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REVITALIZATION OF PLAUEN'S DIKE WITHIN THE HISTORICAL DEFENCE WALLS OF THE MALBORK CASTLE MUSEUM IN MALBORK

1. Introduction

The notion of “restoration” or “regeneration” in its contemporary meaning denotes an all-encompassing approach to different functional aspects of urban systems or the historical buildings. These are, among others, issues related to economical and social aspects, as well as environmental protection, and spatial planning.

By means of comprehensive projects encompassing many different technical measures (such as, in particular, repairs and overhauls, infrastructure modernization, maintenance and renovation, especially in relation to the buildings representing a high architectural and historical value), restoration is aimed at stimulating economic and social revival, as well as improving of tourism potential on urbanized areas.

Restoration initiatives are translated into improved quality of public space, and in the broader perspective, into the higher competitiveness of the restored urban areas [15].

As a result of restoration programmes, the infrastructural conditions of the previously degraded building complexes and historical city districts inspire a tourist and educational revival. These goals can be accomplished by improving the aesthetic value of urban open spaces, redeveloping buildings representing historical and architectural qualities, and by customizing contemporary architecture to historical urban planning arrangements.

The process of restoration is expected to create new economic and social opportunities, as well as the general development of conditions for the residents in the restored area, while at the same time preserving the local cultural heritage and landscape qualities [16].

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In consideration, special attention should be devoted to the historical defence walls surrounding castles and sacral buildings, as well as the old cities and towns, representing a distinguished example of so-called fortification architecture. Defence architecture (fortifications) shall mean all buildings and ground structures (dykes), as well as modified hydrographical conditions used as obstacles against enemies [2, 3, 5, 9]. There are two types of fortifications which can be distinguished, independent buildings and structures erected for the sole purpose of defence, as well as fortified buildings erected and used for other purposes (residential, official and sacral buildings, or utility and storage buildings). The city of Malbork along with the Malbork Castle represent the second type of defence architecture [6, 7]. According to this classification, the fortifications of the Malbork Castle Complex are composed of the High Castle, the Medium Castle and the Lower Castle — Przedzamcze, separated with defence walls [13].

This paper examines the restoration of the area surrounding the Castle Museum along with the adjacent areas of the Malbork municipality, with particular attention devoted to the preservation of historical fortifications in the eastern part of the Lower Castle (Fig. 1). The works are aimed at protecting and restoring the functional, historical and cultural values of the area. The restoration project is focused on making the historical area available to the public and on customizing it to the needs and standards of contemporary tourism, as well as on reconstructing it to its historical form designed on the basis of iconographic sources.

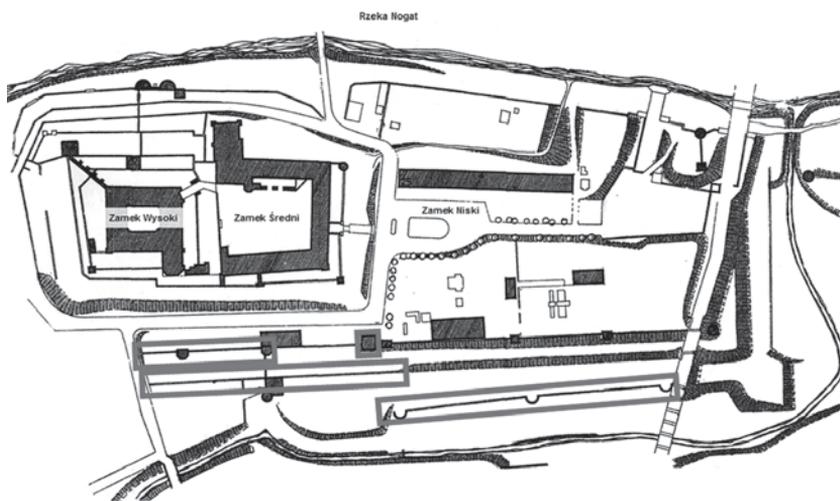


Fig. 1. Malbork Castle Complex and fortifications [10]

2. Restoration of the eastern areas of the Malbork Castle Complex

The area of the Malbork Castle Museum is surrounded by defence walls and is one of the world's largest castle fortifications dating back to medieval Europe. The fortification architecture of the Castle — and the eastern part of the Lower Castle in particular — is composed of both, dykes and defence walls [4].

