

## Soho Loop Cantilever Footbridge

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### Abstract

A new footbridge was required for the Soho Wharf residential development in Birmingham, UK. The bridge was to cross an existing canal from the development side and was to meet the far side through the parapet of a masonry arch footbridge without bearing onto the masonry arch barrel.

A low-cost static cantilever footbridge system was developed with no positive between the tip of the cantilever and the opposing side. This was in the form of an economic stiff and lightweight truss held down by a concrete kentledge under the back span. Existing structures were repurposed for use on both side of the canal.

The vertical deflection was found to be the governing design criterion. Sensible construction sequencing and use of designed levelling devices were employed to mitigate the risks associated construction and any longer-term movement.

**Keywords:** post-tensioning; cantilever; footbridge; steel; canal; Birmingham;

### 1 Introduction

The new Soho Wharf residential development has brought 750 new canal side homes to the city of Birmingham. During the construction, the

developer, Galliard Homes, had a planning requirement to discharge to deliver a new footbridge to connect the development side to the far side tow path of the Old Main Line Canal.



Figure 1 The crossing in April 2021 with the development side to the left of picture