

CONSERVATION AND RESTORATION WORKS IN THE BALLROOM OF THE OFFICERS' CASINO IN THE MODLIN FORTRESS IN NOWY DWÓR MAZOWIECKI

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Abstract

The article describes the list and technologies of conservation and restoration works in the ballroom of the Officers' Casino in the Modlin Fortress in Nowy Dwór Mazowiecki. The history of the development of the Modlin Fortress and the site of the Officers' Casino building are traced, and the stylistic solution of the façades and interiors of the casino is characterized. The main reasons for the emergency state of the hall decor and their manifestations have been determined. The process of carrying out restoration works in the ballroom of the Officers' Casino is described in detail.

Keywords: Modlin Fortress; Officers' Casino; Emergency issues; Restoration works.

Introduction

Significant changes in the management of architectural heritage in Poland have been influenced by the political transformation, membership in the European Union, and related opportunities for the use of aid funds. Modern revitalization works are aimed at achieving two equal goals: preserving historical buildings as objects of cultural heritage and filling them with modern functions, which is a condition for their continued existence [1]. Achieving these goals requires the coordinated work of interdisciplinary teams consisting of architects, conservators, art historians, and craftsmen. Professor Molski notes that "conservation procedures are necessary today, but they are not the only factor that affects the condition and survival of the monument. They are one of the elements of architectural heritage management in a broad sense, which also includes: the selection of appropriate application programmes; obtaining financial resources (including European ones); preparation of project documentation; implementation of renovation and modernization tasks (usually with the application of the Law on State Procurement, which is unfavourable for monuments); promotion and tourist information; use of the facility that generates funds for its maintenance; programming of target visions, and others" [1]. The specifics of conservation and revitalization works involving former fortification and defence complexes are determined by their scale, material and structural features, and primary purpose, which limits their further development and filling with other functions.

In 1999, by the decision of the Prime Minister of the Republic of Poland, the Interdepartmental Commission for the Development of the Modlin Fortress Development Concept was established with the participation of representatives of the State Treasury, the

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Ministries of National Defense, National Education, Environmental Protection, Culture and National Heritage, as well as local self-government bodies and Society of Friends of Fortification. The purpose of the commission was to develop an action plan for the legal protection of the fortress as an inseparable whole, with a recommendation to create a fortress cultural park with a directorate, regulate ownership relations or include proposals in a strategic government program with the appointment of a government commissioner for its implementation.

A year later, the Program Analysis Department of the Prime Minister's Office developed a preliminary concept of the *Modlin Fortress* pilot program for the government and local self-government. It was supposed to be based on the Local Development Strategy, developed as a result of holding seminars of various local communities, the result of which was the determination of priority directions for receiving funds. In the end, due to insufficient preparation, the pilot program was not implemented, but the experience gained as a result of the work carried out was important in the development of later plans for the preservation of large-scale former fortress complexes [2].

In 2016, far-reaching development plans for the citadel of the Modlin Fortress were created, related, in particular, to the expansion of logistics capabilities for the airport in Modlin. Unfortunately, the conceptual design was prepared without the necessary research and conservation recommendations. The presented visualizations clearly showed the significant damage to the earthen fortifications and the excessive construction of the territory, which made it impossible to preserve the historical volumetric and spatial solution of the fortress, provided by the project proposals [3].

In 2017, funds for the revitalization of the Officers' Casino in the Modlin Fortress were received within the framework of the regional operational program of the Mazovian Voivodeship for 2014-2020 [4].

The conservation and reconstruction work described in this article was carried out from May 2021 to December 2022.

The purpose of the article is to investigate, using the example of the ballroom of the Officers' Casino in the Modlin Fortress in Nowy Dwór Mazowiecki, the methodology of conservation and restoration of decorative wall paintings: faux wood grain finishing and polychrome ornaments. Technological issues were presented along with extensive photo documentation illustrating the state of room s' preservation and the results of conservation work.