The subsurface and surface defence structures surrounding the Castle from the east and north are the so-called Plauen's Dike (Heinrich von Plauen was the Grand Master of the Teutonic Knights, 1410–1413) [11, 14]. Fortifications were erected in response to military operations during the Battle of Grunwald in 1410, when the Castle's defence system proved to be too weak to resist fire arms and guns. As a result, Henrich von Plauen decided to reinforce the fortifications in the eastern and northern parts of the Lower Castle. The defence architecture was built to prevent enemies from entering the older fortifications of the Castle, and it allowed to use fire arms during military operations [1, 7, 8, 12].

The fortifications acted as the external defence line which began to be erected in the period from 1411 to 1413. The construction works continued throughout 1418, and were finished in the period 1441–1448. The historical defence structures included dykes combined with brickwork, as well as bastion towers adapted to firing arms and artillery [1, 12].

The defence structures were reconstructed by Conrad Steinbrecht and erected in the period between 1870 and 1920 however, these were later demolished during military operations in 1945 and have not been reconstructed or protected, save for a few exceptions [8].

The current restoration of this historical area is handled by two different entities, the Malbork Castle Museum, and the Malbork Municipal Office. The Project Partners are looking to develop the area known as Plauen's Dyke by designating and restoring the existing ruins and the surrounding area as a cultural venue. The following will be subject to works as part of the Project (Fig. 1, 2):

- 1) internal section of the defence walls,
- 2) New Gate Complex, a historical entrance to the Castle,
- 3) Snycerska Gate,
- 4) external defence wall with towers (artillery stands) reconstructed at the turn the 19th and 20th century.

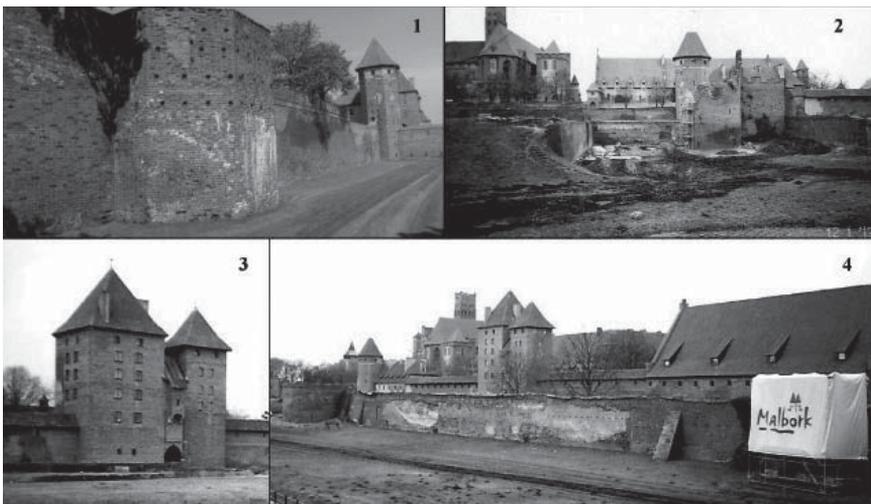


Fig. 2. Fortifications subject to reconstruction (Photo by Z. Duda)

Prior to the beginning of works in 2011, archaeological and architectonic surveys were undertaken in the area. According to the results of the geological survey, the area covers ground moraine upland from 7.1 m to up to 12.6 m above sea level. There are Pleistocene soil deposits under dykes, represented by fine sand. The thickness of the cohesive dykes made of rocks varies from 1.4 to 4.6 m below the site level. Ground water in the form of free or contained water table is at 2.0–6.9 m below the site level. Brickwork elements have been uncovered. The technical condition of brickwork was also evaluated in macroscopic examinations (Fig. 3).

