

ABSTRACT

The thesis is presented on 50 sheets, it contains 2 attachments and a list of references to used sources of 20 titles. The paper presents 23 drawings and 4 tables.

The purpose of this work is to increase the efficiency of designing the infrastructure of urban-type settlements by developing a system that, based on the drawing of the boundary of the urban-type settlement and the boundary lines within it, offers an alternative to the optimal location of land for constructions.

The paper considers methods for solving the multicriterial problem of land-use allocation - evolutionary method, genetic algorithm, method of branches and boundaries, as well as existing software solutions. Based on the formulated criteria for solving the problem, an evolutionary method, a genetic algorithm for placing objects on a plane, is chosen. Drawings of the boundaries of urban-type settlements have been used to work the algorithm.

During the execution of the thesis the system, which is an auxiliary tool in designing the infrastructure of urban-type settlements for the specialist of the mentioned branch, has been developed. A test of the designed software has been performed.

Key words: genetic algorithm, multicriteria problem of land placement, chromosome, generation, individual.