

VISUAL ASSESSMENT OF THE PROBABILITY OF BREAKAGE AND FALL OVER OF SELECTED TREES AT PLANTY PARK IN KRAKÓW

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Abstract

The subject of the study is a detailed dendrological examination, including a visual assessment and taking into consideration the safety aspects of 23 selected trees growing at Planty Park in Krakow in the zone of a planned heating pipeline. The WID assessment by Rosłon-Szeryńska (2006) was used for the evaluation. The assessment of tree vitality was done using the Roloff's leafy method of vitality. The field research was conducted in January 2017. Based on the analysis of the planned excavation for the heat pipe, the percentage of damage to the root system was estimated. In most cases it is predicted that approximately 30% of the root system will be removed from the affected trees. Based on the calculated values, the likelihood of tree overturns after the investment was re-evaluated. In the case of more than a half of the trees, the danger of tipping due to root removal will increase. The high risk of tipping will be with 8 trees, medium and large risk limit will apply to 5 trees. Due to the fact that the regeneration of trees depends on their vitality and health status, the objects have been evaluated for the condition of the trees (Roloff) (0 phase is the vital tree, 4 is a dead tree). Among the trees examined, it was considered that one tree (a beech) was in a poor condition (3). Seven trees were also weakened (2). Only one tree (a young ash) was in the vital state (0). All trees were in average state of health. The tree to be removed due to advanced rot is a common beech. Seven trees are poorly prone to earthwork survivability when they break the critical reach of the root system due to weakened condition or strong tilt. In a case of violation of their minimum reach for the root system equal to 4 m, it will be appropriate to remove the trees concerned. Four trees are in the group of less likely ones to survive. They will be removed when the distance 2 meters from the tree trunk is exceeded. In case of leaving the trees weakly recommended, the special protection is recommended: root screens, agrotechnical treatments, aeration, mineral fertilization, watering, mulching of the ground in the growth zone of the roots of tree barks, improved statics, annual observation of defects/diseases and tree damage. Other trees have the chance to survive with environmental protection and proper tree care at the construction site and with intensive care.

Keywords: Planty Park, WID assessment, planned heating pipeline



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