

Economic Exploitation of Urban Moats in Medieval Hungary with Special Regard to the Town of Prešov*

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Moats were important elements of the defenses of towns. A less studied secondary usage of urban moats is their role in local economies. The study discusses the exploitation of moats in milling using the example of the town of Prešov. The paper argues that the study of the water mills built by the moat can add to our understanding of the general topographic development of the town.

Key words: Urban Moats. Medieval Hungary. Prešov. Urban Development. Water Mills.

Introduction

Moats that surrounded medieval towns (and castles) were important elements of their defenses. However, by the late medieval period, the overwhelming majority of towns in Western and Central Europe had expanded well beyond their walls. With the ever growing population in the suburbs as well as with the increasing economic production of towns, moats gradually became part of the fabric of the towns. Not everywhere, and not always to the same extent, but in many cases, moats became part of urban economies. They were used in at least two different spheres of urban economies: for milling and, less frequently, as fish ponds.¹

These uses of moats of course received considerably less attention than their military and architectural aspects in scholarship as the sources available also seldom refer to the problem. This paucity of information, however, does not mean that there is a complete lack of references to these secondary usages of moats in regional contexts. This essay does not aim to give a comprehensive overview of the problem on a European scale but will focus on the town of Prešov, showing how the usage of defensive moats in economies came into being and how the study of the problem can help to reconstruct urban topography and the town's development.

Research into urban moats in Hungary

There is no comprehensive work on urban moats in Hungarian scholarship and to my knowledge neither exist such literature for the neighboring countries. There is a considerable gap in the scholarly literature on the defensive structures of towns in medieval Hungary. In recent years a number of publications reviewed fortifications in Transylvania, including urban fortifications.² There is a less exhaustive catalogue of

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1 This second aspect can not be shown in the case study presented here. See: VADAS, András. Városárok és vízgazdálkodás a késő-középkori Közép-Európa városaiban (Urban moats and water-management in the towns of East Central Europe in the late Middle Ages). In: *Urbs. Magyar Várostörténeti Évkönyv* 10 – 11, 2015, pp. 335-338.

2 RUSU, Adrian Andrei. *Castelarea Carpatică: Fortificații și cetăți din Transilvania și teritoriile învecinate (sec. XIII – XIV)* (Carpathian Castelaria. Fortifications and citadels in Transylvania and the neighbouring territories).

the castles and urban fortifications in sixteenth-century Hungary³ as well but these works can hardly be said to cover the medieval Kingdom of Hungary geographically or chronologically. There are a number of county castle cadastres that have been gathered in the past decades but they seldom refer to the problem of moats. Most of the relevant literature has been written on the fortification systems of individual towns such as Pest, Trnava, Košice, Sopron, or Kőszeg where archaeological excavations have been carried out.⁴ Despite excavations taking place in recent years on urban fortifications, with the exception of the urban moat of Sopron, these excavations did not touch upon the moats.⁵ The dissertation of the architect Péter Rabb provided an overview of the urban fortifications in medieval Hungary and though very briefly, he did refer to the problem of moats. His work, however, has limited applicability as primary sources were entirely disregarded and to a large extent archaeological excavation results as well.⁶

There is a rather general lack of scholarship on moats in medieval (or early modern) Hungary. This can probably be explained by the limited written sources, and the very few attempts made to excavate them so far. This is true for most of the neighboring countries, but in recent years both archaeological and historical research contributed data on urban moats although the focus in these studies was seldom their secondary use.⁷

Urban history in Hungary in the last fifty years has been preoccupied with what makes a town a town. If the presence of stone walls is accepted as one of the most important features of a *civitas*, there were only a few dozen towns in the region before the fifteenth century, and even by the early sixteenth century there may not have been

Cluj-Napoca : Editura Mega, 2005, 653 p. KARCZAG, Ákos – SZABÓ, Tibor. *Erdély, Partium és a Bánság erődített helyei* (Fortified places in Transylvania, Partium and Banate). 2nd edition. Budapest : Semmelweis, 2012, 888 p.

3 MAROSI, Endre. *XVI. századi váraink, 1521 – 1606* (Castles in 16th-century Hungary). Miskolc : Hungária-Európa Alapítvány – Borsod-Abaúj-Zemplén Megyei Levéltár, 1991, 79 p.

4 For an overview of the results: SZENDE, Katalin. A Kárpát-medence középkori városainak régészeti kutatása az elmúlt két évtizedben (Archaeological research into medieval towns in the Carpathian Basin since 1990). In: BENKÓ, Elek – KOVÁCS, Gyöngyi (Eds.). *A középkor és a kora újkor régészete Magyarországon I.* (Archaeology of the Middle Ages and the Early Modern Period in Hungary). Budapest : MTA Régészeti Intézet, 2010, pp. 149-150. For earlier research see also: HOLL, Imre. Feuerwaffen und Stadtmauern. Angaben zur Entwicklung der Wehrarchitektur des 15. Jahrhunderts. In: *Acta Archaeologica Academiae Scientiarum Hungaricae* 33, 1981, pp. 201-243.

5 HOLL, Imre. Sopron középkori városfalai (Town walls in medieval Sopron). In: *Archaeologiai Értesítő* 94, 1967, pp. 155-183; 95, 1968, pp. 188-205; 98, 1971, pp. 24-44; 100, 1973, pp. 180-207. The most important from the point of view of this article is the volume from 1968, here pp. 198-204. On the fortification of the towns in Slovakia with reference to moats: MIÑO, Martin. Niekoľko postrehov k fortifikačným prvkom miest stredoslovenskej banskej oblasti (Some notes on the fortification elements of central Slovakian mining towns). In: *Archaeologia historica* 36, 2011, pp. 289-302. On Banská Bystrica: GRAUS, Igor. Vývoj fortifikácie Banskej Bystrice do konca 16. storočia v podmienkach špecifík pasívnej obrany stredoslovenských banských miest (Die Fortifikationsentwicklung der Stadt Banská Bystrica bis Ende des 16. Jahrhunderts unter den spezifischen Bedingungen der passiven Verteidigung der mittelslowakischen Bergwerkstädte). In: *Vojenská história*, 2000, no. 4, pp. 3-21.

6 RABB, Péter. *Városi védművek a középkori Magyarországon I – II.* (Urban fortifications in medieval Hungary). [PhD-dissertation]. Budapest : BME, 2005, 162 p. On fortification moats, here: pp. 47-48.

7 See the example of Freistadt in Upper-Austria: GRUBER, Elisabeth. *Raitung und außgab zum gepew. Kommunale Rechnungspraxis im oberösterreichischen Freistadt. Edition und Kommentar der Stadtgrabenrechnung (1389 – 1392)*. Wien : Böhlau, 2015, 243 p; and on Vienna: OPLL, Ferdinand – KRAUSE, Heike – SONNLECHNER, Christoph. *Wien als Festungsstadt im 16. Jahrhundert. Zum kartografischen Werk der Mailänder Familie Angiolini*. Wien; Köln; Weimar : Böhlau, 2017, most importantly: pp. 176-177.

more than ca. fifty such settlements.⁸ There is less information on the moats that surrounded these towns as, just as in other parts of Europe, most were filled up in the modern times as these towns expanded well beyond their medieval limits. Which of these moats were filled with water and which were dry can, in a majority of the cases, be inferred based on hydro-geographical conditions. Despite the fact that there were only about fifty towns surrounded by stone walls in medieval Hungary, there were numerous towns and villages that had earth and wood fortifications or even wooden fences in many cases combined with moats. If these settlements are also counted, there were considerably more than a hundred protective moats around settlements (and castles) in the Kingdom of Hungary by the end of the Middle Ages. The gradual occupation of the Ottomans started a new wave in the construction of fortifications, as well as moats, in the Carpathian Basin.

