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RENOVATION AND ADAPTATION OF A HISTORIC MODERNIST FACILITY TO CONTEMPORARY FUNCTIONAL AND UTILITY NEEDS

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Abstract

The article addresses the issues of conservation and renovation of historic buildings from the turn of the 19th and 20th centuries, located in the historic areas of the city of Częstochowa (Poland). It discusses actions aimed at organizing the historical urban fabric through a comprehensive approach to the protection of architectural monuments, including their conservation and adaptation to modern functional uses. This process poses a particular challenge in urban areas, where interventions affect well-preserved architectural and urban ensembles of high cultural and historical value. In the context of globalization, the issues of conservation and the use of historic buildings play a key role in shaping local identity and residents' sense of belonging to their place of residence. The article analyzes the practical aspects of renovation and adaptation using the example of a selected historic building – a modernist city villa located in the central part of the city. Due to the building's significance for the city's urban structure, its protection and renewal present a significant challenge for architects and conservation specialists. The article presents an implemented architectural-conservation project, which serves as an example of effective cooperation between institutions and specialists involved in the process of revitalizing cultural heritage areas. The research methods used include the analysis of scientific and professional literature, participant observation, document analysis and the development of original conservation projects. Based on the conducted research, conclusions were drawn regarding strategies for preserving the identity of a place through the protection of historic buildings and their adaptation to contemporary functional and user requirements.

Keywords*: Cultural heritage protection; Preservation; Revitalization of downtown areas; Restoration and enovation of monuments*

Introduction

The renovation of architectural sights, especially modernist buildings from the first half of the twentieth century, is one of the key challenges of contemporary protection of cultural heritage. This period is characterized by the development of scientific concepts and methods of renovation, the purpose of which is to preserve the authenticity of the buildings and, at the same time, to enable their adaptation to modern functions. These activities are inextricably linked to the need to ensure the durability of historical structures and their integration with the dynamically developing urban and social environment [1].

These issues are particularly significant in the context of globalization, where the study, protection and adaptation of the sights are becoming important elements shaping the national

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and local identity. The protection of architectural heritage is not limited only to its conservation but also to thoughtful adaptation, which allows the reuse of objects adapted to contemporary needs and functions. The activities are based on the concept of restoration of historic building complexes, which will be discussed in more detail in the literature [2].

This article aims to present the practical aspects of the renovation of historic modernist buildings on the example of a villa from the 30s of the twentieth century, located in Częstochowa, in the historical areas of the city. The renovation process, which included both the building itself and its surroundings, was presented in the context of activities to organize historic urban fabric. The concept of adapting the building and its external space to the contemporary requirements of cultural functions was also discussed. The case study shows the effective cooperation of institutions and people involved in the conservation and renovation process, being an example of a coherent approach to the protection of architectural heritage in the changing socio-cultural reality. The legal basis for the rules of conduct in the field of protection of tangible heritage is the Act on the Protection and Care of Monuments of 2003, as amended and the Construction Law [3].

Aim of the study

The subject of the opinion is the historical building, the so-called "General's Villa" at 30 Wyzwolenia Street in Częstochowa (plot registration number 76, precinct 182), designated by the contracting authority for renovation for cultural purposes as the seat of the Centre for the Documentation of the History of Częstochowa of the Częstochowa Museum and the exhibition rooms of the Centre for the Promotion of the Young. The renovation activities include all maintenance, renovation and adaptation work. They are aimed at preserving the historical value of an important part of the city. This place plays an extremely important culture-forming role related to the material and artistic heritage accumulated over the centuries. The building called "General's Villa" is a valuable example of a modernist villa in the city [4]. It is a corner building in the continuous development of the western side of Wolności Street. It is part of a specific urban layout, a complex of harmonizing buildings, such as Kohn's house (second half of the 19th century), Biegański's house (second half of the 19th century) or the so-called Prince's House (first half of the 20th century) [5]. The building is not listed in the register of monuments, but it is protected by an entry in the register of historic buildings of the Monument Protection Service and is covered by the conservation protection – municipal city registers.

The aim of the study is a project of conservation and renovation of the building, taking into account the contemporary assumptions and the functional-utility assumptions of the building. The scope of the study includes construction works necessary to restore the proper technical condition of all elements of the building's structure and its surroundings. The project also includes solutions for adapting the existing facility to be used by people with disabilities (ramp, elevator). The works related to the conservation and renovation of the building were aimed at maintaining the historical character of the building along with its historic substance. In particular, the original layout of the rooms was restored, the historical character of the interiors with a representative staircase was preserved and the window joinery, decorative elements of the façade and fences were renovated.

Methodology

The research that was carried out concerns the process of renovation and conservation in terms of preserving the value of historic buildings, as well as their adaptation to modern utility functions. The conservation and renovation activities concern a modernist building - a city villa (General's Villa) from the 30s of the twentieth century, located in Częstochowa, in the historical areas of the city. The article presents a completed architectural and conservation project, which is an example of successful cooperation between institutions and experts in the field of revitalization of cultural heritage areas.

