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Wooden Buildings in Market Squares of Polish Small Towns: Bielsk Podlaski and Kleszczele—The Issue of Preserving and Restoring Historical Values of Market Spaces

Aleksander Owerczuk 

History of Architecture and Monuments Preservation Studio, Department of Architectural Design, Faculty of Architecture, Białystok University of Technology, Wiejska 45A, 15-351 Białystok, Poland; a.owerczuk@pb.edu.pl

Abstract: In the past centuries, small towns in Podlaskie Voivodeship were dominated by wooden buildings. Nowadays, there are not many of them left. However, they can still be found in the centers of towns, including some market squares. These are often inconspicuous objects, mainly wooden houses. This paper discusses the issue of the significance of wooden buildings, especially houses, in maintaining and restoring historic values of market spaces in small towns of Podlaskie Voivodeship in the examples of Bielsk Podlaski and Kleszczele. The research determined the moment of rapid changes, during which most marketplace buildings lost their historic form. The existing condition was analyzed in terms of its historical values. Conclusions were formulated on the scope and type of restoration works for individual market squares. Finally, general conclusions from the research on the market squares of Bielsk Podlaski and Kleszczele were presented.



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Keywords: architectural heritage; wooden buildings; historical market

1. Introduction

A city represents a complex and ever-changing organism. The comfort of life of its inhabitants depends on many factors. One of the most important is the quality of public spaces. Their value is determined by various factors. Originally, the market square was usually the most important urban element of a city. In small urban centers its significance was quite special. It has fulfilled and still fulfils various functions [1]. It is a place where trade and services are concentrated, and it meets cultural and social needs. Moreover, mainly today, it is a place of recreation and rest.

“The architectural expression of the marketplace creates the proper face of the town” [2] (p. 27). This is reflected in the importance of marketplace development in the context of the entire urban development. It also has an indirect effect by influencing the architectural expression of the buildings under construction, especially in the immediate vicinity of the market. In small towns, the historic market square still plays a very important role, although its significance in the urban life, resulting from the mostly changed contemporary function, has decreased.

Old buildings in the small towns of Podlaskie Voivodeship are diverse. Historically, the main building material was wood. The brick buildings that appeared with time were mainly sacral buildings and seats of city authorities and nobles. However, residential and economic buildings were predominantly wooden. Wooden buildings, also by their number, were one of the main factors shaping the architectural image of Podlasie towns. Therefore, they constitute an important part of the architectural landscape of urban centers in Podlasie, and above all, they testify to their importance in shaping the architectural landscape of the city. They are still found in various parts of the town, and in particular, in historical centers, including in the market squares.

The main conclusion from the preliminary analysis of the problem was that wooden buildings are an important element in preserving the historic values of market spaces in

the analyzed small towns of Podlasie. Therefore, the research should be based on terms of preserved historical values. The care for the preservation of architectural heritage, including a modest one that is a testimony of local specificity, is a part of the general principles of sustainable development with an intergenerational dimension [3].

2. Literature Review

2.1. Cultural Heritage and Sustainable Development

Material heritage, including architectural heritage, is a resource for improving the quality of life in urban areas. Protecting the architectural heritage is not only an element of preserving cultural heritage for future generations, but also plays an important role in improving the quality of the urban environment. It contributes to the economic, social and cultural development of cities, and more broadly, of regions and countries [4].

The conservation of architectural objects and the protection of the urban landscape are not directly based on the principles of sustainable development. However, in practice these areas are intrinsically compatible with sustainable development principles and have great potential to make a significant contribution to sustainable development [5].

In a holistic approach, architectural heritage is not only a carrier of fixed historical values, but becomes an active element in shaping urban life. The analysis and understanding of the identity of a historic city in terms of the evolution of both its tangible and intangible heritage is the starting point. This is followed by the integration of heritage into contemporary life. Such an approach allows the use of existing historic buildings, streets and public spaces largely in harmony with their traditional use. It is a low-interventionist approach to the society, environment and economy of a historic city. In this case the conservation of architecture is not a separate field of action, but becomes an important element of sustainable development [6]. The adaptation of existing buildings is a form of re-use of material resources. From this perspective, the continued use of historic buildings and their consequent adaptation to contemporary use and operational requirements prove to be important [7].

The issue of sustainability covers a number of aspects. One of them is the energy efficiency of buildings. It concerns not only newly constructed buildings but also existing ones, including historic ones. This is reflected in theory, practice and legal regulations. Historical buildings are a huge resource. They are a testimony to history and a source of cultural values. They also have a high utility value. Historic buildings were built of durable materials. That is why they have a long life span. They are also an example of rational construction and the use of local materials. These are advantages in line with the principles of sustainable development [8]. The material heritage is also affected by the ongoing climate change and is vulnerable to its adverse impacts. At the same time, it is a resource that should also contribute to reducing negative environmental impacts. There is great scope for action in historic sites in this respect, for example, through good management from the point of view of a closed loop economy. Factors such as the material transport, construction process, maintenance and waste management of the built environment are taken into account for environmental impact assessments. Thereby, the environmental impact assessment of historic buildings is more holistic and shows the benefits of using historic buildings [9].

Legislative aspects are important in improving the energy efficiency of historic buildings. Legal regulations in the area of energy efficiency and the life cycle of buildings should take into account the specific nature of historic buildings [8]. Legislation protecting the value of recognised historic buildings often restricts the use of modern techniques to improve the energy efficiency of these buildings. In studies covering specific sites, attention is often focused on technical aspects that improve energy efficiency. A serious challenge for their application is precisely the restrictions arising from the need to preserve historical values [10]. Therefore, an attempt to reconcile often contradictory goals requires the cooperation of specialists from various fields. The interdisciplinary team may consist of architects, engineers and conservators, as well as specialists from other fields [11].

