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RENOVATION OF A SACRED OBJECT MADE OF LIMESTONE, ADAPTING IT TO THE CONDITIONS OF CONTEMPORARY USE

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Abstract

The paper presents a selected sacral object built of limestone located in the Kraków-Częstochowa Upland in the town of Kalej. It is an interesting object of local religious culture worth recording in the literature due to its unique character and scarce publicly available information about it. The Kraków-Częstochowa Upland is located in southern Poland, in the upper Vistula and upper Warta river basins, also called the Kraków-Częstochowa Upland, and covers an area of 2615km^2. This area was formed in the Mesozoic era in the Jurassic period and is characterized by the occurrence of sedimentary rocks in the form of limestone. In the Jurassic area, limestone was once the basic building material characterized by high durability and exceptional colors. It was commonly used to build monumental castles, churches, and residential and farm buildings. The paper presents a historical outline of the construction of the sacral object and the maintenance and modernization works performed over the years to adapt it to the current conditions of use and religious worship.

Keywords: *Limestone; Kraków; Częstochowa Upland; Religious buildings*

Introduction

Limestone has played a key role as a building material in the Kraków-Częstochowa Upland for centuries. Its use dates back to prehistoric times, when it was used to build the first settlements and fortifications. In the Middle Ages, there was an intensive development of defensive construction – limestone became the basic raw material for building castles and strongholds. In the modern period, limestone was used not only for the construction of defensive walls but also in sacral and court architecture [1]. Limestone is characterized by high resistance to atmospheric factors and good physical and mechanical properties; it is relatively easy to process and has a light color, which causes it to reflect a large amount of sunlight, giving buildings an aesthetic appearance and making them visible from a long distance [2].

Limestone, popular in the Kraków-Częstochowa Upland, is a building material that allows for heat accumulation, stabilizing the temperature inside the building. It is also ecological due to its origin and the possibility of reuse. Limestone elements from demolitions can be cleaned and reused in their entirety or divided into smaller parts. Another method is the contemporary use of demolition limestone as an additive to the production of commonly used cement, which directly reduces its production costs and leads to reduced energy and fuel consumption. This allows for a

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reduction in emissions in cement production and uses waste in the form of limestone, which leads to sustainable development and positive ecological aspects [3, 4]. The use of other waste materials for building materials production is shown in [5, 6].

Limestone is resistant to weather conditions such as rain, snow, freezing, UV rays, and mechanical damage and, in addition, easy to process. Limestone is also used to produce lime, which was the basic component of the binding agent and lime plasters [2].

Limestone unfortunately has a number of negative properties, such as a porous structure, which reduces its strength and facilitates water penetration; susceptibility to weathering; low thermal insulation; low tensile strength; irregular shape of blocks obtained from the deposit; hygroscopicity; and high capillary water absorption [2]. These properties required the construction of thick, massive walls and the use of very experienced specialists during the construction of representative buildings, who could build walls from blocks of irregular shape, minimizing the amount of mortar used, which increased the strength of the structure, as well as arrange blocks of limestone in such a way as to give the facades and wall faces a regular, attractive appearance. The positive properties of this raw material translated into its widespread use as a durable building material in areas where it occurred locally.

In the areas where limestone was available, many representative religious buildings have survived to this day, such as churches and monasteries, which still serve their function today. This has an impact on the building landscape due to their unique character and style [7]. In the Kraków-Częstochowa Upland, some of them are the Church of Saint Barbara in Żarki from the 17th century, the Sanctuary of the Blessed Virgin Mary of Skarżyce in Skarżyce from 1583, and the Church of Saint Nicholas in Przyrów from the 16th century.

The Church of the Blessed Virgin Mary, Queen of Angels, from 1923, which is the subject of this work, was built entirely of limestone in the small village of Kalej, whose documented history dates back to the act of granting a privilege by King Władysław Jagiełło to the Jasna Góra monastery in 1414. Many church buildings are significant places of religious worship, which have always been subject to reconstruction, modernization, renovation, and sometimes adaptation. This is an exceptional value aimed at providing a foundation for polemics on this subject [8, 9]. Such an attempt was made in the work of *O. Gobryk et al.* [10], where a planned partial reconstruction, renovation of the Church of Saint Nicholas in Kiev, Ukraine, built in a similar period to the selected religious building in Kaleja, was described.

