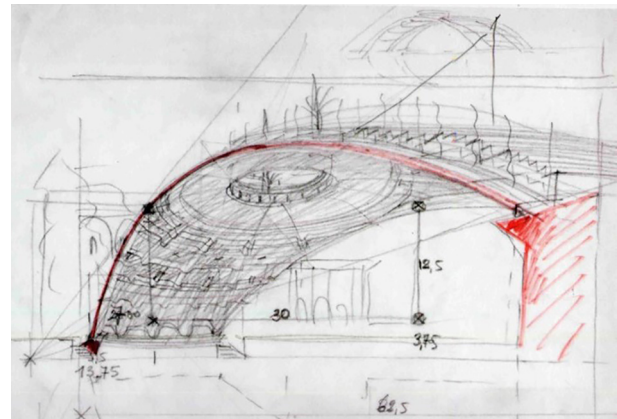
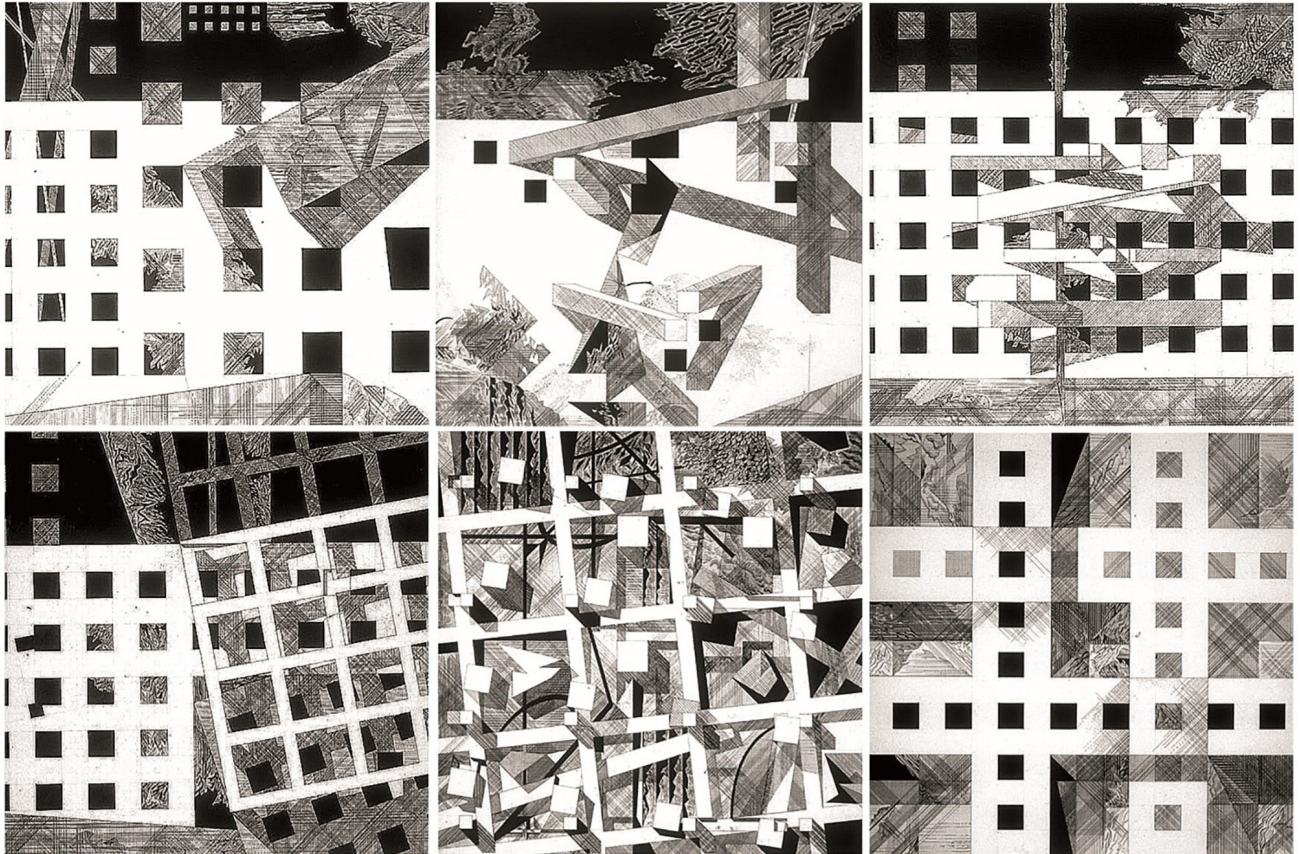