Historic buildings are a resource in focus because of their importance to the preservation of material heritage. There are many buildings that do not meet the criteria to qualify for legal protection as historic buildings. However, they often have high values, e.g., they are an important element in preserving the historic urban landscape. They are therefore important for the preservation of historic cultural values. They could be subjected to more energy-efficient works [12]. Buildings erected before 1945 represent a very large resource on a European scale. They were built using traditional construction methods. Assessing their adaptability is important for their sustainable use. In Italy, the GBC Historic Building system was developed, mainly for buildings from the pre-industrial era [13]. The aim of the tool is to support stakeholders in planning all stages of the construction process in an efficient and holistic way, implementing an informed and sustainable conservation process that allows the historic building to remain a source of cultural identity while meeting today's needs. Intervention should be carried out in a minimal way so as to interfere as little as possible with the historic elements of the building.

High energy efficiency is environmentally beneficial and also economically viable. However, it carries risks for the tangible and intangible values of historic buildings. Modern materials have properties that often work poorly with historic building solutions. Therefore, the changes made should be reversible. It is important to continually maintain buildings in good technical condition, which translates into operational benefits at low cost. This is also facilitated by the use of in situ components. In this way, improving the energy efficiency of a building is done in a way that preserves the historic building fabric as much as possible, while having a minimal impact on the lives of building users and owners. This is in line with the principles of historic preservation and sustainable development [14]. A balanced intervention towards improving the energy efficiency of historic buildings must achieve both the objective of optimising energy savings and preserving the original historic values of the building [15]. The question of preserving the historic form is particularly important in the case of established historical buildings. The solutions found during research in Visby, Sweden can serve as an example of finding the appropriate solutions for wooden buildings. There are historic buildings with wooden structures covered with lime plaster. It was possible to improve the energy efficiency of the building at a relatively low cost. By adding hemp to the lime render and slightly increasing the thickness of the render, a significant improvement in the energy efficiency of the buildings was achieved. The proposed solutions not only preserve the historic form of the buildings, but are almost entirely in line with traditional construction techniques [16].

The issue of environmental impact goes beyond the energy efficiency of a building. A broader view takes into account the life cycle of buildings. Research indicates that, taking into account the life cycle of buildings, the renovation of historic structures can make them just as effective in reducing greenhouse gas emissions as new buildings constructed. Even small energy efficiency retrofits are beneficial in terms of climate change mitigation and offset the environmental investments made. As the stock of historic buildings in many respects represents a finite resource, demolition should be avoided in all circumstances, given that it is an irreversible action [17].

Sustainability is a challenge for different areas of a city. A broader perspective, from the point of view of the urban landscape, is also essential [18]. Different elements contribute to the quality of an urban landscape. One of them is cultural heritage. The UNESCO Recommendations on Historic Urban Landscapes emphasise the importance of heritage conservation: "As the future of humanity depends on efficient planning and management of resources, conservation becomes a strategy for achieving a sustainability-based balance between urban development and quality of life." [19]

Wooden architecture is an important part of the architectural heritage. Due to the material used, wood construction has many sustainable advantages. These include the recyclability of the material. Historic timber construction used traditional construction techniques resulting from a thorough knowledge of wood as a building material. Wood was used according to its properties in an economical way. Traditional construction techniques

have many advantages. They can also be used today [20]. This is one of many reasons why historic timber buildings should be preserved and used. Wooden buildings reflect the historical development stages of towns and villages. They enrich the diversity of European heritage. This diversity deserves attention and should be preserved [21]. What is very important is that wooden buildings often have local features not found in other regions of the country or the world. In the case of small objects, mainly houses, it is usually the so-called “vernacular architecture”, always strongly connected with the climate, available materials and local traditions. Wood is a building material that still allows the use of local materials and the skills of local construction craftsmen [22]. Supporting local distinctiveness and sustaining cultural heritage is key to building sustainable communities. Historic buildings and historic surroundings foster a sense of belonging to a particular place and local cultural traditions as well as creating an awareness of the distinctiveness of local communities. This is important in the context of the negative effects of globalisation in the 21st century [23].

2.2. *An Outline of the Issues of Wooden Architecture in the Podlaskie Voivodeship*

In the past, a characteristic feature of the development of small towns in the Podlasie region was the widespread use of wood as the basic building material. Not only small buildings, mainly houses, but also more substantial structures were built of wood. The brick buildings, such as a town hall or a church, usually appear relatively late compared to other towns in Poland. For example, in the town of Bielsk Podlaski a brick town hall, replacing the old wooden one, was erected only in the second half of the 18th century [24]. At that time, a brick church was built in the immediate vicinity. The previous one was wooden. To this day, there are three historic wooden orthodox churches in the town. The oldest of them dates back to the turn of the XVII/XVIII century [25].

As a result of historical processes, there was a great cultural diversification of the lands of the Podlasie region. Therefore, sacral architecture of the Podlaskie Voivodeship is characterised by a great variety of architectural forms [26]. Roman Catholic churches, Uniate and Orthodox churches, synagogues and mosques were built in this region. Among them, an important role is played by wooden churches. A significant number of wooden churches and orthodox churches have been preserved to the present day. In this group, the Baroque church in Narwia dating from the mid-18th century should be singled out [27]. Another interesting example of an object from the same period is the wooden church in Ostrożany [28]. Among the preserved wooden churches, the oldest ones come from the second half of the 17th century. These are former Uniate churches. The small Orthodox church in Sobiątyń was built around 1672 [26]. The group of the oldest buildings dating back to the turn of the 17th/18th century includes churches in Topolany and Bielsk Podlaski [26]. Today, most of the surviving churches of the Eastern Church are Orthodox churches. They were built in the second half of the 19th and early 20th century. Until World War II, there were also numerous wooden synagogues in the region [29]. Unfortunately, all of them were destroyed during the Second World War. Only a few brick synagogues have survived. Of the non-existing monuments of Jewish culture, the wooden synagogue in Zabłudów, dating from the 17th century, deserves special attention [30]. Nowadays the idea of reconstructing the synagogue has appeared [31].

