



Preparation of Temporary Toilets Directly Connected to Sewers for Use in Times of Disaster and Various PR Activities



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INTRODUCTION

In the past great earthquakes such as the Great East Japan Earthquake, due to damage to sewer pipes, public health problems caused by loss of toilet functions, etc. occurred. Until now, countermeasures for toilets at shelters were not enough, and thus preparations of hygienic toilet environments are vital for ensuring physical and mental health of evacuees. In the City, temporary toilets directly connected sewers for use in times of a disaster has been prepared as a toilet which can be hygienically used even in the event of a disaster at a shelter.

Additionally, the citizens can smoothly set up and operate toilets in the event of a disaster, and furthermore, it will lead to improvements in disaster prevention awareness, which is achieved by preparing temporary toilets directly connected to sewers for use in times of a disaster in order to secure toilet functions in the event of a disaster, as well as making usage methods, etc. certain to all the citizens who actually use them.

This paper describes the preparations of temporary toilets directly connected to sewers for use in times of a disaster and details of various PR activities.

METHODS

(1) Objective

Prepare temporary toilets (Figure 1) directly connected to sewers for use in times of a disaster as a toilet which can be hygienically used at a shelter after a disaster occurs. Conventional vault temporary toilets require drawing up with a vacuum car. Considering traffic function disorder in the event of a disaster and the number of currently registered vacuum cars by City of Yokohama, it is expected that necessary drawing up frequency cannot be secured, which therefore leads to a major problem in terms of hygiene.

(2) Policy

With damage predictions in assumed earthquakes, the regional disaster prevention bases in the liquefaction damage prediction areas are developed as the top priority. In addition, preparations have been underway in order of the oldest area of the seismic intensity floor and the sewer pipe maintenance age in the assumed earthquakes.

(3) Results and target values

The preparations have been completed at the end of 2017 in 174 locations, including 69 locations in all the regional disaster prevention bases in the assumed liquefaction damage areas. At present, in addition to the regional disaster prevention bases, preparations are underway for emergency restoration activity bases and disaster medical base hospitals such as ward offices that play an important role in the event of a disaster (Table 1).

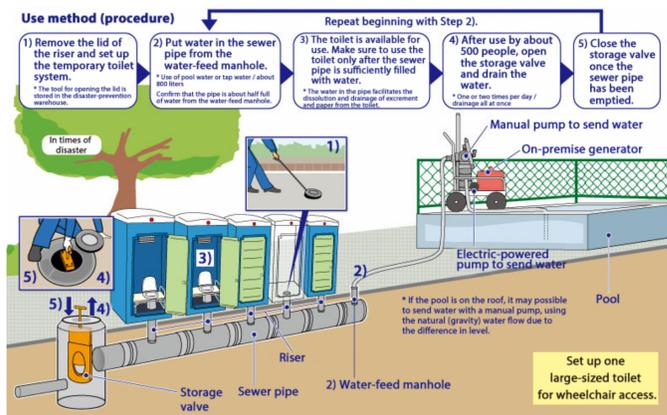


Figure 1 Structure of temporary toilets directly connected to sewers for use in times of disaster

Table 1 Installation of temporary toilets directly connected to sewers for use in times of disaster

	Total	Number installed (2017)	Installation rate (%)
Local disaster-prevention center	459	162	35.3
Emergency recovery activity site	19	9	47.4
Hospitals designated as disaster medical centers	3	3	100
Total	481	174	36.2

RESULTS

As a result of the preparations of the temporary toilets directly connected to sewers for use in times of a disaster and the various PR activities towards the citizens at the regional disaster prevention bases, while the citizens have steadily recognized the temporary toilets directly connected to sewers for use in times of a disaster, most of them have yet to understand how to use such toilets.

DISCUSSION

(1) Participation in regional disaster prevention trainings

After a disaster, evacuees take responsibility for setups and operations of temporary toilets. For this reason, city employees participate as lecturers in the regional disaster prevention trainings, and they work with the training participants to construct temporary toilets directly connected to sewers for use in times of a disaster in order to let them understand how to use.

(Photo-1, Photo 2)

(2) Public invitation of a nickname

Aiming for citizens attachment, a nickname was publicly invited for the temporary toilets directly connected to sewers for use in times of a disaster, and decided as "Hamakko Toilet for Disasters."

(3) Preparation of an explanatory video

In order to allow citizens to learn how to use even without staff, an explanatory video was prepared, and distributed as a DVD or posted on YouTube.

(Photo-3)

(4) Preparation of a model

A model was prepared for people of a wide range of generations to let them understand the structure and construction of the temporary toilets directly connected to sewers for use in times of a disaster.

(Photo-4)

(5) Installation of a signboard

In the vicinity of the prepared temporary toilets, a signboard printed with an illustration showing how to use is installed. (Photo-5)



Photo 1 Disaster prevention training



Photo 2 Temporary toilets



Photo 3 Explanatory video



Photo 4 Explanatory model



Photo-5 Information signboard

CONCLUSIONS

- Also down the road, we will continue our PR activities toward awareness of disaster prevention and human resource education, which is achieved by raising interest in a wide range of age groups in the temporary toilets directly connected to sewers for use in times of a disaster.
- In addition, we are committed to forging ahead with the PR activities for more people to be familiar with how to use the toilets.