

Basic study on reclamation of sound water cycle and sewerage works in urban development

Whole term

1996.2 ~1997.2

(Purpose)

Stormwater management system conventionally used to be planned based on the concept of 'rapid elimination of stormwater'. This was aimed at controlling flood in the concerned area. Recently, however, the concept of 'Slow flow/drainage' by means of flow controlling systems together with facilities for infiltration and storage has been adopted. Furthermore new modes of sewerage works fostering conservation/development of recreational water bodies have been undertaken. Also the concept of stormwater flow control and thereby conserving the environment has been incorporated into the stormwater drainage plan. As part of a visionary effort towards the development of the urban infrastructure system, the Housing and Urban Development Corporation installed stormwater infiltration and storage facilities in selected developing areas. The Corporation has taken the lead in formation of an efficient stormwater management system, ensuring prevention of flood, multiple use of rainwater and reduction of pollution load on the environment.

This study aimed at putting together the desirable form of stormwater management system keeping in mind the conservation of the water environment through discussions in research meetings and policy formulating meetings. The implementation plan was outlined in a report entitled 'Concept of multi-purpose stormwater management system supporting sound water cycle in urban development'.

(Results)

(1) What is multi-purpose stormwater management system

Adoption of the scheme of 'multi-purpose stormwater management system supporting sound water cycle' enables establishment of an urban infrastructure with a self-sufficient stormwater management system that, in one hand, can reduce pollution load on the environment by development, and on the other hand, can produce value added products (reclaimed water).

(2) Basic policy of the system

It was concluded that the following steps have to be taken in order to realize multi-purpose stormwater management system: i) Goal setting, ii) Inclusion of the concept into the urban infrastructure planning, iii) Listing of the selected technologies, and iv) Modification of the existing way of project implementation.

(3) Development of the system

Layout plan of the different facilities, which are characterized as 'underground', 'surface', and "line" types, pertaining to the multi-purpose stormwater management system was discussed. The way to assess the contribution of such installations towards improvement of the water environment as well as the means to develop such a system, associated problems, and corresponding countermeasures were investigated.

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Keywords

urban development, river, sewerage system, water recycling, multi-purpose drainage system