Construction of moats

By the late medieval period, most of the major towns (*civitates*) in Western Europe were not only surrounded by a wall but also had a protective moat which was an indispensable element for defending settlements from the period of the widespread use of firearms.⁹ This rather self-evident character of moats is by this time clearly reflected in the architectural treatise of the Italian humanist, Filarete. According to his treatise the building of the ideal town begins as follows:

*"I have ordered that, the first thing tomorrow morning, everyone is to come with mattocks, shovels, and picks. I want you to be the first to begin the work of digging the moats. These will be ten braccia away from the wall. I think they ought to be 30 braccia wide if the dimensions are satisfactory to you. As soon as this is done the moat should be walled up on both sides. The wall toward the city will be as high from the ground as the battlements of the wall, that is, three braccia high from the ground level, and then the battlements. On the opposite side, it will only be as high as ground level, no more no less."*¹⁰

Although the Italian treatise was probably never a basis for the building of towns in medieval Hungary, the text was not unknown here either. Filarete's work was translated into Latin and the work preserved in one of the codices in King Matthias's library, the Bibliotheca Corviniana.¹¹ The most important lesson within the text as far as moats are concerned relates not so much to its circulation but rather to the fact that by the fifteenth century it was self-evident that a town had to have a more complex fortification

8 KUBINYI, András. Városhálózat a késő középkori Kárpát-medencében (Urban network in the late medieval Carpathian Basin). In: *Történelmi Szemle* 46, 2004, pp. 17-18; and see the detailed overview of the relevant research history: LAKATOS, Bálint Péter. *Hivatali írásbeliség és ügyintézés a késő középkori magyarországi mezővárosokban, okleveleik tükrében I – II.* (Official local written culture and administration in late medieval Hungarian towns (oppida), in the mirror of their charters). [PhD-dissertation]. Budapest: ELTE, 2013, I, pp. 9-10. See also: RABB, P. *Városi védművek...* and especially its appendix. Many of its data have to be modified in light of the recent work by Karczag and Szabó: KARCZAG, Á. – SZABÓ, T. *Erdély, Partium és a Bánság...*

9 See: GUILLERME, André. *The Age of Water: The Urban Environment in the North of France, A. D. 300 – 1800* (Environmental History Series, 9). College Station, TX: A&M University Press, 1988, 293 p.

10 SPENCER, John R. (Ed.). *Filarete's Treatise on Architecture: Being the Treatise by Antonio di Piero Averlino, Known as Filarete I. The Translation.* New Haven: Yale University Press, 1965, pp. 52-53.

11 MÁTYUS, Norbert. Építészképzés Filarete Trattato di architettura-jában és Bonfini latin fordításában (Formation of architects in Filarete's *Trattato de architettura* and in Bonfini's Latin translation). In: MUNDING, Márta (Ed.). *Techné: a mesterségbeli tudás átadásának lehetséges szinterei az ó- és középkorban. Szak- és felnőttképzés az ó- és középkorban* (Techné. Spaces and possible forms of crafts' knowledge transfer in the Ancient Times and the Middle Ages. Professional and adult training in the Ancient Times and the Middle Ages). Piliscsaba: Avicenna Közel-Kelet Kutatások Intézete, 2017. (in press)

system than a wall. Of course, as with many of the elements of fortifications, the role of moats in the self-representation of a community, as a prestige investment, should also be considered.¹² Moats however were significant investments that had little short-term benefit. Probably this is the reason the author of a chronicle of the lives of Auxerre bishops chose a rather unconventional way to argue why the Hugo of Noyers, an influential bishop at the turning of the twelfth and thirteenth centuries ordered one of his smaller residences to be surrounded by a moat:

*"Because it was unprotected and was vulnerable to the attacks of plunderers [Hugo of Noyers] rebuilt the old walls, and constructed moats and high towers in order to fortify Varzy, his famous town. Next to Saint Eugene's Church he erected new buildings for the bishopric with strong walls, great houses, towers and bastions. In order to protect the bishops, he built even stronger walls, with more solid walls, towers and outworks. The inner keep boasted towers, fortifications and advanced defenses of impregnable strength, surrounded by wide, spring-filled ditches. Thanks to the abundance of [water] sources that feed the moat it is not only no small augmentation of the fortifications, but, by reason of the multitude of fish they provided, by the mills the bishop built there, and other profitable assets, they greatly improve the entire establishment."*¹³

There is limited information available on the building costs of fortification moats, but based on an account from Sopron from 1540 and similar sources from Austria (Freistadt), their construction was probably a significant financial burden.¹⁴ Unlike town walls, moats had the potential to generate income since their waters could be exploited in the ways noted above. This exploitation was not merely a potential but in dozens of towns in East Central Europe it was considered a well defined, predictable source of income. The example of Prešov discussed here reflects the way local economies exploited the moats.

The moat of Prešov and the water mills

The building history of the urban fortifications of Prešov is probably amongst the best known from the territory of medieval Hungary. This is not primarily due to its conservation as there virtually nothing remains of the medieval fortifications, but because of the particularly detailed surviving written evidence on the fortifications,

12 HOLT, Richard. Medieval England's Water Related Technologies. In: SQUATRITI, Paolo (Ed.). *Working with Water in Medieval Europe. Technology and Resource-Use* (Technology and Change in History, 3). Leiden; Boston; Köln : Brill, 2000, pp. 79-82.

13 „Castrum suum nobile Varziacum, quod, propter loci immunita, prius frequentibus patebat depredantium incurribus, muros reparando antiquos et fossas turribus ingentibus circumsepsit. Domos episcopales juxta ecclesiam beate Eugenie muro solido, magnificis edificiis, turribus ac propugnaculis a primis condidit fundamentis. Presidium quoque episcopale ulterius muro solidiori, turribus munitioribus et antemuralibus in tutam et ad expugnandum difficilem munitonem provexit, et fossis mire amplitudinis vallavit in girum, in quibus, grata aquarum exuberantia ex fontibus circumfluentibus eas replens, non modicum facit ad munitionis augmentum; et tum ex piscium multitudine qui ibi nutriuntur optimi, tum ex molendinis que edificavit ibidem, tum ex aliis utilitatibus suis, episcopo totique municipio multe commoditatis existunt." DURU, Louis M. *Bibliothèque historique de l'Yonne; ou, Collection de légendes, chroniques et documents divers pour servir à l'histoire des différentes contrées qui forment aujourd'hui ce département l. Auxerre* : Perriquet, 1801, pp. 431-450; and COULSON, Charles L. H. *Castles in Medieval Society Fortresses in England, France, and Ireland in the Central Middle Ages*. Oxford : Oxford University Press, 2003, p. 70.

14 VADAS, András. Vízépítési és munkaszervezési formák a késő középkori és kora újkor Magyar Királyságban (Water-construction and work-organization in the late medieval and early modern Kingdom of Hungary). In: MUNDING, Márta. (Ed.). *Techné : a mesterségbeli tudás átadásának lehetséges szinterei az ó- és középkorban. Szak-és felnőttképzés az ó- és középkorban*. Piliscsaba : Avicenna Közel-Kelet Kutatások Intézete, 2017. (in press)

which have been partially been exploited in recent years by historical research. Apart from medieval documentary evidence, early modern visual source material also significantly contributes to our understanding of the structure of the fortification.