Fig. 5. F. Purini, Compositional drawings of the Brera Series, *Come si agisce/Dentro l'architettura*, published online. From UID website, *Il disegno negli Archivi di Architettura*.



and through which he comes to conceive a work of architecture, over time assumes the role of testimony, becoming itself a heritage to be passed down. Specifically, drawings kept in architectural archives make it possible to document this compositional path, preserving the material and immaterial values underlying the genesis of a design.

The modern conception of archives being intended for research purposes can thus make a fundamental contribution to the development of design culture, also through the knowledge of the most recent design experiences produced by 20th-century architects.

The interest in the conservation and valorization of the archives of 20th-century architecture represents a well-established project that, since the start of the first systematic collections, continues its cultural journey by continuously enriching itself with new acquisitions managed through public and private institutional networks [Guccione 2009].

Architectural archives and museums have been working in this direction for several years, developing experiences in sharing and enhancing documentary materials. The Directorate General of Archives has launched a national project with the aim of acquiring and systematizing the archives of 20th-century architects and engineers of particular interest for the history of Italian architecture and urban planning, which has taken the form of territorial censuses supervised by various Archival Superintendencies [Guccione, Pesce, Reale 2002]. The purpose of these interventions is to ensure the safeguarding of these archives, also in consideration of the particular risks to which they are exposed not only because of the fragility of their supports and materials (drawings on translucent paper, models) subject to deterioration, and the particular value of the documents, but also because they reconstruct events related to the construction of the contemporary city with episodes regarding large cities or small provincial towns with reference to the different contexts and situations connected with post-war reconstruction. The latter was a particularly fertile period for the significant construction activity carried out in the aftermath of World War II, which in those years defined cultural identities and experimentations with new compositional languages. The data collected from the individual regional censuses were transferred to the *Sistema Informativo Unificato per le Soprintendenze Archivistiche* (SIUSA) (Unified Information System of the Archival Su-

Figs. 6, 7. F. Purini, *Avvolgere e Stratificare*, experimentations on theoretical design. Analyses and digital reconfigurations by L. Farroni and M. F. Mancini. From UID website, *Il disegno negli Archivi di Architettura*.

