

Julian Zakharevich's bookcase: between design and implementation

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Abstract: The main building of Lviv Polytechnic National University is a monument of national importance. The library bookcase, designed by Julian Zakharevich, serves as an authentic interior element of the period library, created during the same period as the main building. This unique work of art represents a remarkable example of carpentry, architectural, and sculptural craftsmanship. The relevance of this study lies in emphasising the necessity of recognising and documenting the bookcase as a large-scale monument of cultural and artistic craftsmanship.

The article investigates the historical context of the bookcase's design and construction, the search for archival sources, and the current state of preservation. The principal archival discovery is an article by Julian Zakharevich published in the journal *Dźwignia* (March 1880), which describes the process of constructing the bookcase and includes its original design drawings. A comparative analysis of these drawings, archival photographs, and the existing bookcase revealed both correspondences and discrepancies. The bookcase's complex frame-based construction was confirmed, though the side section is absent in the drawings, and the decorative elements are rendered schematically. The most notable difference concerns the mascarons: while the drawings depict lion heads, the executed design features alternating portrait mascarons of Julian Zakharevich and Leonard Marconi.

The bookcase, over 20 metres long and double-tiered with mezzanines and staircases, exemplifies the integration of architectural and artistic expression. Its elaborate Neo-Renaissance ornamentation – capitals, grape clusters, and mascarons reflects both aesthetic refinement and technical mastery. The work stands as evidence of the high level of woodworking skill in Western Ukraine during the second half of the nineteenth century. It embodies the cultural respect accorded to books and knowledge.

Keywords: Julian Zakharevich, library bookcase, construction, design drawings, Lviv Polytechnic National University

1. Introduction

Relevance. The bookcase is an integral part of the cohesive interior of the library in the main building of Lviv Polytechnic National University, which itself is an architectural monument of national importance. The bookcase is an authentic, original element, not an addition made later. It was designed by the same architect who created the building, Julian Zakharevich. Since the main building is a listed monument, it is evident that the bookcase can also be recognised as a heritage artwork of outstanding historical and artistic value. Nevertheless, the object currently lacks official documentation and has not yet been registered as a monument of art.

This publication forms part of a broader research project aimed at examining the architectural, structural, and artistic characteristics of the bookcase and at establishing the analytical and documentary basis required for its official registration as a large-scale heritage object. The bookcase represents a remarkable example of integrated design,

exceeding 20 metres in length and incorporating unique structural solutions. It is distinguished by the combination of architectural and artistic features, including both structural and decorative components. Furthermore, its structural design is of particular interest: it is a double-tiered construction with mezzanines and incorporates staircases within its construction. There are no known analogues of such a bookcase in Lviv.

The purpose of this study is to compare the original drawings and archival photographs of the bookcase with its existing structure and construction, as well as to analyze the joints connecting its elements, its decorative features, and other details.

The methodology combined archival investigation, source analysis, field examination, and comparative analysis. The field study included a comprehensive inspection of all structural and decorative elements of the bookcase, not only from the exterior but also from the interior structure.

For the purpose of studying the bookcase designed by Julian Zakharevich, archival research was carried out in the State Archives of the Lviv Region. The collected materials provided valuable references to key contributors - Leonard Marconi and the Wczelak Brothers, as well as documentation related to the functioning of the library, including records of books receiving, the relocation of the library to the new building, and the daily schedule of the reading room. Of particular importance is a document dated June 25, 1880, granting Leonard Marconi an industrial license for the production of sculptures and models [6]. Although the original design drawings of the bookcase were not preserved in the archival holdings, it was established that these drawings were published in the March 1880 issue of the journal *Dźwignia* [12]. This issue contains an article by Julian Zakharevich describing the progress of the bookcase construction, accompanied by the corresponding design drawings. Therefore, these published drawings may be regarded as authentic representations of the original design project and serve as a primary source for the study of the object's architectural and artistic conception.

Literature review. The bookcase of the Lviv Polytechnic was first mentioned by Julian Zakharevich himself in the previously mentioned journal *Dźwignia* [12]. In addition, the history of the construction of the main building, including the arrangement of the library, was studied by Oleksandr Zhuk [14]. However, his description of the bookcase repeats Julian Zakharevich's article. In another work by the same author, the art of design in the creations of Julian Zakharevich is examined [13]. In that study, the author provides a brief description of the bookcase. The bookcase is also mentioned in the works of Yurii Biriulov [1, 2] in the context of the main building in which it was constructed. However, no detailed description is provided. The development of Julian Zakharevich as the founder of the Lviv architectural school has been examined by Bohdan Cherkes and Oleksandr Zhuk [3]. In addition, the main building has been studied by Olena Stasiuk in the context of a comparison with the building of the Prague Polytechnic [11]. More recent and comprehensive studies of the bookcase are represented by two articles by Maksym Chornyi. In the first article, the author addresses specific aspects of the conservation of the bookcase [5]. In the other article, Maksym Chornyi examines the significance of the gmerk symbol depicted on the decorative cartouches of the main balusters [4].

2. Presentation of research material

2.1. Historical background

In 1877, the construction of the main building of the Tsisar-Royal Polytechnic School, located at 12 Sapehyn Street (the current main building of the Lviv Polytechnic National University) was completed [1]. Following its completion, work began on the furnishing and interior decoration of the new building, including the library. Three rooms were allocated for the library on the first floor in the northern wing of the building: a book depository, a student reading room, and a reading room for professors [12]. Notably, the student reading room was both larger and more elaborately decorated than the professors' reading room, which remained comparatively modest in design.

A large two-tiered bookcase was specifically designed for the student reading room. The author of this design was Julian Zakharevich, the leading Lviv architect, professor, and rector of the Polytechnic School in 1877–1878 and 1881–1882. The arrangement of the bookcase was carried out between 1878 and 1883. The bookcase was constructed from selected oak wood, the carpentry work was done by the Wczelak brothers' Factory [12]. In addition, the bookcase is decorated with decorative elements such as mascarons, cartouches, and grape clusters, the models for which

were made by Leonard Marconi, a professor at the Department of Drawing and Modelling, and the carving of these elements was made by sculptor Tadeusz Sokulski. [2].

