Spatial Analysis of Urban Master Plans of Towns in North-Eastern Poland in the Context of Urban Revalorisation

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Abstract. The research subject raised in this study is the urban structure of small towns in Warmia, a region rich in history, situated in the north-eastern Poland. This area, together with the neighbouring region of Mazury, is referred to as the Land of a Thousand Lakes. The historical events, such as the conquest of this territory by the Teutonic Order in 13th century, gave rise to the foundation of twelve towns in Warmia, which have survived until our time. Of these settlements, only one, which is Olsztyn, grew to a larger size over the centuries and eventually became the capital of Warmia. The others are still small towns, with a population from a few to less than twenty thousand inhabitants. The policy and economic goals of the Teutonic Order underlay the spread of a uniform type of urban master plan in the entire region. The establishment of urban centres was dictated by military considerations – all towns had fortified castles and were 15-30 km distant from one another, which stemmed from the organisation of the Teutonic State. The location of new towns in Warmia coincided in time with the general urban planning principles governing urban development in the Middle Ages. The medieval towns, which grew on the foundations of ancient cultures, were developed on a regular grid of streets, delineating land lots for compact town houses and a central square serving as a market place. Within this structure, the town's most significant spatial dominants, such as a town hall, a church and a fortified castle, were situated. The castle often stood on the outskirts of a town, as it had to be connected to the town's fortifications. The location of medieval towns in Warmia proceeded according to a similar concept. All these towns are distinguished by characteristically medieval, regular urban layouts, which – while being similar – have certain intrinsic features. Differences can be seen in the design of main streets, the size and proportions of market squares, the ways in which land parcels were developed as well as the location of public buildings. However, the space occupied by the old town has remained dominant in all these urban developments. This, to a large extent, explains the synthetic character of the following research. Spatial analysis of urban patterns developed in the twelve towns of Warmia was the principal objective of this study. Another aim was to confirm the hypothesis that medieval urban structures in Warmia (their old town's area) are the manifestation of the historical identity of these towns and bear some influence on their contemporary development. The conclusions drawn from the investigation, its objectives and the method employed, focus on the connections between the original functions of old towns with the modern-day needs and aspirations to further the towns' development whilst preserving the historic heritage. Processes designed in line with the above recommendations

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should eliminate threats to the structure of developed areas and the whole town's image. Another objective should be to improve the composition-related and aesthetic values of the inner-town space.

1. Introduction

Warmia, a historical land in north-eastern Poland, is one of the country's distinctly identifiable and culturally rich regions. The earliest urban development in this area occurred when the Teutonic Order conquered the Prussian territory in the 13th century. The conquest gave rise to the foundation of twelve towns, which have survived until our time, although in view of their modest growth, except the region's capital city Olsztyn, they are now all classified as small urban settlements. The populations living in these towns range from a few thousand to no more than twenty thousand. The political and economic goals of the Teutonic Knights resulted in a uniform type of urbanisation across the whole region, as the Order founded all the towns of Warmia according to the same principles and within a relatively short time span. The development of towns was dictated by military factors, so that all the towns were built together with castles and lay at a distance of no more than 15-13 km from one another [1].

In turn, the adaptation to local topographic conditions (towns founded near watercourses or stagnant water bodies) was dictated by both security considerations and the medieval concept of urban composition. A medieval town was developed on a checkerboard street plan, with a central market square and a town hall standing in the middle, and with densely built rectangular house lots between streets (figure 1). The city landscape was dominated by three most important, largest buildings – a church in one of the corners of the market square, a town hall located centrally on the market square and a fortified castle, situated somewhat off the town and connected with a system of fortifications.