Both Hungarian and Slovak research showed interest in the medieval history of the town however not independent of the survival of the medieval sources only some questions were highlighted by research.¹⁵ Since the fundamental two-volume collection by Béla Iványi on the medieval records of Prešov's archive, research has drawn on the substantial evidence published by the archivist.¹⁶ Using this rich source material, a number of works have been dedicated to different aspects of the history of the town, from the ethnic composition, through the legal life to some elements of the urban topography from the beginning of the twentieth century. The most important works until recent years were on the testaments that survived in relatively high numbers from the late medieval period. However, they do not add to our image of urban fortifications or their economic exploitation.¹⁷ Recently, a Hungarian historian, László Szabolcs Gulyás gathered some data on the history of the fortification of the town, mostly based on the Iványi's collected materials.¹⁸ However, he made no reference to the moats. Since he focused on the Middle Ages, he made no use of town views either, a relatively rich source from the seventeenth-eighteenth centuries which helps in the identification of some of the medieval topographical elements connected to moats.¹⁹

There exist a number of questions that are not clear with regard to Prešov's fortification moats which could be important in the history of town in general. Precisely when was the town surrounded by a moat? Did it fully surround towns and was it filled with water? Following up on this train of thought, how was the moat exploited in local economies? As I will show in the coming pages, sources on the construction and the

15 See most importantly the monograph of the town: SEDLÁK, Imrich (Ed.). *Dejiny Prešova I* (The history of Prešov). Košice; Prešov: Východoslovenské Vydavateľstvo v Košiciach; Muzeum Slovenskej Republiky Rád v Prešove, 1965, 287 p. GÁCSOVÁ, Alžbeta. Spoločenská štruktúra mesta Prešova v 15. storočí a v prvej polovici 16. storočia (The social structure of Prešov in the 15th century and in the first half of the 16th century). In: *Historický časopis*, 1970, vol. 18, no. 3, pp. 347-378. See also: DOMENOVÁ, Marcela. Daňové písomnosti a sociálno-ekonomické pomery mesta Prešov v období stredoveku (Tax lists and socio-economic processes in the town of Prešov in the Middle Ages). In: *Zborník vedeckých prác katedry ekonómie a ekonomiky ANNO 2009* (Proceedings of scientific works of the Department of Economics, University of Prešov in 2009). Prešov: Prešovská univerzita, 2009, pp. 231-255. See more recently: ŠTEFÁNIK, Martin – LUKAČKA, Ján et al. *Lexikón stredovekých miest na Slovensku* (Historical lexicon of Slovakian towns). Bratislava: Historický ústav SAV, 2010, pp. 331-351. For the early sixteenth century: DOMENOVÁ, Marcela. K hospodáreniu mesta Prešov na základe daňovej-úctovnej knihy z rokov 1528 – 1537 (To the economy of Prešov on the basis on the book of income and expenditure from the years 1528 – 1537). In: *Annales Presovienses* 11, 2011, pp. 25-59.

16 IVÁNYI, Béla (Ed.). *Eperjes szabad királyi város levéltára, 1245 – 1526. I – II*. (Archive of the free royal town of Prešov, hereinafter *Eperjes*). Szeged : Szegedi Városi Nyomda és Könyvkiadó, 1931 – 1932, 240 p; 236 p.

17 SZENDE, Katalin. Gyermekek, testvérek, házastársak. Családi viszonyok és örökösödési szokások Eperjesen a középkori végrendeletek tükrében (Children, siblings, spouses. Family ties and testamentary practices in Prešov in light of medieval last wills). In: *Történelmi Szemle* 46, 2004, pp. 113-140 (with reference to the author's other works in the topic). See also: DOMENOVÁ, Marcela. Prešovské testamenty do roku 1526. (Diplomaticko-obsahový rozbor). (The last will from Prešov until 1526 (diplomatic content analysis)). In: *Historica Carpatica* 33, 2002, pp. 29-68.

18 GULYÁS, László Szabolcs. Városfalépítés a középkori Eperjesen (Town wall construction at medieval Prešov). In: BUHÁLY, Attila – RESZLER, Gábor – SZOBOSZLAY, György (Eds.). *Falak és választóvonalak a történelemben* (Walls and division lines in history) (A Nyíregyházi Főiskola Történettudományi és Filozófia Intézete Kiadványai. Terminus Könyvek, 1). Nyíregyháza : Nyíregyházi Főiskola Történettudományi és Filozófia Intézet, 2014, pp. 127-142.

19 SZALAI, Béla – SZÁNTAI, Lajos. *Magyar várak, városok, falvak metszeteken, 1515 – 1800, II.* (Hungarian castles, towns and villages on cuttings). Budapest : Múzeum Antikvárium, 2006, pp. 70-72.

extension of the moat of Prešov can contribute to our understanding of the growth of East Central European towns in the fifteenth century.

The town of Prešov belonged to a group of Hungarian towns that enjoyed the widest possible liberties in the Middle Ages despite the fact that it was never among the most populous ones in the country. The first references about the existence of the settlement date back to the thirteenth century. At this time, it already was in royal hands although no data exists on wider freedoms of the settlement, which at this time probably was not significant at all. Nonetheless, it is important to note that the core of the settlement already lay in the area of the later town. This had been suggested by earlier research with some uncertainty, but recently it has been confirmed by archaeological excavations.²⁰

The thirteenth-century settlement may not have been much more significant than a village but probably due to its favorable location by the eastern route connecting the newly emerging centers in the region, Cracow and Buda, it grew in importance as a trading post, along with Košice.²¹ Košice, in all likelihood, became important somewhat earlier than Prešov, from the end of the thirteenth century and continued to grow both in terms of its privileges and importance throughout the late medieval period.²² With the emergence of Košice, Prešov may also have gradually gained some importance. However, knowledge about the early history of the town is not very emphatic in the sources. The fact, however, that the first known initiative to surround the settlement with a wall dates back to as early as 1370 reflects the fact that Prešov also grew relatively quickly. The source is a mandate issued by King Louis I the Great to the nobility of Sáros County to provide lime, stone, and wood to build the walls of Prešov.²³ Although part of the secondary literature suggested it, the document did not refer to a ditch or moat – that was probably only dug somewhat later.²⁴ But by the first third of the fifteenth century, Prešov certainly was surrounded by a ditch as well. This is clearly reflected by the tax list of 1428 which refers to the tax payers of the houses “by the

20 ULIČNÝ, Marián – HARČAR, Peter. Počiatky mesta Prešova na základe výsledkov najnovších archeologických výskumov (The origins of the town of Prešov deduced from the results of the latest archaeological research). In: *Archaeologia historica* 35, 2010, pp. 393-403.

21 On the routes, see: SZENDE, Katalin. Kraków and Buda in the Road Network of Medieval Europe. In: BENDA, Judit – KISS, Virág – LIHONCZAK, Grazyna-Nurek – MAGYAR, Károly (Eds.). *On Common Path. Budapest and Kraków in the Middle Ages*. Budapest : Budapest History Museum Budapest, 2016, pp. 31-37. DRASKÓCZY, István. Highways between Buda and Kraków. In: BENDA, Judit – KISS, Virág – LIHONCZAK, Grazyna-Nurek – MAGYAR, Károly (Eds.). *On Common Path. Budapest and Kraków in the Middle Ages*. Budapest : Budapest History Museum Budapest, 2016, pp. 38-41.

22 FÜGEDI, Erik. Középkori magyar városprivilegiumok (Medieval Hungarian urban privileges). In: *Tanulmányok Budapest múltjából* 14, 1961, pp. 27-28. More recently, see: ZSOLDOS, Attila. The Path of Košice to the Privileges of 1347. In: HAJDUOVÁ, Mária – BARTOŠ, Martin (Eds.). *Košice in the Coordinates of European History*. Košice : Kancelária Ústavného súdu Slovenskej republiky, 2013, pp. 34-49. WEISZ, Boglárka. The legal background of the trade life of Košice in the Middle Ages. In: HAJDUOVÁ, Mária – BARTOŠ, Martin (Eds.). *Košice in the Coordinates of European History*. Košice : Kancelária Ústavného súdu Slovenskej republiky, 2013, pp. 94-111. WEISZ, Boglárka. Kassa kereskedelmi életének jogi háttere a középkorban (The legal background of the trade life of Košice in the Middle Ages). In: BÁRÁNY, Attila – DRESKA, Gábor – SZOVÁK, Kornél (Eds.). *Arcana tabularii. Tanulmányok Solymosi László tiszteletére II.* (Studies in honor of László Solymosi). Debrecen; Budapest : ELTE BTK, 2014, pp. 899-908.