The main investor and owner of the facility, the Municipality of Częstochowa, decided to cooperate with the project team together with the experts of various fields and with the municipal conservator of monuments. The care of the conservator of monuments was necessary in this case due to the nature of the project and its location in the downtown areas of the city of Częstochowa, in the zone of direct conservation protection. During the implementation of the project task described, funds were used under the Northern Subregion Development Program, Priority IV. Measure 4.1. Cultural Infrastructure. The legal basis for the rules of conduct in the field of protection of tangible heritage is the Act on the Protection and Care of Monuments of 2003, as amended and the Construction Law [2, 3].

The system of monument protection in Poland in light of contemporary conditions

The current shape of the principles of conservation and restoration of monuments in Poland is the result of the political changes that took place at the turn of the 80s and 90s of the twentieth century. In the period of the People's Republic of Poland, the responsibility for all decisions related to the protection of monuments, including those related to design solutions, financing and available funds, rested with state institutions. At that time, the conservator of monuments was a representative of a state institution and his decisions concerned buildings owned by the state. All conservation investments were financed from public funds and carried out by state-owned conservation companies [6].

Currently, we are observing a gradual withdrawal of the state from responsibility for the historic architectural resource. As a result of ownership transformations, most of the architectural monuments in Poland became private property. Therefore, the role of the conservator of monuments has changed from decision-making to advisory. In a situation where conservation works are financed from private funds, the conservator can only suggest solutions to the investor to use [7].

The basic legal regulation defining the rules of conduct in the field of protection of material heritage in Poland is the Act on the Protection and Care of Monuments of 2003, as amended and the Construction Law [3]. The protection of monuments includes administrative activities that are undertaken by the Provincial Conservator of Monuments and the Ministry of Culture and National Heritage. In some cases, these duties are taken over by the municipal conservator of monuments.

On the other hand, the care of monuments, which includes, among other things, carrying out renovations and conservation works, rests with the owner of the building – in the analyzed case, it is the Municipality of the City of Częstochowa. The owner of the monument is also responsible for preparing appropriate design and pre-design documentation, commissioning research works and obtaining external sources of financing for the needs of conservation works. All activities must be agreed upon with the appropriate conservation services [8].

After 1989, as a result of the political transformation, there has been a constant debate in Poland on the shape of the national program for the protection and care of monuments. Despite the passage of more than three decades, the direction and scope of changes in the monument protection system have still not been definitively determined. As a result of these changes, the conservation community is facing increasingly limited possibilities of action [9].

Currently, as part of the ongoing discussion on the future of the monument protection system, despite the clear voice of the Polish National Committee ICOMOS and the National Heritage Institute, it has still not been possible to develop a comprehensive vision of the new monument protection system in Poland. The further part of the article presents a detailed description of the process of conservation and renovation of a historic modernist villa, considering the contemporary political, economic and social conditions in Poland [10].

Historical outline of the building

The villa located at the intersection of 56 Kościuszki Street (30 Wolności Avenue since 1932) and Zielona Street (Ferdynand Foch's Avenue since the 30s of the twentieth century) is an important element of the architectural heritage of Częstochowa. The history of the building

dates back to the 20s of the twentieth century and its fate is closely related to many transformations of the city. The villa has a modernist body with characteristic semicircular windows: a large one above the porte-fenêtre entrance and other smaller ones in the same character on the first floor. The interior of the building is distinguished by original woodwork: paneling, doors and wooden stairs, designed especially for this property. Around the villa there was a garden with a wooden arbor.

Until the 1930s, the fate of the villa and its owners is unknown. In the early 30s of the twentieth century, the villa became the property of the Częstochowa branch of the Accident Insurance Company, whose headquarters were located in Lviv. This institution leased the building to the army and from 1933 it was inhabited by successive commanders of the 7th Infantry Division. In the years 1933–1935, Colonel Wacław Stachiewicz resided here and in the period 1935–1939, General Janusz Gąsiorowski. From the end of 1939 to January 1945, the villa was in German hands [11].

Post-war fate of the villa

After World War II, the building became the property of the state. In 1945, a military kindergarten was in the building and from 1948 it was inhabited by officers of the Polish People's Army with their families. After the military families left the building, the building was intended for the needs of the Provincial Bureau of Art Exhibitions. In the years 1981–1991, it also housed the Częstochowa Music Society, the Social Ballet Centre and the Department of Culture and Art of the Town Hall. Chamber concerts and ballet performances were organized on the first and second floors. Changes in function resulted in the reconstruction of the interior of the villa. This resulted in the demolition of the original divisions and the introduction of new ones [12].

In the period 1997-2003, the building was the seat of the Częstochowa Capital Group, after which it became the property of the city, which leased it to the Częstochowa Museum. For some time, the villa housed the management and accounting department of the museum [11].

