

Bridges for wobbly people

Balance disorders as an example of inclusive design

Authors: Brian DUGUID

Affiliation: Technical Director, Mott MacDonald, Altrincham, United Kingdom – brian.duguid@mottmac.com

Summary

Our sense of balance is often taken for granted, but there are hundreds of medical conditions which can disrupt it.

There are many things that can trigger an adverse balance reaction, and some of them are features of our built environment, including attributes of some bridges. Pedestrians may now only rarely make a bridge wobble, but bridges can still make people wobble.

Symptoms are generally reported as “dizziness” or “vertigo”. For some sufferers, the condition is short-term in nature, associated with illness or trauma. For others, it is a chronic disability, which may vary in intensity, making it difficult to hold a job, to carry out common household tasks, or to walk more than a short distance.

This paper treats balance disorders within the wider context of inclusive design. It identifies specific features of footbridges which may reduce inclusivity for people with balance issues, including:

- Visual patterns
- Lighting
- Moving visuals
- Walkway flooring
- Non-orthogonal geometry

Simple and positive choices can be made without adverse cost or aesthetic impact, while substantially improving the quality of life for people with balance problems, and enhancing accessibility of bridges for everyone. Examples of positive design features relevant to balance problems include:

- Resting spaces and rails
- Provision of visual clarity
- Previewing
- Choices

The paper considers existing design standards and guidance specifically relating to pedestrian bridges and notes that they do not consider inclusive design effectively.

Inclusive design may be an attitude of mind that recognises that the end-user of a design is not cast from the same mould as the designer. It is therefore particularly important in an industry dominated by designers drawn from a narrow cross-section of society, and lacking in obvious diversity.

Inclusive design requires an act of imagination (putting the designer in someone else’s shoes) that is often difficult. It is easy to concentrate on wheelchair gradients, tapping rails or tactile paving. It is much harder to imagine a wider spectrum of capabilities and to design an environment that could accommodate less obvious impairments.

Designing a better built environment for everyone requires designers to do much more to engage with diversity, to step outside simple compliance with standards and to be proactive in understanding the many different ways in which diverse individuals can engage with and enjoy physical infrastructure, including bridges.

Keywords: Accessibility; inclusive design; balance disorders.