Several noteworthy aspects of the bookcase's production process are documented in an article authored by the designer himself, Julian Zakharevich [12]. In this publication, Zakharevich notes that, given the architectural requirements and the necessity of maximizing storage capacity, the most effective solution was to design a two-tiered bookcase extending along the longer wall opposite the windows. The author also refers to certain initial difficulties encountered during the production phase, which were ultimately resolved upon the timely delivery of the required materials. It may be assumed that Zakharevich initially aspired to a more elaborate design for the bookcase. However, his artistic ambitions were limited by the financial resources available for the project.

Unfortunately, the original structure of the bookcase has not been preserved in its original form. During the 20th century, insufficiency of maintenance led to the loss of the original surface finish, and the upper tier was dismantled [7]. Therefore, information about the second tier can only be traced from archival photos and drawings. Between 2018 and 2021, the bookcase was conserved. During that time, it has become possible to study in more detail the internal structural components that are typically hidden from view.

2.2. Analysis and characterization of the bookcase design drawings

As previously mentioned, the original drawings have unfortunately not been preserved. However, certain design drawings can be found in the «Dźwignia» journal, which will be examined below (Fig. 1).

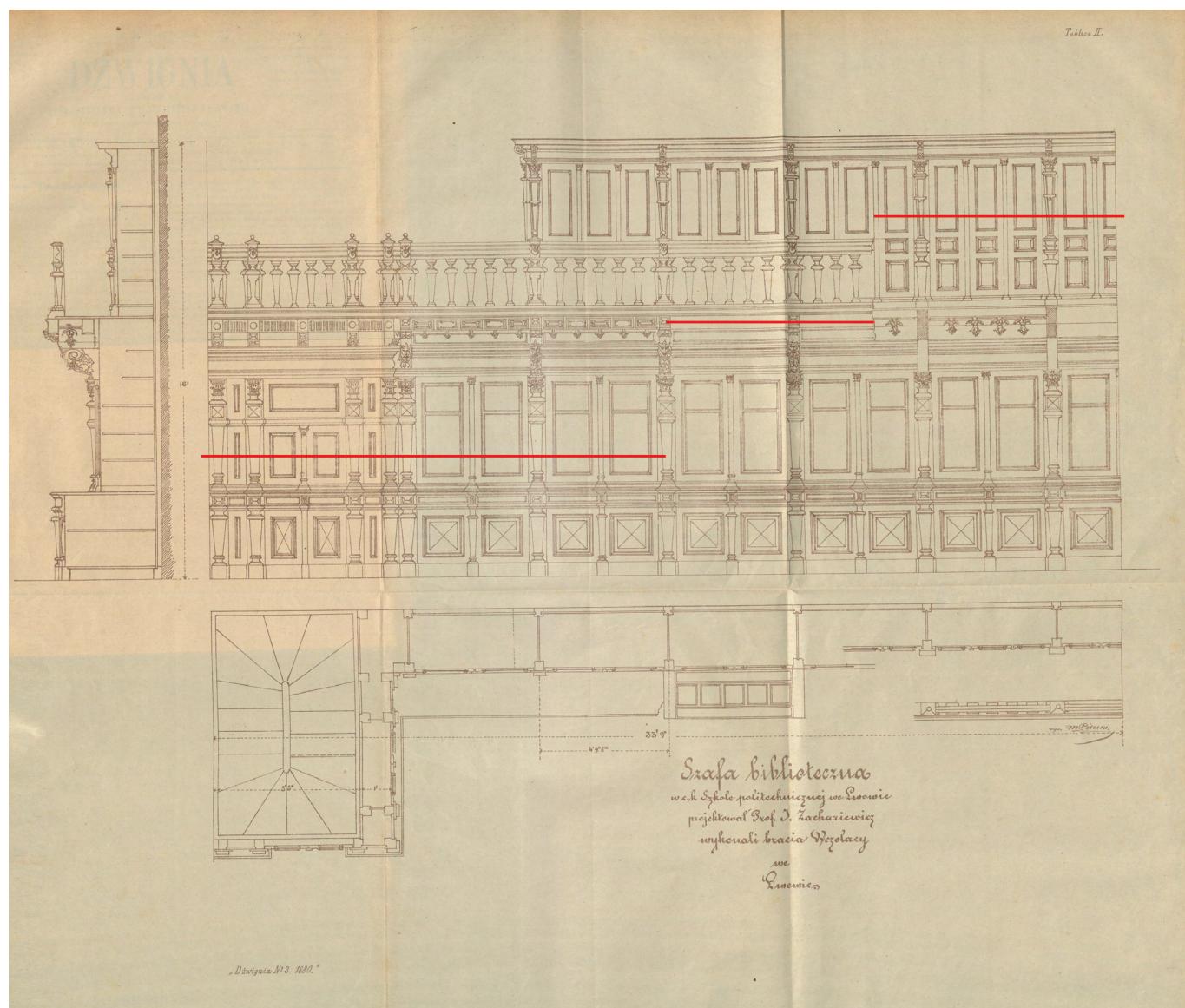


Figure 1. Drawing of the bookcase from the «Dźwignia» journal [12]

Figure 1 presents a single sheet depicting the bookcase in three projections: a frontal elevation (the largest), a vertical section to the left (side view), and a horizontal section (plan) below. The drawing is not complete, illustrating only the right half of the bookcase, as the left half mirrors it symmetrically. Notably, the sectional drawings were not presented only along one plane. The author combined multiple sectional offsets to better represent the structure. In addition, on the facade the bookcase is also shown with local openings. The drawing provides only the principal dimensions, with the units of measurement marked by the symbols ' ', " ", and " ", which may correspond to feet, inches, and lines, respectively. The depiction reveals that the bookcase consists of two tiers and incorporates built-in staircases within the side niches.

The frontal elevation shows that the bookcase is divided into five and a half identical lower sections, accompanied on the left by a broader, slightly different section that projects beyond the main alignment in plan, as well as four and a half upper sections. The façade of the bookcase is richly decorated. However, the structural design is not entirely visible in the frontal view and is only partially revealed in the right part of the drawing, specifically, in the cross-section at the beam level. Here it is also visible that one section contains four sculpted grape clusters.

