

## Project

**BH0045**  
**Radcliffe Hub**

## Document

**Method of Working adjacent the River Irwell**  
**Rev 0**

## Document Control

Issue / Revision  
Description:

For Approval

Date: 23/05/23

## Approval / Acceptance Status

|                                                    | Title & Company                          | Name [Print] | Signature      | Date     |
|----------------------------------------------------|------------------------------------------|--------------|----------------|----------|
| Author:                                            | Contracts Manager<br>VINCI Building - NW | Rob Symons   | <i>RSymons</i> | 23/05/23 |
| Reviewed:                                          |                                          |              |                |          |
| Approved:                                          |                                          |              |                |          |
| 3 <sup>rd</sup> Party Approved:<br>(If Applicable) | Bury Council<br>Planning Department      |              |                |          |

The master copy of this document is retained on the Document Management & Collaboration Database.  
Copies produced from the master, by whatever means, are deemed uncontrolled.  
You must confirm that you hold the latest version, before using this document for its intended purpose.

## Revision History

This document, together with any associated documents, should be reviewed at regular intervals during the project and whenever there is a significant change to the site conditions such as a change in scope, site area, construction methods being used.

This document should be reviewed at least every 6 months in order to maintain its effectiveness.

Record the details of any changes made as a result of these reviews in the table below.

| Rev: | Date:    | Reason for Review:                       | Nature of Changes: | Prepared by: | Checked by: |
|------|----------|------------------------------------------|--------------------|--------------|-------------|
| 0    | 23/05/23 | Original Version – prepared for planning | First Issue        | RS           | RS          |
|      |          |                                          |                    |              |             |
|      |          |                                          |                    |              |             |
|      |          |                                          |                    |              |             |

## Contents

|                                                                                           |          |
|-------------------------------------------------------------------------------------------|----------|
| <b>1. Introduction.....</b>                                                               | <b>4</b> |
| <b>2. Purpose .....</b>                                                                   | <b>4</b> |
| <b>3. Methods of Work.....</b>                                                            | <b>4</b> |
| 3.1 Treatment / Management of Non-Native Invasive Species.....                            | 5        |
| 3.2 Demolition of former TSB Bank.....                                                    | 6        |
| 3.3 Construction of access scaffolding.....                                               | 9        |
| 3.4 Installation of Temporary Frame Dam.....                                              | 11       |
| 3.5 Structural Repair Works to the Market Chambers Building .....                         | 12       |
| 3.6 Infilling of window openings in river wall with brickwork.....                        | 14       |
| 3.7 Replacement of Windows to the Market Chambers Building .....                          | 15       |
| 3.8 Façade Restoration to the Market Chambers Building .....                              | 16       |
| 3.9 Formation of apertures in basement wall, for proposed balcony support structure ..... | 16       |
| 3.10 Installation of proposed Balcony Structure .....                                     | 17       |

**Appendix 1      Environmental Risk Assessment**

**Appendix 2      Site Infrastructure Plan**

## 1. Introduction

This plan is prepared in addition to the Construction Phase Environmental Management Plan, and is a response to the LPA request for a specific method statement to address works adjacent to the River Irwell.

The initial draft of this document has been prepared during the Pre Construction phase of the project, and will outline the key elements of work expected to take place adjacent the river, together with an overview of intended method. It will further highlight anticipated risks and control measures for each of these activities.

It is recognised that some of these activities will be subject to an Environmental Permit – Part B10 “Flood Risk Activities”.

This plan will be developed further during the Construction Phase, alongside updates to the Environmental Management Plan and Project Execution Plan. It will benefit from the input of the specialist contractors that will have been selected.

The works outlined are either part of an Enabling Works Contract, or the Main Contract.

## 2. Purpose

This plan sets out VINCI Building’s working methods and the strategies to avoid or minimise the risks that have been identified in the project’s environmental risk assessment.

The following sections describe in detail the individual operations that will be undertaken on the site.

This plan, taken with VINCI’s other systems and project Environmental Management Plan, are intended to prevent or minimise risks to the environment from each of the project’s operations, with the following aims:

- ensure there’s no increase to flood risk or impact on drainage
- minimise sediment being disturbed and moving downstream
- minimise the impact on biodiversity
- ensure careful storage and disposal of waste
- prevent pollution of watercourses, for example from construction debris or contaminated land
- prevent pollution from static plant, mobile machinery, refuelling and material storage
- prevent or minimise impacts on habitats and wildlife
- prevent the spread of invasive non-native species or plant or animal diseases

## 3. Methods of Work

For each of the numbered activities below, please refer to the project Environmental Risk Assessment (Appendix 1) and Site Infrastructure Plan (Appendix 2) for further detail.

### 3.1 Treatment / Management of Non-Native Invasive Species

There are a number of non-native invasive species growing immediately adjacent the Radcliffe Market River Wall. A programme of treatment of these invasive plant species has been prepared and implemented by specialist contractor – Japanese Knotweed Control.

These works will involve the following activities:

- Specialist treatment applications
- Stem injection herbicide application process
- Herbicide folia spraying and leaf wiping
- Hand pulling & seed head removal

The key risks associated with this activity are accidental release of herbicides into the watercourse, accidental transfer of seeds or plant material during removal works, if not handled correctly.

A water licence for the use of herbicides adjacent to the watercourse has been obtained [Reference Number HERBC016401].

The area by the watercourse is accessible through the gate in the Aldi car park. This area was inspected and access to the river is possible and due to recent low rainfall, water levels are low enough to allow access to the required area.

The works required are to treat or remove the existing non-native invasive weeds identified on the site. This will involve the treatment of any Japanese Knotweed, hand pulling of the Himalayan Balsam and removal of the seed heads for any Giant Hogweed.