The relatively short history of the Church of Our Lady Queen of Angels in Kaleja shows the work that had to be done resulting from the use of limestone rock in the construction of the structure, as well as the work required to modernize it to adapt it to the current needs of religious worship throughout history.

Historical outline of the Church of the Blessed Virgin Mary Queen of Angels in Kalej

The history of the church building in Kalej dates back to the 1920s, when Jan Borodziak, Jan Kalwal, and Władysław Przybylski founded the Church Committee in order to establish a parish. On 20 morga of land separated from the state property by the Polish authorities, based on the resolutions carried out necessary for the then church and state authorities, efforts were made to build a sacral building. One of the conditions that had to be met was to attach a written commitment to voluntary taxation of all parishioners for the construction of the church building. The 1920s were difficult times for the rural population in Kaleja, but their determination and dedicated work, as well as fulfilling the obligation to the state, contributed to the creation of a new parish. The later first parish priest Stanisław Bilski undoubtedly also made a huge contribution. A significant financial contribution was made by the nearby Józef Iron Ore Mine, which committed to supporting the budget for the construction of the future church each month. After obtaining all the permits, the well-known Warsaw architect Eng. began to prepare the

technical documentation of the building. Architect Konstanty Sylwin Jakimowicz (Fig. 1), designer of church buildings, public utility buildings, manor houses, and villas [11-13].

