

**BRIEF:** To provide structural designs and calculations for the reconstruction and repair of a patio that was suffering subsidence and sliding into the adjacent canal.

**PROPERTY:** Ground floor flats in Kidderminster.

**INSTRUCTED BY:** Property management company.

## PROJECT SPECIFICATION

- Timber sleepers supporting the existing patio had rotted and the ground was sloping towards the adjacent canal. This was evident from the cracking to the patio slabs and sloping of the ground towards the canal.
- Our client was keen to minimise disruption and avoid the need for obtaining permits from the canal authority.
- Our structural engineer was therefore tasked with finding a design that would support the patio structure, avoid the need for large scale earth removal and concrete installation, and retain the original timber sleepers in a decorative function.

## THE STEELWORK DESIGN

- We designed a screw pile solution to support the patio.
- The design consisted of a steel screw pile with 250x250x15mm thick termination cap extending to approximately 2–3m below ground level to avoid surcharging the embankment.
- The ground was to be excavated to provide space for the new deck and to allow cover with weed control fabric.
- The new patio would consist of treated timber plate supported on treated timber joists, held in place by universal steel beams (I beams).
- The existing fence was to be replaced with a new balustrade fixed through the decking into the steel beam.
- Lateral support was to be provided by fixing a treated timber wall plate to the brickwork with screw anchors, underpinned by single engineering brick piers tight to the underside of the timber wall plate.
- Allcott Commercial is now providing contract administration for the works.

## SUPPORTS FOR EXISTING PATIO HAD ROTTED, LEADING TO INSTABILITY



## WE DESIGNED A SCREW PILE SOLUTION