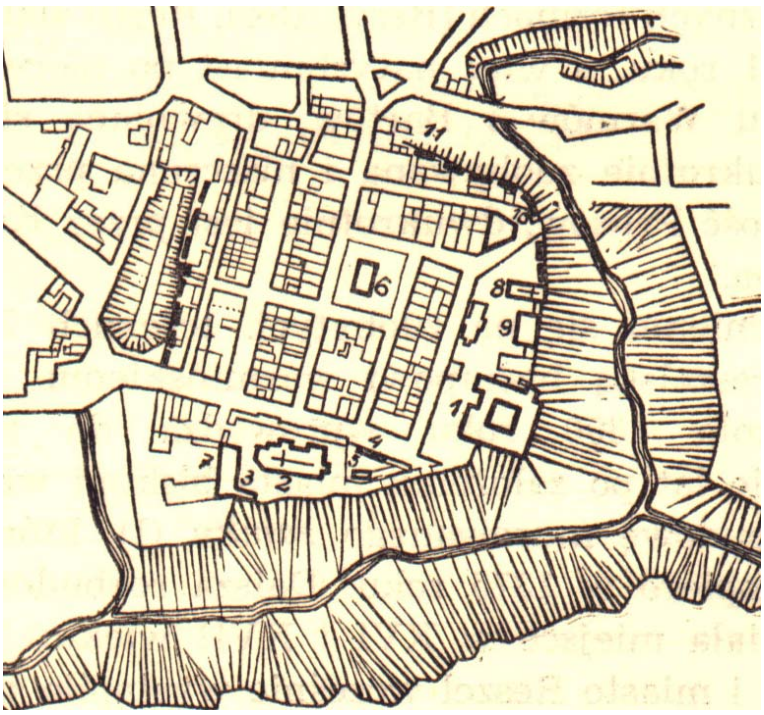


Figure 1. The street plan of Reszel in the 1950s [2]

Most of the small towns in Warmia are now similar in size and, same as centuries ago, the role of their centre is played by the inner town area. However, the state of preservation of these historic quarters in the towns of Warmia, with respect to the original urban systems and architecture of buildings, is varied. The reasons can be sought in the past, especially in the events which took place at the end of

World War Two. At that time, the Soviet Army undertook purposeful and mass-scale efforts to demolish the historic buildings. Another reason is the way these towns were reconstructed after the war damage, which was totally detached from the scale and character of the historic centres in these towns, but in accord with the then superimposed political system. The consequences included the dominance of Social Realism in architecture and lack of respect to the historical foundations underlying old town quarters. As a result, many historic centres of former Prussian towns have lost their identity.

The contemporary image of the inner town areas is also affected by the currently poor economic condition of the region. Promoting tourism necessitates the development and implementation of revalorisation and revitalisation programmes which will take into account both the current functions of towns and their adequately shaped form. Restoration efforts also serve to maintain the identity of historic towns and to preserve the cultural heritage of the region.

2. Urban systems of the Warmian towns

The structure of the urban settlements in Warmia was defined in the Middle Ages, when twelve towns, existing to this day, were founded. Only one of these towns, the region's capital Olsztyn, escapes the classification as a small town. Two towns, Frombork and Braniewo, have the character of a seaport. The other nine towns are distinguished by approximately same localisation, functional and spatial conditions, which is fundamental to the identification of their genesis and development. The towns which were analysed in this study are Barczewo, Biskupiec Reszelski, Bisztynek, Dobre Miasto, Jeziorany, Lidzbark Warmiński, Orneta, Pieniężno and Reszel. Until our times, these towns have been inhabited by a large proportion of the population living in Warmia. A significant role in their origin was played by military and topographical factors, and the erection of defensive castles and routes connecting these towns lay at the foundation of the colonisation of Warmia's territory.

The urban development plans of the Warmian towns remain readable until our times and reveal the characteristics of original settlements. They consist of checkboard patterns of regularly spaced streets, which divide the town's area into house lots, with a market square located in the centre. Certain deformations of some of the patterns were due to the specific topographical features and the proximity of watercourses and water bodies (figure 2).