The design of the bookcase is examined in this section. The plan presents three sectional views of the bookcase at different levels, each corresponding to the red reference line shown on the elevation (Fig. 1). On the left and toward the center of the sheet (side and two typical sections), the cross-section illustrates the upper shelves of the lower tier. To the right of these, a section at the ceiling level of the lower tier reveals five coffers that form the base for the decorative grape clusters, as well as the supporting beams on both sides. Based on the plan and the left-of-center portion of the elevation, it becomes clear that there are actually five grape clusters rather than four, as previously noted.

The right side of the drawing partially depicts a section of the top row of shelving, as well as the placement of the balustrade. The plan also includes four dimension lines. The longest of these likely represents the total width of the bookcase or perhaps half of it and shows a measurement of 33' 9". The width of a single section, measured between the centers of adjacent columns, is 4' 9" 8", while the width of the side section measures 5' 5".

The plan demonstrates that the structural framework of the bookcase is composed of 24 square columns. These columns contain recesses into which the panels are inserted, forming the essential framed and compositional structure of the bookcase. The doors are also indicated, though in a highly schematic manner, without representation of the fastening or hinge mechanisms.

The side elevation illustrates a cross-section through the central section of the bookcase. No additional sectional drawings, such as side sections or side shelving, are provided. The drawing reveals that the bookcase is composed of three volumes: the lowest shelves are the widest, and the overall depth of the structure decreases upwards. The upper shelves are less than half the width of the lower ones, reflecting a deliberate functional hierarchy. This hierarchical arrangement reflects a functional consideration, allowing the storage of larger-format materials, such as maps or architectural drawings, on the lower shelves, while reserving the upper shelves for standard-sized books.

Notably, the drawing omits any indication of the system used to anchor the bookcase to the wall. Furthermore, only the arrangement of the shelving is represented, without a detailed demonstration of the structural framework observable in the plan. The total height of the bookcase, as indicated in the drawing, is 16'.

The decor and details of the bookcase deserve separate consideration. Julian Zakharevich designed the bookcase in the Neo-Renaissance style. The drawing shows that the bookcase is decorated and rhythmically set by doors and pilasters. In the middle sections of the lower floor, broad pilasters alternate with more modest pilasters. The wide pilasters end with brackets on which the same portrait, probably a lion's head, is visible. The lower part is separated from the upper part by the longitudinal frieze of the upper part of the lower floor and the balustrade of the second floor. On the second floor, as on the first, more magnificent pilasters alternate with two straight pilasters. The severity of the lines is diluted by elements of artistic carving, namely: capitals, clusters and brackets.

3. Description of the bookcase in its present condition

Entering auditorium 214 of the main building of the Lviv Polytechnic National University, it is clear that the bookcase (Fig. 2) is located, as planned by Julian Zakharevich, along the wider wall, opposite the windows. However, only the bottom tier of the bookcase is visible, as the top tier has been lost. The upper tier can be seen in archival photographs (Fig. 3). The total length of the bookcase is 21300 mm, height: 4037 mm. The width of the standard section is – 1380 mm, the width of the side section – 3095 mm. The main structure of the bookcase is hidden.



Figure 2. Bookcase after conservation. Photograph by N. Datsko (2022)

In 2018–2021, the Department of Architecture and Conservation carried out conservation, which made it possible to examine and document the internal construction of the bookcase. In general, the condition of the structural elements of the bookcase was satisfactory, except for the fact that the entire second tier of the bookcase was lost. The wood was preserved in good condition - no traces of insect pest activity or mold were found [5]. However, noticeable shrinkage of the wood occurred as a result of sudden and unavoidable climatic changes within the interior, leading to the formation of gaps between many elements and to the loosening of the bookcase door joints. Moreover, some elements were missing or replaced with new ones, however not as accurate as the original. The mechanisms of the bookcase door locks were lost, with the exception of the two doors leading to the staircases. However, these mechanisms required alignment.

