

BERRITE ESTATE – UNIT DEVELOPMENT 2024

CANAL WALL IMPACT ASSESSMENT

1. Overview

It is proposed to demolish some existing industrial units at Berrite Estate, Iron Bridge Road, and construct new units on a slightly altered footprint. Please see drawing 14206 / 678 / 03, attached. The works will be close to the existing canal bank retaining wall. This report will discuss the proposed works and how they might affect the structural performance of the wall, particularly with a view to the stability of the wall, and the safety of the public canal users as well as the workmen themselves.

2. Existing wall assessment

The wall had been overgrown with vegetation, which has since been removed. This has allowed us to inspect the wall's structural integrity from the far bank. We have also dug some trial pits to investigate the wall on the land side. The results of the trial pits are shown on the drawing. There are three types of construction used along this length of wall:

- Type 1 Brick retaining wall
- Type 2 Solid concrete retaining wall
- Type 3 Reinforced concrete retaining wall with a blockwork skin facing the canal.

A catalogue of photographs of the wall is attached.

All the types of wall are generally around 1.3m high to water level, and a further 0.3m depth to the canal bed. They are all reasonably plumb with no obvious lean towards the canal. The canal wall structure is therefore considered to be structurally adequate.

The areas of wall types 2 & 3 are generally in good condition. However the brick sections of wall have a few areas of loose pointing, and occasional missing bricks. These defects are most likely caused by weathering, including frost action; by the vegetation, and by thermal expansion and contraction. It is therefore normal for such walls to require some maintenance and routine repairs, which will be addressed in the proposed works below.

3. Proposed works

The proposed buildings will be built 3m from the canal wall, similar to the existing buildings. The foundations will be CFA piles, expected to be around 300mm diameter. This method of piling has been chosen as it is low vibration, and therefore the effect of boring at this distance from the wall will not affect the structure of the canal

wall. The top part of the piles will also be sleeved to ensure that any skin-friction stresses are not transferred through the soil to affect the wall.

The piling will require some excavations to form a piling mat around 1m below existing ground level. It is proposed to temporarily batter back the soil at a 45 degree angle, as shown on drawing 03, leaving soil against the wall to resist any water pressure, should water levels rise significantly during the works.

The works have been designed to be able to be carried out without affecting the structural integrity of the existing canal wall.

There will be a robust ply hoarding placed between the building and the edge of the canal throughout the works to separate the construction site from the canal, to protect the safety of people both on site, and in the canal.

Under the Party Wall etc Act 1996, the proposed excavations and piling require a Section 6 Notice to be served. This will be done at least 1 month before the notifiable works are due to start. Assuming the CRT dissents to the Notices, and party wall surveyors are appointed, they will no doubt carry out their own schedule of condition before the works commence.

The boundary between Berrite land and CRT land steps away from the canal wall within the length of the construction site, as shown on drawing 03. Please note that Section 8 of The Act permits the temporary excavations on CRT land in order to carry out this work – though such work will be notified in due course.

4. Suggested Method

Before any excavations are to be carried out, the contractors are to fill any holes in the canal wall and repoint where necessary using mortar to match existing. The depth of the canal at this point is too shallow for navigation, and we suggest that access may be simply on foot via well tied ladders from the Berrite site. The contractor ought to be competent for such works, and be able to show they have carried out similar works before. They will also be responsible for providing their own risk assessment and method statement.

Throughout the works, the canal wall will be monitored, with daily readings taken during demolition, excavations and piling; and weekly readings after that when the risks to the wall are reduced.

The hoardings will be erected, and the demolition of the existing units carried out. Care will be taken, using sprayed water to limit dust being blown into the canal (this is also required for the rail line on the other side of the site).

The ground level will be lowered, battering back the soil as shown on the drawing 03, allowing the formation of the piling mat.

The piles will be installed, then the pile caps and ground beams, with the ground level being raised to top of ground beam level.

The steel frame will be erected. The contractor will plan for using any craneage, ensuring they may not oversail the canal, just as they may not oversail the railway.

The masonry walls and cladding will be installed, and the ground bearing slabs cast.

Once the works are completed, the wall will be inspected again, and in the unlikely event that some further repointing or maintenance is needed, this will be carried out in a similar manner to the initial repairs.