In the years 2010-2011, at the request of the City Hall (the owner of the facility), full inventory and design documentation was prepared. It was the basis for undertaking maintenance and renovation activities with the support of European funds.

General description of the structure of the modernist villa building

The building is a one-floor building with a basement and a non-usable attic. It was designed in a traditional structure, with a transverse load-bearing wall system. The external walls are made of solid brick, while the lintels above the window and door openings took the form of Klein-type brick arches. The ceiling above the basement is segmental, based on steel beams that are supported by transverse walls. The ceilings above the ground floor and the first floor have a wooden structure.

The roof structure is wooden and gabled, with a varied angle of inclination of the roof slopes. The roof truss has a purlin-tie structure, with two intermediate purlins. The roofing is made of flat sheet metal laid on formwork.

The stairs, both the main and utility stairs leading to the attic, have a wooden structure and are designed in a winding system [13].

Assessment of the technical condition of the building

In order to assess the current technical condition of the building at 30 Wolności Street, its technical inspection, macroscopic examinations and photographic documentation were prepared. The building has a compact but varied body, with decorative motifs, wide cornices, original arched window joinery and decorative flower grilles under the windows. The building is topped with elbow walls on the east and west sides (Figs. 1 and 2).

Fig. 1. View from Wolności Street (author's photos: A. Kysiak)

Fig. 2. View from Focha Street (author's photos: A. Kysiak)

Fig. 3. Surface detachment of plaster within the first floor (author's photos: A. Kysiak)

The technical condition of the building has significantly degraded due to some breaks in the building and the lack of renovations in recent years. This is especially visible on the façade of the building. There were numerous surface losses of plaster as well as some brick chipping.

The highest dampness, detachment of external plasters, rotting of the bricks and washing of mortar from joints were found in the southeastern corner of the ground floor under the terrace (Fig. 3) and at the level of the first floor, within the junction with the neighboring building (Fig. 4). Leaks in the downpipe are the cause of significant damp patches at the veranda (Fig. 5).

Dampness of the external walls in the ground floor strip was also found due to the capillary rising of water from the ground due to the lack of vertical and horizontal insulation (Fig. 6). The lack of insulation also caused dampness of the basement walls, rotting of plaster, mold and freezing of the walls (Figs. 7 and 8) [14].

Fig. 4. Plaster loss and brick erosion at the ground floor level (author's photos: A. Kysiak)

Fig. 5. Stains and dampness on the walls in the area of the leaking downpipe (author's photos: A. Kysiak)

Fig. 6. Traces of plaster dampness in the plinth zone (author's photos: A. Kysiak)

Fig. 7. Dampness of basement walls in the southwest. (author's photos: A. Kysiak)

Fig. 8. Rot and fungus walls in the basement (author's photos: A. Kysiak)

However, as a result of the inspection, no significant damage to the load-bearing walls of the building was found. Minor damage and cavities in external walls do not threaten public safety. Therefore, the degree of technical wear of load-bearing walls was determined as medium. Despite the exclusion from operation, the condition of the plaster and elements of internal finishing of the rooms (except for the veranda) was considered satisfactory (Fig. 9).

However, the terrace and the walls of the veranda on the ground floor of the building require a major renovation. As a result of the leaky surface of the terrace and damage to the downpipe within the veranda, dampness, detachment of plaster and mold on the veranda walls occurred (Fig. 10).

Fig. 9. View of the southern halls on the ground floor and first floor of the building (author's photos: A. Kysiak)

Fig. 10. Dampness, rotting plaster and brick, mold infestation of the walls in the veranda on the (author's photos: A. Kysiak)

As a result of the inspection of the wooden ceiling above the ground floor, no visible deflections or warpings were found. Excavations of the ceiling above the first floor were also made. Taking into account the state of preservation, it was considered that the degree of technical wear of the ceilings does not exceed 40%. Taking into account the age of the building, the technical condition of the ceilings was assessed as average (Figs. 11 and 12).

Fig. 11.. Beam height measurement ceiling above the first floor (author's photos: A. Kysiak)

Fig. 12. Segmental ceiling above the basement (author's photos: A. Kysiak)

An inspection of the basements and the segmental ceiling on the steel beams above the basement showed that they were damp. However, no significant symptoms of corrosion of the steel beams of the ceiling were found in the accessible basement rooms (Fig. 13). The technical condition of the ceilings was considered average.

The central staircase leading from the ground floor to the first floor has the form of wooden two-flight broken stairs with a landing (Fig. 14). They can therefore be used as the main escape stairs in a public building. No visible bends or curvatures were found on the stairs. Outbreaks of biological wood pests have been noticed in a few places. There are some small gaps in the platforms. The stairs were properly maintained; their technical condition was considered satisfactory.