Materials and methods

The methods of field survey, analytical method, as well as empirical research and the method of photo-fixation were used. The information was supplemented with a historical overview of the entire Modlin fortress and a description of the architectural and stylistic design and functional and spatial planning of the Officer's Casino.

Scientific sources were developed in the following areas:

1) general issues related to the concept of art in art history and restoration activities, as well as in the specialized training of specialists in the field of restoration – works by *P. Gryglewski et al.* [5], *M. Orlenk and, Y. Ivashko* [6], *G. Stabiński* [7], *P. Sztabińska-Kalowska* [8], *M. Weitz* [9];

2) general restoration aspects – publications by *E. Malachowicz* [10], *B. Marconi* [11], *P. Molski* [1, 2];

3) the issue of preservation of cultural heritage and museification – articles by *V. Plokhotnyuk and L. Mitrofanenko* [12], *P. Spiridon et al.* [13], *L. Pujia* [14], *P. Tišliar et al.* [15];

4) restoration technologies – works by *D. Bajno et al.* [16], *W. Borusiewicz* [17], *L. Luvidi et al.* [18], *Z. Mączyński* [19], *W. Ślesiński* [20], *J. Witkiewicz-Koszczyk* [21];

5) research of the Officers' Casino in Modlin Fortress – publications by *U. Brzozowska-Drozdowicz and G. Mądrach* [22], *C. Głuszek and A. Gruszecki* [23], *M. Janicki* [24], *M. Paździora Sattler* [25].

The processing of scientific sources proved the insufficient coverage of the restoration and restoration measures carried out in the previous years in the halls of the Officers' Casino and the need to generalize the existing project documentation.

Results and Discussion

Historical review of Modlin Fortress

Russian fortifications are part of the "open-air museum" of fortifications built in Poland by the states participating in the Poland Partitions, and the direct impetus for their implementation was the November uprising, which made the Russians aware of the need to build additional fortified points and prisons. After the suppression of the uprising, the Russian invaders began a thorough modernization of the Modlin fortress (renamed to Novogeorgiyevsk in 1834) [26, p. 177]. The first Russian fortifications on Polish lands were built as central bastions according to French models and implemented by General Ivan Den. The architectural style used in these projects is the Historicism prevailing at that time [27]. In the second half of the 19th century, Russian fortifications were rebuilt. The defensive lines were transformed into a bastion line, in which the bastion-forts remained, which served as artillery batteries for long-range combat, supplemented by positions for infantry [26, p. 179].

At the turn of the 3rd and 4th quarters of the 19th century, the citadel of the Modlin Fortress lost its military significance, but, nevertheless, it was supplemented with buildings that were the immediate logistical base for new fortresses. After 1864, barracks with an Orthodox church, a fortress commandant's office, a water tower, and toilets were built in the inner courtyard, as well as many premises in the outer courtyard, such as a laundry, officers' barracks, and the official Officers' Casino.

The 2,300m continuous barracks perimeter combined earlier, smaller buildings with historic facades, resulting in a variety of barracks facades from the courtyard side. In part, they have a late-classical decoration – "in the western part of the two-story facade of the northern wing, sectionally closed with recesses and massive windowsills on the ground floor, and on the upper floor with a rhythmic arrangement of three windows separated by Tuscan pilasters supporting parts of a triglyph frieze. In the southern wing of the barracks, the former Napoleonic gate, rusticated with two barrel-shaped passages, was adapted" [23, p.37].

The facade of the Casino, which is made of yellow brick with plastered elements, also has pseudo-historical neo-Gothic forms.

Officer's casino of the Modlin Fortress: characteristics of the object

The building of the former Officers' Casino is the most exquisite architectural structure of the Modlin Fortress with a representative functional program and a rich architectural solution. Many elements of authentic decor and partially original equipment (such as chandeliers) have been preserved, giving an idea of its original appearance.

