

## **SOBIESKI PALACE IN LUBLIN AFTER THE ASSESSMENT OF THE EXISTING CONDITION. RESTORATION AND MODERNIZATION PROJECT**

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The Palace, situated in Bernardyńska Street in Lublin, has a checkered history – it was, among others, mentioned in the vetting in 1661; then it was the Sobieski family's property for about 100 years. In the subsequent periods, its owners changed several times, and the object itself was repeatedly rebuilt. Since 1959, it has been used by the Technical University of Lublin. Because of the alarming state of the palace buildings – after carrying out the necessary research and expertise - a multi-disciplinary restoration and modernisation project has been elaborated, together with the proposition for the EU financed grant from the Operational Program “Development of Eastern Poland”. The paper presents the analysis of the existing state of the palace, and also the modernisation project. The new EU programme “Town Restoration Programme 2014-2020” opens the opportunity to implement this project after the functional correction.

**Keywords:** Sobieski Palace in Lublin, the Technical University of Lublin,  
place identity, modernisation of a historic building

### **1. INTRODUCTION**

The complex of the Sobieski Palace is situated in Bernardyńska Street in Lublin, in Żmigród district, in the town centre. It consists of eleven objects: a palace building, two outbuildings, two guardhouses, six household buildings and two

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courtyards. It is situated in the proximity of the brewery building (Bernardyńska 15) and the modernised object located at Bernardyńska 11.

The palace itself has a checkered history – its beginnings are unknown, it was mentioned in J. Braun's works „Civitates orbis corrarum”, 1617. The vetting, in 1661, contains the record that the palace belonged to the Sobieski family, and it continues to be their property for another one hundred years. In the subsequent periods, its owners changed many times (the Radziwiłł family, the Brzeziński family, the Stachociński family and others), and the object itself fulfilled various functions – it housed among others a mill and a gymnasium for girls. The Palace was rebuilt repeated number of times. Its present appearance is due to the expansion of the project in 1884 by Marian Jarzynski, when it was converted for residential purposes, raised by two floors, the interior decorated with stucco, and the whole was given an eclectic look.

In 1945, the Palace was taken over by the Treasury. Since 1959, it has been used by the Higher Engineering School, later transformed into the Technical University of Lublin [3]. Currently, the courses for students of Architecture and Urban Planning are held there.

Nowadays, the objects of the Palace complex are in an alarmingly poor technical condition. Due to this fact, the decision of its urgent modernisation has been made. After performing the research and expertise – necessary since the object is inscribed into the register of historic monuments – a multi-disciplinary project of its restoration and modernisation has been prepared, together with the proposition for a financial grant from the Operational Programme “Development of Eastern Poland”.

## **2. THE ANALYSIS OF THE CURRENT CONDITION**

### **2.1. General Condition**

The palace consists of three parts: an eight-storey tower, tapered upwardly (elliptic shape – 1188 x 1168 cm at the base, 967 x 946 cm at the finial), a four-storey right wing (with the attic and a basement crossing), and a four-storey left wing.

After the restoration works, in 1884, the palace gained its eclectic appearance which preserved till today. The recent elevation works were performed in 1986, since than no repairs have been carried out, hence the condition of the elevation is critical – numerous cracks are visible as well as plaster losses (or its complete lack, as in the case of north elevation), moisture, stains from leaking flashings. The elevation also poses a threat to users due to the fragments of the plaster which break away. Thus, it was necessary to build a

provisional canopy over the entrance protecting against a possible threat. Also, window frames (box windows) and the doors are in bad shape - clear distortions and leakage are visible.



Fig. 1. A general view of the Palace – the current condition (2008). Photo by J. Wrana.

Fig. 2. Close-up of the tower (2008). Photo by J. Wrana.

Inside, there are conspicuous cracks and delamination of walls, salt efflorescence, poor flooring and joinery. Also, building equipment does not meet the requirements of a modern educational facility - there are no special rooms, adequate facilities, and facilities for people with disabilities.

The structural condition also leaves much to be desired, due to the cracks, subsidence, humidity and biological pests.

The two outbuildings, only one of which is currently used, are also in critical condition and require a thorough, comprehensive renovation.

## 2.2. Structural issues

The tower has six floors above the ground and two underground floors, whereas the wings - three floors above the ground and a basement.