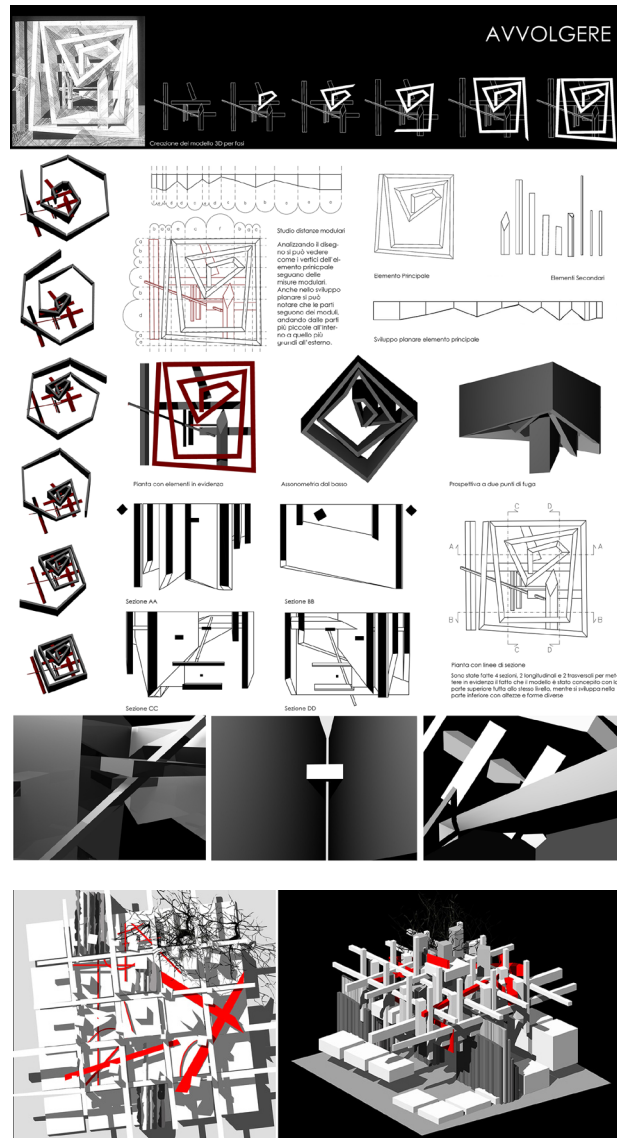
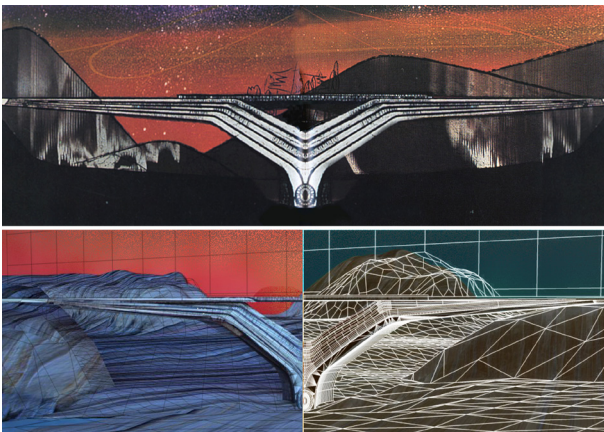
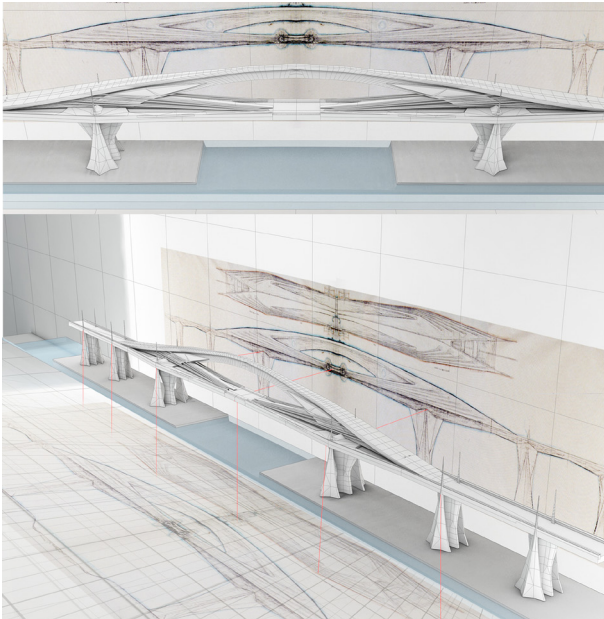


Fig. 8. P. Soleri, Arc bridge, three-dimensional reconstruction from project drawing (graphic elaboration by A. Basso).

Fig. 9. P. Soleri, Double Cantilever bridge, three-dimensional elaborations and graphic texture analysis with colour choices from the original sketches (graphic elaboration by A. Basso).



perintendencias) [Sistema Informativo Unificato per le Soprintendenze Archivistiche (SIUSA)], through the thematic path *Gli archivi dell'architettura contemporanea* (The Archives of Contemporary Architecture). The results of the census can also be viewed in the *Sistema Archivistico Nazionale* (SAN) (National Archiving System) [Sistema Archivistico Nazionale (SAN)], specifically in the thematic portal *Archivi degli architetti* (Architects' Archives), which was opened in 2012. This presents, in addition to archival resources, various contents (images, editorial texts), and places special emphasis on the "project" as the connecting element between the archival records and the work. It also aims to highlight the close connection of the archives with the works of which they bear witness, and how the protection of archival assets is correlated with that of architectural heritage, triggering a possible comparison between the original project drawings and the work of architecture realized, in the context in which it is located.