The utility (winding) stairs from the courtyard side (western staircase), leading to the

attic, are narrow and do not meet the current technical conditions. The wooden structure of the stairs is in average technical condition. It is necessary to strengthen them and replace the treads and balustrades (Fig. 15). The technical condition of the roof truss structure was considered to be of medium condition. Slight roof bends and leak points were found. Impregnation and insecticidal renovation are required, as well as strengthening of the roof structure, along with gutters, downpipes and flashings of cornices, chimneys and walls.

Fig. 13. Wooden stairs in the central (author's photos: A. Kysiak)

Fig. 14. View of the stairs in the west staircase (author's photos: A. Kysiak)

The technical condition of the window joinery was considered average. It was found to be partially dry and warped; the paint of the outside walls was peeled almost completely. Due to the original shape of the windows (especially arched ones), it was decided to not exchange them and carry out a major renovation (Figs. 16 and 17).

Fig. 15. Technical condition of the roof truss elements (author's photos: A. Kysiak)

Fig. 16. Window Balcony (author's photos: Kysiak)

Fig. 17. Window balcony in the stairwell at the first (author's photos: A. Kysiak)

The technical condition of the brick fence made of 2.3 m high brick is bad (Figs. 18 and 19). As a part of the planned renovation, the fence was dismantled and reconstructed in its original form with the use of dismantled and preserved decorative metal elements.

In connection with the planned use of the basements, the communication zone from the courtyard was rebuilt and adapted for use by the disabled. The existing communication zone was in very bad technical condition and did not meet the required technical conditions [15].

Fig. 18. Deflection fences from the street side of Focha (author's photos: A. Kysiak)

Fig. 19. Decorative fencing metal fencing panels (author's photos: A. Kysiak)

General description of the object's function

The building in question, in accordance with the functional program, is the seat of the Center for the Documentation of the History of Częstochowa of the Częstochowa Museum. The southern rooms of considerable size serve as an exhibition space for exhibitions and presentations related to the history of the city, as well as rooms for meetings, conferences and meetings of environmental groups related to the activities of the center. On the ground floor of the building, on the north side, space for the ODDC library was created. On the first floor, there will be documentary workshops and social, sanitary and technical rooms. The attic was adapted for an archive, a warehouse, two scientific and research laboratories and a space for the preparation of thematic exhibitions. In the basement of the building and the large room on the ground floor, there is space for the exhibition of the Centre for the Promotion of Young People (Figs. 20-22).

An internal elevator serving the basement, ground floor and first floor levels was also made in order to eliminate "architectural barriers." The land development project took into account all existing trees. The lawns have also been restored. The area was divided into sectors in the form of pedestrian communication and a parking zone, including the space for planned outdoor exhibitions [16].

According to the evaluation issued by the Provincial Office for the Protection of Monuments in Katowice, Branch Office in Częstochowa, it is recommended to leave the original décor of the villa: the door woodwork, paneling and wooden stairs. The works related to the conservation and renovation of the building were aimed at maintaining the historical character of the building along with its historic substance [17].

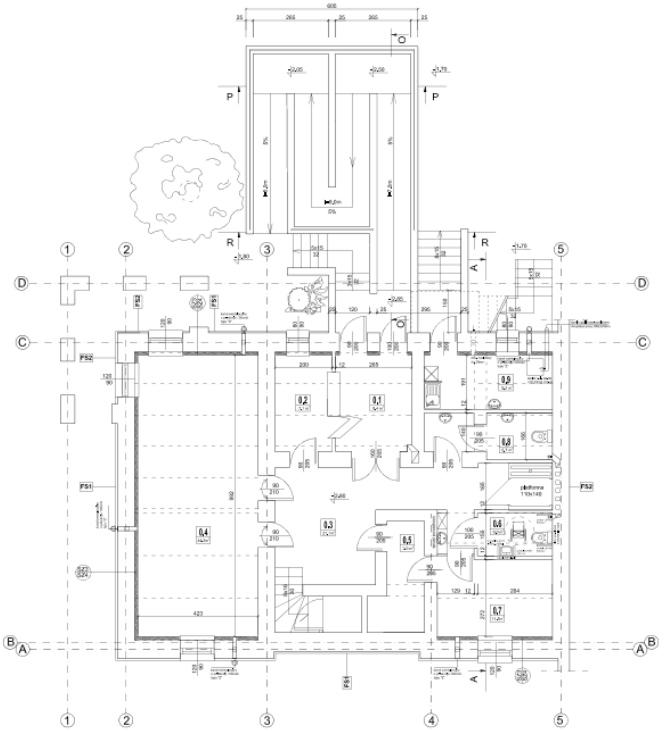


Fig. 20. Basement plan (author of the design: architecture Nina Sołkiewicz-Kos; construction: Jarosław Paluszyński and Andrzej Kysiak). To make the building accessible to the disabled in wheelchairs, a ramp was designed – an exit to the basement floor from the west. Access for the disabled people to all other floors of the building will be provided by an internal elevator adapted to the transport of disabled people