The JKC operative will ensure that no cross contamination occurs during the treatment and clearance.

The application process will be carried out by licensed operatives trained and experienced in specialist treatment programmes only using the correct herbicide application equipment.

The treatment process will be applied with the minimum stress or damage to the plant. This will ensure the plants take on the herbicide and improve the absorption rate. The process of application will be to use a measured dosage of herbicide which will be specific to the process provide for the best result, i.e., stem injection/foia spray.

### Precautionary measures:

- Assess the area where work will take place for hazards or obstructions, effects to wildlife or vicinity to water courses. Update Risk Assessment if required.
- Ensure equipment is prepared and the herbicide is mixed away from water, wildlife, and the public. If necessary, use tape and cones to cordon an area to the rear of the vehicle.
- Ensure that good practice and training is followed when handling chemicals. Ensure a clean label is carried when using equipment and herbicide
- A JKC operative will ensure that any person working within the contaminated area does not spread any viable rhizome out of the controlled area. To this end, a boot wash will be supplied, and any operative leaving the designated contaminated area will need to wash down.
- All tools used in this area will be cleaned before leaving the contaminated area, to ensure no further spread of the plant occurs.

The initial visit was undertaken in September 2022, and the second visit is scheduled for June 2023. A further visit is scheduled for September 2023.

### 3.2 Demolition of former TSB Bank

The scheme requires the demolition of the former TSB bank.

As well as the former bank building there is also part of the existing Radcliffe Market which is to be demolished to the rear and the side of the bank building. The proposed demolition zone is shaded red in the plan below.

The key risks associated with this activity are uncontrolled collapses of structures, loose debris falling into the watercourse, and release of fugitive dust particles.



The proposed method is outlined overleaf/...

### Preparatory Works:

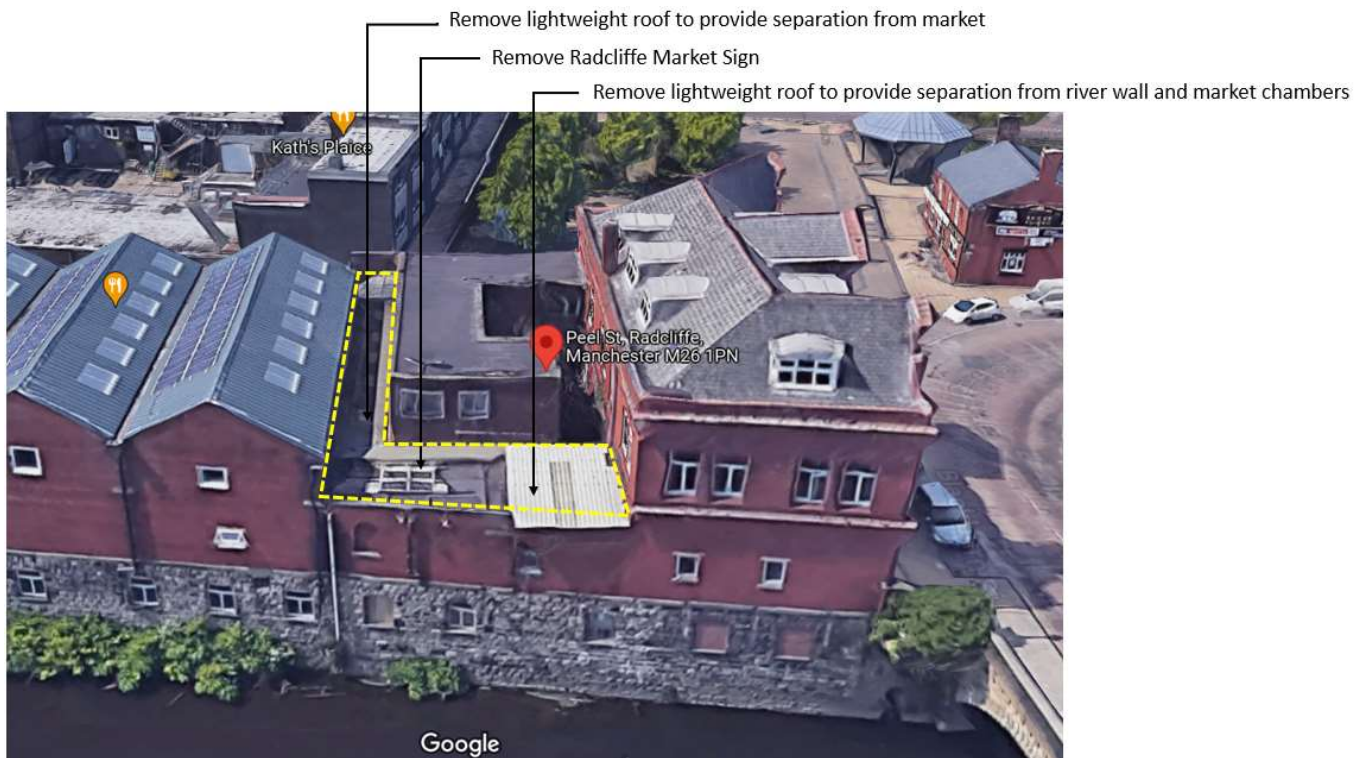
- Removal of asbestos from the buildings
- Isolation of services from the building
- Relocation / isolation of building services from within the market building
- Relocate pot washing/storage facilities to another part of the market building.
- Construct a temporary “end wall” to provide secure/weather resistance to the market in advance of demolition works (as the masonry bank wall currently forms the end wall of the market)

### Main Demolition:

Soft strip to remove non-structural elements – including removal of fixtures, fittings, ceilings, finishes, pipes, cables, radiators and such like.