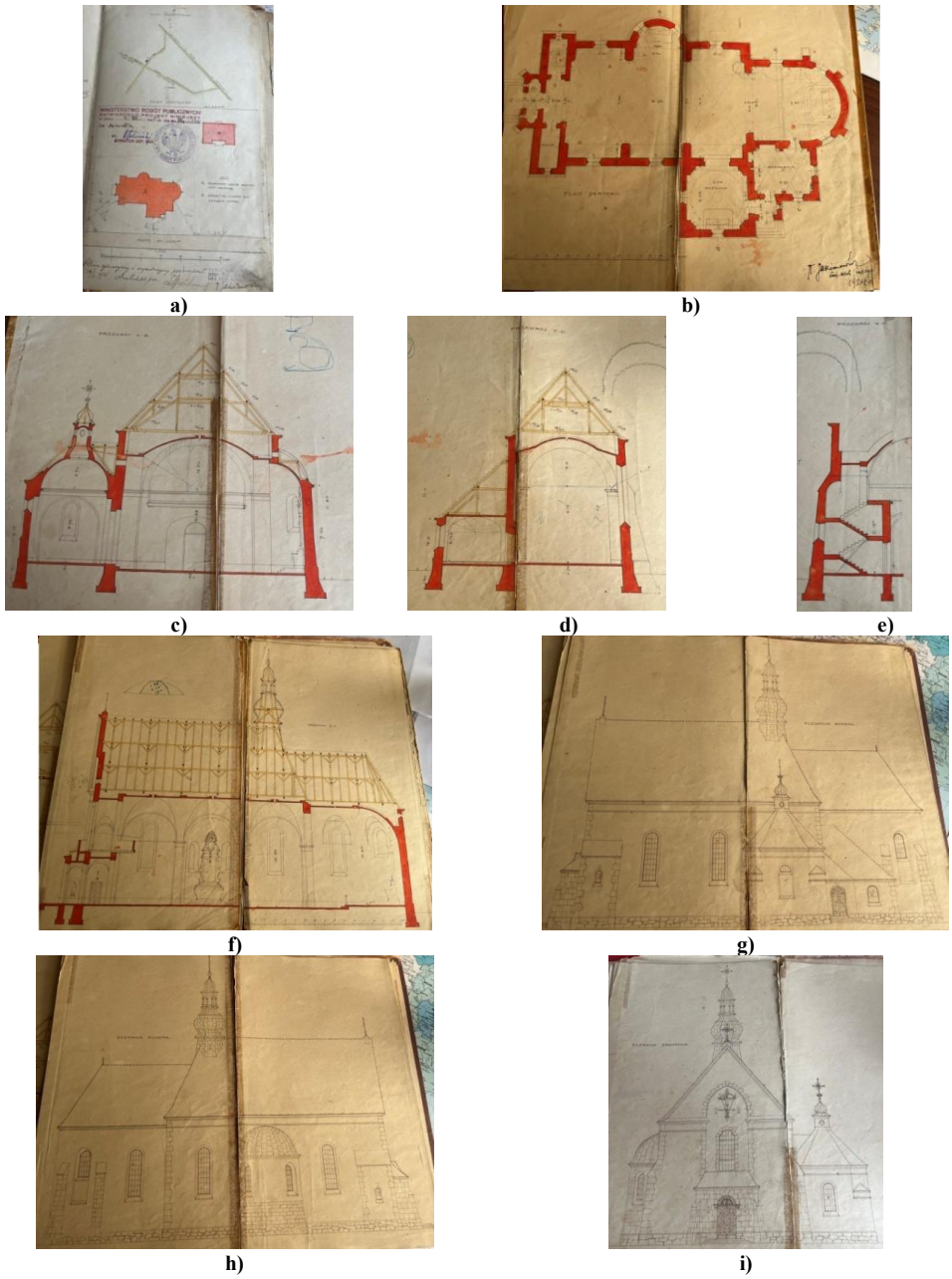


Fig. 1. Technical documentation of the sacral building from 1924: a) situation plan, b) ground floor plan, c) section A-B, d) section C-D, e) section G-H, f) section E-F, g) right side elevation, h) left side elevation, i) front elevation [13]

In June 1924, construction of a church from limestone began, which had been the basic building material in the Kraków-Częstochowa Upland for years, and in the interwar period it was the easiest building material to obtain in the area. Lime produced from limestone, which was the basic component of the binder, was obtained from nearby Mirów, located on the Eagles' Nests

Trail. In the first year, the foundations, structural walls of the ground floor, and a temporary roof over the side of the building were made. In this phase of construction, the building allowed parishioners to participate in the first services.

By 1927, the closed shell was built. Since the elevation was made of limestone (Fig. 2) and the roof was already covered with tiles, it was possible to start finishing works on the interior of the church [11, 14].

Fig. 2. View of the original elevation (limestone structural wall with a visible buttress) of the church in Kaleja. Photo from 1960 [14]

In the same year, a wooden altar was placed in the main part of the church, transported from a nearby chapel in the village of Pierzchno. The second altar was obtained from the chapel of Our Lady of Angels in nearby Szarlejka and was placed on the right side of the church. Both chapels were dismantled, and the building material obtained in this way was used to finish the church and other church buildings in Kaleja (Fig. 3).

a) **b)**

Fig. 3. Photographs published in the "Niedziela" magazine from 1927: a) front view, b) back view [14]

The third, new altar was funded in 1927 by the employees of the Józef z Kaleja Mine, depicting Saint Barbara, the patron saint of miners, and was placed on the left side of the church.

Of the three altars, only the Saint Barbara altar has survived to this day. The interior of the church was modest and was modernized in the following years.

In the years 1930-1936, the parish priest, Father Edward Dyja, built a belfry in the corner of the church plot, which was also the entrance gate to the church (Fig. 4). The technology of the belfry construction was identical to that of the main church building, using limestone on lime mortar [11, 19].

Fig. 4. A contemporary view of the belfry in front of the church in Kaleja

At the same time, a seventy-year-old, long-awaited pipe organ was purchased, made in 1852 from larch wood by the Krakow master Ignacy Wojciechowski, whose internal mechanism was modified by Józef Szymański in 1862. The organ came from the Church of Saint Barbara in Częstochowa and had previously been in Jasna Góra (Fig. 5) [11, 14].

a) **b)**

Fig. 5. Contemporary view of the pipe organ in the church in Kaleja: a) close-up, b) view from the main nave

The further fate of the church building is overshadowed by World War II, when in the years 1939-1943 most of the parishioners were displaced. German colonists settled on the farms, where the remaining residents were forced to work. In the Kraków-Częstochowa Upland, the Germans turned churches into granaries and warehouses. However, in the church in Kaleja, services were still held mainly for Germans. Single masses were held for the few remaining Poles - forced laborers working for German settlers.

After the war in 1945, the residents began to return to their ruined farms and rebuild the village. The first parish priest after the war was Father Kazimierz Wątrobiński, who planned to renovate and modernize the church. Since there were few construction and finishing materials available, only the foundations were plastered, and the external buttresses located around the church were reinforced. The original limestone elevation was left. Inside, the walls and ceilings of the building were renovated, and they were painted white. The altar with St. Barbara was moved to the main place of the church (Fig. 6), and the wooden altar was placed on the left side of the church.

