

BH0045 - Radcliffe Civic Hub Project

Method Statement for the protection of United Utilities Water Mains laid within the site boundary.

1. Introduction

This document has been prepared in response to Planning Condition 8

No development, other than site clearance, demolition, remediation or ground works, shall commence unless or until details of the means of ensuring the water main that is laid within the site boundary is protected from damage as a result of the development have been submitted to and approved by the Local Planning Authority in writing. The details shall outline the potential impacts on the water main from construction activities and the impacts post completion of the development on the watermain infrastructure that crosses the site and identify mitigation measures to protect and prevent any damage to the water main both during construction and post completion of the development. Any mitigation measures shall be implemented in full in accordance with the approved details.

2. Watermain Location

We have consulted the United Utilities Maps for Safe Digging, and also undertaken a GPR survey in order to locate the water mains. The results of the GPR survey correlate well with the UU Infrastructure map. Furthermore, we have been able to determine with reasonable accuracy the depth of the water main in a number of locations.

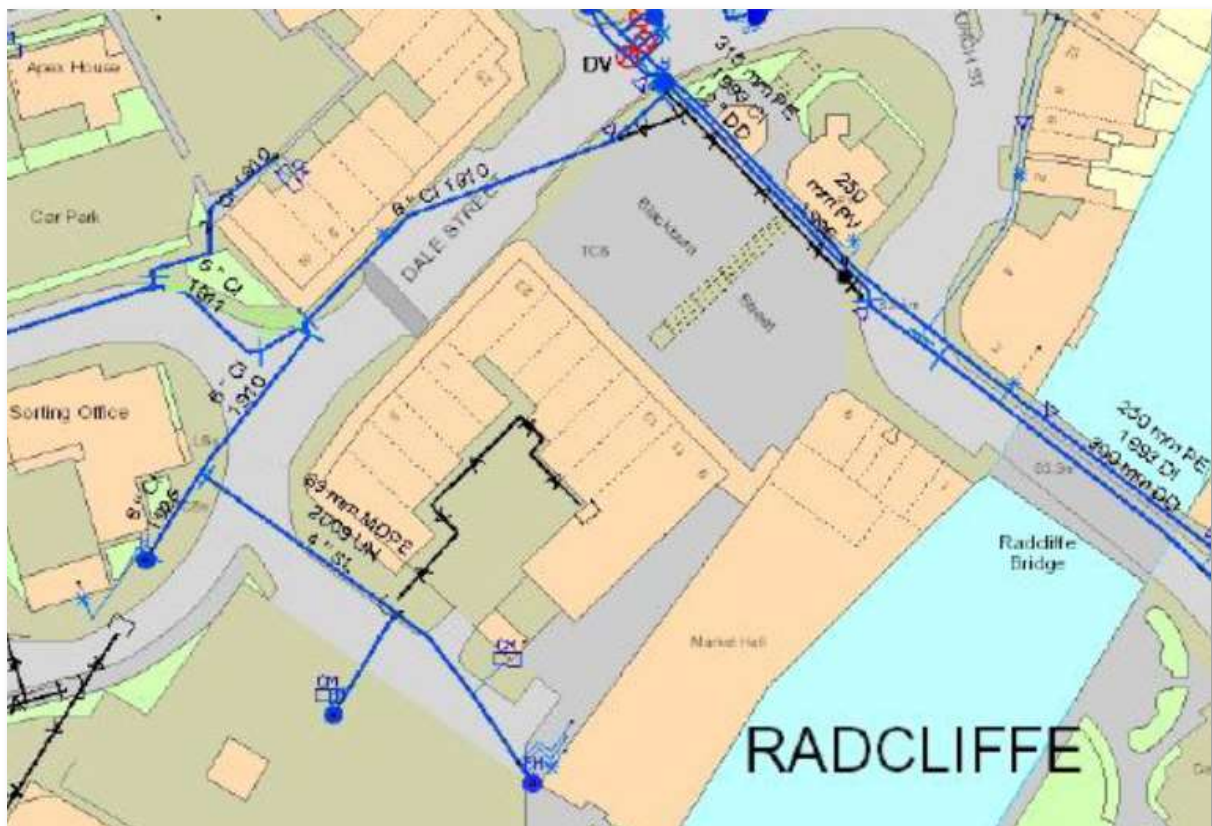


Fig 1 Extract from United Utilities Maps for Safe Dig (11/03/22)

