



Globe Mills Pedestrian Bridge Maintenance Specification

Bridge No. BB1279

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Project Name: Pedestrian Bridge, Globe Mills

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1. Introduction

The proposed footbridge will be designed in accordance with the latest standards and good practice guidance for highways bridges, inclusive but not limited to the Standards for Highways, Eurocodes inclusive of National Annexes and British Standards. In addition to specifying structural performance these documents outline minimum requirements to ensure the asset meets minimum durability requirements throughout its design life.

1.1. Proposed Structure

The proposed structure is to span the canal in front of Globe Mills to provide ramped access to the first floor of the building from Carr Lane. The structure will adopt the form of a half through Pratt truss, constructed from steel hollow section with a solid steel deck plate. The deck will be 2.1m wide and the parapets a minimum of 1.15m. The south end will be supported by a steel trestle fixed to the existing mill building to provide lateral restraint. The north end will be supported by a stone-faced concrete abutment with solid ramp structures.

1.2. Design Life - In accordance with CD 350 (Design Manual for Roads and Bridges):

- The Superstructure will have a design life of 50 years (Category 4).
- The Bearings will have a design life of 50 years (Category 4) in line with the superstructure.
- The abutments and approaches will have a design life of 50 years (Category 4) in line with the superstructure.
- The parapets will have a design working life of 50 years (Category 4).
- Painted elements will have a design life of >25 years.

1.3. Materials

Material specification and finishes subject to planning approval.

- Steelwork: All steelwork will be minimum steel grade of S235JO or an equivalent higher grade.
- Corrosion Protection: Highways Agency Type II (or equivalent) to Specification for Highway Works Series 1900. Topcoat colour to be confirmed.
- Masonry: Ashlar stone facing to reflect local buildings (specification to be confirmed).
- Concrete: Concrete to foundations shall conform to BS 8500 2006 and the Specification for Highway Works, Series 1700.
- Reinforcement: Reinforcement for concrete foundations to conform to BS 4449: 2005.

2. Preventative Bridge Maintenance Practices

Preventative bridge maintenance avoids larger scale work in stream environments, and thus makes sense from the standpoint of stewardship of both natural and financial resources. Preventive maintenance is defined as a planned strategy of cost-effective treatments applied at the proper time to preserve and extend the useful life of a bridge. Bridge maintenance encompasses:

2.1. Cleaning activities:

- The bridge should receive an annual water flush of all elements.
- The bridge decks should be swept every 6 months of all loose grit, litter and plant debris in autumn and spring.

2.2. Preventive maintenance activities such as painting, coating and sealant applications and for routine, minor deck patching and railing repairs.

2.3. Technical and specialised repairs, including jacking up the structures, crack repairs, epoxy injection, repairing or adjusting bearing systems, repair and sealing of expansion joints, repair or reinforcement of main structural members to include stringers, beams, piers, pier and pile cap, abutments and footings, underwater repairs, major deck repairs, and major applications of coatings and sealants.

3. Small Bridge Maintenance Activities that can eliminate the need for larger work projects

Some of the bridge maintenance activities that provide the biggest benefit for the smallest level of investment generally include:

- repairing expansion joints
- Repairing bridge decks
- Maintaining proper deck drainage
- Restoring or replacing bridge bearings
- Repairing or replacing bridge approach works
- Repairing bridge beam ends and beam bearing areas

4. Inspection Regime

Bridge Inspection Guidance and Procedures are contained in CS 450 (Design Manual for Roads and Bridges). Inspections should be conducted as a minimum:

- General Inspection – Every 2 Years
- Principal Inspection – Every 6 Years