The foundations are made of full ceramic bricks on lime mortar (tower) and limestone (wings). They are in an unsatisfactory condition due to moisture, corrosion of the ceramic and limestone materials, the lack of isolation and shallow foundation (in extreme cases, above the frozen soil zone). They require a complex analysis, and then concrete foundation needs to be performed of the widths adjusted to the designed loads after the reconstruction.

The walls in the cellar - to the height of about 180 cm - are made of ceramic bricks on lime mortar, and above that height - of limestone on lime mortar. The basement walls are made of - limestone with brick insertions. The construction walls on the remaining floors are made of limestone (rocks) and

ceramic bricks. Partition walls - built of ceramic bricks or timber. The walls above the ground preserved fairly well. At present they pose no threat to the safety of the building, but they need to be restored and reinforced.

There are numerous reasons for the cracks and subsidence of the walls and foundation. The historic background may be considered as one of them (a heterogeneous structure, the lack of expansion joints). Also, various foundation levels of walls, shallow foundation, as well as uneven loading of the subsoil contributed to the mentioned damages.

Arch vaults made of ceramic bricks survived in the basement, there are also the Klein ceilings and wooden ones. The arch vault is in a good shape, and after restoration it can be maintained. The Klein ceilings over the basements need to be cleaned out of corrosion, covered with a mesh and re-plastered. The beams need to be strengthened in parts where they are over 5.0 m long. Wooden ceilings over the ground floor the first floor do not demonstrate any corrosion. The ceilings are possible to be renovated and adapted, but some of the beams need to be strengthened, the wood needs to be impregnated with non-combustible materials, the floors need to be protected both from the bottom and the top with a material of 60-minute fire-resistance. Ceilings over the second floor and the higher ones must be replaced due to corrosion damages, abnormal deflection as well as fungi and insects damages.

The building is covered with a gable roof, with a rafter-purlin strap with columns and struts, and a conical roof of the tower. The roof truss is severely damaged by pests and should be totally replaced. Roofing - galvanized straight seam - is heavily corroded (on tower - 95%, on the wings - 50%), also should be replaced.

In the tower, there are two staircases: an eight-floor staircase (double-flight masonry stairs in the cellar; single-flight wooden - in the basement; masonry winder stairs with wooden steps in the remaining parts) and a three-floor staircase (double-flight, wooden flights and steps). Both staircases do not meet the technical requirements for utility objects, among others fire-resistance requirements, the landing sizes, the height of the rail. Thus, posing threat to the users, they need to be rebuilt.

A significant problem is the building moisture and humidity. According to the investigation carried out by Aquapol in 2007 [4], the degree of the humidity of the whole complex should be classified as: very humid, wet and very wet. The moisture limit of the external walls ranges from 180 to 240 cm above the ground level, which describes the condition of all the walls in the cellars, basements, and the first floor (to the moisture limits) as very humid, wet or very wet. The external walls are not insulated thus the walls absorb capillary moisture to the height of 2.4 meters above the adjacent ground.



Fig. 3. Lintel with a visible crack exposing the reinforcing steel, 5<sup>th</sup> floor (tower) [4].

Fig. 4. Dig A-9 from the courtyard. Visible stone wall corroded surface, with losses of stone and corroded mortar, no insulation [4].

### 2.3. Biological issues

Unfortunately, the issues connected with the poor condition of the structure and elevation is not the only ones. Also, the occurrence of fungus *Serpula lacrymans* was observed. The fungus belongs to the first group – most harmful for the wooden parts of the building, which are losing weight and strength (crumble in your fingers). It also destroys the walls and plasters and creates an unfavourable microclimate (due to odours). It was found in the samples obtained from the ceiling over the 2<sup>nd</sup> in the attic, and on the 4<sup>th</sup> floor in the ceiling of the tower.

The next problem is the insects: the common furniture beetle (*Anobium punctatum*) and the house longhorn beetle (*Hylotrupes bajulus*). The common furniture beetle was found in the samples obtained from the elements of the roof truss (among others: rafters, pillars, attic walls). It mechanically destroys wood by drilling a number of sidewalks during the larval period (3-4 years). The house longhorn beetle was found in the roof truss over the second floor in the joists in the attics. The most serious damages occur in older elements of the roof truss. They are impossible to be restored – they must be replaced.