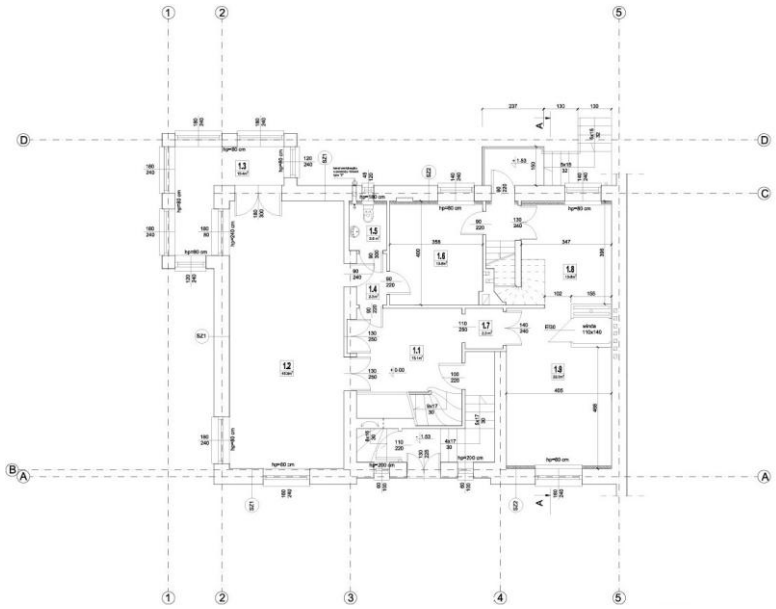


Fig. 21. Ground floor plan of the building - construction design (author of the design: architecture Nina Sołkiewicz-Kos; construction: Jarosław Paluszyński and Andrzej Kysiak). On the ground floor of the building, there will be an exhibition space for exhibitions, conferences and meetings of environmental groups. There is also space for a library related to the history of Częstochowa

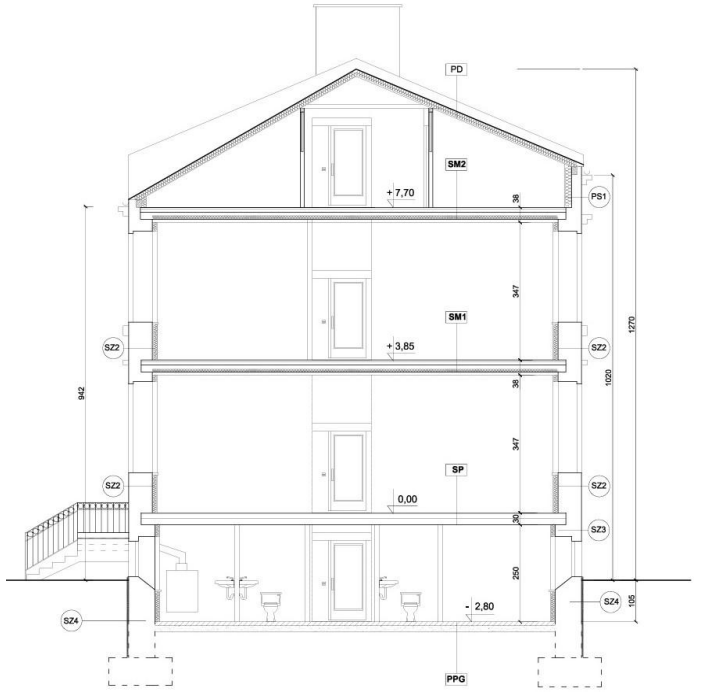


Fig. 22. Cross-section of the building (author of the design: architecture Nina Sołkiewicz-Kos; construction: Jarosław Paluszyński and Andrzej Kysiak). Visible spaces of individual floors

In particular, the original layout of the rooms was restored, the historical character of the interiors with a representative staircase was preserved and the window joinery, decorative elements of the façade and fences were renovated.

Selected Technical Issues

Reinforcement of Wooden Floor Structures

The timber floor structures in the building underwent both renovation and reinforcement. Based on height measurements of the ground floor ceiling, it was determined that the height of the floor joists was approximately 24cm. Calculations subsequently showed that the floor structure above the ground floor, composed of beams with cross-sections of 12×24cm, did not require additional reinforcement.

An exploratory opening in the floor above the first floor revealed that the joists did not meet the required load-bearing capacity for a technological load of 2.8kN/m², typical for office and storage spaces. Reinforcement was carried out by attaching 18×4cm overlay boards, nailed with 5×150mm nails spaced at 10cm intervals (three rows).