5. Conclusion

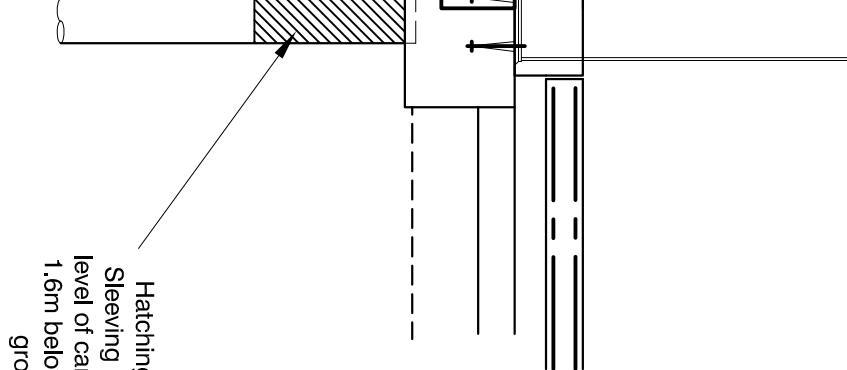
The proposed works have been designed with the canal and its river wall in mind. The method described above is considered not to affect the structural integrity of the canal wall – but rather, with the proposed maintenance, improve its condition.

Prepared by:

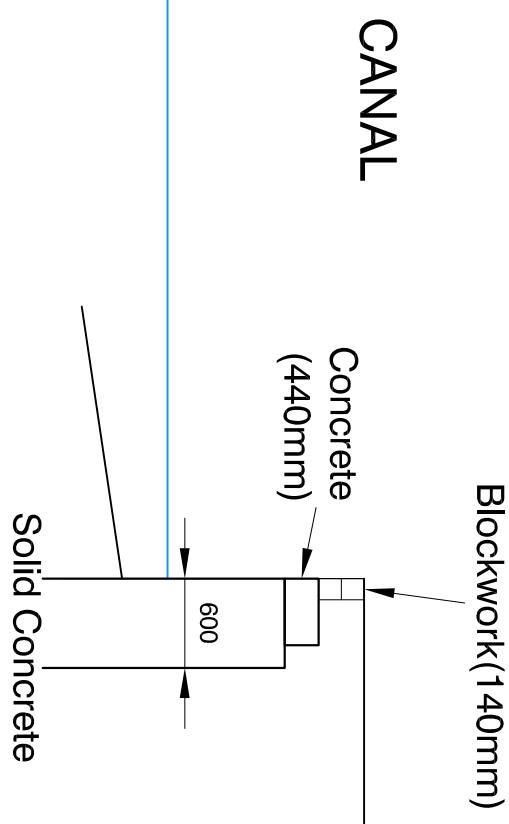


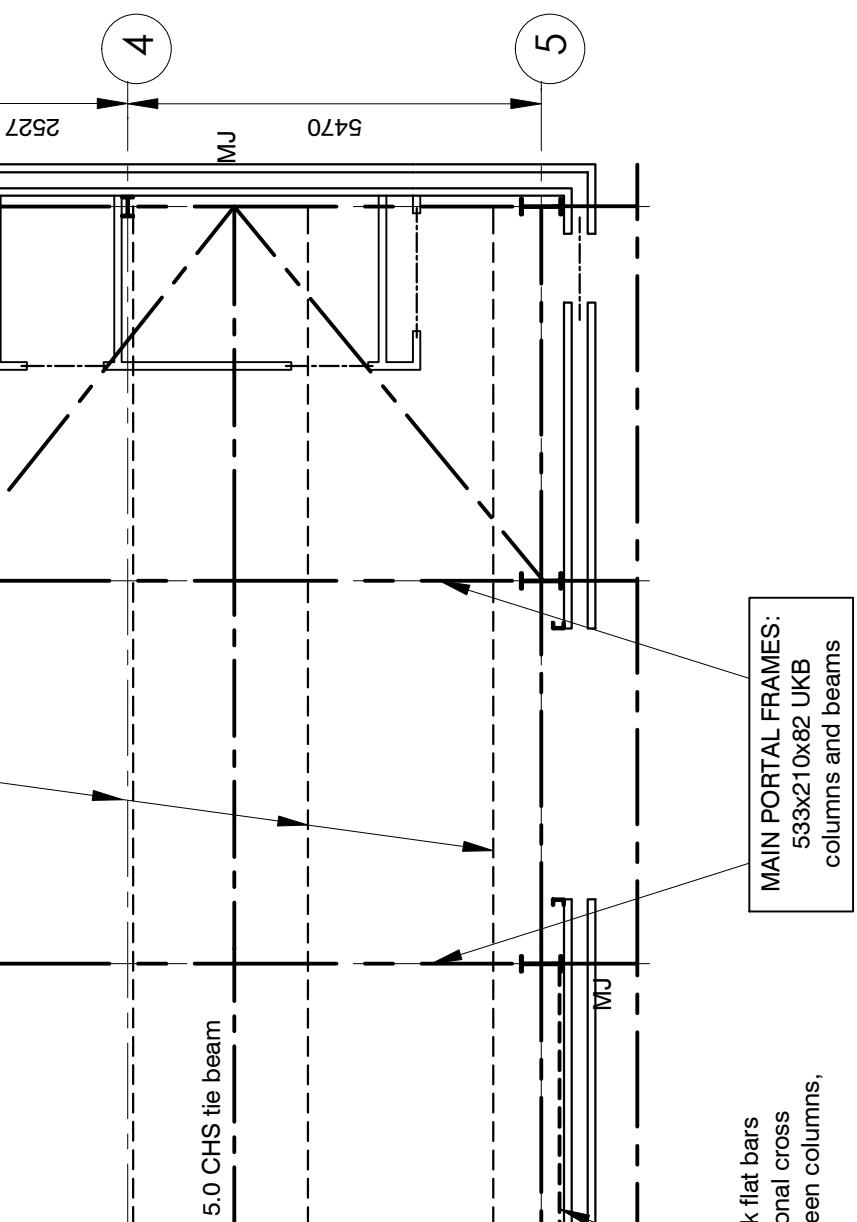
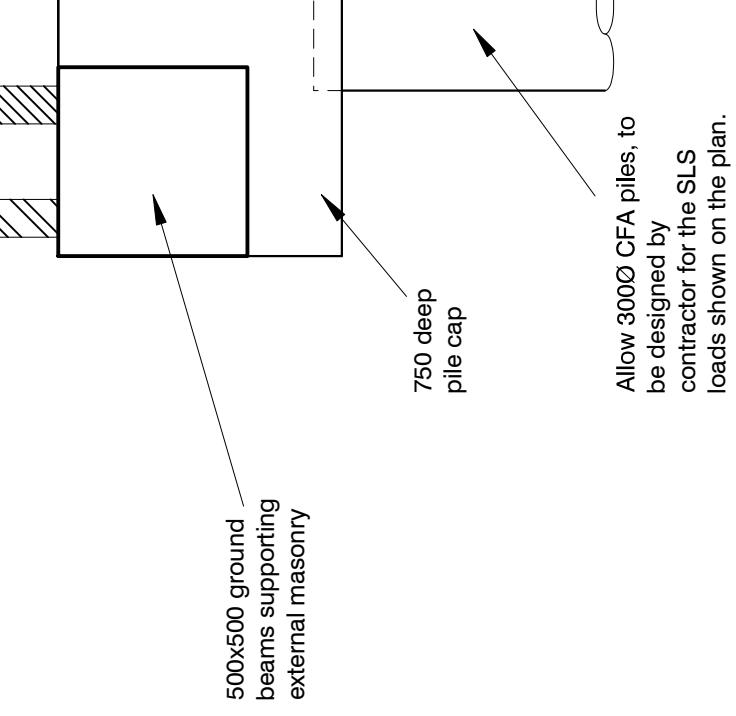
Date: 1st October 2024