### 2.4. The summary of the analysis

The Palace building is in an alarmingly poor technical condition. It poses a threat to its users – students and workers. Long-term negligence in the maintenance and the lack of repairs (or their insufficient accuracy) made the condition of the palace leaves much to be desired both in terms of structure (cracking, corrosion) and appearance (destroyed elevation). In order to continue

to use it, thorough and comprehensive renovation works must be carried out, which would include: the structure and elevation, interior finishing, as well as adjusting the object to the current standards prevailing among universities (like specialised workshops, drawing and design rooms, etc.), and also adapting it for people with disabilities (suitable toilets, passenger lifts, wider doors, etc.).

In view of these findings, it was decided to elaborate a project of the palace restoration and modernization together with a proposal submitted to EU funds for a grant from the Operational Programme "Development of Eastern Poland". The project involved a comprehensive modernization of the building and its adaptation to the current needs, while meeting all the conservation requirements of and the respect for its historic value.

### **3. RESTORATION AND MODERNISATION OF THE OBJECT**

Multiple modification of the complex resulted in the preservation of only minor historical fragments (i.e. parts of stone walls of the basements and the elevation design) – hence the project pays particular attention to their protection and exhibition, while having a relatively great amount of freedom in adapting the rest of the building.

The proposed solution was an interference with author's introduction of a new program in an existing complex of historic buildings, preventing further destruction and degradation.

The project assumed a conversion of the existing main building and two collateral outbuildings, while merging the space through the addition of new objects (connectors). The formal assumption to the object shaping was to preserve all important elements, due to their conservation values, in the existent building, and simultaneously supplementing the building with new elements. To exhibit the architectural form and the rich ornamentation of historic buildings, all new buildings have a very simple and modest architecture with modern details; therefore, a passage between the existing outbuildings and the main building was designed in a form of a plane of glass façade, divisions of which refer to the levels of the existing cornices. Additionally, the application of these passages between the existing objects clearly depicts the axis of symmetry, emphasizing the dialogue between the past and the present.



Fig. 5, 6. Visualizations of the modernization project of the Sobieski Palace: general view, courtyard. Computer imaging – prof. A. Getter's team (after the project implementation).

The mentioned above passages are just the most interesting new elements together with the car parks and the auditorium which is submerged on an earthwork ground (on the escarpment opposite to the entrance courtyard), in order not to destroy the proportions of the elevation of the main building. A sloping, concrete wall which hides the new facade refers to the existing escarpment and constitutes a kind of base for the historic building of the palace. Covering the walls with evergreen vines will make it fuse with the current green slope, making the auditorium – of significant overall dimensions – “disappear” visually.

The form of architecture of the designed interiors involves exhibiting the existing structure of the walls and ceilings at levels below the ground floor.

The project envisages the improvement of the environment of Lublin downtown by replacing the existing coal boiler with a modern automatic gas heating or join the complex to the urban heating network. New modern communication solutions (glass passages, passenger lifts, wide corridors to ensure accessibility for people with disabilities) will be introduced. The “green roof” solutions, designed over the garage and auditorium, will increase the biologically active space.

The modernized palace will include comfortable rooms, dean's offices, staff rooms and a drawing room, and a staircase in the tower (suitable for students' work exhibitions). The main building is connected to the auditory and the car park, located on levels -1 and -2. The outbuildings are planned to house: a multimedia library, digital media laboratory, laboratories, archives and rooms for scientific and research work. Apart from staircases, also toilets have been located in the passages (including toilets for people with disabilities); placing

them in the newly built passages will make it possible to design them better, thus improving users' comfort.