23 Magyar Nemzeti Levéltár Országos Levéltára (hereinafter MNL OL) Diplomatikai Levéltár (hereinafter DL) 41 829.

24 DIVALD, Kornél – IVÁNYI, Béla. Az eperjesi Szent Miklós-templom (The St Michael's Church at Prešov). In: PETROVICS, Elek (Ed.). *Az Országos Magyar Szépművészeti Múzeum Évkönyvei IV* (Yearbook of the Hungarian Museum of Fine Arts, IV). Budapest : Az Orsz. Magyar Szépművészeti Múzeum kiadása, 1924 – 1926, p. 38.

ditch" (*in fossato*). Whether this was a moat or only a dry ditch, the tax list, of course, does not reveal.²⁵ The town's expenses concerning the building of the ditch in 1429 provide further proof of the existence of a more complex fortification system for the town. As will be highlighted later, the mills referred to have stood in the moat leave no doubt that by this time the town, at least on the west, was protected by a moat.²⁶

Another source still from the period of King Sigismund's reign also contains a good number of details about the fortifications, and especially the town's moat. In a charter from 1435, Sigismund gave permission to reconstruct the fortifications of the town in response to the recurrent Hussite threat.²⁷ The walls of the town as well as the moat were then extended. The extension of the moat, however, created a problem. At this time, there were at least two water mills that depended on the moat water, when the moat was extended the mills had to be moved. Sigismund gave permission to the town to pull the two mills to pieces and move them elsewhere in Prešov. As most of the mill parts were made of wood, moving them was not considered an impossible task in the Middle Ages.²⁸ The water mills were not originally built by the town's authority but were in hands of two burghers, Peter Langwart and Peter Blume – according to the tax lists both were wealthy citizens.²⁹ Of course, according to Sigismund's permission, these men had the right to rebuild their mills. The mills were indeed re-erected as it was the town itself which took action in the rebuilding the water mills. The town saw an opportunity in the relocation of the buildings and decided to compensate the burghers with only some share of the capacity of the mills.³⁰ Only a limited proportion of the income from the mill went to their previous owners but neither did the town

25 MNL OL Diplomatikai Fényképgyűjtemény (hereinafter DF) 228 604. Edited in: *Eperjes*, I. pp. 79-92, no. 211. For the inhabitants of the Ditch Street, here: pp. 90-92. The row of houses in tax lists were recurrently referred to as standing by the moat. E.g., MNL OL DF 228 989. 6. p. (1486) or MNL OL DF 229 008 (1488). See on these tax lists: DOMENOVÁ, M. *Daňové písomnosti...*

26 *Item dedimus XX, den. pro reformatione pontis circa molendinum medians inter alia duo molendina*. MNL OL DF 228 612. *Eperjes*, I. 93-103, no. 220, here pp. 97-98.

27 MNL OL DF 229 042. For its at some points erroneous editions, see: WAGNER, Carolus. *Diplomatarium Comitatus Sarosiensis*. Posonii; Cassoviae: Sumtibus Joannis Michaelis Landerer, 1780, pp. 228-231, no. 17. FEJÉR, Georgii. *Codex diplomaticus Hungariae ecclesiasticus ac civilis X/7*. Budae: Typis typogr. Regiae Universitatis Ungaricae, 1843, pp. 656-659, no. 305. Its regesta: *Eperjes*, I, pp. 109-110, no. 237. On the case, see: SEDLÁK, I. (Ed.). *Dejiny Prešova I...*, p. 94. URBANOVÁ, Norma. *Prešov: Pamiatková rezervácia* (Monument guide: Prešov) (Pamiatky mestských rezervácií, 8). Bratislava: Tatran, 1986, pp. 10-15. NÓGRÁDY, Árpád. A középkor végi Magyarország mindennapi kenyere (Beregszász lakosságának gabonavásárlásai 1530-ban és a Jagelló-kori malomvármok) (The everyday bread of Hungary at the end of the Middle Ages. The grain acquisition of the inhabitants of Berehove in the 1530s and the mill customs of Jagiellonian period). In: *A Nyíregyházi Jósa András Múzeum Évkönyve* 42, 2000, p. 162. On the wars of the period, see: TÓTH-SZABÓ, Pál. *A cseh-huszita mozgalmak és uralom története Magyarországon* (The history of the Czech-Hussite movements and rule in Hungary). Budapest: Hornyánszky ny. M. Tud. Akadémia, 1917, 474 p.

28 E.g., „*extunc prefatus dominus quibus fuerit eorum voluntas translocandi et transformandi in eodem flumine ad alium aptiorem et commodiorem locum ubi ipsis et ecclesie melius videbitur expedire, neque aliquod aliud molendinum in derogationem et prejudicium illius per nos aut successores nostros fundari poterit in futurum.*” MNL OL DL 65 946. Edited in: TELEKI, József. *A Hunyadiak kora Magyarországon, XI* (History of the age of the Hunyadis in Hungary). Pest: Emich, 1855, pp. 395-397, no. 501. See also: VADAS, András. Terminológiai és tartalmi kérdések a középkori malomhelyek körül (Questions of the terminology and meaning of the term *locus molendini* in the Middle Ages). In: *Történelmi Szemle* 57, 2015, p. 644.

29 On the two burghers, see: MNL OL DF 228 604. Edited in: *Eperjes*, I., pp. 79-92, no. 211. MNL OL DF 228 669. Edited in: *Eperjes*, I., pp. 127-129, no. 283.

30 MNL OL 228 631. For its regesta: *Eperjes*, I., pp. 110-111, no. 240. MNL OL DF 228 633. For its regesta: *Eperjes*, I., p. 111, no. 242. MNL OL DF 228 634. For its regesta: *Eperjes*, I., p. 111, no. 243.

own a majority of the mills' share. Most of the income from the two mills was shared between different ecclesiastical institutions in Prešov from that time onwards. The town finally came into full possession of the mills half a century later, in 1494 and remained there until the Modern times.³¹

From the point of view of topography, the localization of the original sites of the mills as well as their new sites from the 1430s onwards are of major importance. This could help to identify some other topographical elements, as well as contributing to the understanding of the development of the town.³² According to the documents issued concerning the relocation of the water mills one of them originally was located right next to the Upper Gate (*molendinum ante superiorem portam*). There are a number of data on this mill from the second third of the fifteenth century onwards and especially from 1494 when the mill was acquired by the town. The exceptionally detailed accounts of the town from the late fifteenth century refer to the mill as the Upper Mill (*Obermoell, molendinum superior*; see Fig. 2).³³ Apart from this mill that can be localized relatively precisely to the surroundings of the Upper Gate, the other mill which fell victim to the extension was called Middle Mill (*molendinum medium*) can also be localized relatively precisely. The account fragment from 1429 mentioned expenses related to the bridge close to the Middle Mill. This bridge probably stood next to the so-called Middle (or Small) Gate of the town, similarly to the way the Upper Mill got its name. From the very same year the protocol of the town refers to a street by the Middle Mill by the town's wall.³⁴ The relocation of this mill, however, raises some problems. Unlike the Upper Mill it was probably moved somewhat further away from its original location. Instead of the area in front of the Middle Gate after the extension of the town it was moved to the lower part of the town, hence the new name of the mill: Lower Mill (*Niedermoell, molendinum inferior, mola vero civitatis inferioris*).³⁵ This suggestion concerning the location of the mills at various time periods can be confirmed by one of the first detailed views of the town from 1768. The town view clearly marks the spots of the Upper and the Lower Mill, both probably operating at the same spots from the mid-fifteenth century onwards (see Figs 1 and 3).³⁶

31 MNL OL DF 229 078. For its regesta: *Eperjes*, II., p. 288, no. 714. See also: NÓGRÁDY, Á. *A középkor végi...*, p. 162. On the mill incomes after 1526, see: DOMENOVÁ, M. *K hospodáreniu mesta Prešov...*, pp. 36-37.