In the nineteenth and early twentieth centuries, traditional timber construction by local carpenters continued to dominate in small-town buildings [32]. Particularly in the Podlasie region, the architectural character of towns was created by wooden buildings, mainly residential ones. Statistical data from the 19th century testifies to the use of wood as the basic building material. In 1843 in Bielsk Podlaski, there were 299 houses, including 11 brick ones, while in Kleszczele, there were 202 houses, including 1 brick one [33]. At the end of the 19th century there were 675 houses, of which only 16 were made of brick, in Bielsk with a population of almost 8000 [34]. Currently, the oldest preserved houses date back to the 18th century. Among them is the house in Knyszyn, which is an interesting example of small-town bourgeois architecture [35]. In Bielsk Podlaski, a valuable example of bourgeois

housing is a richly decorated house built in the second half of the 19th century [36]. The majority of houses erected in the interwar period and in the first decades after World War II should also be included in this stock of wooden houses as they maintain the traditional character of the buildings in Podlasie towns. When building houses, the local architectural tradition was referred to. Houses usually repeated traditional architectural forms, possibly slightly modifying them and thus maintaining aesthetic consistency. Building in reference to the local tradition was common. In the town of Supraśl, houses were still being built in this way in the 1960s [37]. Today, wooden houses in some areas of small towns are still an important element in maintaining the traditional character of the urban landscape [38], as well as spatial order in general [39].

On a larger scale, brick construction appeared in the 1970s, also in the form of housing estates. At the same time many houses began to disappear from the urban landscape [30]. This has led to a significant loss of historic townscape features.

Nowadays, remnants of historic wooden housing can be found in various parts of towns. They are mostly located in peripheral districts of towns. There are still some buildings in the town centres [40].

Bielsk Podlaski and Kleszczele are towns, in which some small wooden buildings, mainly houses, have been preserved. Preserved wooden buildings in one of the frontages of the market square in Bielsk Podlaski are the remains of the buildings which dominated even before World War II. The frontage has a significant value from the point of view of the historic preservation of the urban landscape. In addition, individual wooden buildings have historic value. The reconstructed inn dating from the first half of the 19th century is a valuable example of urban public buildings. Its value is confirmed by its entry in the register of historic monuments. Two other wooden buildings in the frontage are examples of typical bourgeois houses, which in the past were an important element of the city development. Both buildings are listed in the register of monuments. Together they form a frontage preserved in its historical shape. A small number of wooden houses have survived in the market frontage of Kleszczele. As early as the late 1970s, attention was drawn to the architectural and functional solutions of the houses in the market square and its vicinity [41]. Their basic characteristics have been identified. The houses are situated gabled to the street. The gable elevation facing the street is decorative—it houses the entrances. The interior layout is two-bay and symmetrical. Houses located in other parts of the city are smaller and have less representative character.

Currently, there are virtually no publications on the significance of modest wooden buildings, mainly houses, for maintaining the historic value of market spaces in the towns of this region. This topic was discussed only fragmentarily in unpublished papers of general nature in the 1970s and 1980s [41,42]. Research on the wooden buildings in the market squares of the small towns in Podlaskie Voivodeship is also needed due to the threat of contemporary transformations of buildings and, consequently, potential loss of their historical value. Wooden buildings testify to the stages of urban development. Their value is confirmed by an entry in the register of monuments or the records of monuments. Buildings with recognized monumental value, together with preserved buildings of traditional character, create at the market squares the buildings which constitute the evidence of the historical urban landscape of Bielsk Podlaski and Kleszczele. As they are located in such important public spaces of the city, their role in maintaining the features of the historic landscape is especially important. They also have a significant impact on the image of the city in the minds of local residents, tourists and visitors.

The need for research in the field of wooden buildings of the market squares in the small towns of Podlaskie Voivodeship resulted also from earlier studies. In general, they concerned historical wooden housing in the region. These studies included the towns of Bielsk Podlaski and Kleszczele. The results were presented in several publications [40,43,44].

3. Materials and Methods

3.1. Objective

As a result of clarifying the research problem, two main objectives were formulated:

- (1) The determination of the significance of wooden buildings in selected small towns of Podlasie in maintaining and restoring their historical values. To achieve this it is necessary to:
 - establish the general history of the transformation of the market buildings, and
 - determine the preserved value of historic wooden buildings.
- (2) Defining the directions for conservation activities that would partially or completely restore the historical values of the wooden buildings and the market space

An additional aim was to compare two different market squares with wooden buildings in cities with different histories, and currently with different sizes and populations.

3.2. Research Subject

The subject of this study is the historic wooden buildings located in market frontages of small towns in the southern part of the contemporary Podlaskie Voivodeship. These include not only buildings listed in the register or records of historical monuments, but also objects outside the register. An important criterion in selecting the locations was the condition of preserving the market square in its historical shape or, if its historical form has been transformed, preserving the basic features of the original layout.

Initially, market squares in several towns that met the above criteria were selected for the study. Two of them were selected for in-depth analysis: Bielsk Podlaski and Kleszczele. These two towns differ in size and character of their urban and architectural tissue resulting from their different histories, as well as their contemporary role as urban centers.

Bielsk Podlaski is located in the southern part of Podlaskie Voivodeship (Figure 1). It was granted town rights, under Magdeburg Law, in 1495 by king Alexander Jagiellon. It was a royal town of the Crown of the Polish Kingdom. Currently, it has a population of just over 25,000 [45]. It is an important industrial, especially construction, and cultural center.



Figure 1. Bielsk Podlaski and Kleszczele. Location within Podlaskie Voivodeship (Source: Author, used file: https://pl.wikipedia.org/wiki/Plik:POL_location_map.svg#filehistory; accessed on 17 April 2021).

The town of Kleszczele is located in the southeastern part of the present Podlaskie Voivodeship, about 25 km south of Bielsk Podlaski (Figure 1). The town was granted city rights, under Chelmno Law, at the beginning of the 16th century during the reign of King Sigismund I the Old. It was one of the royal towns of the Crown of the Polish Kingdom. Currently, it is one of the smallest towns in Poland. At the end of 2019 it had only about 1240 inhabitants [46]. It is an urban center of local importance.