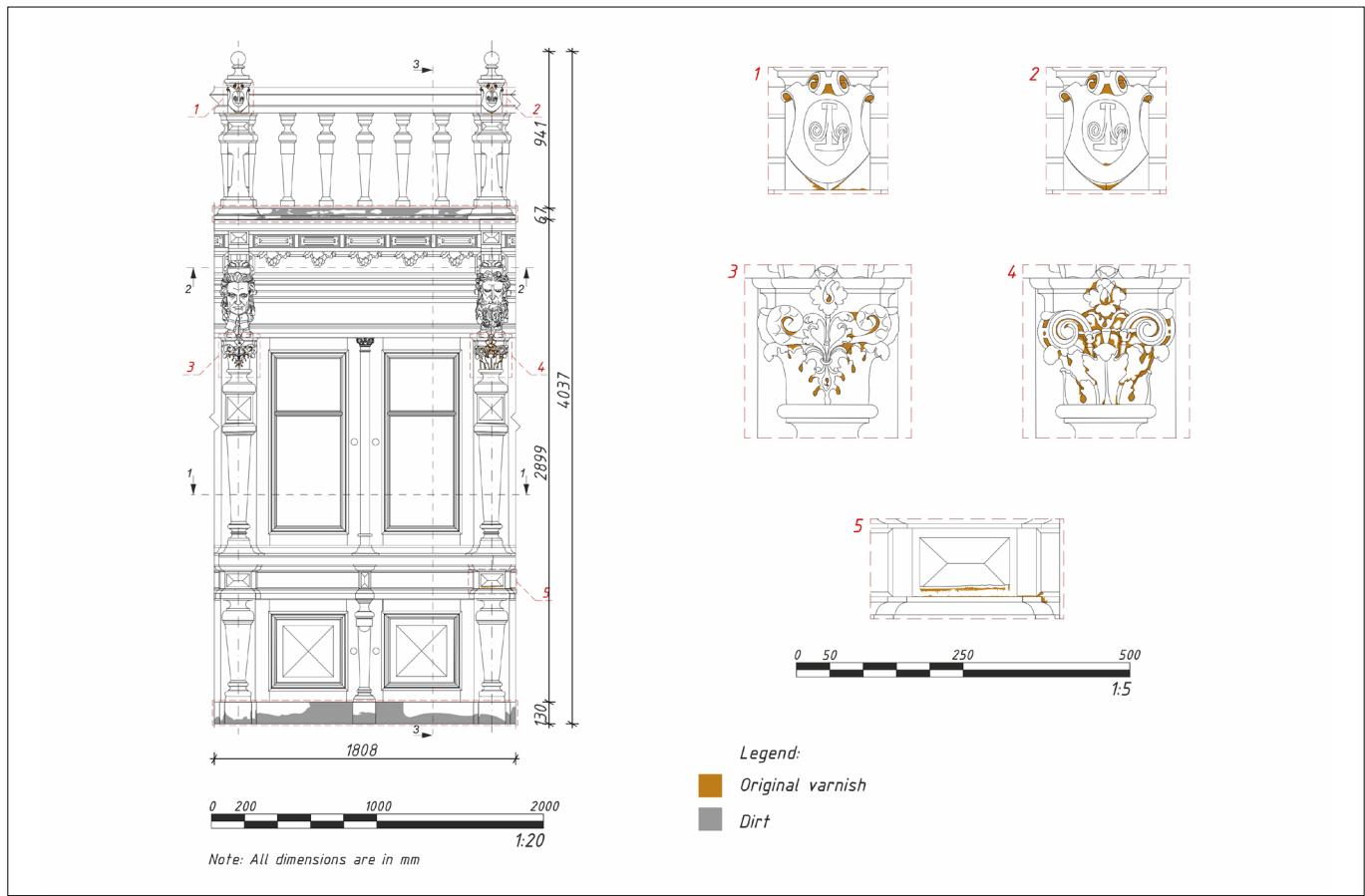
The bookcase was covered with an oxidized shellac, as determined by analysis of a found fragment in an original section of the woodwork. However, this coating was almost completely destroyed. The original varnish was mechanically scraped off and subsequently replaced with a nitrocellulose varnish.

Loss cartograms are considered using a typical section of the bookcase, as the damage can be considered representative of the entire piece. Specifically, Figures 4 and 5 illustrate that the original varnish was preserved only in hard-to-reach areas and also highlight the most soiled sections of the bookcase, namely the parts adjacent to the floor of the first and second tiers, as well as the countertops. Figures 6 and 7 present the most typical types of damage: cracks, misalignment of elements, varnish damage, partial losses, and non-original placement of nails.

Recommendations for the conservation of the bookcase include: cleaning the surface of dirt, cleaning the most soiled areas of the nitrocellulose varnish, filling in veneer losses, replacing missing elements, realigning the joints of the bookcase doors, recreating the traditional varnishing method, adjusting the door-opening mechanisms, reconstructing the drawer locks, and reinforcing the balcony structure. These recommendations were adopted for consideration and for the development of subsequent conservation processes for the bookcase.



Figure 3. Photograph dating from between 1894 and 1900 [8]



