

Escalators are an essential part of most shopping centres, but they need to be designed with safety in mind.

Safety FIRST

The design of escalators hasn't changed all that much since they first came into use in the early part of the 20th century and with many incidents and injuries reported each year they can be hazardous.

A design guide written by architect and consultant Ann Alderson who does freelance work with the Centre of Accessible Environments was published in the summer in conjunction with the BCSC. Stairs, ramps and escalators is designed to help operators with all aspects of the running of escalators from safety to speed settings, inclination, step width, handrails, signage and cleaning.

Alderson explains: "Escalators, being moving mechanical equipment, can be highly dangerous, especially to children and disabled people with mobility or visual impairments. The guide is designed to help those commissioning buildings and designers to specify the right escalator for the right space to make them accessible to the widest range of people.

"Escalator design and manufacture is controlled, and to a large extent standardised, by legislation and standards, but there are additional elements that can assist in making escalators more

accessible to, and safer for disabled people and children, for example more level steps at the top and bottom, and clear directional signage."

Research has shown that 80 per cent of shoppers will use escalators but as Alderson points out, many people, particularly those with a mobility or visual impairment, find escalators difficult and frightening to use, and they are not suitable for wheelchairs, pushchairs or people with assistance dogs unless the dog can be carried.

On top of this falls from escalators, usually during access or egress, are common and 20 per cent of incidents involve feet, hands and shoes getting trapped in the mechanism.

Network Rail reported 495 incidents involving escalators in 2008 and similarly London Underground reported 554 incidents in 2008/09.

Only recently a four-year-old boy severely damaged his hand after getting it trapped in an escalator at the Galleries shopping centre in Washington, Sunderland. It took twenty-two firefighters 45 minutes to free him.

"Inspections make sure escalators are mechanically safe but many are not maintained to the highest possible standards," says Alderson.



"Visually impaired people are often overlooked - lighting is important as is coloured banding on steps and handrails which indicate to people with sight problems that the escalator is moving. They are easily worn away and have to be maintained."

Escalators play a key part in transporting visitors between floors in the majority of shopping centres. As the guide outlines one of the problems with escalators in retail environments is that wayfinding signage, advertising and displays can obscure access and egress, causing people looking at them to block the area and cause a potentially dangerous situation.

Alderson recommends having a CCTV camera nearest to an escalator interfaced to the emergency stop button via the building management system. That way if there is an incident a view of the area will immediately pop up in front of the control room operator.

International lift and escalator consultant Lerch Bates believes that escalator standards should be revised and that there is "scope for innovative design" that would reduce safety and maintenance issues, even calling for the "reinvention" of the escalator.

Amongst the improvements Lerch Bates lists are narrow handrails

that are easier to hold on to, additional high level guarding where there is a fall hazard, step cleats less deep and designed to release trapped materials and electronic monitoring of performance.

Long standing issues such as replacing old escalators, safer techniques for maintenance and cleaning, accurate monitoring of escalator performance and ride quality and the vandal-resistant escalator are, Lerch Bates believes, also within the realms of modern technology.

Alderson concludes: "As with any other manufactured product there is constant development. Curved and spiral escalators are in the pipeline and are already in use in parts of Europe, and escalators and moving walks that accommodate shopping/baggage trolleys are being increasingly used in shopping centres, department stores and transport termini." And energy efficiency is being addressed by escalators and moving walks that only start when people approach. ■

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→ mia.hunt@jldmedia.com