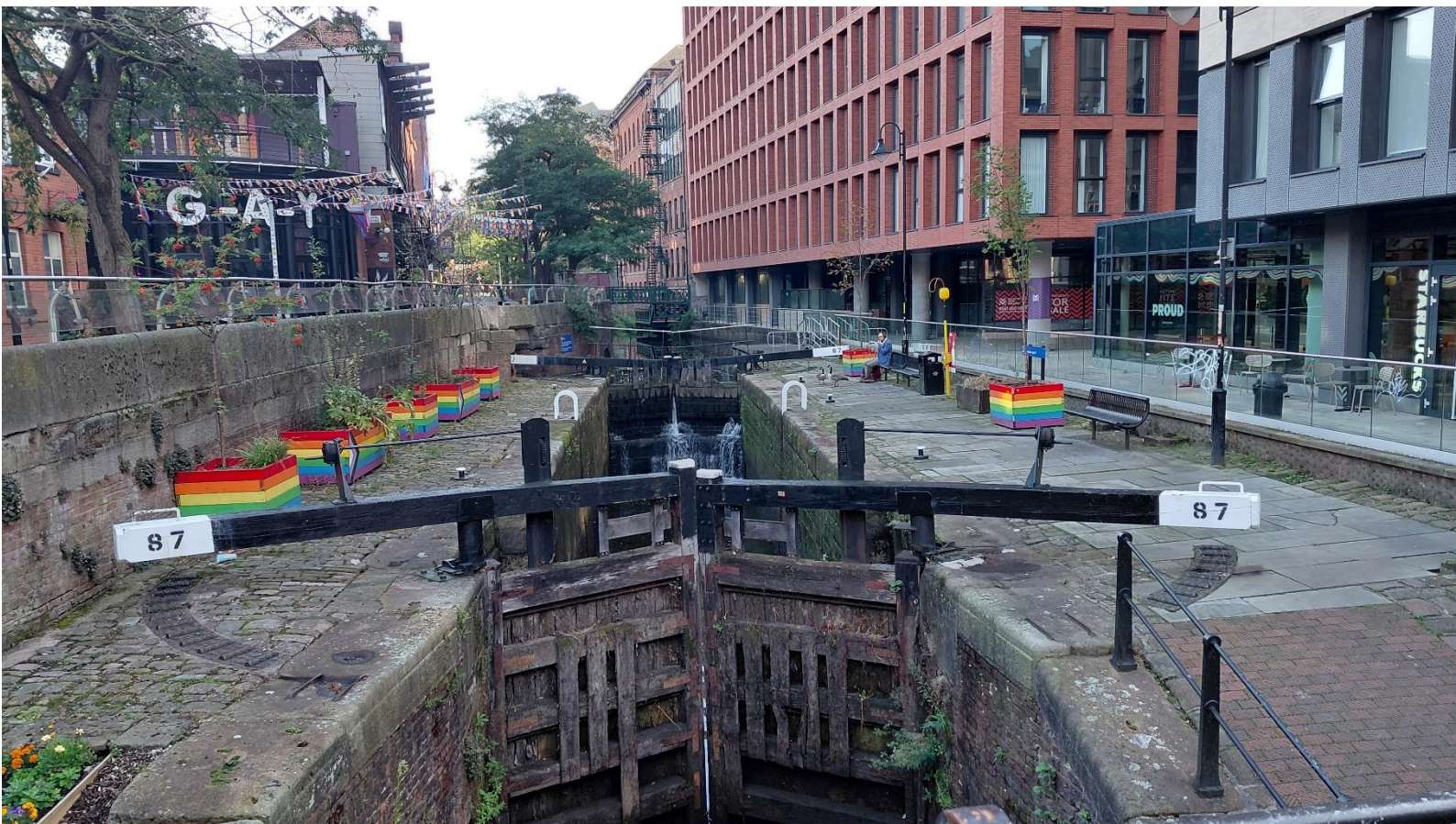




**Canal &
River Trust**

Making life better by water

Lock 87, Rochdale Canal Design & Access



Lock 87, Rochdale Canal

Design & Access

Issue	Date	Prepared by
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1. INTRODUCTION

The Canal & River Trust (hereafter, “the Trust”) is a charity that looks after approximately 2,000 miles of canal and waterway throughout England and Wales. Its objectives are to maintain the canals, their unique historic and ecological value, and to engage local communities in volunteering, learning or physical activity opportunities, and in-so-doing improve their mental health and well-being.

The canals comprise more than 15,000 structures, bridges, aqueducts, tunnels etc and including 1,578 locks. Of these 15,000 structures more than 2,700 are listed. The Trust also maintains 46 scheduled monuments.

This statement has been prepared to support the application for listed building consent for works of maintenance at lock 87, a grade II listed building (list entry number: 1247580), on the Rochdale Canal in Manchester.

1.1. Location

Lock 87 is on the Rochdale Canal east of Princess Street. National Grid Coordinates 384298, 397753..