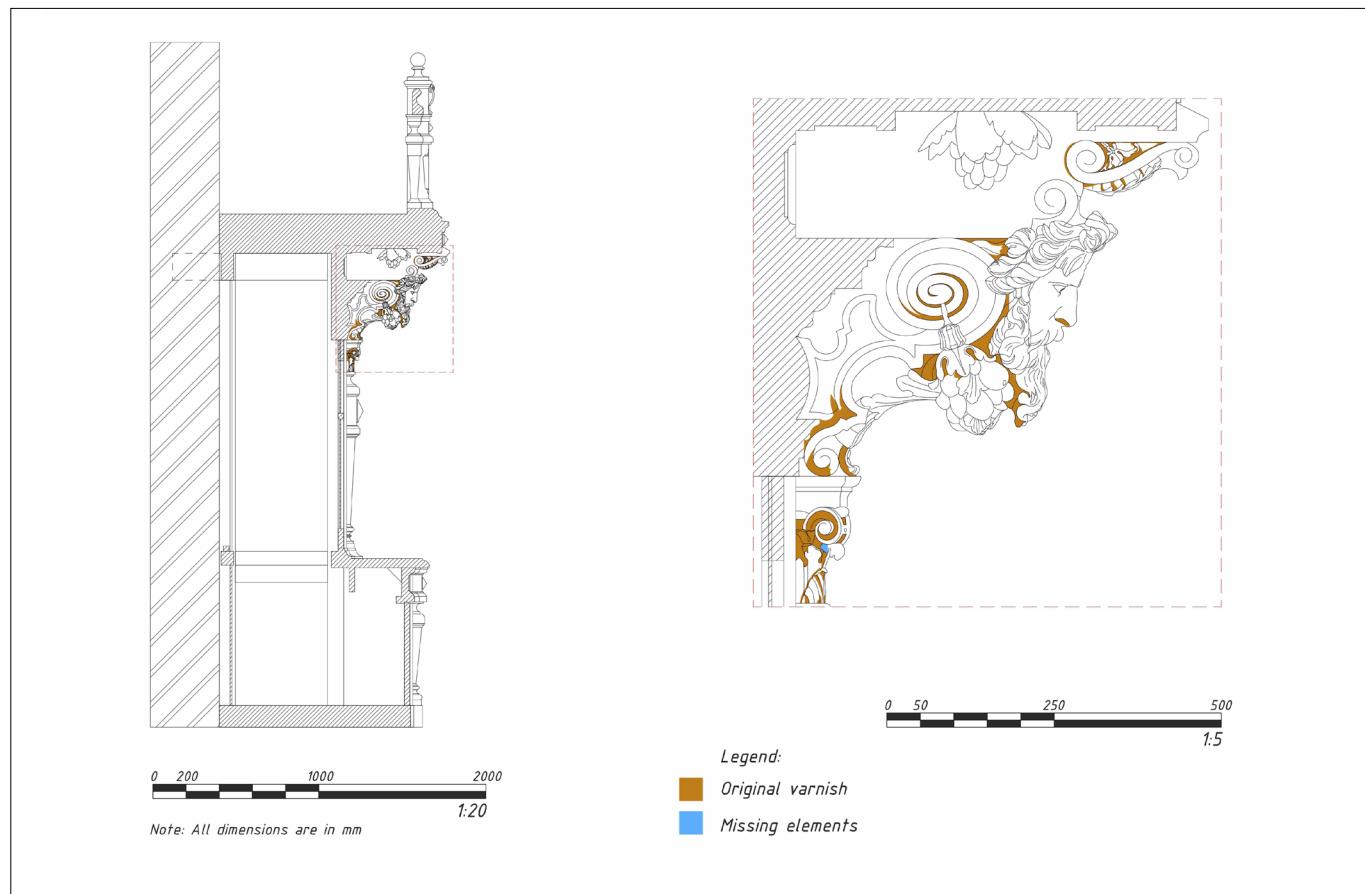


Figure 5. Cartogram of losses. Side view of the section. Remains of the original varnish. Drawing by N. Datsko

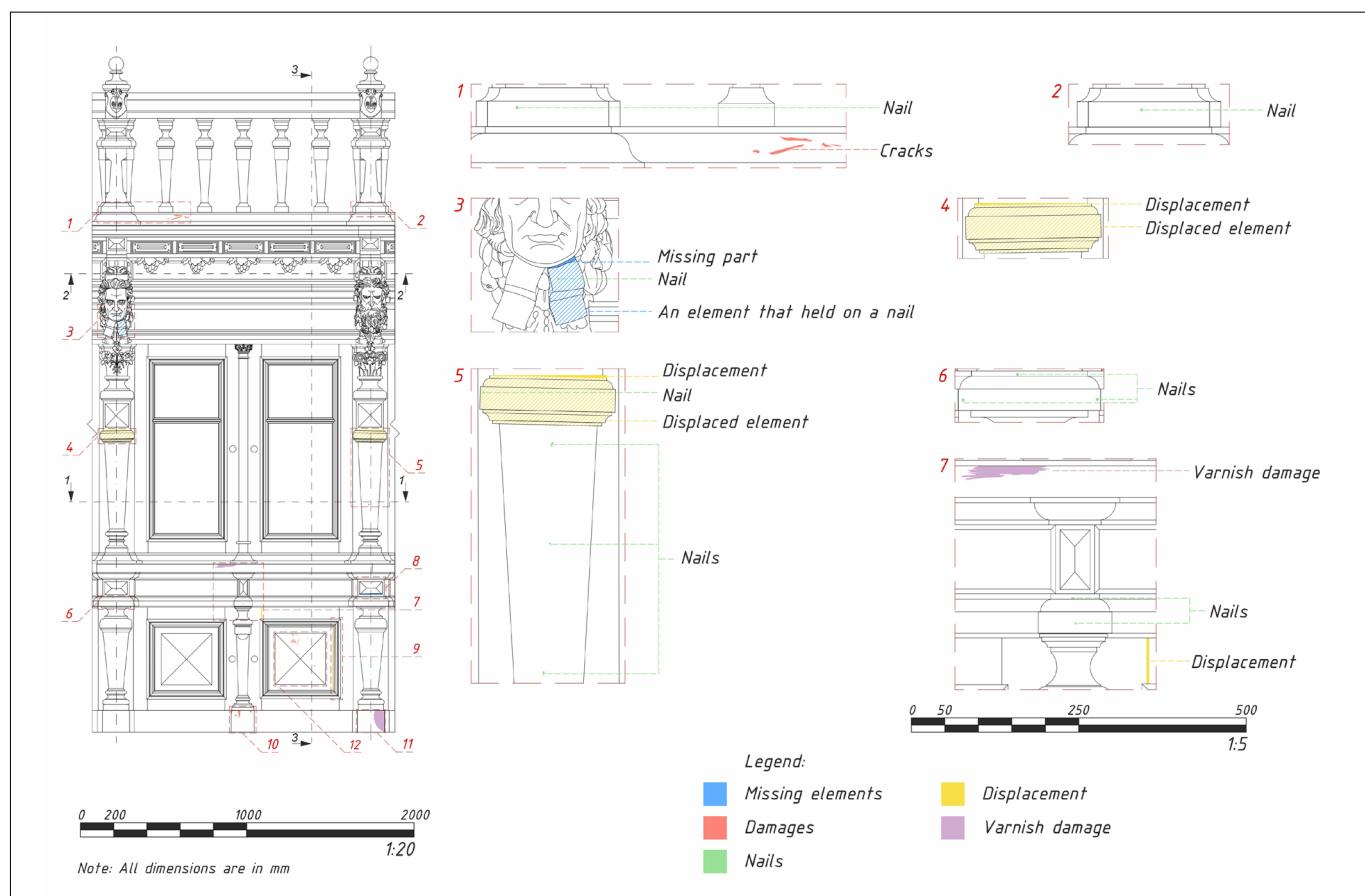


Figure 6. Cartogram of losses. Front view of the section. Damages (Part 1). Drawing by N. Datsko

