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Original Research Article

RENOVATION OF THE LAPIDARIUM IN KOŻUCHÓW

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A b s t r a c t

Sacred monuments are an important part of the landscape of the Lubuskie region. Kożuchów, a small town some 30 km from the provincial capital Zielona Góra, is a town with a long and rich history, whose area is full of buildings in need of care. One of the important elements in its landscape is the museum of gravestone sculpture - the Lapidarium. The sepulchral lapidarium in Kozuchow is one of the best-preserved sets of tomb sculpture in Poland. It was established in the 1970s on the site of a former Protestant cemetery, for the establishment of which the Evangelical community received permission in 1634. Restoration work is in progress to preserve and protect this regionally and nationally significant sacred monument. In this article, the authors present the renovation processes underway since 2018 and the stages planned for the coming years. The purpose of this article as to point out the remarkable regional importance of a unique example of a sacred monument, which is the Lapidarium in Kozuchow. The uniqueness of the gravestone sculptures with epitaphs contained therein, their exceptional level of craftsmanship and state of preservation predispose the Lapidarium to be saved from destruction and made available to the public.

Keywords: Kożuchów, lapidarium, historical monuments, sacred monuments, lubuskie region

1. INTRODUCTION

Kożuchów is one of the oldest cities in Lower Silesia. Located around 30 km from Zielona Góra (Fig. 1.). Today it boasts many fascinating monuments: The ruins of the Nobleman's Palace, the Walls surrounding the moat, the Town Hall with its 290 historic townhouses, the medieval Castle with its system of defensive walls.

One of the most interesting sites is the Lapidarium Tomb Sculpture Museum, located in the southwestern part of the city. The tomb chapels were built in the 17th and 18th centuries from the functions of wealthy Protestant families. The facility was established in the 1720s, but the ceremonial dedication of the Holy Trinity Cemetery. Holy Trinity cemetery took place on September 30, 1634, and in the past it was the main necropolis of the city (Fig. 2, 3). The cemetery's composition is based on a geometric division, determined by the alley and side walls. The burial chapel, built in the 17th at the

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main entrance to the cemetery, was used as a church after the Evangelical community lost the use of the parish church. Over the course of the 17th and 18th centuries, the necropolis saw numerous reconstructions, mainly concerning the walls around the grounds and the main gates. The period also saw the construction of 16 burial chapels, preserved to this day. In addition, we can now admire several hundred tombstones and monuments, numerous foundations and seven Renaissance figural slabs, transferred to the lapidarium in 1976. The Kożuchów lapidary, as a composed arrangement of a set of sepulchral art objects, presents exceptional historical, artistic and scientific values [5, 6].

Another comparative lapidary in the vicinity is located in Wschowa. The Wschowa Tombstone Sculpture Lapidary section includes the area of three historical cemeteries, the old town Evangelical cemetery established in 1609, the new Evangelical cemetery from 1630 and the Catholic cemetery from around 1805. In March 1965, the Provincial Conservator of Monuments in Zielona Góra decided to enter the cemetery chapel, located in the Catholic section, in the register of monuments, and in January 1972. 142 epitaph plates and free-standing tombstones from the 17th-19th centuries, located in the oldest part of the necropolis. The purpose of this article as to point out the remarkable regional importance of a unique example of a sacred monument, which is the Lapidarium in Kozuchow. The uniqueness of the gravestone sculptures with epitaphs contained therein, their exceptional level of craftsmanship and state of preservation predispose the Lapidarium to be saved from destruction and made available to the public.

Fig. 1. Lapidarium area in Kożuchów (Google Maps)

Fig. 2. Entry gates to the Cemetery (Autor)

Fig. 3. Date of manufacture in cemetery gates (Autor)

2. RENOVATION WORKS STARTED IN 2018

2.1. Chappel

Most of the buildings in the lapidary area used plastered clay brick. The brick used is mostly old Prussian brick, measuring 27x13x7 cm. Brick is a building material that spread very quickly. It was produced by a simple technological process, the raw material was widely available and its dimensions and weight allowed the bricklayer to work freely. It replaced stone, which was difficult and demanding to work with, and wood, which was more easily adapted to the needs of the construction industry, but had the major disadvantage of being flammable. Brick was therefore the ideal material for the builders of the past, and many buildings that still exist today were built using it [1-4].