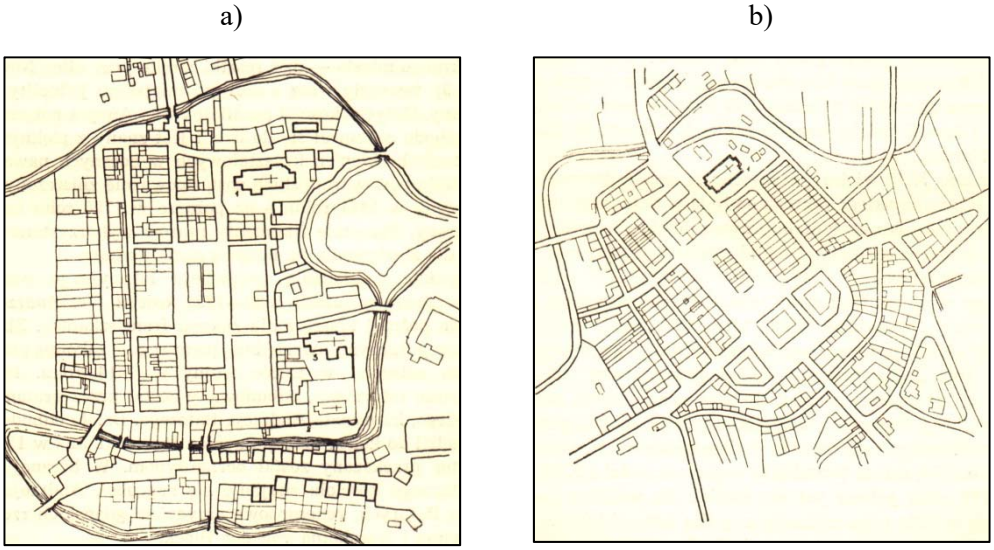


Figure 2. Street plans of small towns in Warmia in the 1950s:
(a) Barczewo, (b) Biskupiec Reszelski [2]

The topographical diversity of Warmia's landscapes divides the towns with regard to how the natural features were taken advantage of for defensive purposes. In most cases, the towns were founded in a river's bend or on its bank, in a fork between two rivers or on a steep hill (figure 3).