An assessment was also made regarding the biological degradation of the timber, including moisture content and fungal infestation. Upon exposing the beams, it was found that the ends of the joists embedded 25cm into the wall niches exhibited signs of biological corrosion. The damaged portions of the beams were cut out and replaced with C-sections of the same height as the timber beams. These were fastened to both sides of the remaining wooden section using bolts (Figs. 23 and 24) [18].

To improve the fire resistance of the floor assembly, a suspended ceiling made of gypsum board was installed on the underside of the timber structure and treated with a fire-retardant wood preservative. The cavity between the floor beams was filled with mineral wool insulation with a minimum thickness of 10cm.

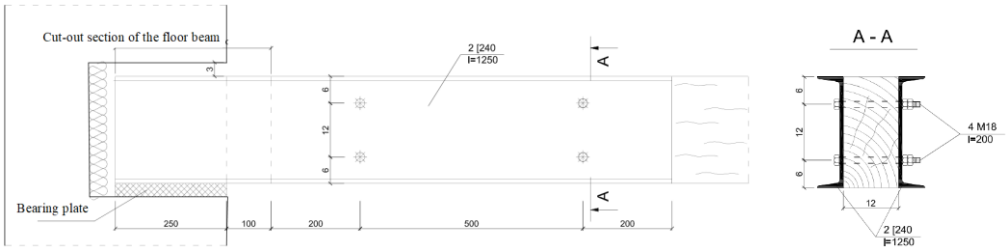


Fig. 23. Method of strengthening the ceiling beam above the ground floor

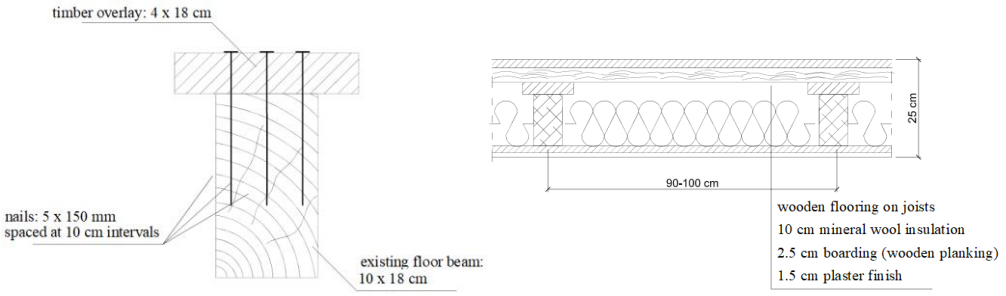


Fig. 24. Method of strengthening the ceiling beam above the upper floor

Structural Reinforcement of the Basement Ceiling

The ceiling above the basement, constructed as a segmental vault supported by steel beams, is classified as a fire-resistant floor system. For the anticipated technological load, the load-bearing capacity of the floor is sufficient for the steel I-beams of type IPE 260. The bottom surfaces of the beam flanges were cleaned of rust and protected by applying a steel mesh underlayer and a plaster coating. The flanges of the steel profiles were also secured for both corrosion protection and fire resistance.

In the area of the demolished reinforced concrete staircase in the western stairwell, which previously connected the basement with the ground floor, a supplementary floor slab was installed. This slab is supported on a reinforced concrete beam spanning the space where a partition wall was removed. The new slab is a 10cm thick reinforced concrete plate, reinforced with 8mm diameter bars spaced at 10cm intervals, with distribution bars of 6mm diameter spaced at 20cm.

In the location of the demolished opening for the elevator shaft, one of the steel beams of the segmental ceiling had to be removed. For this purpose, the entire bay of the segmental ceiling along its length was dismantled. In place of the removed ceiling, a new reinforced concrete slab was constructed, reinforced with 12mm diameter bars spaced at 15cm and welded to the outer steel beams (Fig. 25) [19].

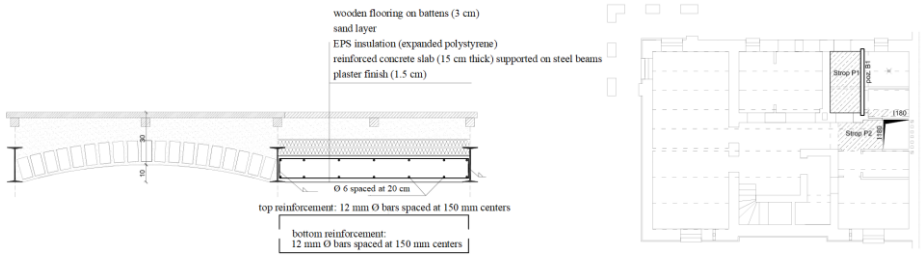
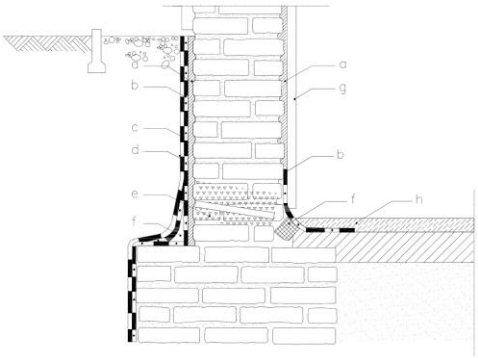