Both cities have market squares preserved in their historical shape. They are located by the main historical transport routes passing through the city. With time, in such an urban

layout, the main road transformed into the most important street of the town. The square is usually compositionally connected with sacral buildings located along the main road. All these elements create a clearly outlined compositional axis. Such a market layout can be found, e.g., in Bielsk Podlaski and Łuków [47] (p. 103). In the case of Kleszczele, this layout has not been fully formed due to a limited overall development of the town. Moreover, a temple has been located on the market square from the very beginning. Perhaps, the reason for locating a church in the market square was the size of square, which in the case of Kleszczele, was about 200 m long. After the land for the church square was occupied, there was still enough space to perform all the functions of the market square. As in each of the historic towns of Podlasie, the discussed cities also had wooden buildings for a long time. Today, only a few have been preserved in the market squares.

3.3. Methods

The study uses mainly the methods applied in historical research, i.e., collecting information available in literature, archival sources, and other studies (e.g., iconographic records, cartographic sources). Then, the collected data were subjected to analysis and conclusions were drawn.

Bibliographic searches of the subject included both published and unpublished papers. Among the publicly available publications, due to the lack of studies directly related to the subject under research, publications of historical character concerning particular localities, as well as the region in general, were of great importance. The bibliographic searches included books and regional periodicals.

Among unpublished publications, the studies and materials in the archives of the Provincial Heritage Monuments Protection Office in Białystok are of great value. These are general studies concerning the town (e.g., historical and urban studies from the mid-1970s). They contain much valuable historical information, analyses and conservation conclusions. After several decades, they have also become valuable archival material, especially in terms of photographic documentation. In addition, studies of individual objects (historic monuments charts) were also used.

A search conducted in the Museum of Both Nations in Bielsk Podlaski, a branch of the Podlaskie Museum in Białystok, revealed a number of iconographic (including photographs from the interwar and wartime periods) and cartographic (maps from the interwar period) materials. Valuable iconographic materials were also obtained from publicly available online sources.

An important element of this study was field research (in situ), which enabled the establishment of the current status and the comparison with the acquired information. Photographic documentation was prepared. The study also used the material obtained in previous field research conducted in 2018 and 2020. The material obtained in the field research was mainly used for comparative analysis of historical materials with the contemporary state of market buildings and conclusions.

4. Results

4.1. General Characteristics of Research Results

The research resulted in establishing the main stages of market square development transformations. The most important of them is the moment of discontinuation of the market square development transformations and the loss of their historic form in the majority of the market frontages. The present state was described, taking into account the preserved historical values. A basic assessment of the wooden buildings was carried out, and the main directions of conservation activities were outlined. An assessment was made of wooden buildings in terms of their significance for the preservation of the historic values of the market spaces. The analysis covered the form of buildings, façade and roofing materials and other elements which may have an impact on the preservation of the historic market space. The preservationist conclusions formulated were aimed at defining recommendations that would enable the restoration of the architectural elements

of the surveyed buildings, essential for maintaining or restoring the historical values of the market spaces. First of all, buildings entered in the register of historic monuments or the register of historic monuments were analysed. Attention was also paid to the preserved wooden buildings of historic value not covered by any form of protection provided by the conservator's services. General comments on the condition of historic market space have also been formulated, with a view to restoring their historic values.

Mainly the following terms are used: historical values, historical character or historical form. This is due to the fact that, in most cases, the research included buildings which are not listed in the register or records of historical buildings and which are not officially listed buildings. Thus, the terminology used better reflects the research scope. Dilemmas concerning the precision of the use of terms also appear in the papers of other authors [48] (pp. 208–209).

For clarity, the research results and conclusions were organized according to the following sections:

1. outline of the history of market buildings—general characteristics of the transformation of market development until the First World War,
2. interwar period—the last stage of evolutionary development of market buildings,
3. Second World War and post-war period—discontinuation of the historical development of market square buildings and a large extent of loss of historical buildings on the market frontage as a result of war damage and post-war transformations,
4. analysis of preserved historical values and conservation conclusions—the section describes historical values identified in the research and conclusions regarding measures to maintain and restore the historical values of market buildings and the market space.

The paper is supplemented by contemporary photographs, as well as drawings showing market development plans with information and conclusions obtained during the research.

4.2. Case Study—Market Square in Bielsk Podlaski

1. Outline of the history of market buildings

The land measurement of 1560–1563 had a major impact on the shape of the market. At that time, the marketplace, which was located by the temples, was liquidated. The marketplace next to the Church of the Nativity of the Virgin Mary and St. Nicholas was transformed into a town square. The market was given an approximately rectangular shape, the eastern side of which was the edge of main street passing through the town [49] (p. 64). Currently, the market's dimensions vary from about 75 m to 95 m and its shape is trapezoidal. Two streets diverge from the northwest and southwest corners of the market square towards the west. The other two streets leaving the square are extensions of the town's former main street to the north and south. The houses of wealthier citizens were built around the square, and in its center stood a wooden town hall [34] (p. 41). The town experienced its heyday at the turn of the 16th and 17th centuries. The second half of the 17th century was a period of devastating wars and invasions in the Republic of Poland, which affected Podlasie very severely. As a result of destructions and a generally unstable situation, the town fell into decline. Bielsk started to regain its importance in the 18th century, mainly thanks to the activity of the Branicki family. The Baroque town hall, situated now in the center of the market square, was built in 1779 by Jan Sękowski, an architect from the circle of the Branicki patronage [24] (p. 99). At that time, thanks to Izabella Branicka's intervention, the Boni Ordinis Commission was active in Bielsk. The new law stated that the height of houses in the market square and in the main streets could not exceed 18 cubits, thus ordering the scale of buildings in the town [47] (p. 125). In the frontages of the market square, the plots were about 16–17 m wide [50] (p. 2).