These will be removed by demolition operatives accessing the building from the front. Skips will be placed within the confines of the site boundary to take the removed items. This work will generally be undertaken by hand, using small tools.

As part of the same exercise the “Radcliffe Market” sign will be removed from the low-level roof to the rear of the building. The “tin roof” which sits over the current toilet/pot wash area to the rear of the bank will also be carefully removed to provide separation from the masonry end wall which is adjacent the river.

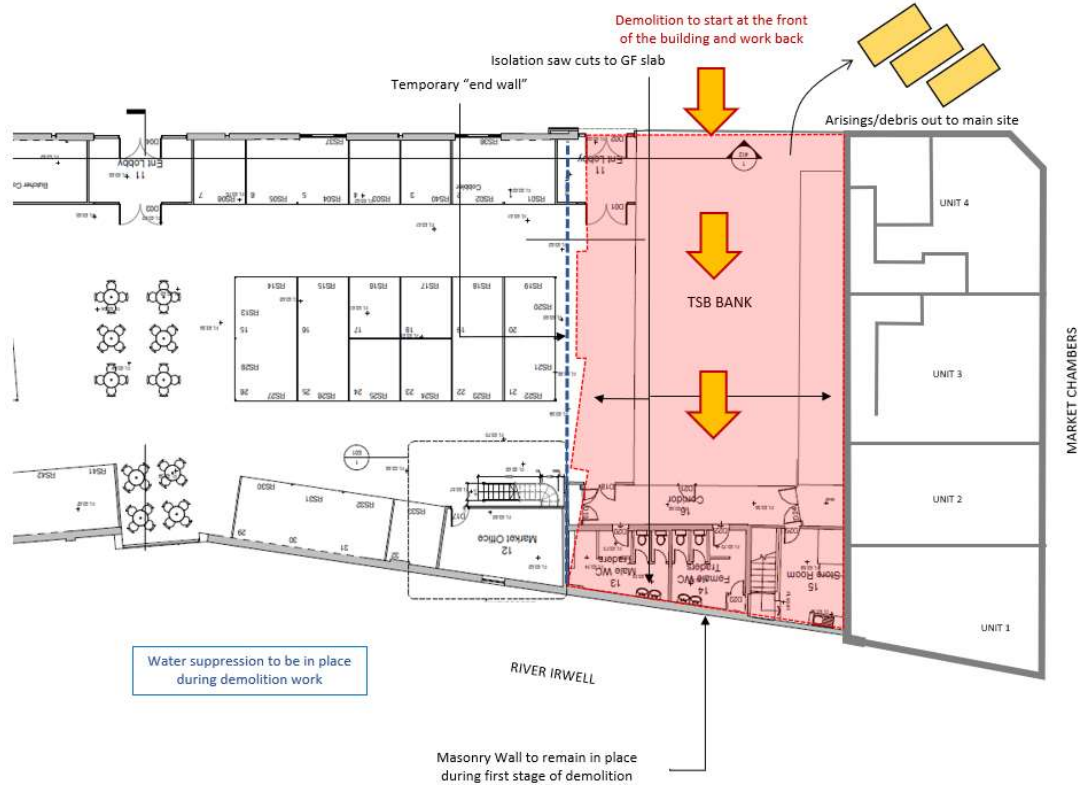


There will also be a requirement to saw cur the ground floor slab internally within the market to provide separation from both the market and the market chambers building.

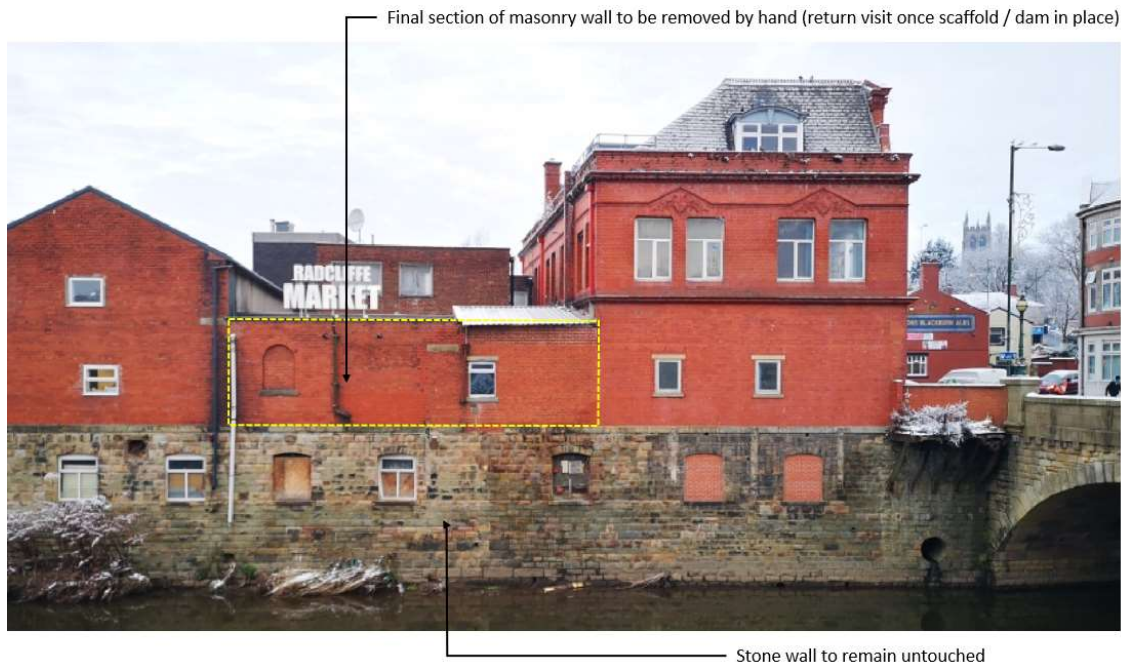
Once the soft strip is complete, and the structure is separated from the adjacent buildings, the main demolition work can proceed.

