

INTEGRATED PLANNING OF WATER DISTRIBUTION SYSTEM IN SEOUL CITY

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The population of Seoul metropolitan city is more than 12 million and the demands of clean and enough drinking water has been increased.

The beginning of water treatment plant was built in 1908, which amounted to capacity of 12,500 tons per day and also has been increased more than 7.3 million tons nowadays in Seoul.

In this study, it is purposed that better quantity and quality could be supplied to customers in spite of disaster or failure whatever. It is designed that stability of quality and quantity of water supply system is mainly considered in emergency.

To do this purpose, 4 major plans are carried out as follows; 1) Restructuring and maintenance for no cut off water supply to customers. 2) Supplying fresh water due to extension of direct water supply system. 3) Separation of function between supply pipe and distribution pipe. 4) Arrangement of main pipe system for the reconstruction of block system and loop system in pipeline.

This method was applied to 129,860 m length and 400 mm to 1,100 mm diameter in Seoul metropolitan city.

We divided into 43 large regional blocks and established water pipe maintenance plan depends on water distribution mains and adopted the programs of KYPIPE III and CYBERNET 3.0 for pipe network analysis. The figure shows the order for water pipe distribution by the block system. After dividing into 43 regional blocks, each block divided into first, second and third order water distribution mains. These small blocks were total 2,037 mains. These divisions make effective management and easy control for the demand quantity of water supply.

In this study, Seoul City Water Office's first priority is to supply water not only quantity but the quality and to provide to the citizen for drinking water from the tap with safety for the 21st century's advanced and high quality. Eventually, Seoul city water office would like to stop the leakage, cut-off, short amount of water and to provide better qualified water. As a result, the block system should be adopted to a metropolitan city such as Seoul for manage and maintenance of waterway.

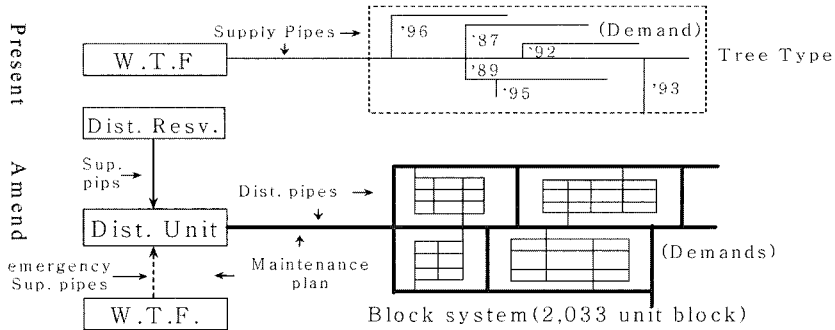


Fig. 1 Pipe Maintenance Plan

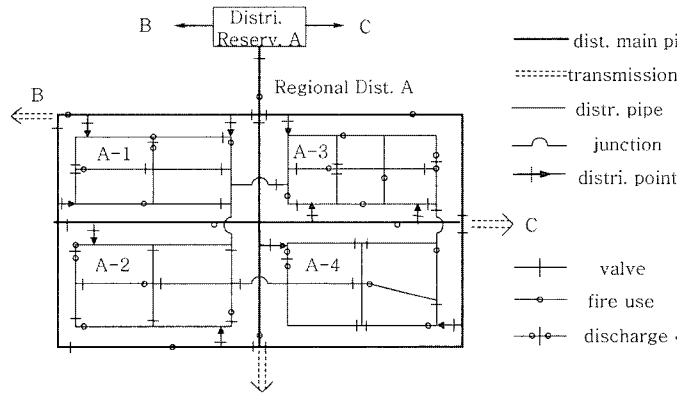


Fig. 2 Block system Model

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