2. Interwar period

The development of the market square buildings in the interwar period reflects the general developmental tendencies of the town at the end of the 19th century and in the

first decades of the 20th century. In that period, wooden buildings played a very important role in the architectural tissue of Bielsk and were definitely prevailing in terms of quantity. These tendencies were also expressed by the buildings located in the market frontages. The northern, western and southern frontages were covered with wooden buildings. Two buildings stood out among them. The most impressive was the 18th century inn. It occupied the eastern end of the northern frontage. Its dimensions were approximately 16×60 m and its short gable facade faced the market square [51]. Another important building was a roadhouse from the second quarter of the 19th century [36]. It was located at the southern end of the western frontage and faced the market square with its gable facade. The remaining buildings were impressive burgher houses. They were situated with their gables or ridges and without a clear compositional concept. These three frontages had a picturesque, relatively uniform architectural expression, the important bond of which was the used wooden material.

The eastern frontage had a different character. It was built up mainly with brick buildings. These were two-story buildings, usually with a usable attic, which took the form of bourgeois houses [52] (p.165). The frontage also included less imposing buildings, brick and wooden houses [53] (p. 85). The buildings in the frontage contributed to a typically urban character. The location along the town's main street probably had an impact on the location of large buildings in this part of the market square.

3. Second World War and post-war period

The period of the Second World War brought great losses to the town. Almost 70% of the buildings were destroyed [54] (p. 19). The greatest loss in the market square was the destruction of the former inn building. Not only was a valuable object lost, but also an important architectural element in this part of the city. The house adjacent to the inn was also destroyed [54] (p. 19). The eastern frontage was partially destroyed. The most important buildings which survived the war time were two large tenement houses. The southern frontage was probably completely destroyed [55]. However, the western frontage was preserved in its entirety.

The post-war period was generally a time when not only the new buildings were built, but also when the old ones were replaced. The wooden buildings which remained in the northern frontage, located to the west of the no longer existing inn, were demolished over time. The last one was demolished in 1998 [56] (p. 17). The eastern half of the northern frontage is currently filled with a commercial building. The remaining part is still undeveloped. Most of the southern frontage is occupied by a modern commercial pavilion from the 1970s. Behind it, a two-story brick house was constructed. The eastern frontage was almost completely replaced after the war. Currently, the evidence of its historic character refers to two elevations of bourgeois houses, which were incorporated into the new building located at the southern end of the eastern frontage. To the north of this building is a line of new brick buildings with uniform architectural expression and a small scale. To sum up, as a result of war damage and post-war transformations, the northern, southern and eastern frontages of buildings were completely replaced. Only the western frontage, where all wooden buildings survived the war, preserved its historic character.

4. Analysis of preserved historical values and conservation conclusions

The only evidence of the historical shape of the buildings at the market square in Bielsk Podlaski is the western frontage (Figure 2). Its importance is confirmed by the inclusion of a roadhouse building in the register of monuments [57], as well as two houses in the provincial register of monuments (No. 7 and No. 9 Town Hall Square) [58]. The square is also located within the boundaries of a fragment of the urban layout entered in the register of monuments.

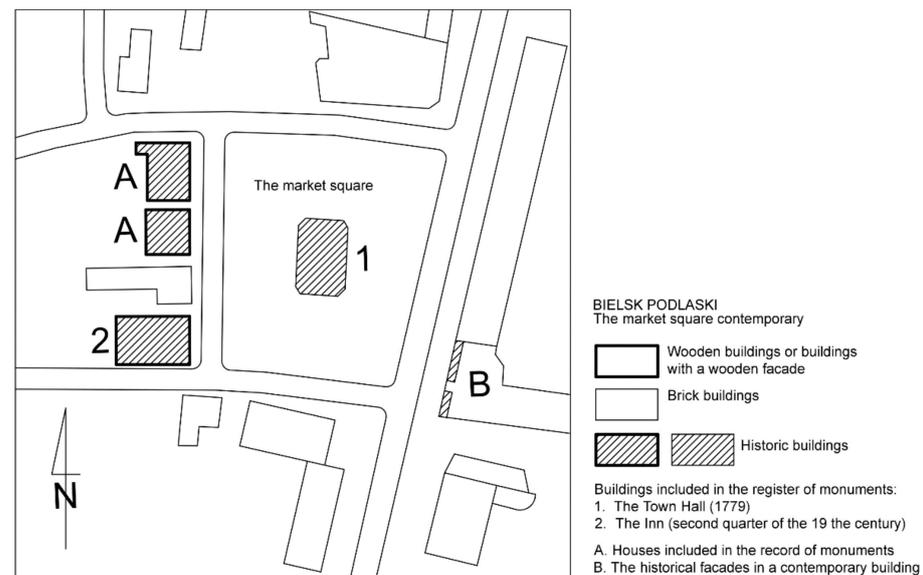


Figure 2. Bielsk Podlaski. The market square with surrounding buildings (Source: author (used maps from the website: geoportal.gov.pl; accessed on 17 March 2021)).

However, the current condition of buildings in the frontage differs from that of the interwar period. The most important building is the roadhouse. It had its historical form in the early 1960s [54] (p. 128). The roof was covered with shingles. In it, on the side facade, there were dormers and a canopy over the entrance, smoothly integrated into the roof slope. In later years, the roof was covered with asbestos, and the dormers and canopy over the entrance were modernized into simplified and historic forms [45]. The wooden roadhouse was demolished in the 1980s and replaced with a reconstruction (Figure 3b). However, the architectural form of the reconstructed building differs in detail from the original. The main change was the use of brick construction. Wood still remained a facade material and the object preserved its general historical form. The roof was covered with sheet metal and several dormers, much larger than the historic ones, were placed in the roof slopes. Some of the deviations from the original were probably due to the desire to achieve the functional qualities of the recreated roadhouse. The wooden house adjacent to the tavern was replaced with a new brick one, with a form similar to the original but on a larger scale (Figure 3a, third building from the right). The other two buildings retained their general architectural form (Figure 3a, the first and second buildings from the right). The facade and roofing materials have been replaced. Nowadays, a serious problem is the placement of an excessive amount of advertisements with aggressive artistic expression on the building, which hinders the perception of their architectural values (Figure 3a,b).



Figure 3. Bielsk Podlaski: (a) The western frontage (2018); (b) The historic inn (2021). (Source: author).