Fig. 25. Modernization of the segmental ceiling above the basement

Drying and Sealing of Basement Walls

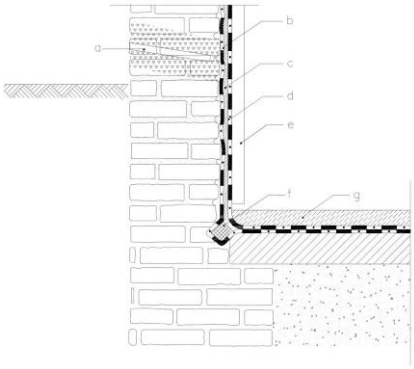
The adaptation of the basement for use as utility and storage spaces necessitated the elimination of moisture and fungal infestation in the walls. To achieve this, a horizontal damp-proof course and vertical waterproofing were both designed and implemented, along with a comprehensive antifungal treatment of the basement walls.

Due to limited accessibility to the exterior sides of the basement walls along extended sections of the façade (such as the north gable wall, exterior stairs and veranda), two types of wall sealing systems were applied: internal and external. Wall drying was carried out by drilling holes and injecting a chemical agent that forms a horizontal barrier to prevent capillary rise of moisture within the masonry [20] (Figs. 26 and 27).



a. leveling layer
b. primer
c. damp-proofing membrane
d. temporary protection during excavation – 2x PE foil layers
e. injection against capillary rising damp
f. mortar-based facade
g. renovation plaster
h. cement screed

Fig. 26. External sealing of the basement wall



a. injection against capillary rising damp
b. primer
c. leveling (smoothing) layer
d. waterproofing membrane
e. renovation plaster
f. mortar-based facade
g. cement screed

Fig. 27. Internal sealing of the basement wall

Adaptation of the building to the needs of persons with physical disabilities

In order to make the building accessible to individuals with physical disabilities using wheelchairs, a ramp was designed to provide access to the basement level from the western side. Access to all other floors of the building is ensured by an internal elevator adapted for the transport of persons with disabilities.

The external ramp designated for persons with reduced mobility features a movement surface width of 1.2 meters and is equipped with handrails on both sides, spaced between 1.0 and 1.1 meters apart. The length of the level surface at both the beginning and end of the ramp is at least 1.5 meters. Along the ramp, two-level steel handrails were installed at heights of 0.75 meters and 0.9 meters.

Access to all other floors is provided by an internal elevator designed for wheelchair users, featuring a platform measuring 110 by 140cm.

Accordingly, a new foundation slab for the elevator shaft was constructed. The 30cm thick reinforced concrete slab, placed on lean concrete, is founded at the same level as the adjacent wall foundations of the building. A hygienic-sanitary room for persons with disabilities was also planned within the basement level [21].

Results and Discussion

The conducted research focused on the renovation and conservation of historic buildings, with particular emphasis on preserving their historical value while adapting them to contemporary functional uses.

The undertaken renovation and conservation efforts in the case of the villa highlighted three key issues that are crucial for maintaining the heritage value of the building and successfully adapting it to modern user needs. These include the process of thermal modernization of a historic structure, the preservation of original window and door joinery and the protection of the original interior design elements in the context of their adaptation to present-day functional requirements [22].

Thermal Modernization of a Historic Building

The thermal modernization of historic buildings presents numerous challenges, primarily due to the need to balance contemporary energy efficiency requirements with the preservation of a building's historical value [23, 24]. Key issues associated with the thermal upgrading of heritage buildings include:

a. Preservation of Historical and Architectural Values

The historic General's Villa features unique architecture, detailing and original materials that must be preserved. The process of thermal modernization, including the introduction of new technologies such as insulation, may interfere with the building's appearance and compromise its historical character.

In such cases, it is essential to identify solutions that comply with heritage conservation regulations while also achieving energy efficiency objectives [25].

b. Ventilation and Indoor Microclimate

A gravity-based ventilation system was designed for the villa, utilizing the existing chimney flues. The introduction of modern heating and insulation systems could alter the indoor microclimate. In the case of the villa, this is particularly important due to the need to preserve the historic interior decor, especially wooden elements, such as the original wood paneling in the central staircase area.

c. Risk of Material Damage and Lack of Universal Solutions

During the process of thermal modernization, there is a risk that modern materials or construction techniques may not be compatible with the original building materials. For instance, applying modern external insulation systems can lead to moisture accumulation within the masonry, which may result in its degradation—particularly if the original building fabric is not suited to such changes. Since every historic building is unique, the solutions implemented in

thermal modernization must be tailored to the specific conditions of the individual structure. This means that no universal approach exists; each modernization project requires a carefully developed design that addresses both energy efficiency needs and the preservation of historical values [26].