The casino was built for Russian officers who were stationed in the Modlin fortress around 1905-1906. The four-story, partly with basement building in the form of a palace was designed by a Russian architect (name unknown), probably with the participation of the Polish architect Piotr Leon Karasinski. The building has a T-shaped plan and a fifteen-window facade, which is oriented to the south. Nearby is a passage with an arcaded portico covered by a terrace with a concrete openwork balustrade. The Neo-Gothic front facade was extended as a risalite, surmounted by an attic with buttresses and false windows, supported by a muscular cornice, also encircling the rear wing [23, p. 44]. The building is built in a traditional style for barrack buildings, which is based on a facade wall made of red smooth and profiled ceramic bricks with seams filled with lime-sand mortar [28]. Decorative elements had to imitate natural sandstone. They were made of cement mortar with a smooth surface. The entrance portico is made in the same technique of monolithic and drawn elements: rusticated pillars and pilasters with profiled bases, beams, a terrace, and a balustrade. The facade risalite was originally decorated with coats of arms depicting the patron saint of warriors – St. George (Fig. 1).



Fig. 1. General view of Officers' Casino around 1917. (Archive photo <https://fotopolska.eu/785455.foto.html>)

The casino was equipped with electric lighting (an electric generator was installed in it) and central heating. The boiler pumped hot steam instead of hot water, which was an innovative solution at the time. Another technological innovation was the ventilation system: fresh air was supplied through holes in the shafts, closed with lattices, and the exhaust of the used air was carried out, for example, through decorative, openwork rosettes (in the ballroom) or through decorative lattice openings to the shafts [29]. The interior of the building was designed in an eclectic style based on Baroque and Classicism styles. The representative premises were the Ballroom (now the theater and cinema hall) and the Restaurant Hall (now the ballroom).

The reconstruction of the frontal risalite was carried out after the restoration of independence in 1918 and the capture of the Modlin Fortress by the Polish army. As a result, the main facade acquired features of the Neo-Renaissance. It can be assumed that the goal was to distinguish the casino building from others and to disassociate from the Russian origin of the building. The flat surfaces of the brick facade were covered with rectangular ceramic tiles of an other color, the cartouches with the Russian coats of arms were removed and replaced with

medieval coats of arms depicting the Polish eagle (according to the model of 1919-1927). Four pinnacles from the attic were also removed.

Most of the premises' transformations were carried out during the period when the building belonged to the Polish People's Army, when the internal premises, separated bathrooms, kitchens, projection cabin, etc. were rebuilt. The decorative parquet was also replaced, and the interiors repainted several times.

The ballroom (former restaurant): a stylistic and architectural solution

The ballroom is located on the ground floor of the building, on the north side of the facade. It has a rectangular plan measuring 12×26m (Fig. 2).