The conducted analyses indicate the basic directions of conservation activities which would allow, to a large extent, to restore the historical values of the only preserved frontage of market square in Bielsk Podlaski. The activities should focus on appropriate facade and roofing materials, taking care of details and the general building appearance. The main recommendations are as follows:

- historical shuttering of the building No. 7 should be restored;
- roofing materials should be replaced with historic ones in buildings no. 7 and 9, (ceramic tile), perhaps in the future in the roadhouse building, replace the tile roofing with shingles; due to the overall architectural expression replacing tile roofing with ceramic tile in building no. 5 would be beneficial;
- the existing wooden window frames should be retained; and
- advertisements in their current form should be removed—new ones should be less aggressive and inscribed in the historic character of the buildings.

The Market Square—in general, the market space is maintained in an appropriate form. However, consideration should be given to removing conifers from the market square (Figure 4a,b). These elements are historically unreasonable, randomly located and hinder the perception of the market space, especially the western frontage. Ecological considerations and opinions of the local community should also be taken into account when making decisions.



Figure 4. Bielsk Podlaski: (a) The town hall in the foreground. In the background, a part of the western frontage is visible (2018); (b) The town hall in the foreground. The eastern frontage is visible on the right (2021) (Source: author).

4.3. Case Study—Market Square in Kleszczele

1. Outline of the history of market square development

Most probably, the buildings of original settlement were located along the route connecting Bielsk and Brześć. Apart from the moment of its incorporation, the spatial layout was also influenced by the land measurement carried out in 1560. It is difficult to distinguish elements of the layout from those two periods [41] (p. 12). The main element of the town's urban layout was the market square. It was laid out roughly on a rectangular plan measuring approximately 200×100 m. The most numerous among Polish towns are market squares with dimensions of 80×90 m or similar [2] (p. 25). Thus, the market square in Kleszczele was one of the largest. The market square was located on the eastern side of the Brześć–Bielsk route (its longer side). The longer axis of the square deviated to the east, following the course of main road that ran through the town. A total of five streets were leading from the square: four of them from the corners. Two streets were actually extensions of the eastern frontage—to the north and south was the Brześć–Bielsk route. The northwestern and southwestern corners had one street each leading westward.

Additionally, from the eastern frontage, about 1/3 of the length of the frontage from the southeastern corner, a street led out in the eastern direction.

The 1560 measurement register mentions the church of St. Stanislaus on the market square, which was founded in 1544. The layout of the market frontage was as follows. In the northern frontage there were two squares, one of which belonged to the parson. The parsonage, inn and school were located there. In the southern frontage, there was one square belonging to the mayor. The other two longer frontages consisted mainly of houses. The western frontage had eight squares, including the one owned by the mayor. The eastern frontage had 14 squares. There were 11 houses, an Orthodox parsonage and the St. Nicholas Orthodox Church with a cemetery next to it [41] (p. 13).

The 1568 revision of measurements provides the number of squares, which differs from the number given in the 1560 measurement. The shorter frontages had one square each, while the longer one had 11 (western) and 8 (eastern) squares [41] (p. 15).

A 1784 revision of Kleszczele, conducted at the behest of the Boni Ordinis Commission, states that a small town hall stood in the square's center. There were 20 houses by the market square. All houses in the town were wooden. Generally, they were not very big. The most magnificent houses were at the market square, where the wealthiest burghers lived [59] (p. 104). In the squares near the market square, in addition to spacious houses, there were also many farm buildings. However, the buildings of the Catholic parsonage were the most developed. In addition, the Orthodox parish, located at the northern end of the eastern frontage, had a number of buildings in its square [59] (p. 127). The analysis of the above descriptions of market frontage development shows that the longer frontages were built up with houses. Hence, it can be concluded that from the architectural point of view, they had an ordered and uniform, or relatively uniform, character. On the other hand, the southern and northern frontages, where the mayor's and rectory's yards were located, were built-up with buildings that did not form a compact frontage and were subject to major changes.

In the 1870s, a brick church was built in the place of wooden church. At the end of the 19th century, the old wooden town hall was converted into a school. For the purposes of the magistrate and the town council, a wooden, rather spacious building was built on the post-church square [59] (p. 176).

2. Interwar period

The last period, when the market square retained its historically shaped, form was between the First and Second World Wars. Based on the preserved iconographic materials, the eastern frontage was, apart from the northern end, entirely built-up with houses [42]. The buildings were relatively homogenous, despite differences in their types. It consisted of one-story houses with a rectangular ground plan, covered with a gable roof. Most of them were situated with their gables, others with their ridges. The western frontage probably had similar buildings. The aforementioned forms are confirmed by the preserved houses from the turn of the 19th and 20th centuries and the first decades of the 20th century. Another characteristic feature of houses was the location of an entrance or two towers in the façade facing the market square. Two entrances were often symmetrically located in the façade. Wooden fences were placed in the line of facades facing the market square and, together with the buildings, formed a clear line of development. It is difficult to determine the development of the two shorter frontages.

The most important object on the market square is the brick church located in its northern part. Moreover, based on iconographic materials from the interwar and wartime periods, it can be concluded that there were other buildings on the square. Two small wooden buildings were located to the southwest of the brick church. It is difficult to determine their function [60]. Probably, a building or buildings also used to stand in the southern part of market square [41]. However, it is difficult to determine this unequivocally based on the available materials.

In conclusion, it should be assumed that the two longer frontages (eastern and western) built up with wooden houses had a uniform architectural expression. Due to its location by the main street crossing the town, the eastern frontage was more important.

3. Second World War and post-war period

The Second World War caused serious damage. The scale of damage to the market square buildings is difficult to establish precisely. It is known that 52 houses burned down [59] (p. 231). The Orthodox church was damaged. In particular, the roof and church equipment were destroyed. However, it is not known exactly what losses occurred in the buildings by the market square. Probably, in the eastern frontage, some buildings were destroyed [61].

The post-war period brought transformations to the buildings by the market square. Several historic wooden houses were demolished. The construction of new buildings started in the 1970s and the 1980s. These are brick, two-story buildings, usually with a flat roof. Their architectural expression differs from the historic buildings. They were usually located deep within the plot and do not form a clear line with the old buildings. The existing houses partially replaced the façade and roofing materials. The above mentioned changes affected the western frontage the least. The southern frontage is currently developed with three detached buildings with the height of a typical house and forming a clear building line. There are no buildings on the northern frontage.