Although insulating the external walls of the building would improve thermal comfort, it would also significantly alter the appearance of the façade. Numerous decorative elements would be obscured or lost, such as prominent cornices and original ornamental grilles for flower boxes beneath the windows. The window reveals would also become significantly deeper, diminishing their visual prominence.

Given these considerations, the method of external insulation was formally excluded based on conservation requirements outlined in a statement issued by the Voivodeship Office for Heritage Protection on August 25, 2008. Only the thermal modernization of essential building components was carried out—exceeding standard requirements—including the application of enhanced thermal insulation layers to the roof slopes, attic floor, ground-level floor, foundation walls and basement walls (Fig. 28).

Fig. 28. Building elevation after renovation – preserved historical character of the building (author's photos: N.Sołkiewicz-Kos, M.Tubielewicz-Michalczuk)

Renovation of Window and Door Joinery

The renovation of deteriorated window and door joinery in a historic building is the preferred approach for several reasons, primarily stemming from the need to respect the building's historical value and preserve its authenticity. Recommended actions regarding the renovation of existing architectural elements include:

a. Preservation of Authenticity and Material Value

Historic windows and doors often serve not only as structural elements but also as integral components of a building's historical character. Renovation enables the preservation of original materials, shapes and details that possess historical and cultural value. In many heritage buildings, the original joinery was crafted from high-quality materials that may offer greater durability and value than their contemporary equivalents.

b. Significance for the Building's History

In certain cases, preserving the original doors and windows is crucial from the perspective of architectural history. These elements may provide valuable insight for researchers studying the history of the building, its previous owners and the development of construction technologies during a specific period.

c. Compliance with Heritage Protection Regulations

Many countries have heritage protection laws that require the preservation of original architectural elements wherever possible. Renovating existing joinery is often the preferred approach, as it enables the retention of the building's historical appearance, which may be a

legal requirement under heritage protection frameworks.

According to the guidelines issued by the Office for Heritage Protection (letter dated August 25, 2008, concerning the building's renovation concept), it is recommended that the existing window and door joinery be preserved and renovated. Although the thermal insulation performance of the existing box-type windows is lower than that of modern double-glazed units, their structural configuration provides a balanced thermal barrier across the wall.

In contrast, modern plastic-frame windows can lead to condensation when the window recess is not insulated. This is due to the rapid heat transfer through the short section of wall surrounding the frame installation, which results in vapor condensation at the warmer interior side during winter, caused by the temperature differential between the inside and outside.

The renovation of the window and door joinery included the removal of old paint layers, degreasing, filling of wood cracks and losses and realignment of the sashes to the frames (Fig. 29). The renovation also included the property's fence. The perimeter wall and the decorative metal grille were restored (Fig. 30).

Fig. 29. Building elevation after renovation – visible original, restored window joinery and refurbished original flower grilles beneath the windows (author's photos: N.Sołkiewicz-Kos, M.Tubielewicz-Michalczuk)

Fig. 30. Property fence after renovation – visible restored fence wall as well as the original, refurbished decorative metal grille (author's photos: N.Sołkiewicz-Kos, M.Tubielewicz-Michalczuk)

Issues Related to the Adaptation of a Historic Building for Public Use and the Installation of an Elevator Shaft for Persons with Disabilities

The adaptation of a historic building for public use involves a careful balance between preserving the heritage value of the structure and ensuring its functionality. This process requires consideration of both the protection of the building's historical character and its compliance with contemporary user requirements, including accessibility for persons with disabilities.

The introduction of new elements within the villa, such as elevator shafts and circulation systems (ramps), was carried out in a manner that minimizes interference with the original structure while enabling comfortable and safe use in accordance with current building and legal standards. This adaptation required close collaboration with the heritage conservator and the implementation of innovative technical solutions that harmonize with the historical context of the building [27].

Conclusions

Częstochowa is a city with a rich history and a clearly defined spatial structure, in which the downtown areas occupy a particularly significant place. These areas offer substantial aesthetic and functional value and the way they are developed emphasizes the importance of the city while serving as an example of contemporary continuation of urban tradition.

This article presents a case study of the renovation and conservation of a historic building, which are inherently linked to the need for preserving the durability of historical structures and integrating them with a dynamically evolving urban and social environment. The changing modes of use of historical cultural spaces and the effort to harmonize architecture with the functions of new urban places form the basis for shaping a coherent urban fabric.

The renovation and conservation of a historic structure, namely, a modernist villa, exemplify an appropriate strategy and set of practices in shaping the cultural space of the city. The renovation project demonstrates the potential for interpreting Częstochowa's historical urban framework and shows how, despite the passage of time, a historic building can be successfully adapted to new functions that respond to the needs of the contemporary urban community. At the same time, the project preserves key structural elements of the building that constitute an integral part of an urban context of exceptional historical and cultural value.

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