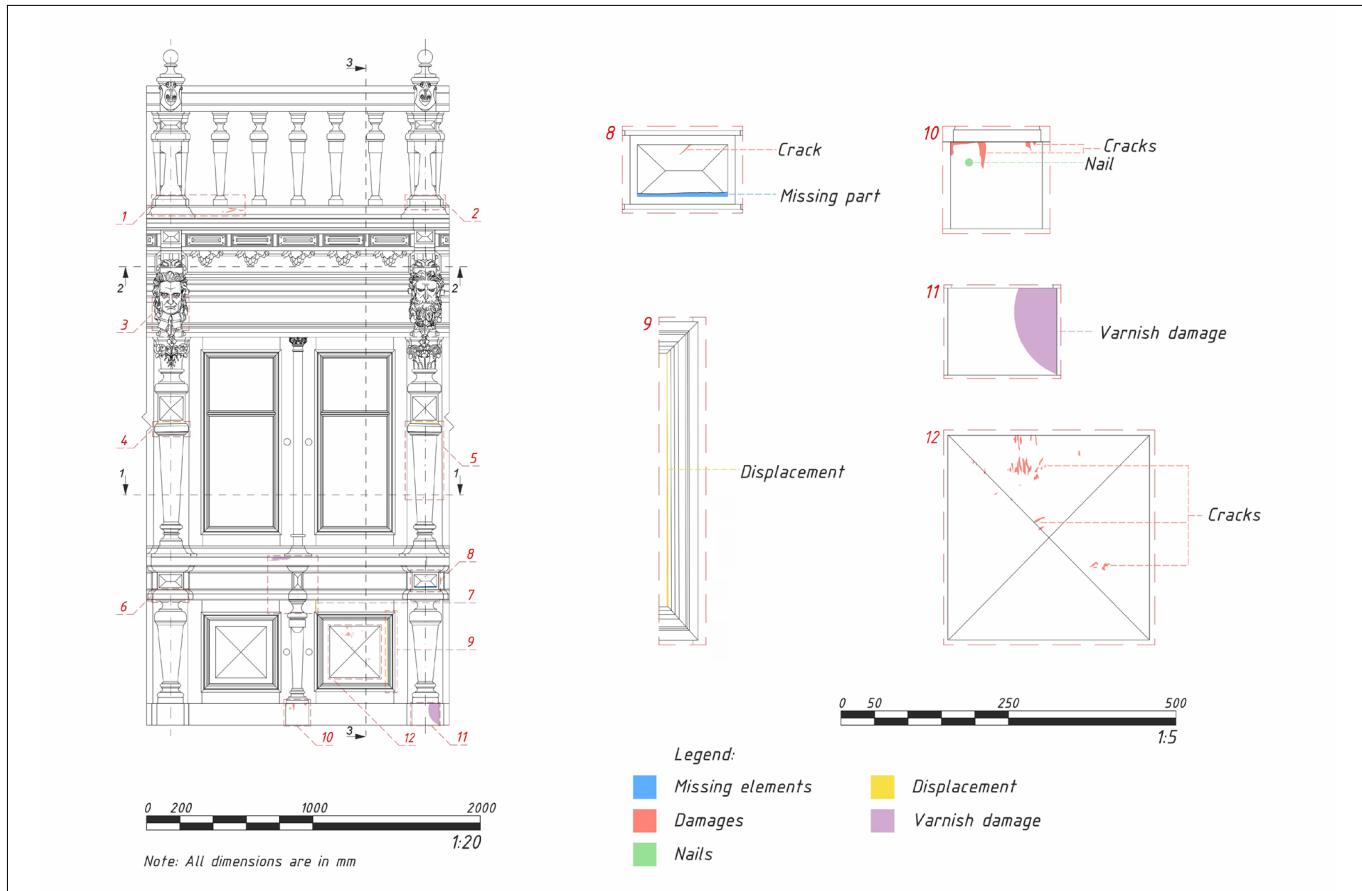


Figure 7. Cartogram of losses. Front view of the section. Damages (Part 2). Drawing by N. Datsko

The structural scheme of the bookcase is examined. The base of the bookcase represents a framed structural system composed of vertical and horizontal beams, to which the enclosing panels were subsequently attached. As previously noted, the library bookcase exhibits a complex configuration, being narrower in its upper section and broader at the base. Figure 8 illustrates that columns "A1", "A2", and "A3" are supported by a structural base composed of beams "B1", "D1", and "D2." This base incorporates a recess designed to accommodate the flooring of the lower shelves ("E1" and "E2"). The floor is constructed from multiple wooden boards, forming a stable foundation for the bookcase's lower tier. Particular attention should be paid to beam "B2", since it connects columns "A1", "A2", and "A3" into a cohesive structural assembly. The stability and rigidity of this configuration are further enhanced by dowels "C1" and "C2". Additionally, beam "B3" establishes the width of the rear section of the bookcase. It is noteworthy that columns "A1" and "A3" feature incised numbering, as illustrated in Figures 10 and 11, suggesting that their positioning was carefully considered during the assembly process. At the upper level, beams "D5" and "D6" are positioned atop column "A3", supporting beam "B4" above them. Notably, one end of beam "B4" is embedded into the wall (indicated in red), a feature that increases the overall rigidity and stability of the structure. However, the exact depth of this anchoring remains undetermined. As previously noted, the panels were inserted into narrow grooves integrated within the framework. The rear panels are divided into three sections, joined together by intermediate beams (Fig. 9, c). The positions of the side panels are marked with the letters "a", "b", and "c", while the rear panels are designated as "d" and "e" (Fig. 8). The side panels terminate with right-angled upper edges (Fig. 9, a), whereas the rear panels are characterized by a rounded upper contour (Fig. 9, b). The entire shelving framework is enclosed at the front by a series of doors, with panels positioned between them. Such an enclosed configuration was particularly effective in maintaining optimal conditions for the preservation of books.