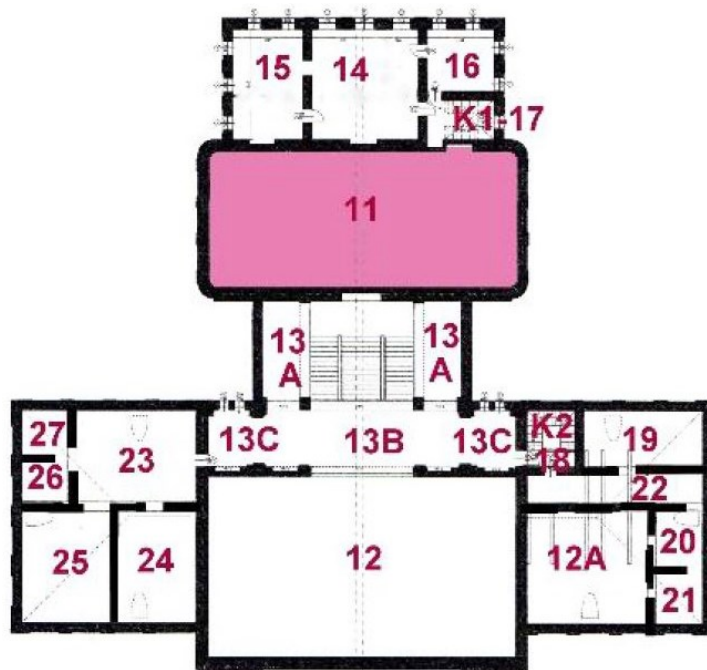


Fig. 2. The ground floor plan of Officers' Casino. Ballroom is marked in colour

The longer walls originally had triple, symmetrically located doorways. In the southern part of the room, the two margin openings give access to the great hall of the stairwell, and the middle one, flanked by columns on the side of the stairs, was the entrance to the balcony above the stairs (now defunct). Protection in the form of a forged balustrade in the Baroque style was used during the conservation work at the place of the balcony [22, p. 6].

In the shorter walls, there are triple rectangular windows, above which in the rounded vault zone there are semicircular lunettes. Half-round lunettes in facets are also located above the doorways in the side walls. Cartouches with sculptural decoration were placed at the tops of the lunette arches. The walls between the doorways are decorated with stucco planes, framed by decor with rounded inner corners. In the upper zone of the field, there is a shell motif surrounded by tendrils of plants.

The pictorial and sculptural decoration of the vault of the ballroom is based on Gothic, Renaissance, Baroque and Classicism motifs in ocher (dark and light), brown and dark green colors. The rounded part of the vault (the transition from the walls to the plane of the ceiling) is richly decorated with polychrome decor with plant motifs (mainly acanthus leaves and laurel

leaves), flowers and vases, complex rich geometric shapes. The background of the decor is a grain finishing imitating the oak texture. The corners of the rounded part of the vault have the shape of wedges with an arabesque composition of vases and finials, decorated with a regent ribbon in the candelabrum style. The shape of the lunettes is emphasized on the rounded concave surface of the vault with a train of S-shaped painted crepes, fastened in the lower corners with shells [22, pp. 6-7].

The ceiling was symmetrically divided into three fields, defined by stucco frames with an ovary and pearl motif, between which are placed paintings of plant tendrils on a grainy background. Inside the central fields, there are richly decorated rosettes with acanthus leaves, and the center of the rosettes is the place where the candelabras are attached (Fig. 3).

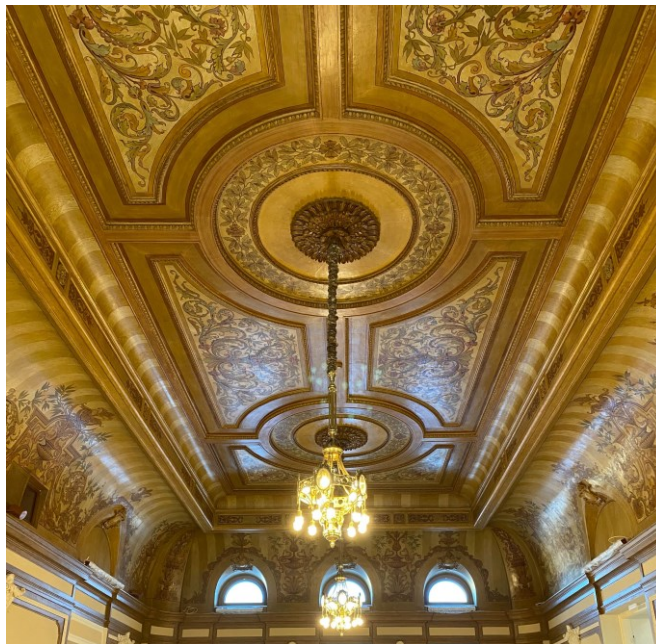


Fig. 3. General view of the Ballroom ceiling

The floor of the ballroom has been preserved in good condition and consists of parquet laid according to the English model at the turn of the 20th and 21st centuries.