The building will be demolished mechanically using a demolition excavator located within the confines of the main site, at ground level. It will be approached from the front, working progressively inwards, and top down.

The process will be gradual, and arisings/debris removed systematically back to the main site area for processing. Dust suppression equipment (hoses/water cannons or similar) will be positioned so as to mitigate the release of airborne dust particles so far as is reasonably practicable.



It is intended at this stage of the project to leave the brick end wall in place. This will provide a screen between the construction zone and the river which will help with control of dust migration towards the river.



This remaining section of wall will be removed at a later date, and once the temporary works have been positioned within the river channel [the details of these are described in subsequent sections of this method statement]

The wall will be carefully taken down by hand, by demolition operatives working from the inside using a scissor lift type MEWP. This method of demolition will significantly reduce the risk of any part of it falling into the river channel, and will significantly reduce the risk of airborne dust release, which could settle within the river channel.

Dust monitoring equipment will be in place and operational throughout the demolition programme.

Further, the watercourse will be protected by the presence of a scaffold deck, and a “dry zone” provided by a temporary frame dam. These works will be subject to an Environment Agency Permit – Part B10.

### 3.3 Construction of access scaffolding

The construction of the proposed river balcony, and the bricking up of the existing window openings on the river wall will require the installation of an access scaffold.

It is anticipated that the access scaffold will be constructed in May 2024, and remain in place for up to 15 weeks. Preliminary design work has been carried out, but the detailed design will be available once the scaffolding contract has been awarded. The detailed scaffolding design will be required to be included in our application for a B10 Permit.

The key risks associated with this activity are safe transit of personnel along the river bed, loading of scaffold materials down to the river level, and use of small tools.

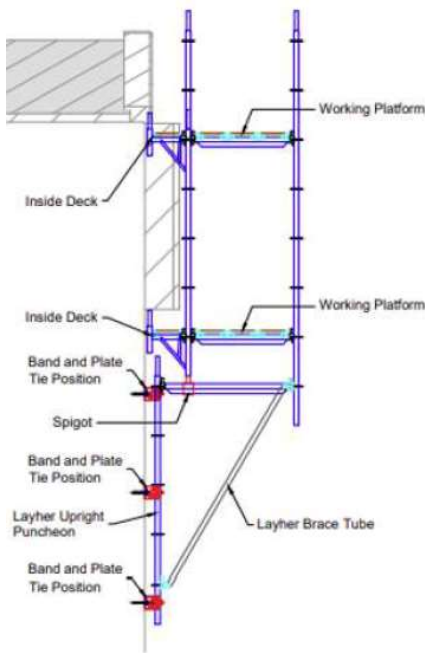
The scaffold will be constructed once the temporary frame dam has been installed so that the scaffolding work area is relatively dry, and accessible.

A scaffold stair will be formed from the Blackburn Street Bridge, and will be accessed from within the confines of the main project site hoardings.

Material will be loaded down to the river level utilising a hiab or mobile crane, situated at ground level. A lifting plan is to be prepared and approved by the project lift coordinator prior to commencement.

Subject to final design the scaffold will be ground bearing and tied back to the market wall, or cantilevered from the stone part of the market wall. The scaffold will be approx. 55m long





*Extract from preliminary concept design*

The final designs will be subject to secondary checking by our in house temporary works department to ensure the designs are robust and suitable for this location.

Any tools used by the scaffolding operatives will be battery operated to remove the risk of any potential fuel spillage etc.

Once erected, the scaffold does have potential to create a risk during flood events in that flotsam and jetsam could be caught on it and create a “dam” effect. We have sought to minimise this risk via the following methods:

- Installation of the frame dam & scaffolding is to be through the summer, where river levels and flood risk potential is at its lowest.
- The frame dam will be installed to hold back up to 2m river level, thus reducing the risk of floodwater/debris striking the scaffold.
- The scaffold design engineer has already reviewed the site and proposal at pre-construction stage, and the scaffold will be designed to withstand seasonal high water levels. Historic data on river levels on this stretch of the river have already been reviewed.
- The scaffold will likely utilise the “layher all round” system, which provides excellent adaptability and lightweight aluminium components for ease of handling. The boards are perforated also.
- No permanent material storage will be permitted on the scaffold deck and this will be checked at the end of each shift. Flood warnings will be monitored from the EA and when issued the deck will be cleared of any materials and personnel.
- All scaffolds on site including the above will be inspected weekly by an experienced and competent scaffolder.

### 3.4 Installation of Temporary Frame Dam

To facilitate the safe installation of the access scaffolding, it is our intention to install a temporary frame dam. The frame dam will be installed by a specialist installer, who is well experienced in these kinds of works.

The additional benefit provided by the frame dam is that should and minor dust or debris be generated from any of the various activities, it will deposit in the dry work zone, rather than directly into the watercourse.

The frame dam will be supplemented by a debris deflecting boom also, upstream to mitigate any potential damage that flotsam and jetsom could cause during an unseasonal flood event.

The frame dam is intended to be installed during May 2024 (ahead of scaffold installation) and remain in place until after the scaffolding has been removed.

The primary risks associated with this activity are safe transport of materials to the river bed, safe management of fish, and pumping operations.

Protecting the environment, and in this case the river, is a priority. By engaging with specialists early, we will be able to implement their expertise into detailed methodology and risk assessments that will be required in support of permit applications, well in advance of the works commencing.

