



## **World Toilet Summit 2005**

**Belfast, Ireland**

**September 26-29, 2005**

### **Invited Plenary Speech**

## **Inclusive Design: Public Toilet Designs for Blind**

Presented by

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### **Background**

Equal opportunity does not only imply the fair use of a resource by all, but also the provision of that resource or alternative resources to persons with special needs (PSN), and assistance in using it so that they can then gain equal access to the resource.

In recent years, the barrier-free concept has been implemented in newly built and renovated public toilets. Special toilets or additional toilet compartments (or cubicles) for physically handicapped persons, and ramps for wheelchair users are being provided. However, such improvements are still insufficient, so that many PSN still find it difficult or impossible to use public toilets.

Blind persons (including visually-impaired persons) still find it difficult to use public toilets with environments with which they are not familiar. In order to explore the difficulties that blind persons have in using public toilets, an investigation was conducted in Hong Kong in 2004. The focus of the investigation was on human-product interactions.

### **Methods**

A site study was conducted involving several common types of public toilets in Hong Kong. The study included a product analysis of the facilities provided in the toilets. The objective was to provide a general understanding of which types of toilets in Hong Kong posed difficulties to blind users.

Interviews with representatives of NGOs serving blind persons were conducted. The objective was to gain a general understanding of the needs, difficulties, and expectations of blind persons in accessing public environments, in particular those without standard environmental configurations and physical settings, for example, public toilets.

Interviews with blind persons introduced by the NGOs were conducted. The contents of the interviews focused on the ways in which the blind persons used toilets (or user experience). Semi-structured questions were employed to obtain a more in-depth understanding of the needs and difficulties of blind persons.

## **Key Results**

Existing tactile ground surface indicators can give a certain degree of assistance to blind persons in orienting them to the location of public toilets. However, little or no information (for example, using the Braille system) is provided outside or inside the toilets to help blind persons use public toilets.

Compared to other groups of PSN, blind persons face critical difficulties in using public toilets because the environmental configurations and physical settings of every toilet are nearly all different. Even if some are quite similar, slight differences can cause serious inconvenience and pose a possible danger to blind persons.

Blind persons find it difficult to orient themselves around the facilities inside public toilets. It is difficult, unhygienic, dangerous, and nearly impossible for them to use their hands to search for facilities.

Sound orientation (or sound assistance), which is commonly used for blind persons, is not provided in public toilets. Moreover, the interviewed respondents pointed out that sound orientation can only help them locate public toilets but is of little use for accessing the facilities inside toilets. Sound orientation/assistance may also cause inconvenience to other users.

Blind persons would not prefer to have personal assistance in accessing and using public toilet facilities. In other words, they would prefer to have special facilities that will make it easier for them to use public toilets.

## **Recommendations**

According to the findings, we recommend:

1. The barrier-free concept should be further enhanced to allow blind persons to access public toilets easily and safely.
2. Special facilities (perhaps under an inclusive and universal approach) should be provided for blind persons in public toilets.
3. Safety, hygiene, self-assistance, and minimal influence with other users are the four major concerns of blind persons when using facilities provided in public toilets.
4. It may not be feasible to provide facilities for blind persons that available in an entire public toilet. One possible solution is to include facilities for blind persons in special toilets or toilet compartments for physically handicapped persons.
5. International standards with local considerations for toilets for blind persons should be established, for example, standard heights and locations for Braille information.
6. Sound orientation may be an optional facility provided for blind persons in toilets or toilet compartments. However, minimal influence with other users must be considered.

## **Design Concepts to Investigate User Experiences**

Based on the recommendations, design concepts were generated to investigate user experiences. A set of Braille system (called BrailleWise MS-1) was constructed for small toilet compartments, such as aircraft laboratories, which blind persons could use independently.

Blind persons and representatives of NGOs were invited to test and give comments on the prototype of the design of the BrailleWise MS-1. The comments were positive. Further applications of the system are under development.

More information about the system will be presented and discussed in the World Toilet Summit 2005.

### **Acknowledgments**

The investigator would like to thank the Hong Kong Polytechnic University for its support for this study.

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