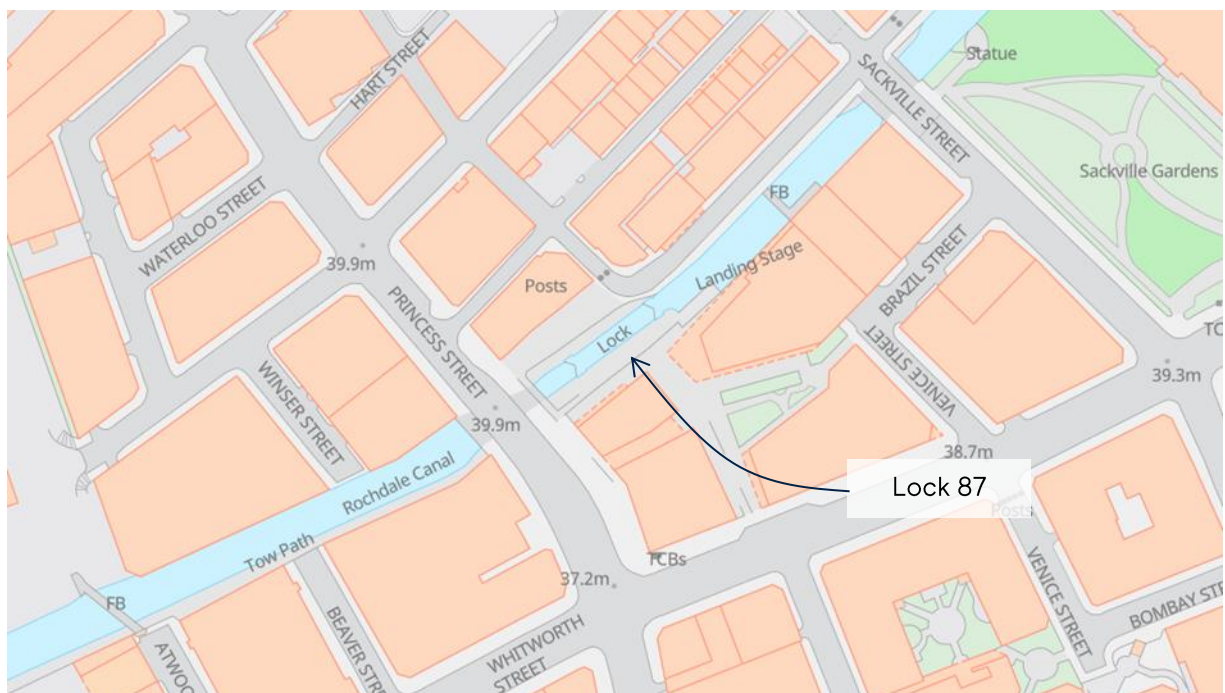


Figure 1 Location of lock 87 to east of Princess Street, Manchester

1.2. Proposal

- Like for like replacement of bottom end lock gates
- Repairs to spalled and missing brickwork in the lock chamber and forebay
- Repositioning upstream heel grips
- Shortening of balance beam to reduce trapping hazard

2. DESIGN OF PROPOSED WORKS

2.1. Replacement of bottom end lock gates

The existing bottom end lock gates are to be replaced with new gates of the same design and material. The new gates will be constructed of oak timber. The replacement is like-for-like.

Timber lock gates operate in a very tough, permanently wet/dry environment, subject to severe weather and to damage caused through impact by passing boats.

Timber lock gates have an expected life-span of 25 years. The gates to be replaced were built and installed in 2003 and are therefore reaching the end of their expected lifespan. The Trust's lock gates are regularly inspected and their condition and serviceability assessed. At the most recent inspection the condition of these gates was assessed to be poor.

The poor condition is due to progressive decay on several elements of the lock gates (including top bars and the end tenons of the top bars; the heel posts below the collar and at the upper waterline and the balance beam end tenons) and the appearance of shakes on the lower bars, heel posts and balance beams. Decay to the gate planking has caused leakage through the gates and, when the lock gates are under pressure, beneath the gates at the cill.

Figure 2 shows the mismatch in height between the two mitre posts caused by excessive wear of the pot that the left-hand gate is sat in and hinges on and by the gradual loosening of joints despite reinforcement.



Figure 2 Bottom gates (condition)

Figure 3 shows decay of the lock gate boards creating gaps between the boards reducing the gates ability to hold water. This condition will allow water to escape through the gate, wasting water and delaying passage for the boater.



Figure 3 Bottom gates (condition)

2.2. Repairs to spalled and missing brickwork in the lock chamber and forebay

There are areas of missing and unstable brickwork in the lock chamber forebay (the approach to the lock) and in other areas of the lock chamber, including the lock gate recesses. These areas are to be repaired. Figures 4 and 5 illustrate these areas.

We will recover bricks that are on the canal bed and where their condition allows, we will use them in the repair. The shortfall will be made up with new bricks following the existing coursing and observing the existing bond.