32 On the topography of the town, see: MENCL, Václav. *Středověká města na Slovensku* (Medieval towns in Slovakia). Bratislava : Universum, 1938, p. 98. SEDLÁK, I. (Ed.). *Dejiny Prešova I...*

33 Discussed in: NÓGRÁDY, Á. *A középkor végi...*

34 See note 26 and (...) *in plathea medii moledini penes murum civitatis* (...). MNL OL DF 282 529, 4. p. The relevant entry – with the omission of important words – in the town protocol book was edited in: IVÁNYI, Béla. *Eperjes szabad királyi város jegyzőkönyve, 1424 – 1509* (The protocols of the free royal town of Prešov, 1424 – 1509). In: *Történelmi Tár* 10, 1909, pp. 121-122.

35 For the latter, see e.g. MNL OL DF 282 538. fol. 112'. See also Fig. 1.

36 The town view was not included in the collection of Szalai and Szántai: SZALAI, B. – SZÁNTAI, L. *Magyar várak...*, pp. 70-72; despite the fact that it has already been published in 1965: SEDLÁK, I. (Ed.). *Dejiny Prešova I...* For the original town view, see: Štátny archív v Prešove, f. Magistrát Prešov, Zbierka máp a plánov, inventory number (hereinafter Inv. č.) 2. I am thankful to Blanka Szeghyová for her help with identifying the map published in: SEDLÁK, I. (Ed.). *Dejiny Prešova I...* without referring to its repository.

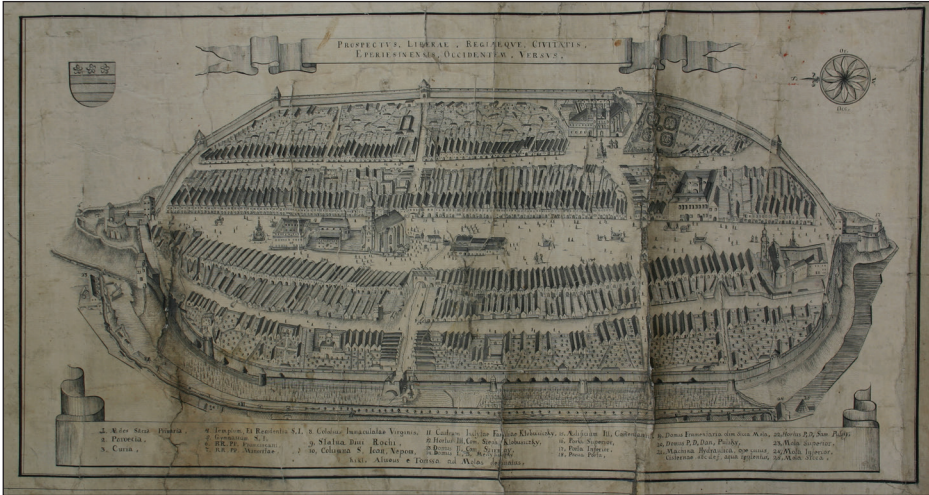


Fig. 1: View of the town of Prešov from 1768 by Gaspar Caspar.



Fig. 2: Detail of the view of the town of Prešov with the Upper Mill (no. 23) from 1768 by Gaspar Caspar.

Apart from the two mills that functioned for centuries by the western section of the town moat there were other mills that dated to the Middle Ages in the town. The town's accounts repeatedly refer to a fulling mill (*molendinum pannificum*). The location of this mill is unknown, but lacking in other water resources within the town this mill could also have used the water of the moat. The early-sixteenth-century accounts also refer to a smith's stone (*de lapide vero quo utuntur fabri or cotes fabrorum*).³⁷ This statement, based on the modest income connected to it, suggests that this mill may have been connected somehow to the fulling mill, or perhaps to the Lower Mill.³⁸ From the fifteenth century onwards, apart from the two flour mills and the fulling mill, there was a gunpowder mill at Prešov. Whether this mill used water as a source of energy for the production of saltpeter is unclear. Based on the accounts from 1533/1534, Iványi suggested that the building stood next to a friary. The only mendicant friary that operated in town in the late medieval period was a Carmelite institution. The building stood by the town gate by the road leading to Solivar, somewhat to the southeast of Prešov.³⁹ The medieval sources are unclear as to whether a moat also ran on this side of the town or not. The water in the moat section running by the mills on the west side of town originated in the nearby River Torysa. This channel can be easily identified on early modern maps, including the relevant sheet of the First Military Survey from the late eighteenth century. The eastern section of the moat was probably not connected to the River Torysa or to the western section of the moat. However, according to the eighteenth century description of the town by Matthias Bel left as a manuscript,⁴⁰ the whole of the town at that time was surrounded by a moat.⁴¹ If this is true, because of the local geographical conditions, the water in the eastern section of the moat probably originated from somewhere other than the River Torysa as this area lies at a somewhat higher elevation. The water may have come from the hills to the east of the town. It is equally possible that the gunpowder mill close to the town wall was a dry

37 For these two, see: DOMENOVÁ, M. *K hospodáreniu mesta Prešov...*, pp. 37-38.

38 DOMENOVÁ, M. *K hospodáreniu mesta Prešov...*, p. 38.

39 The Carmelites took over the building from the Franciscans. On the friary, see: ROMHÁNYI, Beatrix F. *Kolduló barátok, gazdálkodó szerzetesek. Koldulórendi gazdálkodás a késő középkori Magyarországon.* (Mendicant brothers, farming friars. Mendicant economy in late medieval Hungary). [Dissertation submitted to the Hungarian Academy Sciences]. Budapest: [s. n.], 2013, passim. REGÉNYI, Kund. *Az eperjesi Szentháromság karmelita konvent története* (History of the Holy Trinity Carmelite convent at Prešov). In: HOMONNAI, Sarolta – PITI, Ferenc – TÓTH, Ildikó (Eds.). *Tanulmányok a középkori magyar történelemről. Az I. Medievisztikai PhD-konferencia (Szeged, 1999. július 2.) előadásai* (Studies in medieval history. Proceedings of the 1st PhD conference in medieval studies, Szeged, 2 July 1999). Szeged: Szegedi Középkorász Műhely, 1999, pp. 103-113. On the relationship of the Franciscan friary and the Carmelite convent: ROMHÁNYI, Beatrix F. *Kolostorok és társaskáptalanok a középkori Magyarországon. Katalógus* (Monasteries and collegiate chapters in medieval Hungary. Catalogue). Budapest: Pytheas, 2000, p. 23.

40 On Bel's description of Sáros County, see: TÓTH, Gergely. *Bél Mátyás Sáros vármegyéről* (Matthias Bel on Sáros County). In: *Gesta: fiatal miskolci történészek folyóirata*, 2006, vol. 6, no. 2, pp. 30-49. TÓTH, Gergely. *Bél Mátyás „Notitia Hungariae novae...” című művének keletkezéstörténete és kéziratának ismertetése. I – II* (Creation history of Mátyás Bél's "Notitia Hungariae novae..." and description of its manuscripts). [PhD-dissertation]. Budapest: ELTE, 2007, II., pp. 247-251.

