

FOOTBRIDGES IN PORTUGAL

António ADÃO DA FONSECA

Professor - *Faculty of Engineering of the University of Porto*
 Structural Engineer - *Adão da Fonseca, Engenheiros Consultores*
 Porto, Portugal

1. BRIDGES – road and railway bridges – footbridges

Bridges overcome obstacles, open passageways and provide the way to the other side. Bridges unite territories and people separated by water or topographic barriers. Bridges are man-made objects in the landscape scenery. Bridges are always points of reference.

Road and railway bridges bring about social and economic development. Road and railway bridges grant more efficient travel. Road and railway bridges are made to go along. Often, road and railway bridges are not perceived. Road and railway bridges are for all but belong to no one. Many people hardly notice road and railway bridges.

Footbridges bring about quality of life. Footbridges offer opportunities to meander above ground or water, to take pedestrians away from the busy traffic in urban areas and to offer unexpected views and enjoyment of the landscape, whether built or natural. Footbridges provide meeting points. Footbridges are perceived and touched by the individual pedestrian. Footbridges are for all but belong to each pedestrian. Footbridges may attract pedestrians. Footbridges may frighten people.

Definitely, footbridges are playing a central role in the urban renewal and pedestrian safety demanded by modern society, which is more and more sensitive to the needs of the elderly, of the physically handicapped, of the pregnant women and of the infants.

2. FOOTBRIDGES – design concept

Footbridges may be regarded as large sculptures with practical purpose and severe structural requirements, but they should not be designed as sculptures are. Footbridges are to be used by human beings and their size and applied loads imply that structural demands are dominant. Therefore, beauty and elegance in the architectural concept must spring from efficiency in the structural design. And structural efficiency requires simplicity and purity of structural form and of their structural components.

It should be clear to all involved that the achievement of natural harmony between the beauty of architectural and structural concept, the physical configuration of the local landscape and the social attractiveness and usefulness of footbridges require a fusion of all the various issues, whether social, artistic or technical.

Unfortunately, that is not the view and understanding of many of those holding the initiative and authority to build footbridges. The belief that footbridges overflying streets, roads or motorways, even if in urban areas, need only to be there at a minimum cost has proved to be short-sighted and ignores responsibility towards the built environment and the aesthetic, cultural and emotional dimensions of human beings. Pedestrians disregard those footbridges and seem to prefer to endanger life when crossing busy traffic roads.

Preferably, footbridges should be located and stretched along the natural walkway of pedestrians, who should derive pleasure from their use, never implying the walk of a much longer distance. When possible, pedestrians should be led naturally into the footbridge, well before pedestrians are at the edge of the road to be crossed.

The setting of footbridges in parks or in open land is much easier and, although these footbridges are seen by less people, they tend to be better designed, as if the natural environment is regarded as deserving more esteem than the built environment.