Detailed methodology will be developed once this subcontract has been let, but we have been working with specialist company Murlac, during the pre-construction period in order to develop this initial methodology. The detailed methodology will form part of our application to the EA for the B10 Permit

#### Initial Methodology:

- Undertake an In-Water Site Survey with marine operatives. They will analyse all aspects of the project including: watercourse conditions, working requirements, environmental impact and flood risks.
- Supply of Temporary Works Design Certificate for the works (for secondary checking by VINCI temporary works department)
- Preparation & Submission of bespoke RAMS (also required for B10 permit application)
- Provision & Installation of a 20m long Debris Deflection Boom.
- Mobilisation & Installation of a 65m long x 2m high Temporary Frame Dam
- Fish Rescue. As a legal requirement, all wild fish will be managed and transported safely. The process will be carried out by a team of professionals, using environmentally approved electrical equipment and netting techniques as appropriate, to ensure the highest welfare for the fish. The fish will then transported to a more secure location within the same river environment, thus mitigating any environmental risks to the fish.
- Installation of a 65m long a 2m high Temporary Frame Dam. Access to the river channel is to be via the Blackburn Street Bridge.
- Removal of a 65m long x 2m high Temporary Frame Dam upon completion



The use of tools is minimal, but where required battery operated tools will be used to remove the risk of any potential fuel spillage etc.

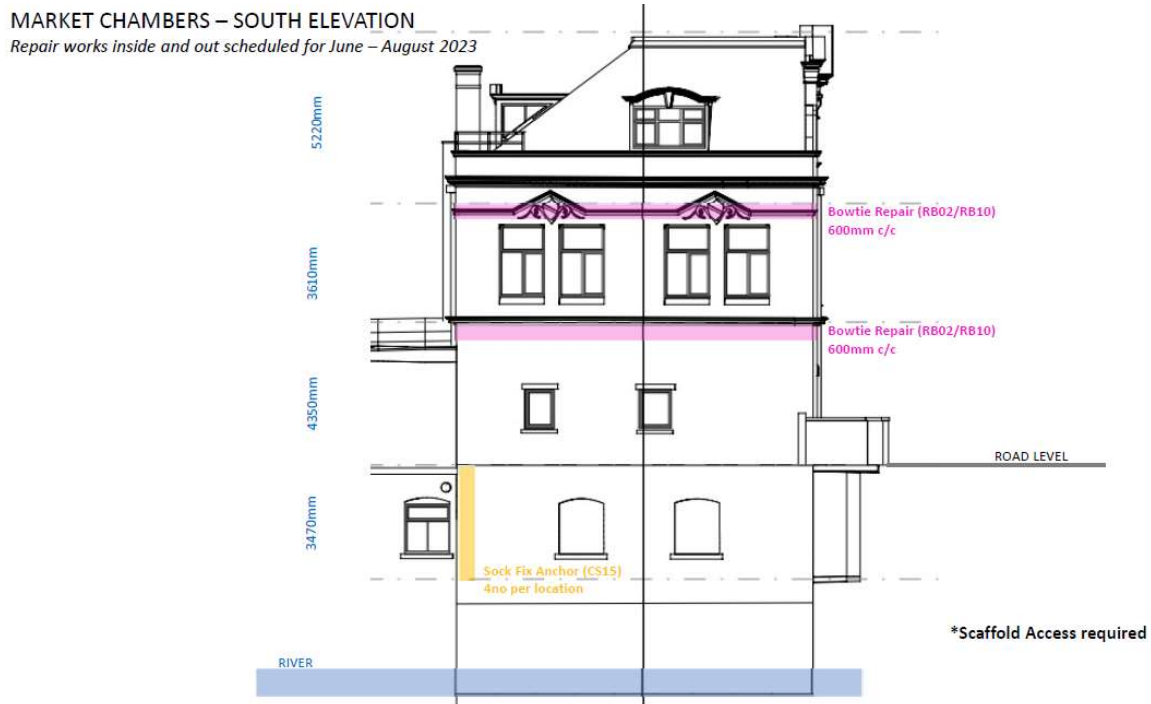
We anticipate that there may be a requirement for some maintenance pumping during the deployment of the day, and will install de-watering/maintenance pumps.

### 3.5 Structural Repair Works to the Market Chambers Building

Various structural repair works are required to all elevations of the mid-victorian building known as market chambers. These repairs are mainly proprietary masonry stitching details, and are required to all elevations of the building.

The front side and rear elevations will be tackled in the initial visit, and the river wall will be completed on a return visit, once the frame dam and scaffolding is in place (as described previously).

The primary risks associated with this activity is the release of silica dust, spillage of cementitious mortar products, and spillage of polyester resin products.



Repair works to the river wall elevation include 1 x “sock fix anchor” and a series of “Bow Tie repairs” as indicated on the elevation shown above.

#### Sock Fix Methodology:

- Ensure temporary frame dam and access scaffold are in position
- Mark out positions on the wall and drill clearance holes – tools to be tethered, and water suppression to be utilised at source to prevent dust migration.
- Set up pressure pot and compressor, and flush with fresh water.
- Wet the sock, and prime the injection tube

- Mix the SockFix grout for 3 minutes with a power mixer (this is a specially formulated cementitious grout – mixing of cementitious mortar products is not to be undertaken on the scaffold area. It should take place in a designated area on the main site away from the river. Also materials not in use are to be stored on the main site and not on the access scaffolds. All to be stored in a secure container located on the main site and away from the river or any connecting surface water drains. All products to be stored in accordance with COSHH safety data sheets.
- Insert the SockFix into the drilled hole, and connect to SockFix valve.



Stitching a cracked solid wall.