The main causes of deterioration of brick walls can include:

- the action of water and physical and chemical processes associated with its penetration into the brick structure (freezing and volume change, introduction of soluble salts, etc.);
- the formation of surface layers, so-called patina and soiling. The patina is an approx. 0.2-0.5 mm thick layer of dirt deposited on the surface and bonded by calcium hydroxide. Although patina has always been present on façades, it used to come mainly from natural physical and chemical processes, but nowadays its effect is much more negative due to environmental pollution.

Aggressive chemical compounds from exhaust fumes or acid rain accumulating in the patina layer accelerate the deterioration of the underlying brickwork [1-3];

- the influence of impurities in the raw materials used for the bricks and mortars (impurities swell after moistening, increasing their volume and destroying the brick or joint structure);
- biological contamination (algae, fungi, lichens, mosses), i.e. secondary effect of surface soiling;
- mechanical damage during the operation of the buildings;
- impact of alterations, previous renovations and maintenance;
- impact of fortuitous events (floods, fires, etc.).

When undertaking planning repair work on historic buildings, in addition to performing a thorough assessment of the technical condition of the building, it is necessary to take into account the aspect of preserving the original appearance of the object—especially the front elevation. Emphasis is placed on this by historic preservationists, without whose consent it is impossible to carry out repair or modernization works [8]. In 2018, given the poor technical condition of the objects , the mistakes made during the renovation work in the 1980s and the desire to make the Lapidarium accessible to visitors as one of Kożuchów's most interesting attractions, the decision was taken to carry out renovation work.

One of the main mistakes made during the recent renovation work was the use of improper cement plaster. Renovations carried out in the '80s using strong cement plasters on a weak base, while initially looking good, are not bonded to the base-masonry. Cement plasters laid directly on brick, especially soggy brick, in many cases fall off with the face of the brick. Bricks without a face, which due to the production process (firing) is the most durable and protects the brick, degrade at a rapid rate. Any work should be preceded by a good discernment-diagnosis, of the facade surface According to the current principle of , " The brick used is mostly old Prussian brick, measuring 27x13x7 cm", each successive layer should be weaker than the substrate. Using strong and tight adhesives, often with dispersion additives, on a soggy substrate is a serious mistake. The basic principles of ordinary plastering are also forgotten. Historical buildings usually had thicker plaster than today. This was mainly due to the unevenness of the substrate, made mainly of brick and stone, but also the measuring tools used. Thicker traditional plasters, in addition to the visual effect, mainly protected the walls, from rainfall. Despite the lack of hydrophobic additives, which are now standard in facade materials, thick plasters never soaked in the entire layer, which protected them from frost and destruction of the walls.

Requirements for plasters used in the restoration of historic buildings include the relatively low strength associated with applying plaster to non-resistant, damaged substrates. It is not uncommon for plasters used for restoration to have a strength of less than 1 MPa, precisely because of the need to reduce the loads transferred to the substrate. They also often contain volcanic tuff (trass), which reduces the dynamics of strength buildup during the initial setting period. Such plasters must also be characterized by a high degree of vapor permeability, which, not only in old buildings, has a very strong impact on the durability of the envelope, especially the exterior.

Another element that characterizes plasters intended for renovation is a very carefully selected formulation, which, taking into account the technologies and materials available today, must meet both the requirements of today's construction and be compatible with plaster coatings used years ago. Also very important is the appearance of the plaster, which, in order to restore lost splendor, as a rule is designed specifically for a particular building. For this reason, the previously mentioned trass, charcoal, mica, crushed brick or other special aggregates are often found in such plasters.

Another special group of plasters are renovation plasters. These are wall plasters, which in the standard for plasters [10] have special requirements and are marked with the letter "R". In the mentioned standard, renovation plasters have specific parameters that they must meet to be called renovation plasters. These parameters mainly concern vapor permeability and water absorption [3, 7].

Based on the decision of the Lubuskie Provincial Conservator of Monuments dated 27.11.2018, permission was granted to carry out construction works involving work on the chapels [9].

The scope of work is as follows:

- Replacement of the roofs of the chapels - manual dismantling of roofs, sorting, cleaning and hydrophobization of the removed tiles for reuse; dismantling of the wooden trusses of the chapels; construction of new wooden rafters made of treated wood, covering with ceramic plain tile in scales; copper roofing flashings; use of a clear agent against biological corrosion (Fig. 4.)

