

PROPOSAL OF BROWNFIELD LAND DEVELOPMENT ON THE EXAMPLE OF THE LANDFILLS OF FORMER KRAKOW SODA WORKS „SOLVAY”

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ABSTRACT

The article presents a proposal for the development of soda industry landfills on the example of a former Cracow Soda Works “Solvay”. The area is located in close proximity to the center of Krakow and is surrounded by places of worship. The analyzed area is characterized by specific physical and chemical properties of the substrate (soda production waste) that manifest themselves e.g. in very high salinity and the presence of numerous processes of water erosion. The former landfill covers an area of 1 km² and is a natural link between the two large settlements in the southern part of Krakow, namely Kurdwanów and Borek Fałęcki. The developed landscape concept is based on a detailed analysis of the physicochemical substrate and the conditions necessary for the foundation of buildings and civil engineering. In the research phase, the technical and natural inventory was made, and a detailed review of the literature in the field of land use with similar properties was performed. The designing process was guided by the information contained in the available planning documents and the needs of the local community, which presented in the literature of other scientists. As a result of the research, the concept of omni-zoning area landfills was established. The main assumptions are based on the concept of the nineteenth-century idea of the garden city, consisting in dividing the area into 6 main thematic areas, i.e. parks, which are described in detail in the article. The main functions (leisure and recreation) have been supplemented with historical and touristic elements.

Keywords: landfill landscape development, Krakow, soda industry

INTRODUCTION

Differentiation of the physicochemical properties of waste stored in landfills of former Cracow Soda Works was the subject of numerous scientific papers devoted to the possibilities of development of this area. The first local spatial development plan (Biuro Rozwoju Krakowa 1994) allocated this area for low greenery, as designed by Nagawiecka et al. (1980) and Sanecki (1994). Ten years later, the concept of developing this area, maintains the assumptions of the foundation plan from 1994 and supplements that paper with recreational features (Instytut Rozwoju Miast w

Krakowie 2004). Assumptions of the project from 2004 were confirmed through biochemical studies by Pośpiech and Skalski (2006) and geotechnical analysis by Sroczyński (2008). Poda (1999), Krzak (2005) and Okrutniak (2010) also emphasize the validity of such concept.

At the end of 2012, the Krakow City Council passed a currently valid local development plan called “White Sea”. The plan was partly abandoned from the maintenance of large green areas for the expansion of service areas and communication. Due to the partial development of the landfills area, (Uchwała... 2012) proposed a modified and supplemented land development conception