Alex Fothergill BSc CEng MInstuctE MPTS



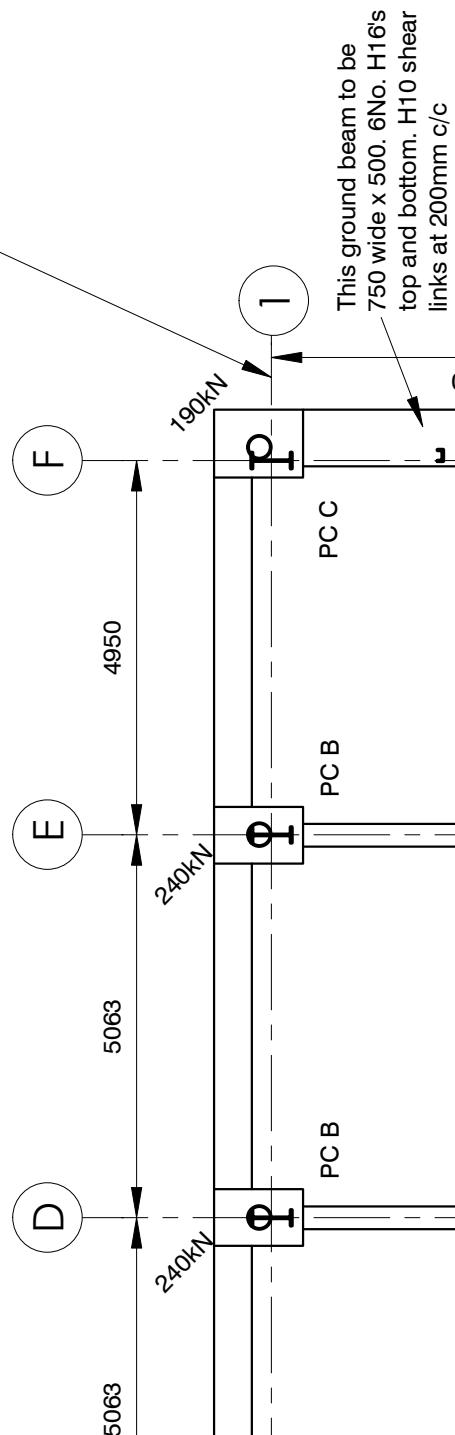
2

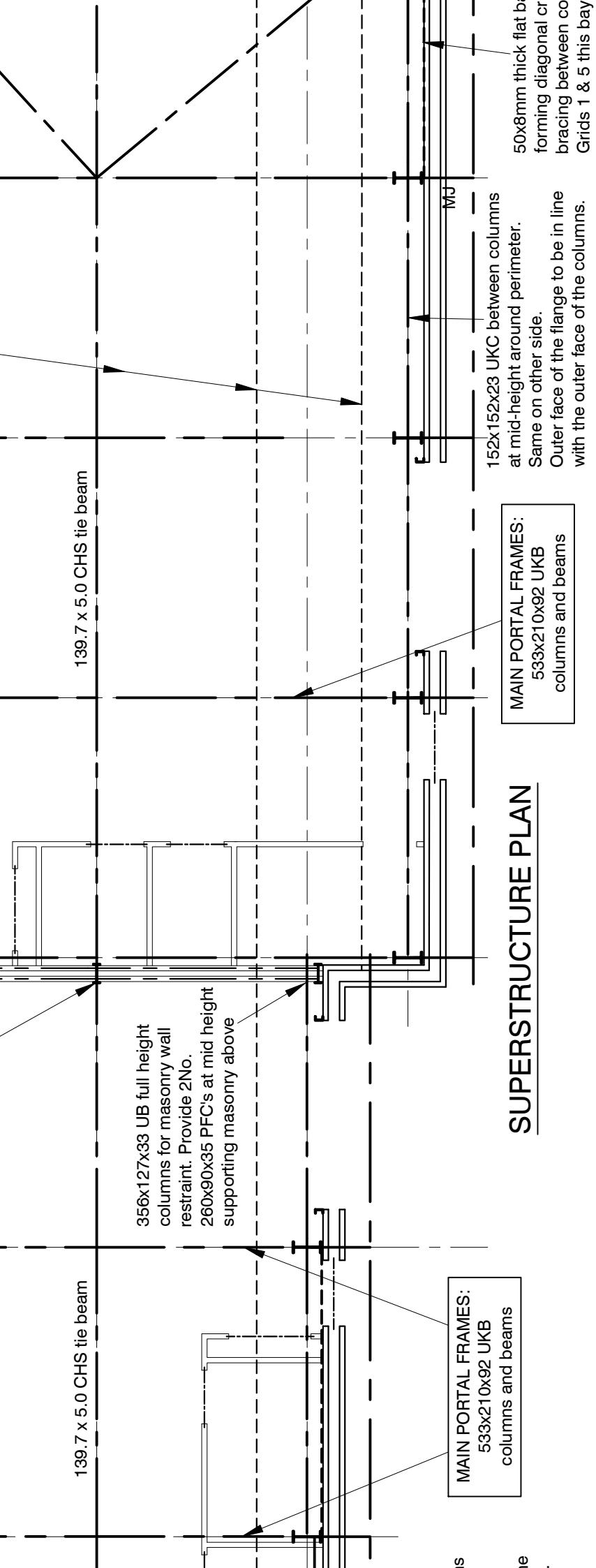




STRUCTURE PLAN

NOTE: PILES ON GRIDLINE 1
TO BE SLEEVED FOR TOP 1.6m





SUPERSTRUCTURE PLAN

533x210x92 UKB
columns and beams

MAIN PORTAL FRAMES:
533x210x92 UKB
columns and beams

152x152x23 UKC between columns at mid-height around perimeter. Same on other side. Outer face of the flange to be in line with the outer face of the columns. 50x8mm thick flat bar forming diagonal bracing between columns 1 & 5 this bay