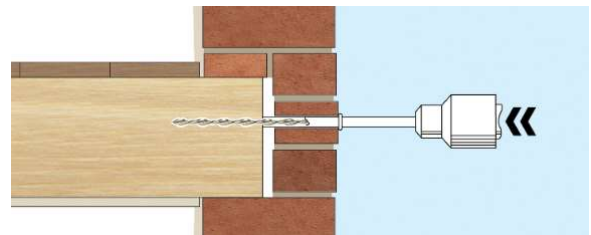
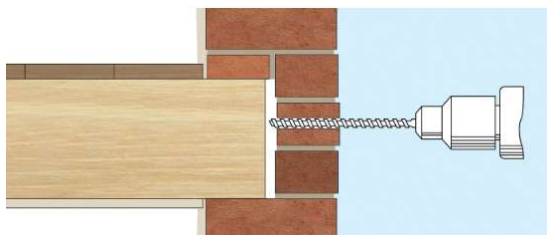
- Inflate the sleeve with grout to a maximum of 3Bar, so the grout permeates the sock and bonds to the masonry – maintain pressure until fully inflated.



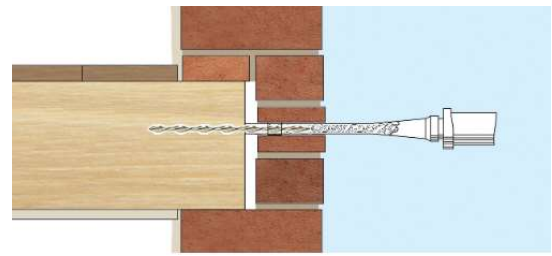
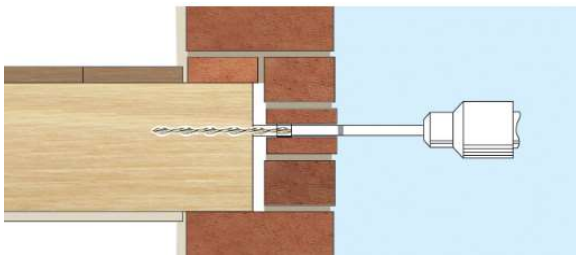
- Once the grout has cured, cut off the end of the grout tube, and make good the entry hole.

## Bow Tie Methodology:

- Ensure temporary frame dam and access scaffold are in position
- Mark out position of the centre of the joist on the external wall and drill a clearance hole (12mm). Then fit the BowTie support to a SDS drill (battery), and insert it into the end of the joist.



- Fit the plastic sleeve over the bow tie and use the support tool to push it back into the hole in the masonry. Then inject PolyPlus resin to fill the hole and bond the tie



- Once the resin has cured make good the entry hole.

The PolyPlus resin is a two part, general purpose polyester resin (comprising resin and hardener). It's use shall be carefully monitored to ensure no product is able to enter the watercourse.

Only a small amount of the product will be brought to the workplace – just enough to suit the immediately available work. The product will be stored in a COSHH store located on the main site area, in accordance with the COSHH safety data sheet.

Upon completion of the work each day, the area will be checked to ensure no grout or resin containers have been left out on the scaffolds, that could be inadvertently blown off and into the watercourse.

### 3.6 Infilling of window openings in river wall with brickwork.

There are 8 windows to be removed and infilled along the basement river wall (refer to photograph below)



Remove Window and replace with 2 skins of Engineering Brick and mass concrete infill.

The primary risks associated with this work is the release of silica dust, and the spillage of wet mortar products.

The windows will be removed following the installation of the temporary frame dam and the access scaffolding

The uPVC window framed units will be de-glazed first, and then the frame removed from the aperture.

The aperture will be cleaned/prepared using vacuum methods, so as not to sweep masonry dust/detritus into the river channel.

The apertures are to be filled with 2 skins of engineering brickwork tied into the stone work adjacent. Structural mass is then provided by the introduction of concrete between the 2 skins of brickwork.

The first step is to drill and fix ties into the window reveals. These will be drilled using battery operated drills by operatives working on the access scaffold. Vacuum suction will be provided to remove any masonry / silica dust generated at source, through use of dust extraction system.

The outer skin (river side) will be constructed first using a red engineering brick bonded with M6 mortar. The brickwork shall be reinforced with ladder type bed joint reinforcement.

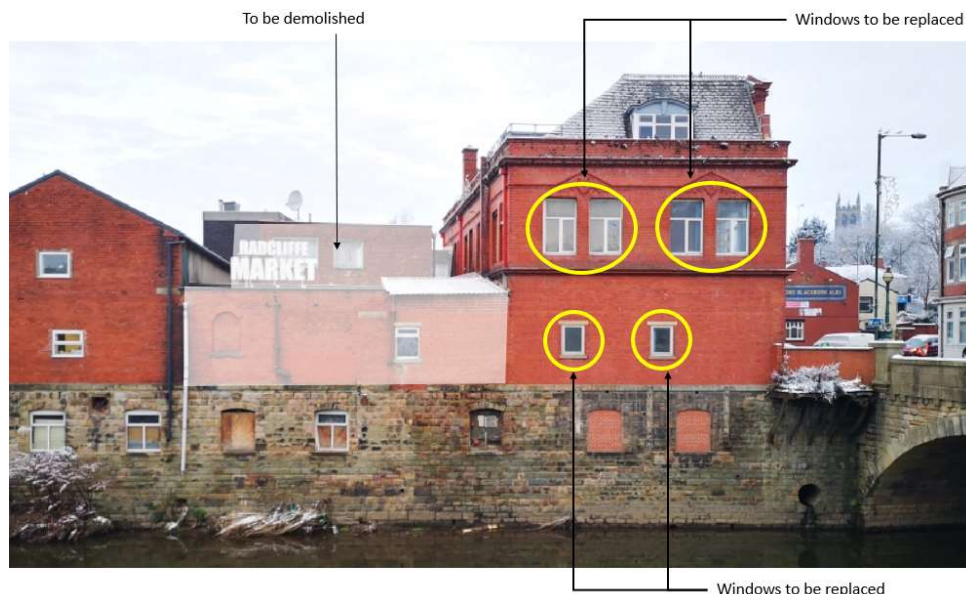
All mortar mixing will be carried out on the main site and then transferred to the brickwork operatives on the scaffold through an adjacent window opening – feb from the basement. This method minimises the interface of wet mortar products near to the river. Only the minimal amount of mortar is to be brought to the workface to avoid unnecessary risk of wet mortar entering the watercourse. The fact this work will take place behind the temporary frame dam offers another level of protection to the watercourse.