Fig. 6. View of the main altar of Saint Barbara—photo from 1962 [14]

In 1949, the next parish priest, Father Maciej Namysło, thanks to the generosity of the parishioners, introduced changes to the church building. An iron gate was purchased and installed in place of the entrance door to the church building. Wooden, richly carved entrance doors to the church were installed. Additionally, two bronze bells were made: a smaller one weighing 257kg and a larger one weighing 400kg. These corrosion- and abrasion-resistant bells made of an alloy of copper with tin, zinc, and lead were cast in the company of Jan Uciechowski from Wągrów near Warsaw. The smaller bell was baptized with the name Saint Stanislaus Kostka and was inscribed with the following inscription: "I call and ask that the Youth of the Way follow in your footsteps and be a comfort to your parents," while the larger one, named Mary, has the following inscription engraved: "Most Holy Mother, take care of our parish." On Christmas Day in 1950, the parishioners could hear their first sound (Fig. 7) [11, 14].

a) b) c)

Fig. 7. Contemporary view of the bells in the church tower in Kaleja: a) wooden stairs from 1927 leading to the belfry, b) the Mary bell, c) the Saint Stanislaus Kostka bell

In 1952, work began on modernizing the roof of the church. The old roof tiles, with their numerous cracks or gaps, caused rainwater to enter the building through the cracks, causing the church to deteriorate. Therefore, the entire roof covering was replaced with galvanized sheet metal (Fig. 8).

a) b)

Fig. 8. View of the church from 1952-1960: a) western elevation [4], b) northern elevation [14]

In 1956, the village of Kalej was electrified; medium-voltage power lines were brought in, and transformer stations were put into operation. An electrical installation was installed in the church building while the wall surfaces were repaired and prepared for painting. A church painting committee was convened, consisting of several people, who, together with the painter Wacław Pyżyński, established a detailed plan for painting the interior of the church. According to the design, the entire work was done using the casein technique, which is used for painting church walls due to the good adhesion of the paint coat to the substrate and its resistance to moisture. This technique was used to paint the frescoes of the presbytery, the main nave, the chapel, the main altar of Saint Barbara, and the altar of Our Lady of Częstochowa (Fig. 9). The work was completed two years later, i.e., in 1958 [11, 14].

