Study for Arranging the Data for Long-Term Maintenance and Rehabilitation Planning of Sewerage Systems

Year of Research	2008	

(Purpose)

The coverage of sewerage system has been increasing. Although civil engineering structures such as wastewater treatment plant and pumping station are under the highly corrosive environment, the frequency of regular inspection for those structures is not enough compared to that for machineries.

The objective of this study is to develop some assistant tools for the "stock management" which implements efficient and effective maintenance in the management of sewerage systems. These tools will make it possible for non-specialists to inspect and evaluate the condition of sewerage structures, to consider how to maintain and repair them, to calculate the future costs.

(Results)

The contents and results of this study are as follows:

(1) Developing and improving the facility inspection assistant software

The facility inspection assistant software which has developed last year has been improved by the voices from users.

(2) Study on deterioration prediction models

Based on the collected data with the facility inspection assistant software, the deterioration prediction model has considered. The study adopts both Markov chain model and simplex deterioration curve model.

(3) Presenting general LCC calculation method

Considering the deterioration prediction results, this study presented how to calculate the future LCC roughly. Also, this study sets the scenarios with the combination of some construction method for repair and maintenance. The LCC

Fig.-1　Windows of the LCC calculation software

calculation software can calculate and compare the general LCC for each scenario.（cf.Fig.-1）

(4) Draft of the procedure for formulating long-term maintenance and rehabilitation plan of sewerage systems

"The draft procedure for formulating long-term maintenance and rehabilitation plan of sewerage systems (created in 2007)" is revised. Especially, the procedure for using facility inspection assistant software and LCC calculation software has added in.
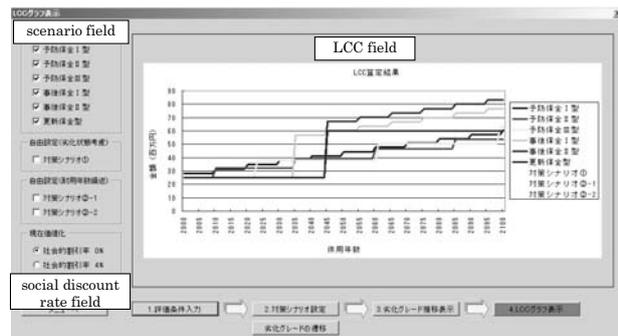
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