Should any mortar droppings occur during construction they will be retained on the dry side of the dam and will be recovered. Daily checks to be undertaken to ensure the work area is maintained clean and tidy, and that any wet mortar is recovered back to the main site for disposal.

Once the outer skin of brickwork has been installed and cured, the inner brick skin and concrete work will take place from within the market basement. This method will prevent the risk of any accidental spillage of mortar or concrete into the watercourse.

### 3.7 Replacement of Windows to the Market Chambers Building

There are 6 windows to be replaced on the river wall elevation of the Market Chambers building;



The key risks associated with this activity are release of silica dust into the watercourse and manual handling of window frames.

The windows will be removed following the installation of the temporary frame dam and the access scaffolding

The uPVC window framed units will be de-glazed first, and then the frame removed from the aperture.

The aperture will be cleaned/prepared using vacuum methods, so as not to sweep masonry dust/detritus into the river channel.

The window frames (unglazed) will be transferred from the site to the scaffold, in accordance with an approved lifting plan (to be developed in detail by the glazing contractor).

The windows will be offered into position and fixed using frame fixings into the existing window reveals. Care to be taken when drilling – tools to be battery operated and tethered. Dust extraction in place to prevent release of silica dust to the atmosphere.

Once frames are fixed the units can be glazed, and sealed. Frames to be sealed using silicone based external grade mastic. As with all other COSHH materials the tubes are to be stored on the main site in accordance with COSHH safety data sheets. All used tubes to be removed at end of working day and disposed of in the facilities provided on the main site.

### **3.8 Façade Restoration to the Market Chambers Building**

A number of façade improvement works are required to all elevations of the market chambers building. The works required to the river elevation will be carried out from access scaffolds installed once the temporary dam is in place.

The works will include vegetation removal, raking out of mortar joints and replacing with lime mortar, and general steam cleaning of the façade.

The key risks associated with these works are release of silica dust to atmosphere, spillage of lime mortars and releasing of general grime from the façade during the steam cleaning.

These risks will be mitigated by controlling dust at source through extraction systems fitted at source, when raking out old mortar joints. As with other mortar materials, the lime mortar will be batched on the main part of the site away from the river, and only the amount required on any given shift will be brought to the work face.

With regards to the steam cleaning, the doff machine will be operated on the lowest setting possible to be effective in order to reduce release of grime into the atmosphere. Protective screens may be used to further contain any such material from spreading.

### **3.9 Formation of apertures in basement wall, for proposed balcony support structure**

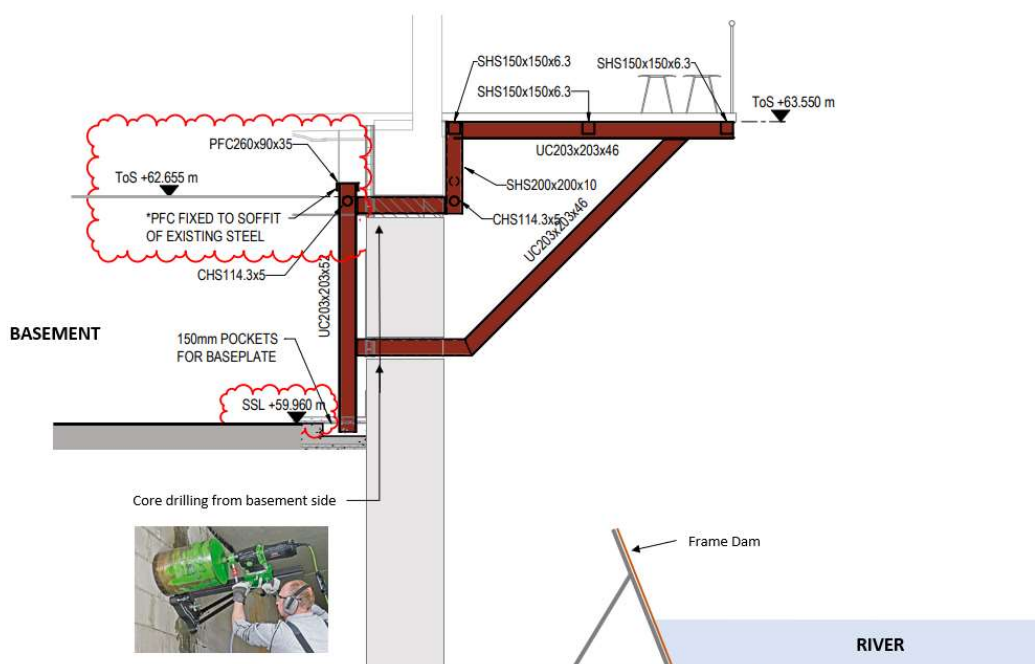
The construction of the new balcony requires apertures to be formed through the river wall in order to enable new structure to pass through, to support the balcony.