Fig. 4. Construction of the roof in the chappel (Autor)

Fig. 5. View of masonry before repair: chipped plaster, salinity and biological corrosion (Autor)

Fig. 6. Interior wall of the chapel: chipped plaster, salinity (Autor)

Fig. 7. One of the chapels after renovation works (Autor)

- Renovation and replenishment of stucco detailing of the exterior walls of the chapels - Scuffing off chipped cement-lime plaster from the exterior face of the chapels; replenishing brick and mortar defects,

Prior to the restoration work, a diagnostic was carried out for moisture in the masonry - the masonry was determined to be wet, the level of water saturation (by weight) was above 20% in most of the sites examined. Re-plastering with restoration plaster in accordance with WTA 2-9-04/D in the lower part of the wall; whitewashing the walls from the outside. Lime mortar with white cement was used for the work. The use of renovation plasters, is primarily walls and walls , which for years deprived of moisture insulation corroded and covered with salt efflorescence. Using this kind of plasters results in protection from further water soaking (mechanically by undercutting and replenishing insulation or chemically) from the very beginning.

The next step was the scraping off of all salt-laden, crumpled and loose layers, followed by the application of a cementitious dressing that acts as a grafting bridge for the next layers - after which comes, perhaps the most important moment in the entire process, the application of a leveling restoration plaster.

Thanks to its high air pore content, it is designed to trap salts that will continue to migrate outward from the wall for some time to come. These salts increase in volume during crystallization or hydration, forming structures that destroy traditional plasters.

The renovation work began with site preparation. These consisted of: exposing the face of the masonry, making an inventory of the exposed joints, edges of the masonry, battlements, niches and possible stonework details, conducting a chronological stratification of the masonry with a description of the materials and technology used, and making descriptive, drawing and photographic documentation. Conservation studies were carried out on the walls of the chapels, including: studies of the arrangement of historical layers and color, analysis of historical relics, recognition of the materials used and their properties [9, 10] (Fig. 5-7.)

2.2. Outer wall

A year later, on 08.10.2019, another decision was issued by the Lubuskie Provincial Conservator of Monuments regarding the planned restoration of the walls around the building [9]:
- Securing the crown of the outer wall - re-bricking of crumpled brick and laying of Ceramic plain tiles in scales with the development of a slope to the outside (Fig. 8.)
- Construction of reinforced concrete buttresses on the exterior side, connected to the wall with steel anchors and a crown on the crown of the wall
- Plastering the masonry with lime plaster with white cement, in the lower part used renovation plaster [10].

However, work on the outer wall is still at a low state of progress and will continue in 2024-2025.

Fig. 8. Cemetery fence wall with display of epitaphs to be renovated next (Autor)

3. CONCLUSION

Kożuchów, which used to be an important town in the northern part of the former province of Lower Silesia, is full of buildings and structures worthy of attention and in need of restoration work. The Lapidarium in Kożuchów is a unique object of high historical and cultural value, not only regionally but also nationally. The lapidarium contains a group of about 200 tombstones (Renaissance, Baroque and Rococo), enriched with 16th-century figural epitaphs from the manor cemetery in Długie near Kozuchow. Their diverse shapes, compositions, decorative motifs and inscriptions, are an interesting testimony to the eras in which they were created. They are also evidence of the high level of Kozuchow's sculpture workshops, comparable to their contemporaries in Wroclaw and Nysa Its renovation and preservation in a condition allowing it to be open to the public is an important goal for the conservation services. The ongoing renovation work on the building is an extremely significant element in the

protection of historic monuments in the Lubuskie Voivodeship. Work is planned over the next few years until all the structures in the cemetery are fully complete and protected.

The renovation work carried out was comprehensive and was preceded by a detailed reconnaissance of the existing condition. An important element was the removal of the effects of improperly carried out renovation work from the '1980s. Mistakes made at that time led to the degradation of the plaster coating, the separation of the face of the bricks and the dampness of the walls, which in turn resulted in visible traces of salinity and fungus.

The result of the renovation work carried out is a significant improvement in the technical condition of the Lapidarium. However, further stages of restoration and conservation are required to achieve the full effect. Work will continue, with the wall enclosing the cemetery being repaired next in year 2024-2025.

The example of the lapidary shows how important it is to use correct technologies and materials in the restoration of monuments, especially brick walls and facades in order to avoid further deterioration and degradation of the historic tissue.

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