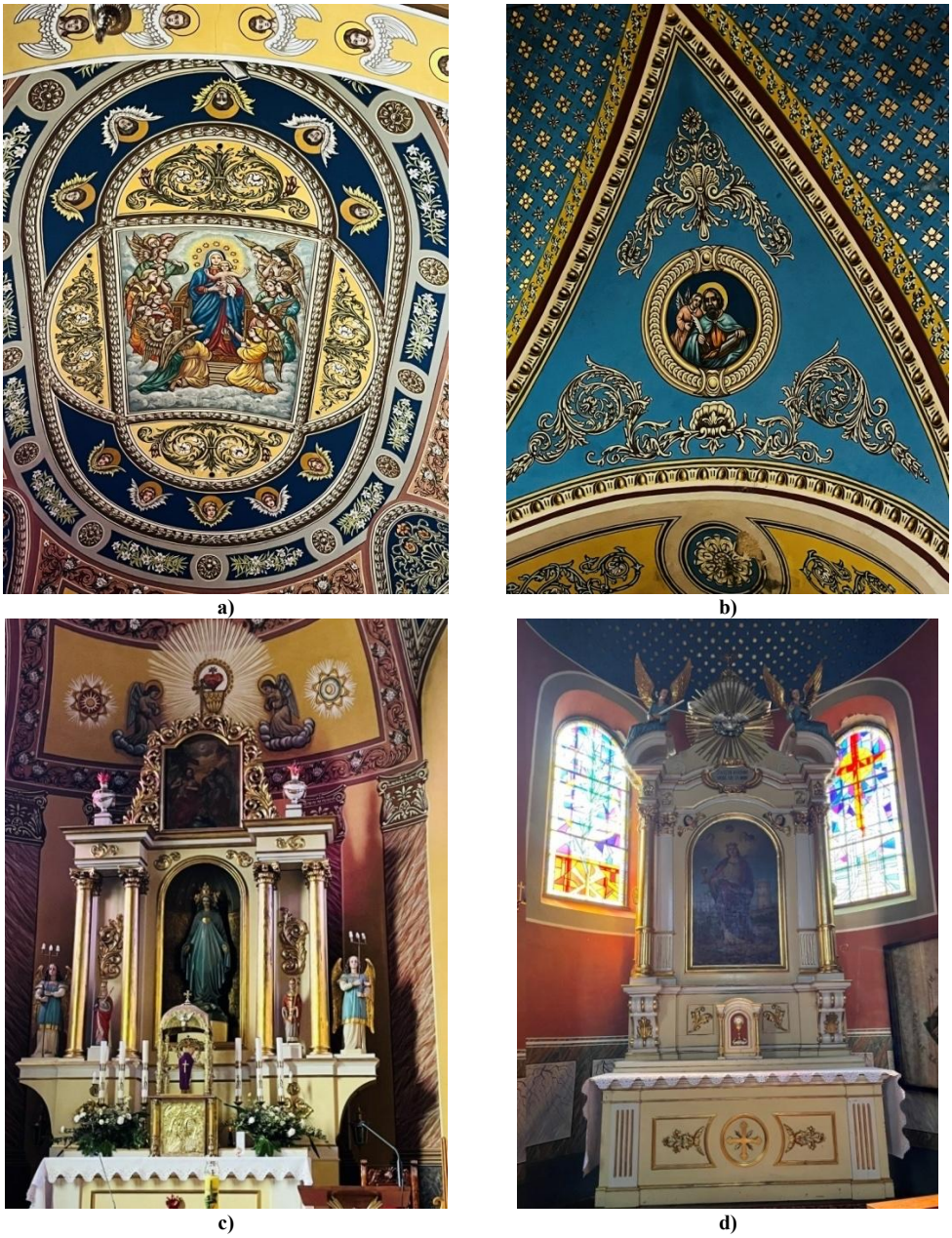
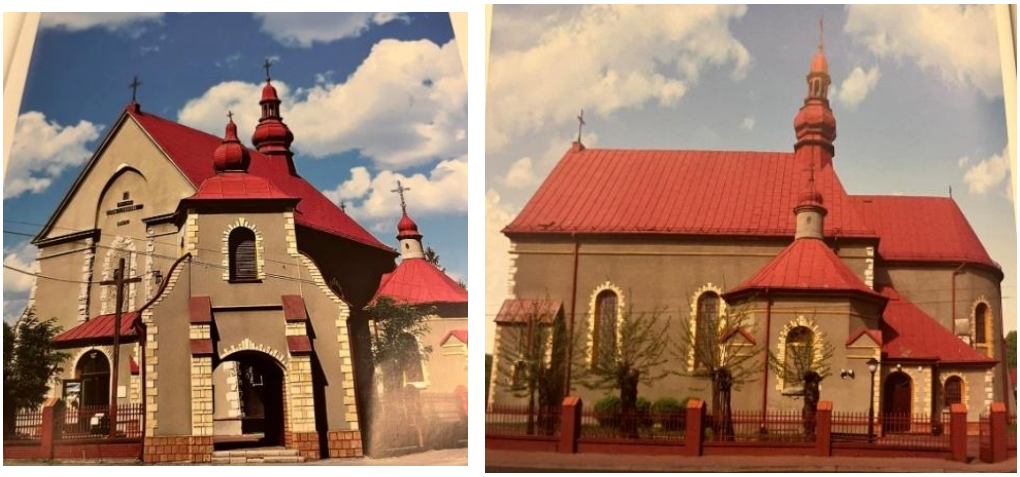


Fig. 9. Contemporary view of the paintings in the interior of the church in Kalea, made using the casein technique: a) a fresco of the Virgin Mary surrounded by angels on the ceiling in the presbytery, b) a fresco depicting Saint Luke, c) the main altar of Our Lady of the Angels, d) the altar of Saint Barbara