These will be 22no, circa 250-300mm to facilitate SHS200 x 200 support stubs.

The apertures will be formed using a diamond tip core drill mounted to a drilling frame on the inside of the wall. By drilling from the inside any dust, debris, water will be contained within the construction site side.

The work will be done when the frame dam and access scaffolds externally are in place though to aid core recovery. Cores to be recovered back into the market basement.

Refer to sketch over/...



The methodology will be as follows;

- Mark out the location on the inside face of river wall
- Mount the drilling frame to the wall and load drill
- Core drill through stone wall
- Recover core back into the market
- Square off the opening using hand held breaker (controlling dust at source)
- Install the internal steel structure with stubs penetrating through the wall.
- (once frame is fully loaded with new structure, seal the apertures against the SHS stub following the tanking design to ensure watertightness.

### 3.10 Installation of proposed Balcony Structure

With the preparatory works complete and the steel stubs in position the main balcony structures can be installed. The method of installation will be as follows;

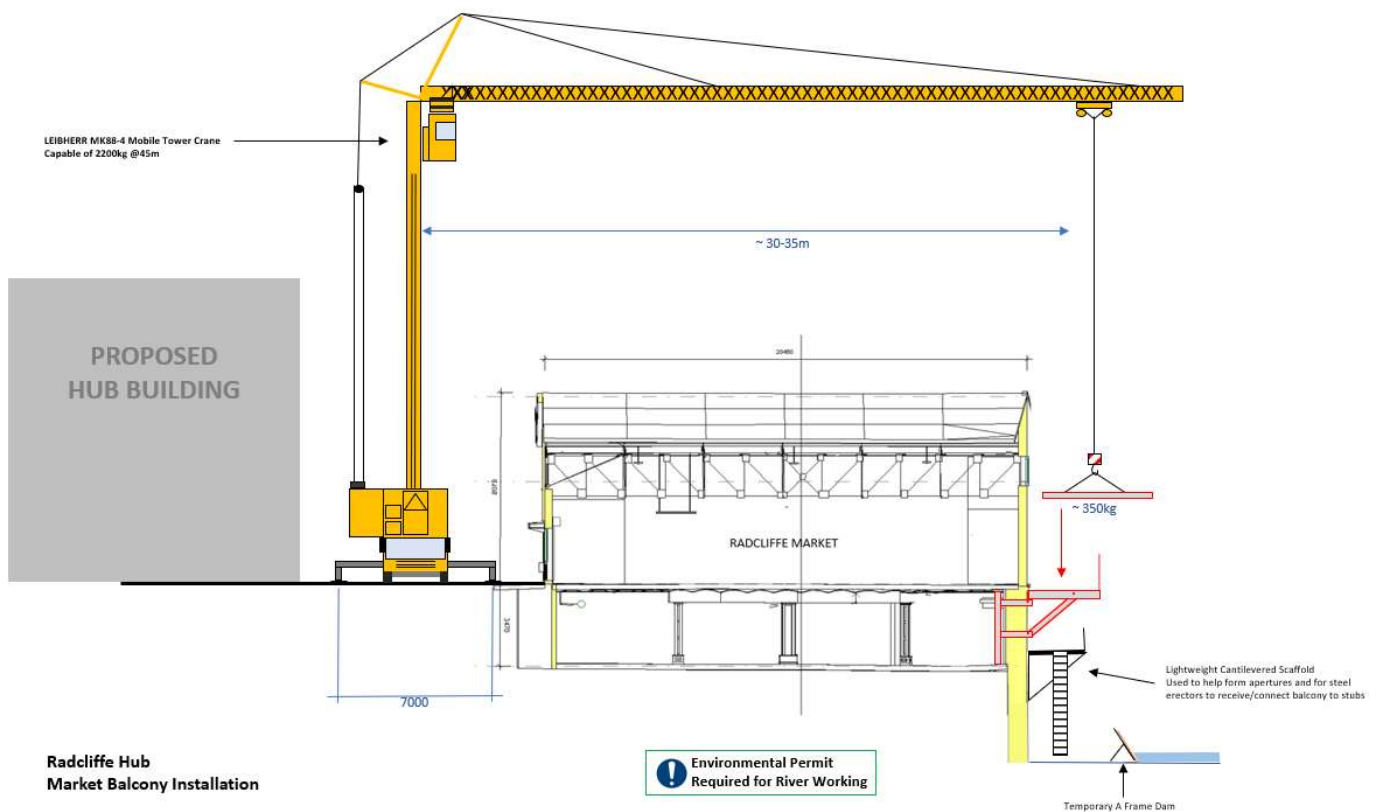
Deliver part assembled balcony structures to the main site.

Lift and manouvre into position using mobile self erecting tower crane located on the main site. (full detailed lift plan to be in place prior to commencement of lifting operations, and market below to be vacant during lifting procedures.

The part assembled balcony sections will be offered into position and received by steelwork operatives located externally on the access scaffold.

The balcony sections will carefully be manouvered into place and fixed to the stubs using a bolted connection. Steelwork operatives working from the scaffold to use tethered battery operated drills for this operation.

Repeat until all sections are installed.



When the steel structure is fully assembled, the timber balcony deck and glazed balustrades can be installed.

Once the installation is completed the access scaffolding and the temporary frame dam can be removed, and the river work completed.

All of the works described above will be subject to further detailed risk assessments by appointed sub contract trades in due course.

Detailed methodology plans, and detailed risk assessments and control measures will be further developed, during the construction phase.

## Appendix 1      Environmental Risk Assessment

## Appendix 2

## Site Infrastructure Plan