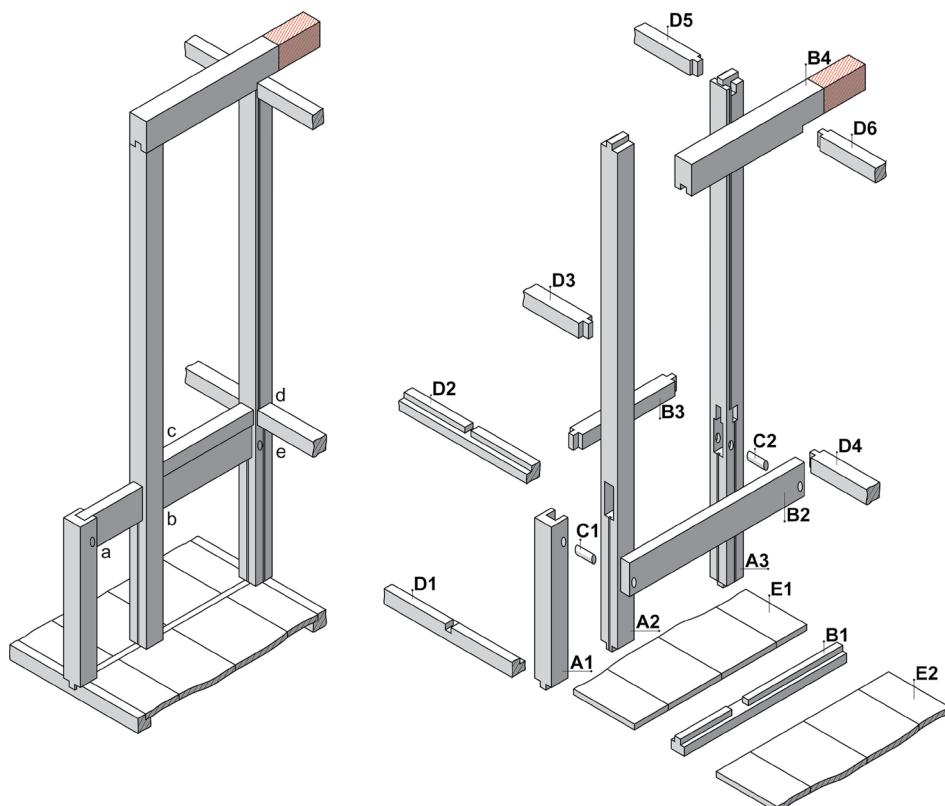


Figure 8. Structural joints of beams and flooring. *Drawing and measurements by N. Datsko*

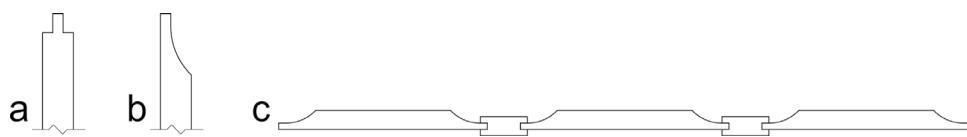


Figure 9. Panel construction. *Drawing by N. Datsko*



Figure 10. Numbering "11" on the front column beneath the countertop. *Photograph by N. Datsko (2020)*



Figure 11. Numbering "11" on the rear column. *Photograph by N. Datsko (2020)*

The artistic and decorative elements of the bookcase are examined. The artistic carving serves to soften the rigidity of the bookcase's main structural lines. Two categories of decoration can be distinguished: architectural elements — including pilasters with capitals, balusters, cartouches with heraldic motifs, belt courses, and profiled panels, and artistic, including mascarons, brackets with vegetal and fruit motifs, and grape clusters. On the lower tier, three types of capitals are used on the main pilasters: two alternate in the central section of the bookcase, while the third type is present on the side sections. In the central sections, the pilasters continue into the brackets, which, in addition to vegetal and fruit motifs, are decorated with superimposed mascarons depicting alternating portraits of the bookcase's creators, Julian Zakharevich (Fig. 12) and Leonard Marconi (Fig. 13).

The bookcase doors are decorated with architectural decor. The lower doors are decorated with framed panels, designed as square pyramids on the main facade and as rectangular pyramids on the side sections and the doors of the second tier. The doors of the upper shelves on the lower tier feature glazing, divided into two sections: a larger lower panel comprising approximately two-thirds of the height, and a smaller upper panel comprising roughly one-third. Above these, beneath the first-tier ceiling, coffers between the brackets contain five grape clusters, the fastening of which is integrated into the ceiling. On the upper tier, balusters situated between sections are decorated with cartouches combined with heraldic motifs.



Figure 12. Portrait carving and photography of Julian Zakharevich. Photography by N. Datsko (2020); [10]



Figure 13. Portrait carving and photography of Leonard Marconi. Photography by N. Datsko (2020); [9]



4. Comparative analysis of the bookcase drawings and the implemented project

First, the structural comparison is examined. The most significant difference lies in the absence of the upper tier. However, based on an archival photograph of the library (Fig. 3), it can be assumed that the drawings generally correspond to reality. The photograph reveals that each section of the upper tier was divided into three parts, while the decoration of the pilasters closely resembles that represented in the drawing. Since the structure is represented only in a single drawing, specifically, the plan, it is difficult to conduct a detailed comparison with the existing condition. Nevertheless, the overall correspondence between the two is confirmed, as both display an identical number of sections, and their approximate dimensions appear consistent.

The following section examines the artistic elements. Regarding the decorative elements, several comparative drawings were prepared. In Figure 14, under the designation "A," the projections of certain components, absent from the original drawings, are visible. Interestingly, these projections overlap the side brackets, partially covering the side portraits. The designations "E" and "F" indicate elements that appear in the drawing but are absent in the implemented design. In Figure 15, the designations "B", "C" and "D" present a comparison between the decorative elements of the existing bookcase and those depicted in the historical drawings. Minor differences can be observed – for example, in images "B" and "C," the widths of the modern balusters vary less than those in the drawings, giving a slightly different visual impression. Furthermore, although the drawings depict identical mascarons, as previously noted, the executed bookcase features two distinct portrait representations.

5. Conclusions

The bookcase demonstrates the exceptional craftsmanship of leading woodworking specialists in Western Ukraine during the second half of the nineteenth century. Its carefully designed structure for book storage reflects a deep respect and appreciation for the volumes it was intended to preserve. Julian Zakharevich's project was realized almost in its entirety, with only minor modifications introduced during construction. The original design also included a second tier, as evidenced by historical photographs, although this upper section has not survived to the present day.