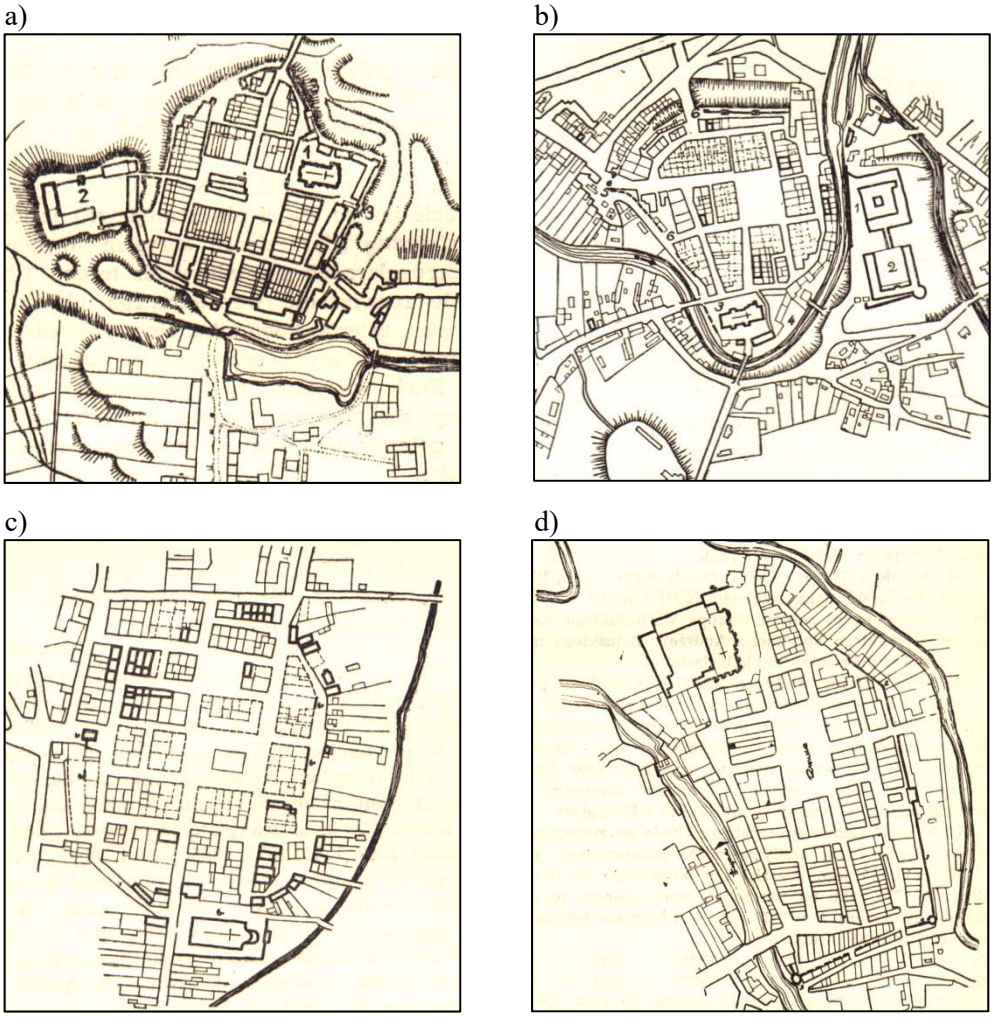


Figure 3. The planning of towns in Warmia – street plans dating to the mid-20th century: a) Jeziorany, b) Lidzbark Warmiński, c) Bisztynek, d) Dobre Miasto, [2]

The medieval urban systems of the Warmian towns are characterised by many features which were shared by all medieval towns, founded around the same time. On the other hand, they reveal much diversity, one reason being the local landscape relief conditions. The differences can be seen in the shape of a market square, its size and proportions, and in the solutions applied to the town's inner communication system. The size of towns founded in Warmia during the medieval times was similar, adjusted to the then current circumstances, limitations or economic opportunities. The surface area of the towns within the limits of their fortified walls was 6 ha on average.

The checkerboard-pattern and densely built structures of urban complexes were enclosed within relatively regular geometric shapes. These shapes reveal the great care attached to rectangular and square forms while maintaining symmetry [3]. With respect to the geographical directions, the towns tended to be orientated towards the north-west or the north, which stemmed from functional considerations and natural conditions [4], (figure 4).

a) b)

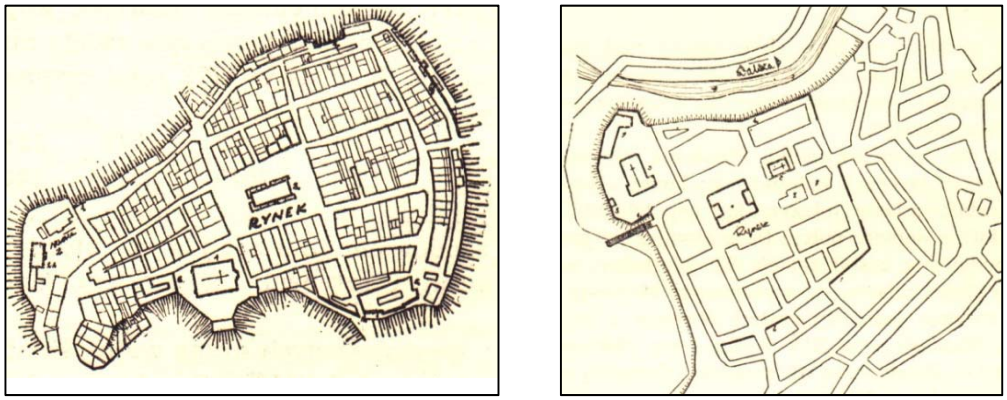


Figure 4. The planning of the Warmian towns – street plans dating to the mid-20th century: a) Orneta, b) Pieniężno [2]

Among elements of the spatial planning of towns, attention is drawn to a market place. This centre-forming element in a medieval town had a predominant role in trade organisation, but also served as a public space [5]. The shape, proportions and size of a market place, as well as the location in the heart of a town, contributed to its considerable influence on the organisation of the town's internal structure. The above parameters depended on the natural contours and conditions, and sometimes were adjusted to the pre-existing routes. Thus, an approach to the planning of a new town in each case was adapted to individual circumstances, rather than being based or a previously elaborated paradigm.