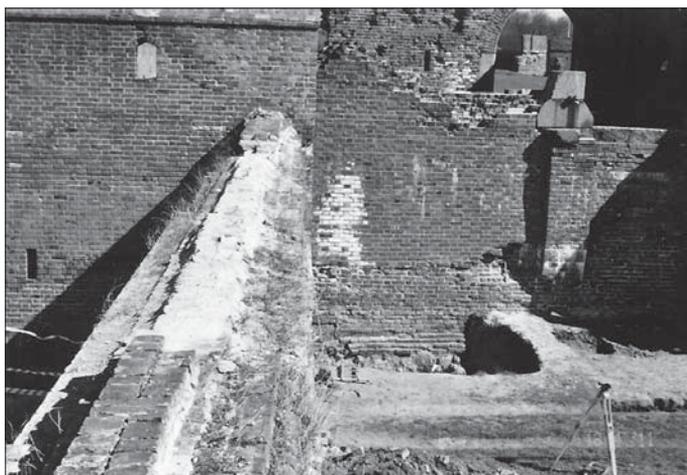


Fig. 3. Archaeological and inventory works within defence walls
(Photo by Z. Duda)

All works have been executed on the basis of inventory results and the conservation plan for the construction project. The scope of the reconstruction works for the fortifications of the eastern part of the Lower Castle shall include, in particular:

- The testing of samples to determine the composition of all historical jointing mortars, the physical and mechanical properties of construction materials, the moisture content in brickwork, and the content of salt in porous materials;
- The removal of contaminations and built-up layers deposited on the brickwork, based on the test results defining the composition of the deposits on bricks and stone elements;
- Insulation works (vertical and horizontal),
- Filling up and repairs to cracks and fissures in the brickwork, necessary construction protection measures, structural reinforcement of destabilized brickwork sections, the supplementing of gaps in the brickwork and in stone elements as well as joints, colour reintegration of sections where the original sections have been reconstructed (with a clear differentiation of sections subject to conservatory works), as well as rebuilding the most damaged sections;
- The reconstruction of damaged sections of the brickwork crown and sections of towers which no longer exist as per iconographic sources, taking into consideration the original shape and height;

For example, all works to be carried out as per restoration plan and the present condition of specific fortification sections documented along with all tests, the progress of technological works, as well as photos illustrating subsequent work stages [16].

The current conservation works are aimed at preserving existing historical elements, improving the technical condition of the fortification construction materials, and eliminating or limiting the causes of damage.

These works are intended to rehabilitate and add a functional dimension to the eastern area of the Castle, and in particular, its walls, gates and towers which are incorporated into the system of dykes and moats representing a high historical value, which have been so far inaccessible to tourists. The essence of this undertaking is to introduce new tourist traffic arrangements, and to build an auditorium together with the required infrastructure on the eastern bank of Jurand's Canal.

The works within Plauen's Dyke will enlarge the Museum's area of the Castle in general, restoring them to their original size. Tourists will be able to view the Eastern panorama of the Castle, which is currently inaccessible for tourists. As a positive consequence, another tourist highlight will be added to the tourist appeal of the city of Malbork.

Apart from reconstruction of the fortifications, the restoration of the eastern part of the Lower Castle also includes the construction of a front desk, the development of green areas, yards and pavements, the reconstruction of a draw bridge, a barbican and a round tower, and the adaptation of the New Gate interiors (museum and functional premises), as well as the reconstruction and adaptation of Knights Tower [16].

3. Summary

The area surrounding Plauen's Dike within Malbork Castle will be restored as a tourist highlight and cultural venue by means of infrastructural modernization and conservation of the fortification structures. Moreover, the restoration is undertaken in response to the current dilapidation of the historical structures caused by past events. The restoration project is based on the active collaboration of public institutions, municipal authorities and social entities who will contribute to the improvement of cultural life for the citizens of Malbork, to the recovery of suitable land management schemes as well as to the economic revival arising from tourism. The works are scheduled to take place between 2007 and 2013, and are of particular importance for the cultural heritage of the Malbork Castle and to the city of Malbork as a tourist destination.

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