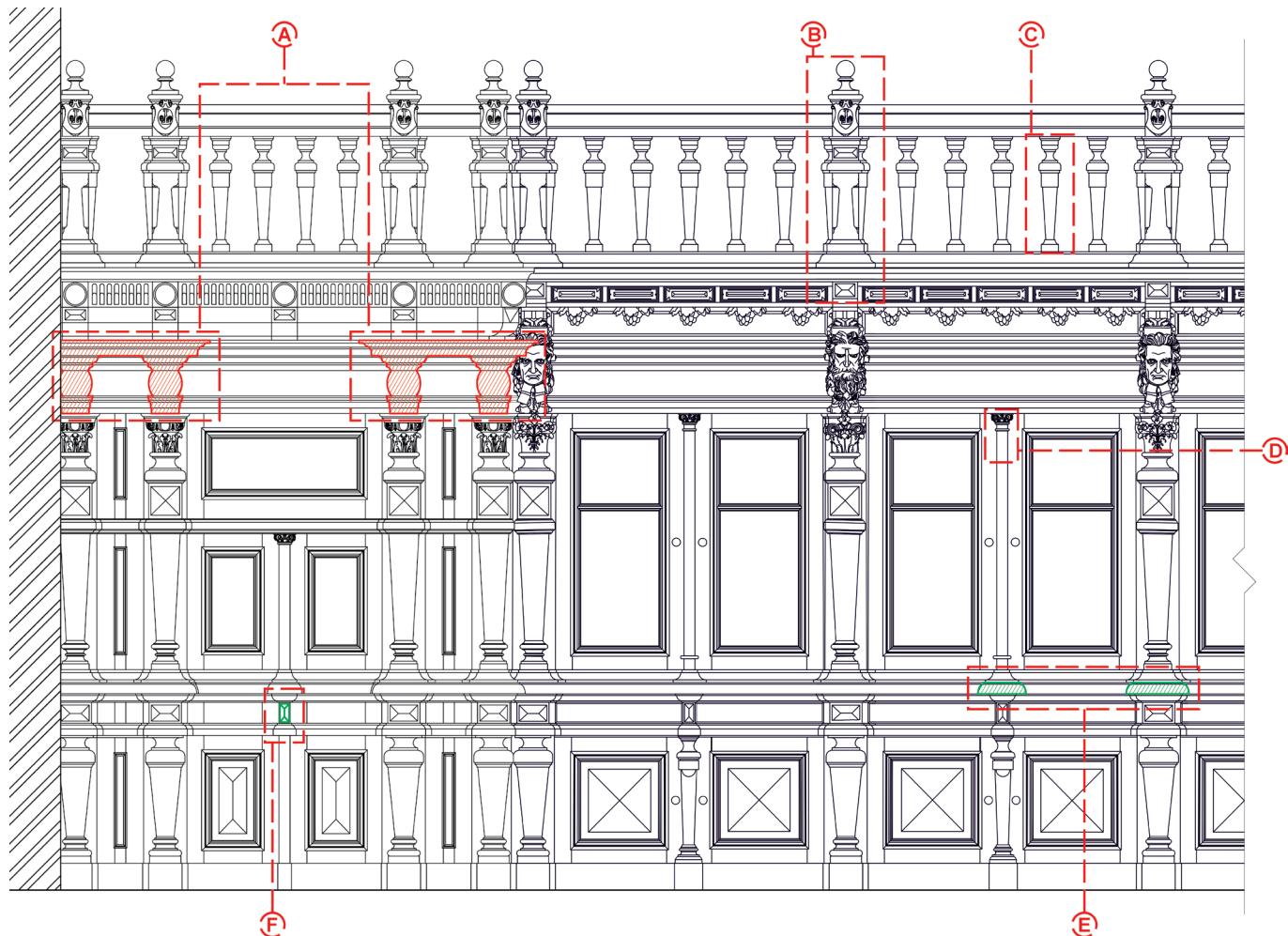


Figure 14. Drawing of a section of the bookcase façade. Comparison of differences with the original drawings: A – elements absent from the original drawings that complete the columns; E – missing column terminations (indicating the termination of the countertops, likely inaccurately represented in the original plans); F – absent diamond motif on the bookcase doors (possibly lost). B, C, D - continuation on the next figure. *Drawings and measurements by N. Datsko*

The Construction of the bookcase. The drawings do not provide sufficient information regarding the structural design of the bookcase, making it difficult to determine the accuracy of the project's implementation. In particular, the side section, which includes the staircase, is not sufficiently represented in the drawings. Essential dimensions such as widths are omitted. The frontal elevation primarily emphasizes decorative features, while the constructive framework remains largely unexplored. Nevertheless, field investigations reveal that the bookcase constitutes a complex framework structure organized according to a frame system. A comparative analysis of the existing bookcase and the original drawings indicates that the craftsmen followed the project with only minor deviations.

Artistic Elements of the bookcase. The decorative system of the bookcase can be categorized into two distinct groups: architectural and artistic ornamentation. Overall, the differences between the realized bookcase and the original drawings are minimal, limited primarily to minor dimensional variations in certain elements. It should also be noted that the decorative details in the drawings are depicted in a rather schematic manner. The most significant divergence

concerns the mascarons: instead of the lion heads depicted in the drawings, the completed bookcase features alternating portrait mascarons representing Julian Zakharevich and Leonard Marconi.

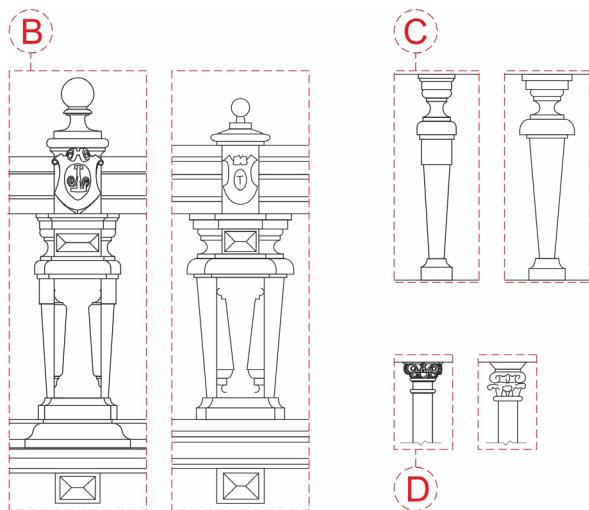


Figure 15. Comparison of the balusters and capitals with the original drawings (Left – measured drawings of the bookcase; right – reconstructed original drawings): B – baluster between sections, C – baluster, D – capital of the display bookcase door. *Drawings by N. Datsko*

In summary, the project designed by Julian Zakharevich was executed with exceptional craftsmanship, resulting in a bookcase of remarkable aesthetic and artistic value that stands as a testament to the creative and technical mastery of Lviv Polytechnic's craftsmen.

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