

The purpose of the project is to analyze the medieval hydraulic solutions functioning in key settlement complexes located in the Osa River Valley. The acquired materials and results will form a part of a doctoral dissertation, currently in preparation.

The Osa River Valley is a unique area. This river served as a historical border between the Christian Piast state of Boleslav I the Brave and the pagan Prussians. It has also marked the northern border of the Chełmno Land since the Teutonic era. A border nature of this river made it a perfect location for medieval gords, settlements, castles and cities. Development of these complexes depended primarily and foremostly from the potential to supply water to meet the needs of the growing population and economic activities (mills, timber mills, fullers and other production facilities). Satisfying the increasing water demand required interfering in natural hydrological conditions by regulating the river beds and tributaries and constructing the hydraulic structures, such as channels, weirs, dikes or artificial ponds. The individual structures and machinery contributed at the same time to the larger water supply systems dedicated to the following settlement complexes: Grudziądz, Kłódka, Rogoźno-Zamek and Słupski Młyn, studied under this project. This relatively small-scale area selected for studies enables confronting information from multiple historical sources (including iconography and cartography) with current field conditions, which have been already surveyed by the project author. In addition, thanks to narrowing the surveys to a smaller-scale settlement complex we will manage to perform both detailed and comprehensive analysis. At this relatively small area, we will examine the development and changes in the applied hydraulic solutions throughout the Middle Ages and attempt to answer the question on transfer of medieval technical knowledge.

The medieval water supply systems operating in the Osa River Valley are a comprehensive and still undescribed issue raising plenty of doubts due to insufficient information and data. Thus, it requires a scientific query covering certain domestic and foreign institutes (selected by the author at an earlier stage as holding relevant archival resources). The remains of historical wooden hydraulic structures in the Rogoźno-Zamek region identified by the author require confirmation to be the medieval system components. To this end, a specialist dendrochronological analysis will be performed. Use of state-of-the-art D3 laser scanning technique will enable precise measurements and digital documentation of water tower – a unique historical hydraulic structure in Grudziądz. Listing and arranging the available information in a form of catalogue will contribute to future archaeological and historical studies and enhance interpretation of artefacts found during excavations. The obtained data will support the scientific attempts to localize the hydraulic structures which have failed to survive to our days.