41 „*Moenia murus geminus, alter altero sublimior et solidior incingit, suffulcientibus eos propugnaculis quorum duo praecipua mercatorum unum, alterum victorum, non parum addunt ornamenti urbeculae, ut nihil dicamus de reliquis, quae sartoribus, carnificibusque nomen habent: ea enim pariter singulari munimento moenia, et urbem ornant. Praeterea adstant portae, superior una, altera inferior, adiecta una portula a latere, quae omnia turritis tectis condecorant urbis compagem. Totam eam ambiunt fossae, alte satis depressa, quarum una, quae Tarca vicina est, oppletur aquis ad summum.*” Országos Széchényi Könyvtár. Fol. Lat. 3783. 34^v (Descriptio Comitatus Sarosiensis per Matthiam Belium adornata). On the manuscript, see: TÓTH, Gergely. *Bél Mátyás...*, II., p. 251.

mill, something that cannot be ruled out for the fulling mill either. There is no clear evidence for the source of energy used by these industrial complexes but a dry mill certainly existed in the town as confirmed by an entry in the town accounts in 1521.⁴²

The account books refer to two further mills, but neither the location nor the power source they employed is clear. The first to appear chronologically in the sources was a mill that ground the malt to provide the burghers with beer. As sources mention this mill as being a "malt mill and a wine house" (*malzmühle und weinhaus*) the building must have held one of town pubs.⁴³ Sources in the 1510s also refer to another mill (*molendino bursatili* [?]), that only functioned for a couple of years but neither its location nor whether it was a water mill is known.⁴⁴

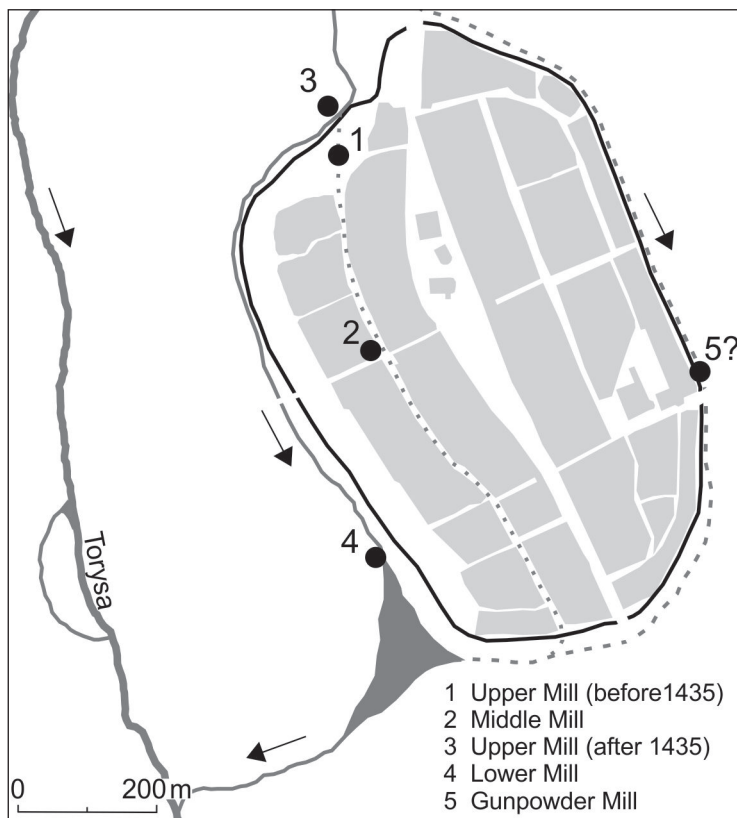


Fig. 3: Topography of Prešov in the late medieval period with the relocation of the mills and the probable running of the western section of the urban moat before and after 1435.

⁴² MNL OL DF 282 538.

⁴³ MNL OL DF 282 535.

⁴⁴ MNL OL DF 282 538 (image: 533, 625 and 703).

Moats, urban topography and mills – some conclusions

There are two different kinds of lessons that Prešov provides, ones related to the topography of the town and urban water use in general. First, Sigimund's permission and the two individual agreements with the mill owners, Peter Langwart and Peter Blume can be used to date the extension of the town walls and the streets of the town itself. In this period, most probably a new street and a row of houses was added to the previously existing settlement, hence the relocation of mills. The documents related to the problem of the mills highlights the fifteenth-century development of town itself. While the Upper Mill only had to move probably a few meters, the Middle Mill had to be moved further to the south, allowing a significant extension of the town towards the west.

The documents related to the extension of the fortifications along with the detailed account books of the town from the late fifteenth and early sixteenth century allowed data to be gathered on mills in the town. They also revealed that despite the relatively small population of the town compared to that of other free royal towns in Hungary, Prešov possessed a high number of such complexes. Whether some of these mills used water or some other source of energy remains unclear.

This survey of the moat and the exploitation of the waters surrounding Prešov also highlighted some general features regarding urban water-management. Population concentrations such as walled towns in Hungary had to use the waters within their borders very efficiently to provide various industries with energy. Power needs meant that mills built by moats were anything but unique in the Middle Ages. Researchers identified a number of similar buildings in dozens of towns in Western as well as in East Central Europe. In the Kingdom of Hungary moat of some towns were exploited; the example of Sopron is probably best studied,⁴⁵ although the water running around the castles of Moson and Óvár also supplied major mills with power.⁴⁶ A section of the moat of Cluj was also used as a mill race in the late medieval period. In this case, however, the use of this semi-artificial riverbed probably pre-dated the time when a moat was established around the town.⁴⁷ From the sixteenth century onwards and together with the beginning of the construction of dozens of new fortifications with the arrival of the Ottomans, numerous mills were built by moats, becoming increasingly every day elements in local economies.

BIBLIOGRAPHY

- Magyar Nemzeti Levéltár Országos Levéltára (Hungarian National Archives, National Archive), fund Diplomatikai Fényképgyűjtemény (Collection of Diplomatic Photographies)
 Magyar Nemzeti Levéltár Országos Levéltára (Hungarian National Archives, National Archive), fund Diplomatikai Levéltár (Collection of Diplomatics)
 Országos Széchényi Könyvtár Kézirattár (Széchényi National Library, Collection of Manuscripts), Fol. Lat.
 Štátny archív v Prešove (Town Archive of Prešov), fund Magistrát Prešov (Magistrate of Prešov), Zbierka máp a plánov (Collection of maps and plans)

45 VADAS, A. *Városárok és vízgazdálkodás...* VADAS, A. *Vízépítés és munkaszervezési formák...*

46 On Magyaróvár: ASZT, Ágnes. A mosonmagyaróvári Bástya utcában végzett régészeti feltárás történeti tanulságai (Historical lessons of the archaeological excavations at Bástya Street in Mosonmagyaróvár). In: *Moson Megyei Műhely*, 2001, no. 3, pp. 29-32.

47 On Cluj: BENKŐ, Elek. *Kolozsvár magyar külvárosa a középkorban* (The Hungarian suburb of Cluj in the Middle Ages) (Erdélyi Tudományos Füzetek, 248). Kolozsvár : Erdélyi Múzeum Egyesület, 2004, 129 p.