The institutional contexts, the *Istituto Centrale per il Catalogo e la Documentazione* (ICCD) (Central Institute of Cataloguing and Documentation) [Il nuovo Catalogo generale dei Beni Culturali] for the collection and conservation of historical-artistic heritage and the Ministry of Cultural Heritage, with a specific sector for archival heritage, have therefore worked actively over the last thirty years on the definition of description, metadata and interoperability models shared at the national and international level. In this context, at the end of the 1990s, the aforementioned national project on architectural archives was launched, for the purpose of acquiring and systematizing materials from private archives [Associazione nazionale Archivi Architettura contemporanea] that were in danger of disappearing due to their perishability, which proved to be of particular importance in opening to in-depth studies on the subject and on the experiments facilitated by digital resources.

In parallel with the activities of conservation institutes, research activities have been carried out by scholars of architectural drawing in regard to various topics: the two-dimensional analysis and interpretation of drawings, the three-dimensional reconfiguration of spaces, the experimentation with graphic languages for visualization, the immersive and interactive exploration of data and their interpretations, and the techniques for online presentation of 2D and 3D data.

These studies have led to the realization of digital and open-access products designed to define a communica-

Fig. 10. E. Del Debbio, unrealised project sketch for Villa Brizzi-Simen E42, reconfiguration and digital study model (graphic elaboration by the author).

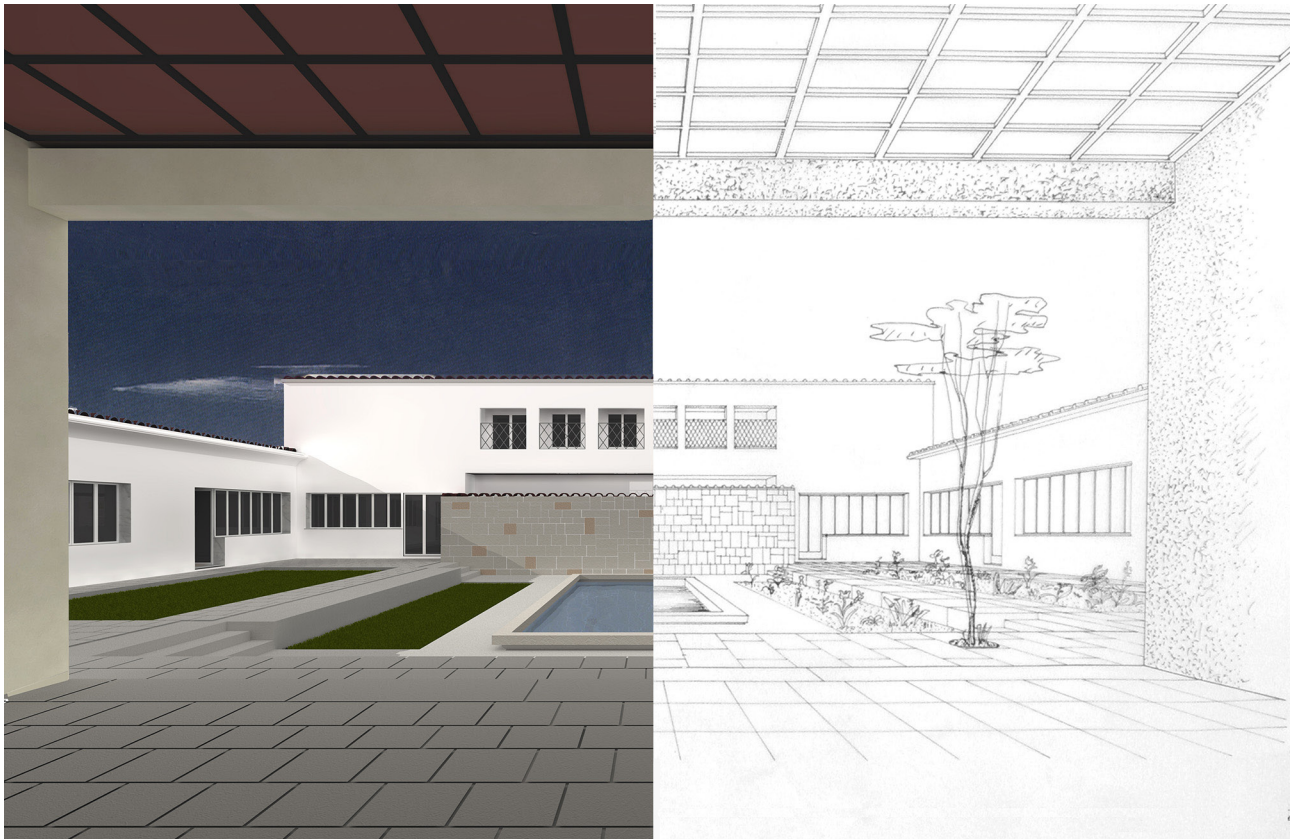


Fig. 11 A. Cataldi Madonna, sketches of project solutions for a residential complex with cinema, Pescara 1967 (Cataldi Madonna private Archive, graphic elaboration by C. Palestini and L. Pellegrini).