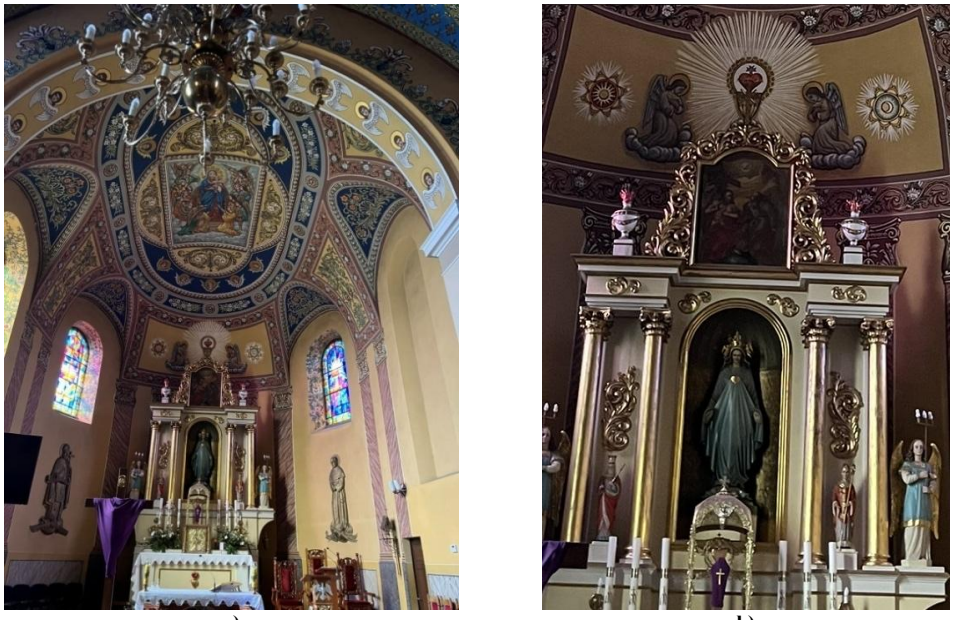
Another parish priest, Wojciech Galon, installs an iron gate in the belfry, which is the entrance to the church plot from the outside. In 1961, a general renovation of the pipe organ was carried out, including the installation of an electric drive and the replacement of wooden pipes. The window directly above the organ was also bricked up to protect it from sunlight. The next stage was plastering the church from the outside and securing the roof covering with galvanized sheet metal with anti-corrosion paint [11]. The building received a new look from the outside (Fig. 10).



a) **b)**

Fig. 10. View of the church today: a) main entrance, b) right elevation [14]

At the same time, an important event for the faithful was the construction of a new main altar inside the church. It was built entirely on a stone base of sandstone, a fine-grained sedimentary rock created by combining quartz and mica with the addition of a silica or clay binder. The stone part was custom-made in Krakow, and a mensa and an ornate extension were made entirely of wood on it. A figure of Our Lady Queen of Angels with angels was placed on the richly decorated extension (Fig. 11). The entire altar of Saint Barbara was moved to the left side aisle, where it stands to this day.



a) **b)**

Fig. 11. Contemporary view of the main altar in the church in Kaleja:
a) view from the main nave, b) figure of Our Lady Queen of Angels with angels

In 1963, the interior of the church began to be equipped; a baptismal font with a bas-relief of John the Baptist was placed on the right side of the church, and oak pews and oak confessionals

were purchased. A reinforced concrete pulpit was built, decorated with bas-reliefs of Christ and the apostles Peter and Paul (Fig. 12). Directly above the pulpit, the text of the Ten Commandments was placed, along with a sculpture of a dove [11, 14].

a) **b)**

Fig. 12. View from the interior of the church in Kaleja: a) the baptismal font on the right, b) the pulpit on the left

Contemporary renovation and modernization of the Church of Our Lady Queen of Angels in Kaleja

Since 1984, the modern renovation and modernization of the church have begun. Work began on the external lighting of the church building and on the sound system inside and outside. An important change for both the interior and the exterior of the church was the replacement of windows, from traditional to stained glass windows in iron frames. This radically changed the lighting inside the church, especially on sunny days, when the reflection of colored light on the walls gives a spectacular effect (Fig. 13) [11, 14].

