ASSESSMENT AND REHABILITATON OF THE STRUCTURE OF EXISTING REINFORCED CONCRETE TANK

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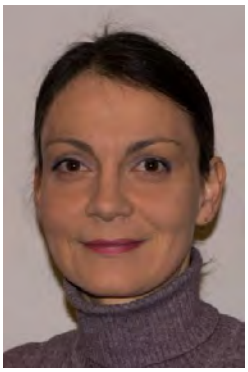

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Summary

In the 70s of the last century an investment project for a plant for wastewater of the city of Gabrovo (Bulgaria) starts. The project is partially completed and is put into operation in 1984-85. Once built, the tanks for the treatment of the wastewater never operated, respectively not maintained. In 2012-2013, analysis to already constructed equipments to assess their technical compliance with current regulations, grade of completion and operation in order fully construction and modernization of the equipments is done. That investigation aims to answer about actual state of the tank's structure and to conclude on the suitability of the structure for the future use

The paper focuses on assessment, numerical modelling, analysis and recommendations for the rehabilitation of existing reinforced concrete tanks according the requirements of the new technology for the treatment of the wastewater of the city.

Fig. 1: Actual view of one of the tanks

Keywords: reinforced concrete structures; computer modelling; assessment; rehabilitation.

1. Introduction

In the 70s of the last century an investment project for a plant for wastewater of the city of Gabrovo (Bulgaria) starts. The project is partially completed and is put into operation in 1984-85. The wastewater treatment facility includes a large number of reinforced concrete tanks(*Fig. 1*). Once built, the tanks for the treatment of the wastewater never operated, respectively not maintained. In 2012-2013 starts an investigation project for modernization of the existing equipment according a special European program for wastewater treatment. The existing technology is about 30 years old and is not in compliance with the contemporary technologies and the requirements for the quality of the water. The paper presents a special investigation for assessment and rehabilitation of reinforced concrete tanks, which are part of the system of the wastewater plant in the city. The purpose of the investigation is the technical compliance with the actual regulations and the behaviour of the structure of the tanks according the

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