4. Analysis of preserved historical values and conservation conclusions

The market square in Kleszczele (Figure 5) is an element of the urban layout dating back to the 16th century which has been entered into the register of historical monuments [57]. The western frontage is the best preserved in its historical form (Figure 6). The provincial register of monuments lists three buildings there. These are houses no. 10 and 12 (adjoining each other with their gable walls, wooden and plastered) [41] (p. 27) and house no. 22 (Figure 7a), which is listed along with a barn located deep within the plot [58]. There are no objects listed in the register of historical monuments. The existing buildings mark the historic building line. Despite the loss of buildings and their partial replacement, the historic building line is still legible. The preserved houses form architecturally consistent buildings on longer sections (Figure 6a,b). Most of them are wooden. These houses have both gable and ridge positions. At least two wooden buildings are plastered. In terms of architecture, their frontage should be treated as brick buildings. Most of the houses, which were constructed after the war, do not refer to the historical buildings with their form. Usually, they are set back from the historic building line (Figure 5). Despite the unfavorable changes, the western frontage has to a large extent retained its historic character.

In order to preserve and restore the lost historical values of the western frontage, it is necessary to:

- maintain the general character of the development;
- in case of new buildings, the scale and form should refer to historical houses;
- use facade and roofing materials of traditional character—in the case of existing buildings, replace them with traditional ones (wooden shuttering referring to historical ones, ceramic tile roofing);
- use wooden window frames in the existing buildings;
- ensure that fences are kept in the line of market facades (within historical building line); fences should be wooden; and
- newly built houses should have the form, scale and finishing materials referring to the historical model and should be located along the historical building line.

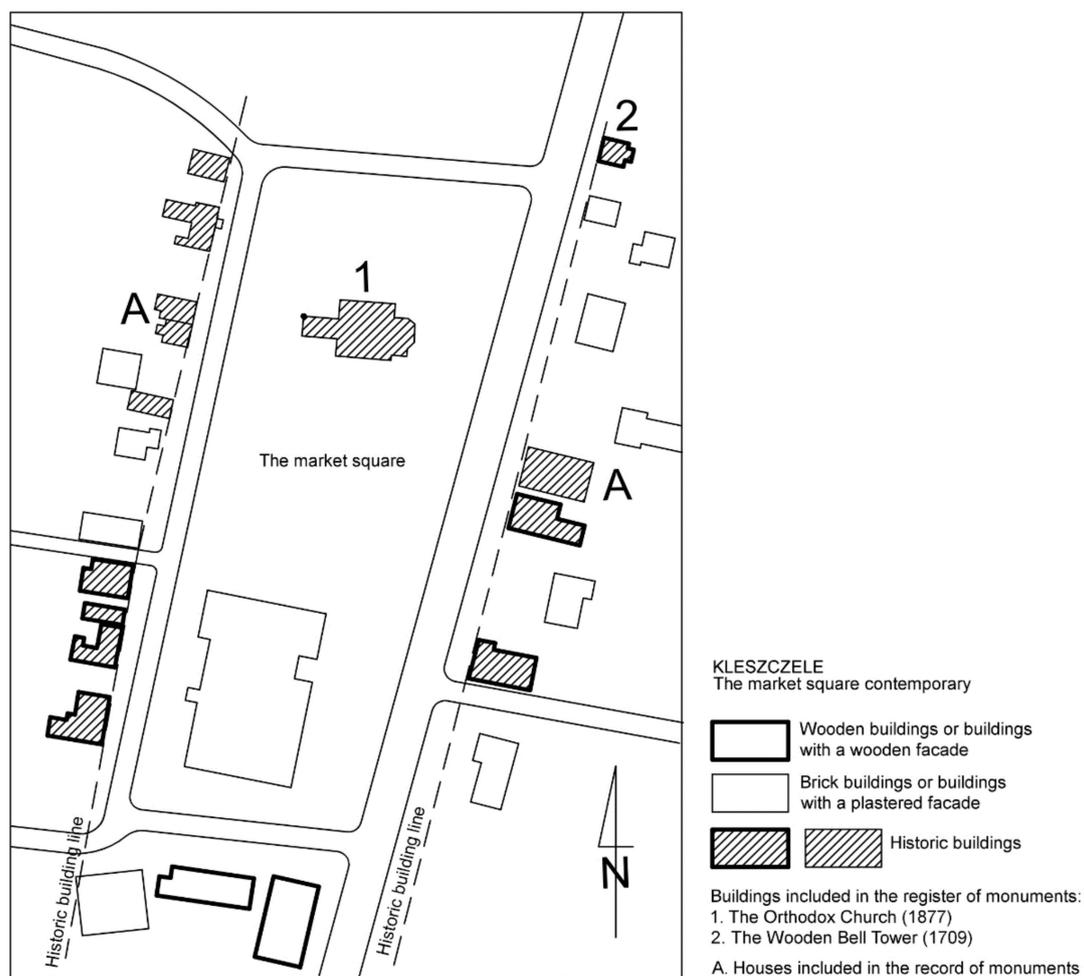


Figure 5. Kleszczele. The market square with surrounding buildings (Source: author (used maps from the website: geoportal.gov.pl; accessed on 25 March 2021)).



Figure 6. Kleszczele: (a) The western frontage. View from the south (2021); (b) The western frontage. View from the north (2021) (Source: author).