By founding new towns in sites where some routes had already existed, the economic role of these urban settlements in the whole region was defined. Moreover, such localisation also played a decisive role in the planning of an internal layout of a town, based on a checkerboard pattern of streets and house lots. Regardless of the organisation of internal traffic in a town, the traffic routes initiated a regular, block-like layout of the whole settlement. Routes were either interconnected outside towns, but in their vicinity, or they crossed one another inside a town, within the space of its market square. These solutions are still readable in many towns, as evidenced, for example, by the surviving gatehouses or gates, which used to belong to urban fortification systems (figure 5).

a) b)



Figure 5. Gatehouses: a) Bisztynek – the Lidzbark Gatehouse, (b) Lidzbark Warmiński – the High Gate

The current spatial management in the Warmian towns is quite diverse. Differences appear in the preservation of historic urban layouts, scale of the original urban foundation, and character of the buildings. Most of the urban settlements have survived in an almost unchanged urban layout. However, there are examples where the solutions implemented in the 1960s and 1970s added a new dimension to the identity of a town's centre. The space of the market square in Dobre Miasto or Biskupiec Reszelski was converted to a roundabout, which became the main traffic hub in the town (figure 6). The heavy traffic of vehicles through the town's centre (transit traffic to the border checkpoint in Bezledy) disturbs the small-town nature of this square [6].

a) b)



Figure 6. Roundabouts in the middle of old town market squares: a) Dobre Miasto, b) Biskupiec.

3. Architecture of the old towns

A significant influence on the shape of towns in the region's landscape, apart from the solutions applied to urban layouts, was exerted by the architecture of building compounds, especially monumental edifices. Same as in the past, they are dominant elements in a town's skyline. Such edifices as churches, castles and town halls present features of the regional, red-brick Gothic architectural style, and are therefore an important manifestation of the cultural heritage of Warmia. To a large extent, these buildings created the medieval composition of the towns and continue to play the same role in their contemporary life [7] (figures 7, 8).

a) b)



Figure 7. Fortified castles in the Warmian towns: a) Lidzbark Warmiński, b) Reszel.

a) b)



Figure 8. Monumental edifices of the Warmian towns: a) the parish church in Pieniężno, b) the town hall in Orneta.

The contemporary buildings erected in the historic areas of the Warmian towns are quite diverse. Special attention should be paid to Orneta and Reszel, as their spatial layouts are among the best preserved in Warmia. The urbanistic structure and architecture of these towns remain deeply rooted in the historical context. In both cases, the dominant properties are the easily readable regularity of street plans, the wealth of forms maintained in the similar convention of a scale, divisions, rhythms, details and light pastel colours. The accumulation of residential functions with services and trade facilities located on the ground floors of houses strengthen the association of the old town with the centre of a small urban settlement. This has a strong influence on the economic and social roles that these central areas play in the life of a whole town (figure 9).

a) b)



Figure 9. Houses along the sides of market squares: a) Orneta, b) Reszel.

A reverse situation can be observed in other towns of Warmia. The way in which they were reconstructed after the war damage had a drastic impact on the space of many urban sets. The consequences can be seen in the buildings surrounding the market squares in Dobre Miasto, Bisztynek, Lidzbark Warmiński or Pieniężno. Examples of some alien architecture or even the lack of buildings on some land parcels cannot be identified with the historically founded patterns. What is missing in these towns is the compact development on elongated house lots, small divisions on façade walls as well as the small scale of one- or two-storey townhouses, whose style would inscribe itself into the historical

context of a small town [8]. Large parts of the old town areas in these towns have been deformed. Admittedly, the grids of streets have remained more or less intact, but their width has been altered, the lines of buildings moved and townhouses replaced by oversized, monolithic structures. The time when these changes occurred coincided with the period when means of architectural expression applied were typical for the socialism era, and this brought havoc to the structure which had been historically shaped over centuries (figure 10).

a) b)



Figure 10. A row of buildings along a side of the market square in: a) Dobre Miasto, b) Lidzbark Warmiński.