The Ballroom state: the results of field surveys

Before the conservation works, the building was surveyed and the "Program for the Conservation of the Officers' Canteen in the Modlin Fortress" [23] was drawn up, in which it was recommended to restore the original, representative appearance of the ballroom. As a result of the on-site inspections, the following were found numerous chips and flaking of paint layers, numerous secondary layers of repainting with emulsion and oil paints, traces of scuffs under the repainting layers both on the stucco decorations and on the door fittings on the side of the ballroom.

The main areas of conservation work were defined as:

- removal of secondary repainting from the surface of the walls, ceiling, door fittings;
- reconstruction of faux wood grain finishing surfaces;
- replacement of wooden windows with restoration of their original appearance;

- carrying out conservation work on doors and parquet [23, pp. 8-9].

Initially, a glued mesh was placed on the ceiling of the ballroom on a wooden structure in the form of a crate, and lime-sand mortar was applied, and plaster putty was already applied to it. After preparing the surface polychrome painting with oil-based paints was performed. According to the results of the research, the following materials were found:

- gypsum – hydrated calcium sulfate;
- glutinous glue – protein glue of animal origin, from bones and skin;
- paints on binders made of linseed oil.

Unstable humidity and temperature conditions that prevailed at the site, as well as technological errors related to the production of the painting layer, affected the general poor condition of the exquisite paint coatings. The wooden ceiling structure was weakened by wood-feeding insects and rotted by rainwater from the leaky roof, especially in the ceiling corners. Examinations revealed the imposition of new layers of faux wood grain finishing surfaces on the previous ones without considering the loss of the layer of mortar and paint. Retouching was carried out carelessly, without attention to color and shape. The secondary polychrome decoration was also carelessly applied, with cracks and flaking in many places that threatened to ruin it.

Studies have shown that the use of hygroscopic gypsum as a primer for oil-based paints was a technological error. Wetting the ceiling, excessive humidity and lack of heating caused water to be absorbed by plaster and, as a result, cracking of the paint layer (Fig. 4).

In addition, as a result of the action of water under the surface of the polychrome decorative painting, salt crystallized, which also led to damage by growing crystals (Fig. 5).



Fig. 4. The damaged wood texture imitation by means of painting. Photo by M. Paździora Sattler.



Fig. 5. Damage from growing salt crystals due to overwetting

Restoration and reconstruction measures to restore faux wood grain finishing surfaces and polychrome decorative paintings of the Ballroom

Works on restoration of the ceiling panel

Before the work began, samples of the original paint layers were taken from the ceiling in order to detect pigments in the oldest surviving layers by microscopic and microchemical methods. Based on laboratory research conducted by Barbara Sowa-Holewińska, commissioned

by the Laboratory of Laboratory and Conservation Research in Cracow, zinc bleach and iron pigments, as well as an oil-resin component, lime bleach and iron pigments were found in the oldest layers of plaster.

At the first stage of conservation works, surface dirt was removed, and fragments of polychrome decorative painting were removed along with mortar in parts of the salt deposits. The paintings were then disinfected, and the stucco was fixed with pins and glued so that they would not fall off. Work was carried out to recreate the missing stucco details in accordance with the original form, the wooden structure was strengthened in the open parts of the ceiling (mainly in the corners most damaged by the penetration of rainwater).

The next stage was gluing and leveling the scales of the painting layer by wetting and pasting Japanese cigarette paper moistened with methyl cellulose and pressing it with a stone (Figs. 6 and 7). Then the paper was removed, excess methylcellulose was removed, and protruding scales were glued.

In order to protect the surface, the paint layer was permeated, and its losses supplemented. The final work was retouching the losses of the polychrome decorative painting made with resin paints, according to the preserved original parts. Retouches were protected with varnish in a spray bottle, and then with two layers of satin varnish. Finally, the polychrome decorative painting was covered with paste wax, and then the waxed surfaces were polished with flannel.