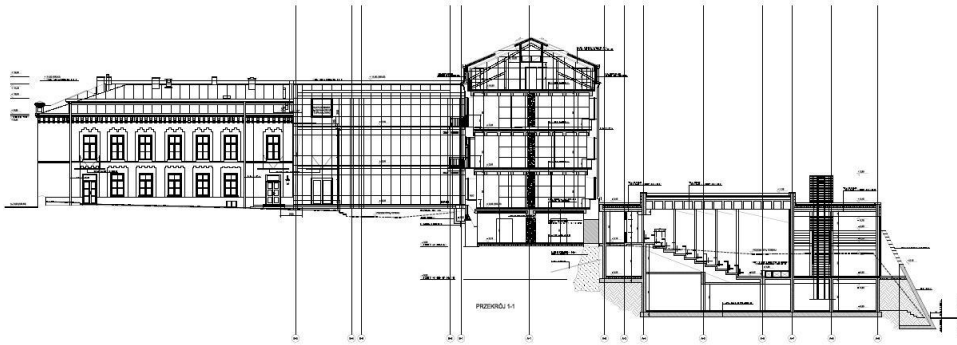


Fig. 7. The cross section of the corpus of the Palace with the designed double-floor auditorium, the view of the passage and outbuilding. The concept - a group of employees led by arch. Jan Wrana.

Thanks to the modernization project, the palace can become a comfortable place for both learning and work, and also has the potential to become an important place in the city centre of Lublin.

#### 4. NEW-OLD STRUCTURE

The modernization project includes all the remarks contained in the construction expertise. Foundations have been strengthened and insulated, ceilings have been either replaced or strengthened, and window and door woodwork has been replaced completely. All the additions to or replacement of the structure elements are designed as made of raw concrete.

All new floors designed for above-ground floors of the main building will have a reinforced concrete panelled structure, made of raw concrete. Thus, all the existing building threads will be possible to exhibit in relation to the new fragments, emphasising the vivid contrast old-new.

Also the roofing and the truss are planned to be replaced totally. The tower, as the most distinctive element of the solid, was decided to be covered with a glass ceiling, which will light the main staircase perfectly. Large sheets of tempered glass are used for glazing the door openings and partitions, in order to make the impression of space.

The project distinctly differentiates between the new and the old tissues, paying particular attention to the respect of historic elements.



## 5. CONCLUSIONS

The building is currently in poor condition, but still half of it is in use. It is necessary to protect the palace, since the building was inscribed on the register of monuments years ago - as an important part of the centre of Lublin.

The complete construction project of the reconstruction and modernization of the palace has been submitted to the authorities of the University and is waiting to be implemented. However, the further preparatory action has been stopped because of legal problems (ownership issues). In passage with the construction of a new building for the faculty of Architecture and Urban Planning, the proposed primary function needs to be changed. Financing the modernization of the Palace from the EU's new program "Urban revitalization 2014-2020" seems to be the chance for the project to be implemented. Additionally, this could be supplemented with transforming the palace into an integrative centre of science and a dialogue of the multicultural Borderland. This would undoubtedly be an interesting point on the cultural map of Lublin and a chance for the Palace to receive a "second life".

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PAŁAC SOBIESKICH W LUBLINIE PO OCENIE STANU ISTNIEJĄCEGO.  
PROJEKT REWALORYZACJI I MODERNIZACJI OBIEKTU

Streszczenie

Położny przy ul. Bernardyńskiej w Lublinie pałac ma burzliwą historię - wzmiankowany został m.in. w lustracji z 1661 roku; po jego rozbudowie pozostawał własnością Sobieskich przez ok. 100 lat. W kolejnych okresach często zamieniali się jego właściciele, a sam obiekt był wielokrotnie przebudowywany, mieścił się w nim między innymi młyn oraz gimnazjum żeńskie. Od roku 1959 użytkowany jest przez obecną Politechnikę Lubelską. Z powodu alarmującego stanu technicznego obiektów zespołu pałacowego - po dokonaniu koniecznych badań i ekspertyz - przygotowany został wielobranżowy projekt rewaloryzacji i modernizacji z wnioskiem o dofinansowanie z Programu Operacyjnego „Rozwój Polski Wschodniej”. W niniejszym artykule przedstawiono analizę stanu istniejącego pałacu, a także opisano projekt jego modernizacji. Szczególną uwagę poświęcono połączeniu zabytkowej tkanki z nowymi elementami, takimi jak przeszklone łączniki czy aula, gdyż nadrzędnym celem projektantów było uszanowanie i wyeksponowanie istniejącej, zabytkowej formy (projekt uzyskał pozytywną opinię Wojewódzkiego Konserwatora Zabytków w Lublinie). Nowy program unijny „Rewitalizacja miast 2014-2020” stwarza szansę realizacji tego projektu, po korekcie funkcji.