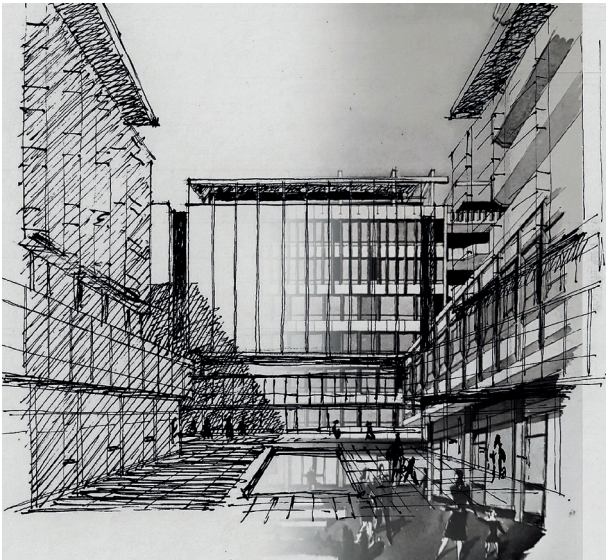
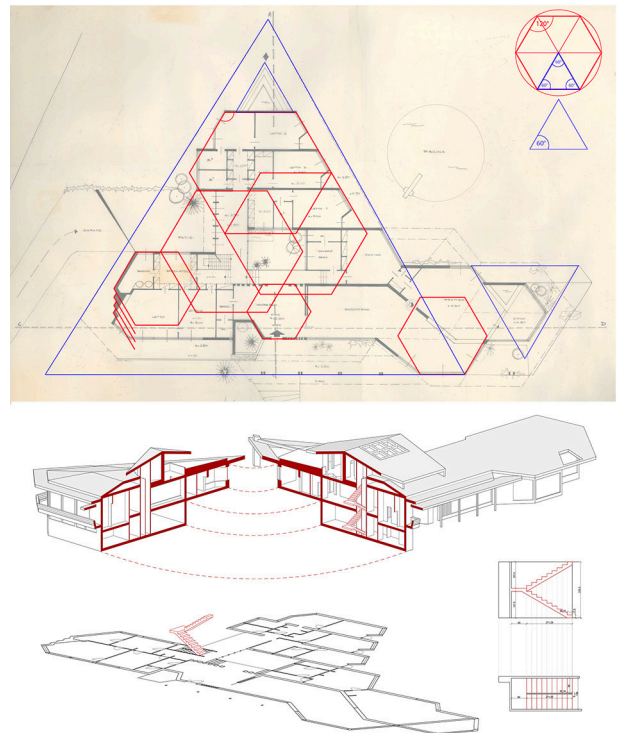


Fig. 12 A. Cataldi Madonna, Villa De Gennaro project, geometry analysis and three-dimensional reconstruction (graphic elaboration by C. Palestini and L. Pellegrini).



tion model for the valorization of the data deposited in archives [Biblioteca Hertziana], expanding, in particular, the accessibility, use and dissemination of analyses for the knowledge of architectural drawings. Thematic projects such as *Il Disegno negli Archivi di Architettura* (Drawing in the Archives of Architecture) promoted by the Unione Italiana per il Disegno [UID - Unione Italiana per il Disegno. Archivi, UID - Unione Italiana per il Disegno. Canale YouTube], concerning the graphic analysis, readings and three-dimensional reconstructions of original projects

and of experimental case studies conserved in architectural archives have been directed towards this aim. In conclusion, analysis through drawing, as described, can offer various possibilities for study and comparison with archival drawings, to permit their valorization, better use and two- and three-dimensional graphic explorations, also allowing the stimulation of visual reading skills on the part of the user based on interactive, graphic-textual associations and cross-references that clarify the cultural process of architectural prefiguration.

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