Research on the structure of sewerage rainwater infiltration facility

| Period       | 1994.8-1995.3 | 47P~ 50P |

( Purpose )

The rain water infiltration is listed as one of the main methods of the rainwater runoff control. And the method has been positively utilized in each place, because improvement effect of hydrologic cycle of cities such as area of the groundwater and revival of spring water is also combined. In order to achieve such purposes, "the sewerage storm storage infiltration project" was established as a newly supported subject ( Ministry of Construction ) since 1994. Being the public inlet of the infiltration type as a support object, for adjusting to the establishment of this project, the technical guide (draft) of sewerage rainwater infiltration facility is decided, and the technical directivity is shown.

However, the concrete technical manuals which the designer of the national municipality can utilize have not yet been made.

Therefore, this study was more carried out for the purpose of making the more concrete technical manual which is easily to use by these designers.

(Result )

Within the matters concerned with the installation of the sewerage rainwater infiltration facility, investigation and research were mainly carried out on the technologies of plan, design, construction and maintenance of the inlets etc., on public road, and "sewerage rainwater infiltration facility technical manual (public road edition )" was made.

1. Research of object facilities ( the manual application facilities )

Within sewerage rainwater infiltration facilities, it was made to be " infiltration stormwater inlet ", "the infiltration trench " ( since then, it is called " infiltration stormwater inlet, etc." ).

2. Contents mentioned

Investigation and research were carried out on these concrete technical matters which mainly concerned with "plan, design, structure, construction, maintenance" on "facilities on the public road which the sewerage manager installs or controls ", and this range was summarized as a technical manual.

3. Plan

By considering rain water elimination plan and discharge load reduction plan in combined sewerage in rainy weather, improvement project of " infiltration stormwater inlet, etc." should be conducted. And, the technical matters for examining setting technique of the right infiltration spot, and for considering geomorphology, soil, ground water levels, and groundwater use, etc. was coordinated.

4. Design.

Installation site of " infiltration storm water inlet", catchment basin, infiltration capacity, concrete design procedure and the design technique for determining arrangements, etc. were concretely examined. It will be efficient for design in the order of the basic investigation  ?  Selection of the installation road of " infiltration storm water inlet, etc."  ?  adjustment with road administrator  ?  grasp of infiltration capacity of " infiltration storm water inlet, etc."  ?  detailed design and estimation of stormwater runoff depression effect.

4. Structure

To ensue the infiltration function, combination method of facilities of " infiltration storm water inlet, etc.", consideration techniques for the block prevention and the necessity of the load in proportion to installation site, etc. were examined and coordinated.

5. Construction management

For attempting the effective expression of the infiltration function, various considerations in the construction was examined and was arranged.


Infiltration facilities and the cleaning contents were concretely examined as core, and the necessity of the cleaning for maintenance of " infiltration storm water inlet, etc." function was described.

Collaborators : Japan institute of Wastewater Engineering Technology. Ozawa Concrete Industry Corp..., EBATA Corp..., SEKISUI Chemical Corp.

Researchers. Fuzita Masakazu,Tanaka Itirou,Zaimae Mituyoshi, Miyata Atushi.

Key Words

Rain water seepage, on-site type runoff control facilities, public infiltration storm water inlet, infiltration storm water inlet, infiltration storm water trench, public road