4. Revalorisation of the spatial structure of towns in Warmia

Expression of the spatial aspect of restoration of the historic centres in the Warmian towns, through the revalorisation of such urban systems and architecture of buildings, above all should serve to achieve the material restoration of their space. The overall aim is to highlight the historic identity of the town's centre and to adjust it to the current social and economic requirements, as well as to preserve the region's cultural heritage.

Transformations which take place in urban areas most often affect these spaces which have been already transformed over the past decades. This is felt most acutely in old town complexes, as the process of transformations, including numerous aspects, has been evolving all the time. This evolution is affected by the following conditions:

- relationships between urban and architectural aspects,
- concentration of various functions which stimulate the creation of a town's centre (trade, services) and public spaces,
- functional and residential relationships.

A direction envisaged for such transformations should take into account proper exposure of historic areas against the backdrop of the town's other neighbourhoods (figure 11).

The principal aim of revalorisation efforts undertaken in historic areas of towns is to protect the original spatial layouts and to sustain them adequately, in response to the town's contemporary need for development. Actions regarding the transformations of old town centres, preceded by all necessary urbanistic, architectural as well as social and economic analyses, should revolve around the following goals:

- reconstruction of the historic urban layouts of the old town areas,
- organisation of urbanistic systems in a way which will agree with the historical solutions (finer-grain urban tissues, more 'humane' dimension of the historic centre),
- the shape of architecture for whole sets of buildings in accord with the original assumptions (scale, layout, materials, details, an intimate character of buildings),

- organisation of the public spaces within the town's centre, providing support to the centre-forming functions (trade, services),
- restoration of the identity (appeal) of the town's centre.



Figure 11. Reszel – a view of the old town

Thus, measures undertaken to renovate the spatial system should assume that the town's oldest area will regain the role of its centre and will be appropriately connected with the other areas of the town. Planned transformations should also improve functional and social relationships. What we deal with here are small town communities, which form bonds with their place of residence mostly owing to the presence of the historic centre and monuments of architecture in their town. Solutions which will ignore this aspect may lead to the depopulation of the town's centre, which has already been happening in some towns. One reason is that centre-forming functions have been located elsewhere in a town.

5. Conclusions

As well as other underlying reasons, revalorisation of the towns in Warmia is driven by the wish to preserve the region's cultural heritage, so important in many respects. The renovation of the degraded inner town areas in the Warmian small towns is a great chance for them to regain the adequate functions of their historic centres. Revalorisation efforts focus on spatial aspects and on creating a potential for economic development. The complexity of the problem of urban restoration necessitates an interdisciplinary approach to this question, also because of the various expectations which the town's centre raises. This is a prestigious space in a town, which all town residents identify themselves with, and this means that the old town can have a positive influence on relationships between people and it strengthens the bonds and a sense of identity with one's place of living. It is worth reminding ourselves at this point that a town is a living organism, which must be responsive to changeable functional conditions, connected with the town inhabitants' needs and expectations.

The guidelines presented in this paper with respect to revalorisation measures dedicated to old town areas assume that a general vision of their architectural and urbanistic development should be proposed. It ought to be based on the current condition of a given urban space to be restored and from the pre-defined aims of the revalorisation process. Such a vision also serves as the basis for designing, in collaboration with the local community, plans and executive programmes of actions, which are tailor-made for each town. The difficult economic and social situation of towns in Warmia means that it is not an easy task to secure sufficient funds and co-funding from private and municipal sources. External sources of finances, e.g. EU structural funds, are an alternative that at the moment is the best opportunity to apply for and obtain funds dedicated to the co-financing of projects connected with the restoration of

urban space [9]. Thus, the goals of revalorisation should focus around the measures which will eliminate the sources of risk, improve the technical condition of elements of building and urban structures, improve the living standard for local communities and preserve the centuries-long urbanistic and architectural tradition of Warmia.

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