

# A study of design condition and its effect using a graphic floor sign in a railway station

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**Abstract.** This study is considered about installation of graphic floor sign in railroad station. The design is discussed with people with low vision. And the investigation of the placement is carried out under a partnership of people with low vision. It is installed after discussing with local government administrators. Finally, it is installed around railroad stations after investigating size, form, and content under a partnership of people with low vision. As the result, it is delayed to find it with ordinary passengers, however it is easy to search and recognize it when found it once. It is an effective sign system also including construction or a cost.

**Keywords.** Universal design, Low vision, Way Finding, Transport Facility

## Background

Sign (pictogram, way-finding) system at train stations is regulated for barrier-free guidelines. In Japan, it is regulated the represent with a block character, a pictogram, and other languages. And it is pointed out the character of a size, visual value, color combination, posting height and so on. However, if there is so much of information in some area, it will be require to be changed for a greater size sign or a smaller size font, and it will be also turned to more complex. Some frail conditioned elderly people are frequently walked to watch at a road surface side, because of they has high falling risk and decline with the cognitive and visual function. Therefore, a posted up sign system has being walking difficulty environment for them. Furthermore, strangers are also lost their way when they transfer between a complex railroad stations.

It is normally required that information signs have four functions: direction, navigation, location, information for facilities. Especially it has required to easy guide for a people with low vision or the people with cognitive impairment.

This study propose the sign which a pedestrian can guide using a road surface. And it is installed the guiding indicator at floor surface in the railroad station. It is verified effect by an investigation of a design and placement under a partnership of people with low vision. It is installed discussing with local government administrators.

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Fig. Example of proposed graphic floor sign

### A design requirement

As the crossing sign, it is verified under the partnership of five persons' people with low vision. They are estimated that this design is found clearly. Especially, they are evaluated to express a crossing context by T or + marking. The obtained comment is as below:

- The presented design is a finding easily.
- A yellow background with a dark blue character is clearer than the white one.
- Although the yellow character with the dark blue is clear, but it is worried that this is not easy to find at a nocturnal or a nighttime.
- It is difficult to read a yellow and white combination for them, therefore it is needed the black edge line for which a yellow background as a contrast.
- As a result, a crossing sign combined a dark blue character and dark blue edge line in the yellow background.

Most of them have answered that it is not clear as compared with a crossing graphic floor sign. However, they have much response to find easily, it is not clear to understand of the content as a result. Finally, this sign has under consideration with local government administrators (avoiding green, red, yellow color as traffic signals). The obtained comment is as below;

- They are easy to recognize discriminating from a typical color, however the arrow in the pictogram of an elevator is not clear for them.
- It is not easy to recognize since many languages has too much information.
- There was much comment which needs the remaining distance, however, it is not required a distance to the next sign.
- One person is easy to recognize a clear red color one, and four persons recognize a clear green color.
- Three persons has a glaring for red color like a clear green color.
- It is pointed out the good contrast of a white background.
- A way-finding method is easier when it installs in the inside of the course of tactile blocks.



Fig. User audit and the installation of graphic floor sign at actual scene