- ASZT, Ágnes. A mosonmagyaróvári Bástya utcában végzett régészeti feltárás történeti tanulságai (Historical lessons of the archaeological excavations at Bástya Street in Mosonmagyaróvár). In: *Moson Megyei Múhely*, 2001, no. 3, pp. 29-32.
- BENKŐ, Elek. *Kolozsvár magyar külvárosa a középkorban* (The Hungarian suburb of Cluj in the Middle Ages) (Erdélyi Tudományos Füzetek, 248). Kolozsvár : Erdélyi Múzeum Egyesület, 2004, 129 p.
- COULSON, Charles L. H. *Castles in Medieval Society Fortresses in England, France, and Ireland in the Central Middle Ages*. Oxford : Oxford University Press, 2003, 441 p.
- DIVALD, Kornél – IVÁNYI, Béla. Az eperjesi Szent Miklós-templom (The St Michael's Church at Prešov). In: PETROVICS, Elek (Ed.). *Az Országos Magyar Szépművészeti Múzeum Évkönyvei IV (Yearbook of the Hungarian Museum of Fine Arts, IV)*. Budapest : Az Orsz. Magyar Szépművészeti Múzeum kiadása, 1924 – 1926, pp. 30-73.
- DOMENOVÁ, Marcela. Daňové písomnosti a sociálno-ekonomické pomery mesta Prešov v období stredoveku (Tax lists and socio-economic processes in the town of Prešov in the Middle Ages). In: *Zborník vedeckých prác katedry ekonómie a ekonomiky ANNO 2009* (Proceedings of scientific works of the Department of Economics, University of Prešov in 2009). Prešov : Prešovská univerzita, 2009, pp. 231-255.
- DOMENOVÁ, Marcela. K hospodáreniu mesta Prešov na základe daňovej-úctovnej knihy z rokov 1528 – 1537 (To the economy of Prešov on the basis of the book of income and expenditure from the years 1528 – 1537). In: *Annales Presovienses* 11, 2011, pp. 25-59.
- DOMENOVÁ, Marcela. Prešovské testamenty do roku 1526. (Diplomaticko-obsahový rozbor). (The last will from Prešov until 1526 (diplomatic content analysis)). In: *Historica Carpatica* 33, 2002, pp. 29-68.
- DRASKÓCZY, István. Highways between Buda and Kraków. In: BENDA, Judit – KISS, Virág – LIHONCZAK, Grazyna-Nurek – MAGYAR, Károly (Eds.). *On Common Path. Budapest and Kraków in the Middle Ages*. Budapest : Budapest History Museum Budapest, 2016, pp. 38-41.
- DURU, Louis M. *Bibliothèque historique de l'Yonne; ou, Collection de légendes, chroniques et documents divers pour servir à l'histoire des différentes contrées qui forment aujourd'hui ce département. I. Auxerre: Perriquet, 1801, 579 p.*
- FEJÉR, Georgii (Ed.). *Codex diplomaticus Hungariae ecclesiasticus ac civilis X/7*. Budae : Typis typogr. Regiae Universitatis Ungaricae, 1843, 928 p.
- FÜGEDI, Erik. Középkori magyar városprivilegiumok (Medieval Hungarian urban privileges). In: *Tanulmányok Budapest Múltjából* 14, 1961, pp. 17-107.
- GÁCSOVÁ, Alžbeta. Spoločenská štruktúra mesta Prešova v 15. storočí a v prvej polovici 16. storočia (The social structure of Prešov in the 15th century and in the first half of the 16th century). In: *Historický časopis*, 1970, vol. 18, pp. 347-378.
- GRAUS, Igor. Vývoj fortifikácie Banskej Bystrice do konca 16. storočia v podmienkach špecifik pasívnej obrany stredoslovenských banských miest (Die Fortifikationsentwicklung der Stadt Banská Bystrica bis Ende des 16. Jahrhunderts unter den spezifischen Bedingungen der passiven Verteidigung der mittelslowakischen Bergwerkstädte). In: *Vojenská história*, 2000, no. 4, pp. 3-21.
- GRUBER, Elisabeth. *Raitung und außgab zum gepew. Kommunale Rechnungspraxis im oberösterreichischen Freistadt. Edition und Kommentar der Stadtgrabenrechnung (1389 – 1392)*. Wien : Böhlau, 2015, 243 p.
- GUILLERME, André. *The Age of Water : The Urban Environment in the North of France, A. D. 300 – 1800* (Environmental History Series, 9). College Station, TX : A&M University Press, 1988, 293 p.
- GULYÁS, László Szabolcs. Városfalépítés a középkori Eperjesen (Town wall construction at medieval Prešov). In: BUHÁLY, Attila – RESZLER, Gábor – SZOBOSZLAY, György (Eds.). *Falak és választóvonalak a történelemben* (A Nyíregyházi Főiskola Történettudományi és Filozófia Intézete Kiadványai. Terminus Könyvek, 1). Nyíregyháza : Nyíregyházi Főiskola Történettudományi és Filozófia Intézet, 2014, pp. 127-142.

- HOLL, Imre. Feuerwaffen und Stadtmauern. Angaben zur Entwicklung der Wehrarchitektur des 15. Jahrhunderts. In: *Acta Archaeologica Academiae Scientiarum Hungaricae* 33, 1981, pp. 201-243.
- HOLL, Imre. Sopron középkori városfalai (Town walls in medieval Sopron). In: *Archaeologiai Értesítő* 94, 1967, pp. 155-183; 95, 1968, pp. 188-205; 98, 1971, pp. 24-44; 100, 1973, pp. 180-207.
- HOLT, Richard. Medieval England's Water Related Technologies. In: SQUATRITI, Paolo (Ed.). *Working with Water in Medieval Europe. Technology and Resource-Use* (Technology and Change in History, 3). Leiden; Boston; Köln : Brill, 2000, pp. 51-100.
- IVÁNYI, Béla (Ed.). *Eperjes szabad királyi város levéltára, 1245 – 1526. I – II* (Archive of the free royal town of Prešov). Szeged : Szegedi Városi Nyomda és Könyvkiadó, 1931 – 1932, 240 p; 236 p.
- IVÁNYI, Béla. Eperjes szabad királyi város jegyzőkönyve, 1424 – 1509 (The protocols of the free royal town of Prešov, 1424 – 1509). In: *Történelmi Tár* 10, 1909, pp. 118-133, 161-184.
- KARCZAG, Ákos – SZABÓ, Tibor. *Erdély, Partium és a Bánság erődített helyei* (Fortified places in Transylvania, Partium and Banate). 2nd edition. Budapest : Semmelweis, 2012, 888 p.
- KUBINYI, András. Városhálózat a késő középkori Kárpát-medencében (Urban network in the late medieval Carpathian Basin). In: *Történelmi Szemle* 46, 2004, pp. 1-30.
- LAKATOS, Bálint Péter. *Hivatali írásbeliség és ügyintézés a késő középkori magyarországi mezővárosokban, okleveleik tükrében* (Official local written culture and administration in late medieval Hungarian towns (oppida), in the mirror of their charters). [PhD-dissertation]. Budapest : ELTE, 2013, 165 p.
- MAROSI, Endre. *XVI. századi váraink, 1521 – 1606* (Castles in sixteenth-century Hungary). Miskolc : Hungária-Európa Alapítvány – Borsod-Abaúj-Zemplén Megyei Levéltár, 1991, 79 p.
- MÁTYUS, Norbert. Építészképzés Filarete Trattato di architettura-jában és Bonfini latin fordításában (Formation of architects in Filarete's Trattato de architettura and in Bonfini's latin translation). In: MUNDING, Márta (Ed.). *Techne: a mesterségbeli tudás átadásának lehetséges szinterei az ó- és középkorban. Szak- és felnőttképzés az ó- és középkorban* (Techné. Spaces and possible forms of crafts' knowledge transfer in the Ancient Times and the Middle Ages. Professional and adult training in the Ancient Times and the Middle Ages). Piliscsaba : Avicenna Közel-Kelet Kutatások Intézete, 2017. (in press)
- MENCL, Václav. *Středověká města na Slovensku* (Medieval towns in Slovakia). Bratislava : Universum, 1938, 230 p.
- MIŇO, Martin. Niekoľko postrehov k fortifikačným prvkom miest stredoslovenskej banskej oblasti (Some notes on the fortification elements of central Slovakian mining towns). In: *Archaeologia historica* 36, 2011, pp. 289-302.
- NÓGRÁDY, Árpád. A középkor végi Magyarország mindennapi kenyere (Beregyszász lakosságának gabonavásárlásai 1530-ban és a Jagelló-kori malomvámok) (The everyday bread of Hungary at the end of the Middle Ages. The grain acquisition of the inhabitants of Berehove in the 1530s and the mill customs of Jagiellonian period). In: *A Nyíregyházi Jósa András Múzeum Évkönyve* 42, 2000, pp. 155-169.
- OPLL, Ferdinand – KRAUSE, Heike – SONNLECHNER, Christoph. *Wien als Festungsstadt im 16. Jahrhundert. Zum kartografischen Werk der Mailänder Familie Angielini*. Wien; Köln; Weimar : Böhlau, 2017, 400 p.
- RABB, Péter. *Városi védművek a középkori Magyarországon I – II* (Urban fortifications in medieval Hungary). [PhD-dissertation]. Budapest : BME, 2005, 162 p.
- REGÉNYI, Kund. Az eperjesi Szentháromság karmelita konvent története (History of the Holy Trinity Carmelite convent at Prešov). In: HOMONNAI, Sarolta – PITI, Ferenc – TÓTH, Ildikó (Eds.). *Tanulmányok a középkori magyar történelemről. Az I. Medieviztikai PhD-konferencia (Szeged, 1999. július 2.) előadásai* (Studies in medieval history. Proceedings of the 1st PhD conference in medieval studies, Szeged, 2 July 1999). Szeged : Szegedi Középkorász Műhely, 1999, pp. 103-113.

