

Study on Computerization of Sewer System Information

Whole term

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(Purpose)

Since a sewer system is expected to expand as a basic civil need, the cities, especially small and medium sized municipalities which implement sewage works, will increase in the future. However, there are not a sufficient number of professional engineers to handle it in recent times. Therefore, efficient techniques, such as computerized systems for design and calculation, are required.

Moreover, it is very difficult for inexperienced municipalities to gain information and advice on sewage works. Accordingly, information networks, where municipalities and experts from Japan Sewage Works Agency constantly can exchange information, should be built for the acceleration of sewerage maintenance in small and medium sized communities. This survey focuses on development and utilization of computerized systems effectively, considering these problems.

(Results)

1. Computerization for design and calculation

1.1 Interview survey on the cities with advanced computerization

Interview survey on the cities with advanced computerization was held in order to better understand survey results of 1992 and specifically to grasp the present conditions, the merits and demerits of installation and its problems and solutions.

1.2 The problems and their solutions of computerization for design and calculation

Computerization has the merit of promoting the efficiency of calculation and eliminating the error, which is based on the assumption that calculation design is a black box. Hence, being the black box, the computerization lowers the skills of engineers, most inevitably which is a serious problem for the computerization. This may eventually encourage the widespread use of an abbreviated unit price.

The other problems can be solved by achievement of the following items:

- (1) Diffusion of nationally-standardized format
- (2) Supply of basic unit price file (disclosure of basic format)
- (3) Training of maintenance organization of each prefecture

2. Information network

On the basis of the response from the local authorities to the questionnaires, interview of the existing network administrators and literature review, the basic design and feasibility study were conducted to discuss favorable telecommunication network systems of sewer information for the network administration as well as the users.

It was made clear that commercially profitable network administration is required to offer useful information continuously from the beginning.

Although the technology is rapidly progressing, the current situation might be explained as follows;

Telecommunication using computers is yet less prevalent compared to facsimile which became practicable around the same time as the computer telecommunication.

On the occasion of interoperability within the network, unified protocol is not available yet.

Internal information is not included in the network or data-based for the organizations which are the possible supporting groups.

To provide the users with a high speed access to sewer system information network at low price, diffusion of digital public circuit and high speed modem (9,600bps ~ 14,400bps) is crucial.

It is difficult to predict when these problems will be solved, since those problems are social factors. Furthermore, the generalization of high speed modem, which is most predictable, is expected to take 4 ~ 5 years according to the experts. Hence, a small-scale network should be set up by trial and error basis neglecting cost accounting, and the know-how should be stored, or see off the situation until the mentioned social factors are fulfilled.

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Keywords

computerization, calculation, network