Where new bricks are required it is proposed to use Furness Natural Orange (9" x 3", matching the existing brick dimensions) supplied by Furness Brick & Tile Co Ltd, Askam-in-Furness. This brick has been used on several occasions to repair brick lock chambers in the Manchester area. It was selected following a site visit to Manchester canals by a representative from Furness Brick. A sample can be seen in figure 6.

The bricks in the chamber have become discoloured after being subject to atmospheric pollution and/or silty canal water for two hundred years. The original colour of the bricks used in this lock was orange.



Figure 4 Missing and unstable brickwork (towpath side forebay) to be repaired



Figure 5 Missing brickwork (towpath side gate recess) to be repaired



Figure 6 Furness natural orange

2.3. Repositioning of upstream heel grips

The heel grips on the towpath side at the top of the lock are misaligned with the balance beam of the lock gate. To take full advantage of the lever of the lock gate and to reduce the effort required to operate the lock gate, reducing the likelihood of injury caused by manual handling, the heel grips should be placed at the end of the lock gate balance beam beneath the lock gate handle.

The existing heel grip plate will be lifted and moved to the correct position directly beneath the balance beam handle. This will require the heel grip plate to be moved 1100mm to the right. The existing paving slabs, which are not original material, will be lifted and reused.

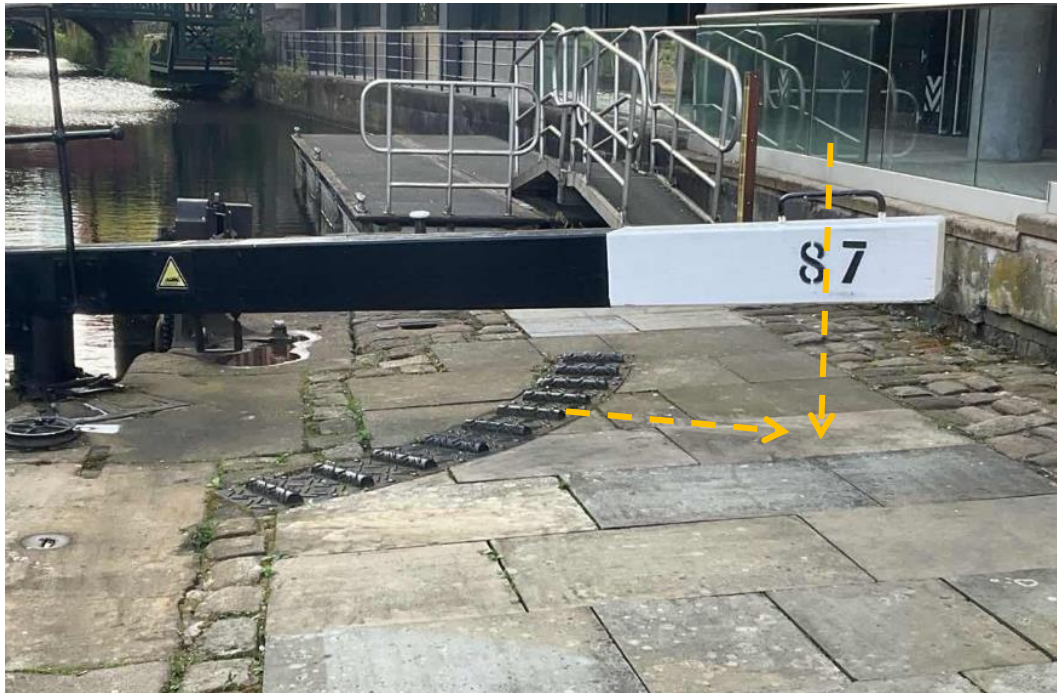


Figure 7 Heel grips top gate, towpath side to be moved

2.4. Shortening of balance beam to reduce trapping hazard

There is a trapping hazard between the lock gate balance beam and the adjacent retaining wall on the offside of the top lock gates (figure 8). There could be serious injury should an approaching boat strike a partially open gate whilst somebody stands between the partially open gate balance beam and the wall.

This lock is close to popular venues and may therefore have a higher number of visitors at certain times.

It is proposed to reduce the balance beam length by 300mm to provide additional space between the balance beam and the wall. The balance beam handle will be moved 300mm to allow the beam to be shortened. A visualisation shows how this will appear (figure 9).



Figure 8 Balance beam of the off-side top gate creates a trapping hazard against the wall



Figure 9 Visualisation of appearance after shortening by 300 mm

It is further proposed to attached a hazard warning sign on the wall adjacent to the lock gate balance beam to further reduce the likelihood of injury. The sign, illustrated at Figure 10, will be 380 x 280 mm. The sign complies with BS5499 Graphical Symbols & Signs and the Health and Safety (Safety Signs and Signals) Regulations 1996.



Figure 10 Proposed hazard warning sign

The sign will be attached to the adjacent brick retaining wall below the gritstone slabs of the canal wall. Where possible the fixings will be placed into mortar joints between the bricks.

3. ACCESS

The works will be conducted from Trust property.

The path adjacent to the lock will remain open for the duration of the works.