

URBAN DESIGN | PEDESTRIAN PRINCIPLES | BRIDGES



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UNDERSTANDING THE ISSUES

At-grade crossings, particularly where they connect into local road and recreational path networks, are preferred by pedestrians and cyclists. Where a grade separated option is necessary, a pedestrian bridge may be considered. Bridges offer the opportunity to maintain visual connections with adjacent land uses and roads, improve accessibility, reduce any severance created by a road and

capture attractive views for pedestrians and cyclists. For these reasons bridges can offer a safer and more pleasant experience than underpasses.

As with underpasses, the issues often associated with poor pedestrian bridge design relate to accessibility (where changes of level create physical obstacles), amenity (where the width, enclosure, finishes and

detailing make the bridge uninviting), and safety (where isolation, lack of surveillance, poor lighting and length of travel create unsafe and uninviting connections). Pedestrian and cycle bridges should be located and designed to make them safe and easy for people to use, to reduce their travel time, and to create inviting connections along routes that people want to use.

PEDESTRIAN BRIDGE DESIGN

The following principles should guide the design of pedestrian bridges:

- // **LOCATION:** Pedestrian bridges should be located to serve identified desire lines as much as possible. This will ensure that the use of the bridge is maximised. Isolated locations should be avoided. The natural topography should also be considered in determining suitable locations for pedestrian bridges.
- // **ACCESSIBILITY:** Bridges should be accessible to all pedestrians and cyclists. This includes mobility impaired people who may require ramps. Any ramps should be incorporated into the approaches to the bridge and their slope minimised. Ramps and stairs should be located as close as possible. In special circumstances lifts may be required.
- // **INTEGRATION:** Bridges are elements within the wider urban fabric and should be integrated into their context. This includes relating the structures to the character and scale of the surrounding urban form or landscape to ensure that the design fits in well. It also includes seeking opportunities to create new connections to existing cycle and pedestrian networks.
- // **LANDMARK DESIGN:** Bridges can be prominent structures offering opportunities to create new landmarks and to incorporate the cultural and historic values of the area into the design. A landmark structure will not be appropriate in all situations.

- // **EXPERIENCE:** Compared with vehicle bridges, pedestrian bridges provide a greater opportunity to create an interesting experience for users as they travel slower and spend more time on the bridge. These opportunities include maximising or framing views and using street furniture and other design features to create an attractive environment.
- // **FORM:** Pedestrian bridges carry lighter loads than traffic bridges, which allows more flexibility to the form of the bridge and the choice of materials. Sleeker, more elegant structures may be possible. Barriers and handrails perform an important safety function, but care should be taken to ensure they are not visually dominant. If needed, safety screens should be integrated in the overall bridge design. The finished texture and colour of the bridge can also play an important role in highlighting all or part of its form.
- // **APPROACHES:** Approach ramps should be designed as part of the bridge composition and integrated in the landform and landscape. Wherever possible, minimise the length of ramps and staircases by taking advantage of the topography or using noise bunds and earth mounds as landings.
- // **SAFETY:** The safety of users must be considered in the bridge location and design. If the bridge is to be used by cyclists as well as pedestrians, the bridge should be wide enough to accommodate both groups and it may be necessary to provide separate paths. The angle of the bridge and its approaches should be designed to suit both groups and reduce opportunities for collision.

- // **LIGHTING:** Most bridges will be used at night and therefore require lighting to ensure the safety of users. Bespoke lighting can be used as a design feature but care must be taken to avoid light spilling into the surrounding environment. The protection of lighting from vandalism must also be considered, either through the design itself or the use of protective boxing.
- // **LANDSCAPING:** Well considered, low maintenance planting can be a feature of pedestrian bridge design. This can include planting on the bridge itself which can be beneficial when integrating a bridge into a landscape setting. Planting can also be used to good effect at the ends of pedestrian bridges in order to reduce the visual impact of ramps and associated structures.
- // **MAINTENANCE:** Select durable materials and finishes that do not significantly degrade in appearance over time. Where required, anti-graffiti coating should be applied as part of the bridge construction phase to the full extent of piers and barriers to prevent patchy application and appearance at later stages.
- // **COLOUR:** Colour provides opportunities to give consistency to a family of bridges and to reinforce the landmark quality of a stand alone structure. When used to highlight particular elements it should form part of a coherent, ordered composition. Colour must be used carefully as it draws the eye, especially in a rural setting.



SAFETY



INTEGRATION



APPROACH



LIGHTING