

The IDED-method to improve the design of the Railway station Houten

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Qualification of the presenter:

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Proposal:

AIM: In view of an increasing support for the “human right” of low vision people to use vision for independent traveling, architects need tools to reckon with the visual needs of this target group when planning and designing. A distinction is made between the visual information needed for orientation navigation, localization of information and reading. **METHOD:** The image processing based IDED-method is presented to measure the visibility of aspects that are crucial to perform these four sub tasks that are necessary for successful traveling in a concrete situation. The IDED-measurements are performed in two steps: 1) image degrading of digital images to simulate different levels of visual acuity and 2) edge detection to calculate the resultant contrast differences in these degraded images. While doing so it is possible to determine how visible crucial information is in comparison with irrelevant or conflicting information in the same situation. Until now the IDED-method has been used to design safe staircases, to study safety while descending staircases, finding and reading information panels in railway stations and finally to study safety of cycle routes.

RESULTS: Based on the experiences in these studies we developed the following ‘points of departure for the design of a visually accessible railway station now being built in. Houten in the Netherlands:

1. Accentuate by contrasting colors and lightning the most important destinations of the railway station, especially the ascending points (stairs, elevators, ramps and lifts) and the entrances and exits.
2. Accentuate by contrasting colors and lightning the most important walking routes of the railway station.
3. Concentrate and accentuate the signposts near the ascending points.
4. Position the contrasting platform numbering near the ascending points to the platform, on both ends of the ascending point.
5. Position the travel information boards near the ascending points to the platform, on both ends of the ascending point.
6. Position a sufficient numbers of travel information boards on fixed distances.
7. Design a routing from the bus, tram and metro platform to the entrance of the railway station, consisting of a combination of tangible and visible natural guide paths, together with signposts.
8. Position the facilities of the railway station on each station on a similar spot.

CONCLUSIONS: The data, that is, the final design and the building site in progress, show the beneficial result of the quantitative approach with the IDED-method to improve the visual accessibility for special groups and the general public.