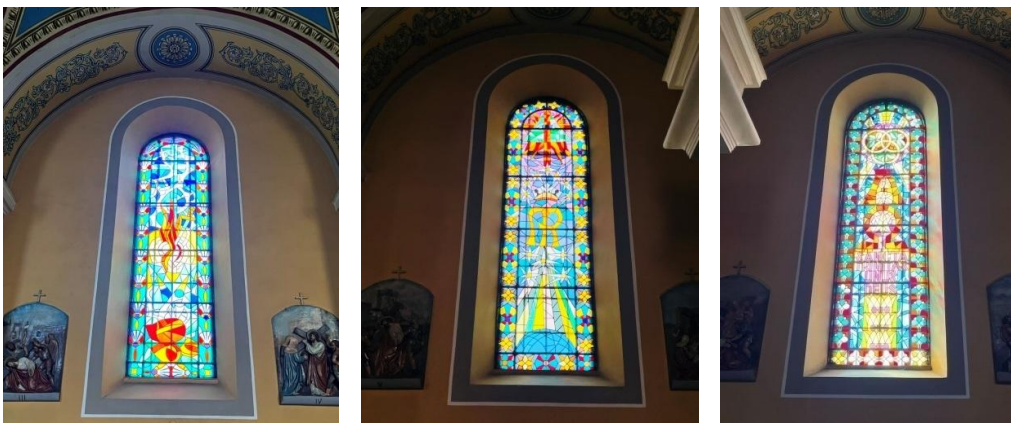


Fig. 13. Selected stained iron windows in the church in Kaleja

The next painting works of the church interior took place in 1997, where, among other things, individual ceiling frescoes in the entire church were meticulously restored (Fig. 9 a, b). In 2000, electric heating was installed on the side walls of the main nave of the church.

The next modernization of the church building in the years 2013-2015 was carried out by parish priest Kazimierz Zalewski, when an air heating system powered by heating oil was installed and the modernization of the existing sound system inside the church began, and then a new sound system was made outside the building. A water installation was also built in the rear part of the church-sacristy.

Since 2016, the parish priest has been Father Mariusz Foltyński, who is renovating and modernizing subsequent elements of the church building. In order to prevent dampness of the external walls of the church building, he is performing drainage around the building and draining rainwater from the roof. A year later, an alarm system was installed, monitoring was also installed, and additional grounding was made. In order to increase the safety of both the parishioners and the church building itself, a lightning protection system was installed. In the same year, the almost 100-year-old wooden entrance door of the church was renovated (Fig. 14) [11, 14].

Fig. 14. A contemporary view of the main door in the church in Kaleja

In 2020, the process of adapting the church building for people with mobility disabilities began, and a ramp to the main entrance was built for this purpose, and new stairs were built, secured with railings. In the same year, efforts began to renovate the roof of the church building and the tower. The roof renovation consisted of cleaning and impregnating the roof truss, replacing its worn-out elements, and then replacing the entire roof covering from galvanized sheet metal with copper roofing along with gutters. These works were completed in March 2025. Additional finishing touches were made in the form of copper fittings on plinths protruding from the face of the wall around the building and on the upper part of all buttresses placed outside the building, which were intended to protect the walls from moisture, and additionally, the downpipes were replaced with copper ones (Fig. 15).

Fig. 15. Contemporary view of the Church of the Blessed Virgin Mary Queen of Angels in Kaleja: a) front elevation and view of the bell tower, b) elevation from the right side, c) elevation from the back, d) elevation from the left side, e) view of the new roof slope on the right side of the church, f) view of the renovated turrets

The current parish priest, Father Mariusz Foltyński, continues his efforts to renovate and modernize the church building. The nearest plans include renovating the church bell tower, which is the entrance to the church, primarily by renovating the roof truss and replacing the old roof with copper in order to unify the roof coverings in both buildings.

Conclusions

Beautiful limestone objects scattered throughout the Kraków-Częstochowa Upland are described and photographed by many authors. There are also objects worth remembering or recording in literature, about which we only obtain scant information based on stories or chronicles. One such object worth promoting and publishing information about is the church in Kaleja under the invocation of the Blessed Virgin Mary, Queen of Angels. This over-a-hundred-year-old religious building with a beautiful history of its construction is an object known mainly to the residents of Kaleja and the surrounding villages due to its function and as a distinctive architectural object in the area. Due to its unique character and atmosphere, it is worth wider dissemination. Since there is no more extensive study on the history of the construction, renovation, and modernization of the building of the Church of the Blessed Virgin Mary, Queen of Angels, in Kaleja, an attempt was made to describe the facts based on scant sources in order to record this object in the history of architecture as unique, atmospheric, and very important for the residents of Kaleja and the surrounding area.

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