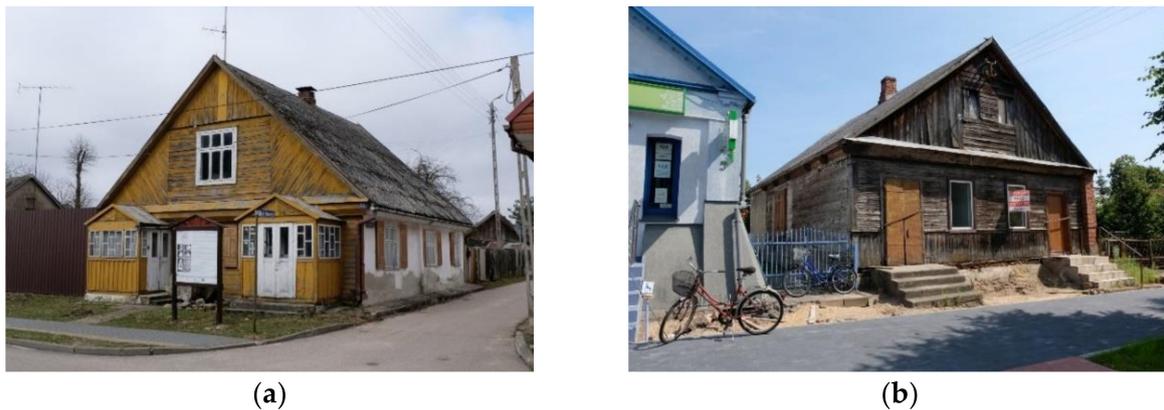


Figure 7. Kleszczel: (a) The market square. A wooden house in the western frontage (number 22) (2021); (b) The market square. A wooden house in the eastern frontage (2020) (Source: author).

Despite the irretrievable loss of its historic character, the eastern frontage also deserves attention. Historically, it was the most impressive frontage. It was probably influenced by its location along the main street crossing the city. At the northern end of the eastern frontage, there is a wooden bell tower dating back to the beginning of the 18th century (Figure 8a). It is a remnant of the complex consisting of a church and a bell tower. The wooden church was destroyed during the First World War. The bell tower is located slightly north of the northeastern corner of the market square. However, together with the brick fence, it is actually the beginning of the eastern frontage on the northern side. It also marks the historic building line. Further along the frontage, the building line is determined by two preserved buildings (no. 5 and 7) and a building at Kościelna Street (Figure 8b, two houses in the foreground). The buildings constructed in the post-war period were situated deep within the plots at a distance of 6–7 m to even over 20 m from the historical building line. Several plots remained undeveloped (Figure 5). As a result, the frontage does not have a legible historical building line and a uniform architectural character. The remains of old buildings are two adjacent buildings: the brick building no. 5 (registered in the provincial monument records) (Figure 8b) and the wooden building no. 7 (unregistered). Building no. 7 is the last preserved wooden house in its historical form in this frontage (Figure 7b).



Figure 8. Kleszczel: (a) A part of the eastern frontage. View from the north. The wooden bell tower in the foreground (2020); (b) A part of the eastern frontage. View from the south. The two historic houses in the foreground (2021) (Source: author).

Despite the irretrievable degradation of the historic character of the frontage, appropriate actions could maintain the old building features preserved in their residual form. The most important measures include:

- restoring the historical building line in new buildings, especially in buildings no. 5 and 7, and

- ensuring that new buildings have an appropriate form, small scale as well as toned colors and finishing materials.

The Market Square—currently, in addition to the church located in the northern part of the square (Figure 9a), the large southern section of the market square is occupied by a school building constructed in the second half of the 1990s. The space between these buildings is filled with tall greenery planted in the 1930s and 1940s (Figure 9b) [62]. As a result, the square as a single space is illegible. The frontages are invisible or poorly visible from the market square. It is reasonable to leave the old trees around the church. However, in the future, the high greenery in the undeveloped part of square should be only partially removed. In this way, at least in some parts, the square would be perceived as a single space.



Figure 9. Kleszczel: (a) View of the market square with the orthodox church (2021); (b) The market square. View through the trees on a part the western frontage. The orthodox church is visible on the left (2021) (Source: author).

5. General Conclusions

The conducted research can be summarised in the form of general conclusions in relation to the wooden buildings in the markets of the examined towns:

- wooden architecture is an evidence of a certain stage of market square development transformations and therefore it is an important element in the preservation of historical values of the analyzed market squares;
- in each of the analyzed market squares there is one frontage of relatively homogenous character, the main elements of which are wooden architectural objects;
- the state of preservation of the wooden architectural objects is not only their form—finishing materials and details as well as the shape of their surroundings are of great importance;
- it is advisable to carry out works both on the buildings and in their surroundings—this would restore some of the historical values of the buildings as well as the market space;
- the state of preservation of the historical market space also influences the proper exposition of the frontage and the authenticity of its perception; and
- care for the historical values of wooden market buildings directly translates into the values of the market space, thus becoming an important element of residents' quality of life, while increasing the attractiveness of the locality.

The research proved that it is possible to maintain and partially restore the historical values of market spaces in small towns in Podlaskie Voivodeship. Research in this field can be conducted in several other small towns in Podlaskie Voivodeship, where traditional wooden buildings have been preserved. The research can be the first stage of activities aimed at restoring historical values of market squares and other public spaces of the cities. In further stages, they should be carried out in a more detailed way in relation to particular buildings. They could be a basis for planning detailed conservation works.

It is also true that for cities with modest cultural heritage, including architectural heritage, it is much easier create a better-quality living space for people by utilizing the cities' original spatial order. In minding the cultural heritage, the sense of safety and the residents' ability to identify with a space is enabled and reinforced [63] (p. 299).

Some cities of modest architectural cultural heritage are often depleted by historical events and a lack of protective measures. In such a case, maintaining and restoring the historical values of old buildings takes on a broader dimension that exceeds the purely conservational issues. It becomes an element of shaping the quality of public spaces, indirectly having a positive impact on the quality of residents' lives [64]. Historical research and conservation work aimed at restoring the historical values of market buildings have a wider dimension than just expanding historical knowledge and restoring the historical shape of buildings. They make it possible to use the potential of heritage in the creation of high quality public spaces [65]. They promote the economic development of the city. They also make it possible to preserve the individuality of an urban space, which, in the age of globalisation and consequent unification, is becoming a more appreciated value. Thanks to this, residents identify themselves more strongly with their place of residence [66]. This induces in them a greater involvement in various aspects of city functioning. This is particularly important in the case of small towns.

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