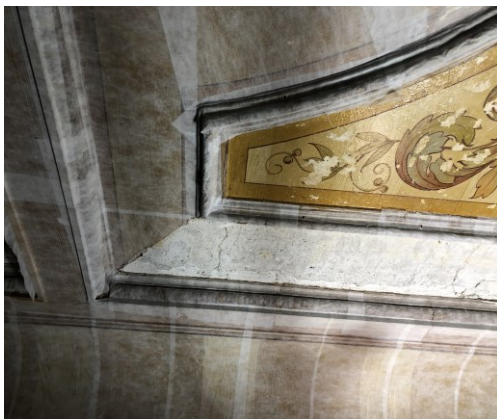


Fig. 6. The process of painting restoration.



Fig. 7. The process of painting restoration.

Works to restore the Ballroom walls

Before the start of conservation and reconstruction work on the faux wood grain finishing surfaces, the opening (probing) of the furnishing layers was made, which made it possible to determine the original colours and technology.

On the smooth plastered surfaces of the walls, the later layers of paint were firmly connected to the main paint coatings, which forced the use of chemical preparations and

mechanical action to completely remove the secondary paints. As a result, four secondary layers were identified, of which the top layer was an oil coating that included three paint layers (layer painting method).

After removing all the secondary paint coatings, breaks and cracks in the plaster coating were discovered, as well as construction transformations in the form of walling in small sections of the northern wall. An oily layer of paint, a long-term lack of heating and water dripping from the ceiling caused the destructive processes of the plasters, which became visible in many places. The detected damage made it necessary to strengthen many plaster parts and combine the old plaster with the new during the restoration work.

Wall surfaces were strengthened by applying calcium hydroxide, and then lime plaster was applied. Secondary painting was removed from stucco ornaments with the help of the so-called "white steam", which to a large extent allowed to preserve the original texture and sculptural decoration. The lost molded parts were made from model plaster. The missing decorative elements were reconstructed by temporarily dismantling the cleaned and supplemented part, making a mold, and then a plaster cast. The removed part of the molded part was installed in the place from which it was cut out for forming.

Wall surfaces and stucco details were primed and then treated with mineral paints with high vapor permeability in colors according to conservation instructions. The cartouches and strips of decor at the final stage of painting were patinated in a darker shade.



Fig. 8. The restored interior of the Ballroom

On parts of the walls there were planes made in the technique of traction profiles, the original coverings of which differed both in the skill of execution and in the way of faux wood grain finishing. The plinth, after numerous repairs (puttying), was also covered with coatings

imitating various types of wood. After cleaning the surface of the walls and profiles, options for faux wood grain finishing in various shades of beige were proposed, and then submitted for approval to the protection commission. On the basis of accepted samples and conservation recommendations, the original imitations of wood were reconstructed on the profiles in the wall parts and plinth.

In the profiles that frame the stucco panels and the plinth, the technique and colour of the faux wood grain finishing of the selected fragment of the richly decorated ceiling are used. Faux wood grain finishing of wall surfaces are made using water technology. Steel combs, special brushes, brushes, and sponges were used. The smooth, primed surface of the drawn parts was covered with a primer in colours adapted to the grain finishing on the ceiling (Fig. 8).

Conclusions

Based on the conducted research and analysis, it can be concluded that the main reason for the damage to the Ballroom in the Officers' Casino in Modlin Fortress was negligence due to poor maintenance of the historic building. The most damage was caused by the damaged layers of the roof, through which rainwater got inside. The second reason was the lack of heating of the building when it was not in use, which led to increased damage from moisture (rapid fluctuations in the relative humidity level, which in turn contributed to the accelerated destruction of the plaster structure).

Conservation work carried out by unskilled workers led to the formation of numerous layers of carelessly applied paintwork, without observing color stability and technological correctness.

In order to prevent the above-mentioned damages in the future, it is necessary to carry out periodic inspections of the condition of the polychrome decorative painting and valuable faux wood grain finishing, made by means of painting, and, above all, to maintain the technical condition of the architectural monument (especially the roof covering) in good condition. It is also recommended to use a hygrometer to measure humidity and temperature in the room along with monitoring the readings.

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