- ROMHÁNYI, Beatrix F. *Kolduló barátok, gazdálkodó szerzetesek. Koldulórendi gazdálkodás a késő középkori Magyarországon* (Mendicant brothers, farming friars. Mendicant economy in late medieval Hungary). [Dissertation submitted to the Hungarian Academy Sciences]. Budapest : [s.n.], 2013, 443 p.
- ROMHÁNYI, Beatrix F. *Kolostorok és társaskáptalanok a középkori Magyarországon. Katalógus* (Monasteries and collegiate chapters in medieval Hungary. Catalogue). Budapest : Pytheas, 2000, 137 p.
- RUSU, Adrian Andrei. *Castelarea Carpatică. Fortificații și cetăți din Transilvania și teritoriile învecinate (sec. XIII – XIV)* (Carpathian Castelaria. Fortifications and Citadels in Transylvania and the Neighbouring Territories). Cluj-Napoca : Editura Mega, 2005, 653 p.
- SEDLÁK, Imrich (Ed.). *Dejiny Prešova I* (The history of Prešov). Košice; Prešov : Východoslovenské Vydavateľstvo v Košiciach; Muzeum Slovenskej Republiky Rád v Prešove, 1965, 287 p.
- SPENCER, John R. (Ed.). *Filarete's Treatise on Architecture : Being the Treatise by Antonio di Piero Averlino, Known as Filarete I. The Translation*. New Haven : Yale University Press, 1965, 339 p.
- SZALAI, Béla – SZÁNTAI, Lajos. *Magyar várak, városok, falvak metszeteken, 1515 – 1800. II.* (Hungarian castles, towns and villages on cuttings). Budapest : Múzeum Antikvárium, 2006, 341 p.
- SZENDE, Katalin. A Kárpát-medence középkori városainak régészeti kutatása az elmúlt két évtizedben (Archaeological research into medieval towns in the Carpathian Basin since 1990). In: BENKŐ, Elek – KOVÁCS, Gyöngyi (Eds.). *A középkor és a kora újkor régészete Magyarországon. I.* Budapest : MTA Régészeti Intézet, 2010, pp. 141-172.
- SZENDE, Katalin. Gyermekek, testvérek, házastársak. Családi viszonyok és örökösödési szokások Eperjesen a középkori végrendeletek tükrében (Children, siblings, spouses. Family ties and testamentary practices in Prešov in light of medieval last wills). In: *Történelmi Szemle* 46, 2004, pp. 113-140.
- SZENDE, Katalin. Kraków and Buda in the Road Network of Medieval Europe. In: BENDA, Judit – KISS, Virág – LIHONCZAK, Grazyna-Nurek – MAGYAR, Károly (Eds.). *On Common Path. Budapest and Kraków in the Middle Ages*. Budapest : Budapest History Museum Budapest, 2016, pp. 31-37.
- ŠTEFÁNIK, Martin – LUKÁČKA, Ján et al. *Lexikón stredovekých miest na Slovensku* (Historical lexicon of Slovakian towns). Bratislava : Historický ústav SAV, 2010, 629 p.
- TELEKI, József. *A Hunyadiak kora Magyarországon XI* (History of the age of the Hunyadis in Hungary). Pest : Emich, 1855, 584 p.
- TÓTH, Gergely. *Bél Mátyás „Notitia Hungariae nova...” című művének keletkezéstörténete és kéziratainak ismertetése I – II* (Creation history of Mátyás Bél's "Notitia Hungariae novae..." and description of its manuscripts). [PhD-dissertation]. Budapest : ELTE, 2007, 184 p. and 339 p.
- TÓTH, Gergely. Bél Mátyás Sáros vármegyéről (Matthias Bel on Sáros County). In: *Gesta : fiatal miskolci történészek folyóirata*, 2006, vol. 6, no 2, pp. 30-49.
- TÓTH-SZABÓ, Pál. *A cseh-husza mozgalom és uralom története Magyarországon* (The history of the Czech-Hussite movements and rule in Hungary). Budapest : Hornyánszky ny. M. Tud. Akadémia, 1917, 474 p.
- ULIČNÝ, Marián – HARČAR, Peter. Počiatky mesta Prešova na základe výsledkov najnovších archeologických výskumov (The origins of the town of Prešov deduced from the results of the latest archaeological research). In: *Archaeologia historica* 35, 2010, pp. 393-403.
- URBANOVÁ, Norma. *Prešov : Pamiatková rezervácia* (Monument guide: Prešov) (Pamiatky mestských rezervácií, 8). Bratislava : Tatran, 1986, 165 p.
- VADAS, András. Terminológiai és tartalmi kérdések a középkori malomhelyek körül (Questions of the terminology and meaning of the term locus molendini in the Middle Ages). In: *Történelmi Szemle* 57, 2015, pp. 619-648.

- VADAS, András. Városárkok és vízgazdálkodás a késő-középkori Közép-Európa városaiban (Urban moats and water-management in the towns of East Central Europe in the late Middle Ages). In: *Urbs. Magyar Várostörténeti Évkönyv* 10 – 11, 2015, pp. 323-353.
- VADAS, András. Vízépítés és munkaszervezési formák a késő középkori és kora újkori Magyar Királyságban (Water-construction and work-organization in the late medieval and early modern Kingdom of Hungary). In: MUNDING, Márta (Ed.). *Techne: a mesterségbeli tudás átadásának lehetséges szinterei az ó- és középkorban. Szak- és felnőttképzés az ó- és középkorban*. Piliscsaba : Avicenna Közél-Kelet Kutatások Intézete, 2017. (in press)
- WAGNER, Carolus. *Diplomatarium Comitatus Sarosiensis*. Posonii; Cassoviae : Sumtibus Joannis Michaelis Landerer, 1780, 575 p.
- WEISZ, Boglárka. Kassa kereskedelmi életének jogi háttere a középkorban (The legal background of the trade life of Košice in the Middle Ages). In: BÁRÁNY, Attila – DRESKA, Gábor – SZOVÁK, Kornél (Eds.). *Arcana tabularii. Tanulmányok Solymosi László tiszteletére II* (Studies in honor of László Solymosi). Debrecen; Budapest : ELTE BTK, 2014, pp. 899-908.
- WEISZ, Boglárka. The legal background of the trade life of Košice in the Middle Ages. In: HAJDUOVÁ, Mária – BARTOŠ, Martin (Eds.). *Košice in the Coordinates of European History*. Košice : Kancelária Ústavného súdu Slovenskej republiky, 2013, pp. 94-111.
- ZSOLDOS, Attila. The Path of Košice to the Privileges of 1347. In: HAJDUOVÁ, Mária – BARTOŠ, Martin (Eds.). *Košice in the Coordinates of European History*. Košice : Kancelária Ústavného súdu Slovenskej republiky, 2013, pp. 34-49.