

Brześć Kujawski culture appeared around 4350 cal. BC as an effect of the strong social changes in the Late Band Pottery culture and lasted up to about 4000 cal. BC. Despite the strong relations with the Lengyel culture (some of the ornaments on ceramics, decorations made of the *Spondylus* shells, the use of copper and funeral rites), BKC significantly manifested its difference (unified, monumental long houses, amber artefacts, necklaces of teeth, as well as antler T-shaped axes – adapted from the hunters-gatherers communities). By far the most distinctive BKC features are the relics of the monumental, long, trapezoidal houses, constituting the basis of a stable settlement network. Within such a network the central settlements (e.g. Brześć Kujawski, Osłonki, Dubielewo, Krusza Zamkowa) were surrounded by the system of a smaller satellite-villages (e.g. Konary, Miechowice, Pikutkowo). Central settlements not only stand out by their large size and multi-stage buildings, but probably were also a ritual centres for the communities living in the surroundings, what is reflected in the numerous and well-equipped burials. The BKC long houses reveal a strong tendency to unification, they were built on a trapezoidal outline, determined by a solid foundation trenches, inside which a single row of posts was located.

The scientific goal of the project is to use the remote sensing (satellite, multispectral and thermal imaging, LiDAR data) to reconstruct the settlement network of the Brześć Kujawski culture in the central part of the Inowrocław Plain. This creates the opportunity to construct the critical interpretations regarding the demographic potential, village development, formation of a settlement network and territorial divisions.

For the implementation of that goal, the following steps will be applied: (1) recognition of the BKC settlement context in the research area on the basis of: (a) archival query, (b) analysis of the satellite images – Google Earth, (c) analysis of the multispectral satellite imaging, (2) creation of the remote sensing methodology with use of a drone armed with a RGB, multispectral and thermal sensors, (3) Creation of a prediction model, that allows selection of the most probable locations of the BKC sites, (4) Development of a complete picture of the BKC settlement in the research area by: (a) systematic search for the BKC settlements with the use of a drone (RGB, multispectral and thermal sensors), (b) fieldwalking surveys with use of the RTK technology on the reference sites and those discovered during the prospection.

Recreating of the BKC full settlement network on a large part of the Kuyavia Plain area, which almost coincides with the range of this culture main Kuyavian ecumene, opens a new possibilities for interpreting the demographic potential and the spatial organization system of the culture, that played a huge role in the neolithisation of the entire European Plain. On this basis, it will be possible to design further research in a much more precise manner, targeting particular problems of the social organization, contact networks and economy.

The project results will also contribute to the development of archaeology as a scientific discipline, since subjecting of the modern, non-destructive remote sensing methods (multispectral and thermal imaging) to the intensive testing will allow for their implementation into the methodology of archaeological field research in a much wider and more effective way.