We have taken the information from these record drawings and surveys, and overlaid on to a site plan to aid the identification of zones that may be affected by the proposed development. (see over)

With the position of the water mains laid on to the site plan, we consider there are 3 key areas to be considered;

Area 1 Vehicle Crossover of the 6" water main (Gate 2)

Area 2 Works adjacent the 300mm water main

Area 3 Works adjacent the 4" water main

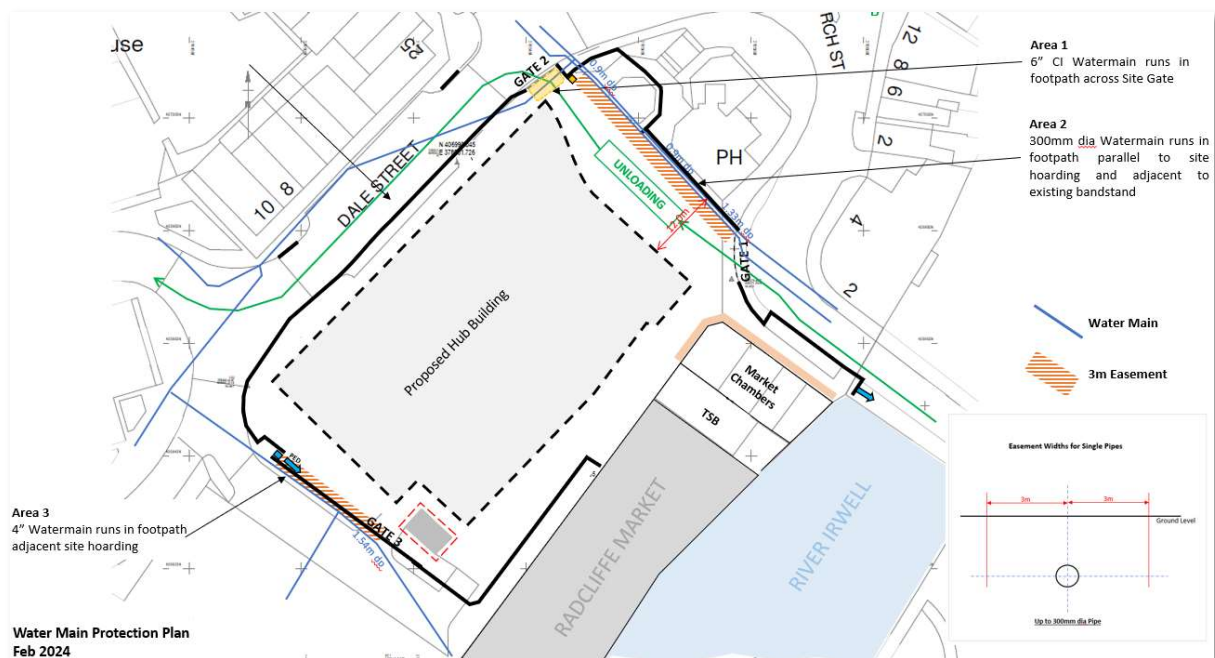


Fig 2 Site plan with watermain locations shown

3. Description of works and mitigation measures

In order to facilitate the construction of the new Radcliffe Civic Hub project a wide variety of construction activities will take place. It is noted however, that the water mains that are laid within the site boundary are close to the edge of the site, and away from the proposed building itself.

Area 1

The 6" watermain passes parallel with site Gate #2. This is an exit only gate which will see unloaded vehicles cross the watermain not leave the site, via Dale Street.

Later in the project as the new Civic Hub building nears completion, new paving will be installed to all the external areas including this location.

We have undertaken a trial pit in this location and proven the watermain to be ~0.95m below road level.

Our in-house temporary works designers have undertaken a design check, and derived a number of crossing point solutions to counter the effects of a variety of axel loads, appropriate to the plant proposed for use on this site (25t axel loads). The solutions are designed to spread the load to limit the factored bearing pressure at the crown of the pipe to <8.5kN/m²

We have selected a standard solution incorporating road plate protection mat. This utilizes 20mm thick road plates, is suitable for pipe diameters <300mm and depths as shallow as 600mm.

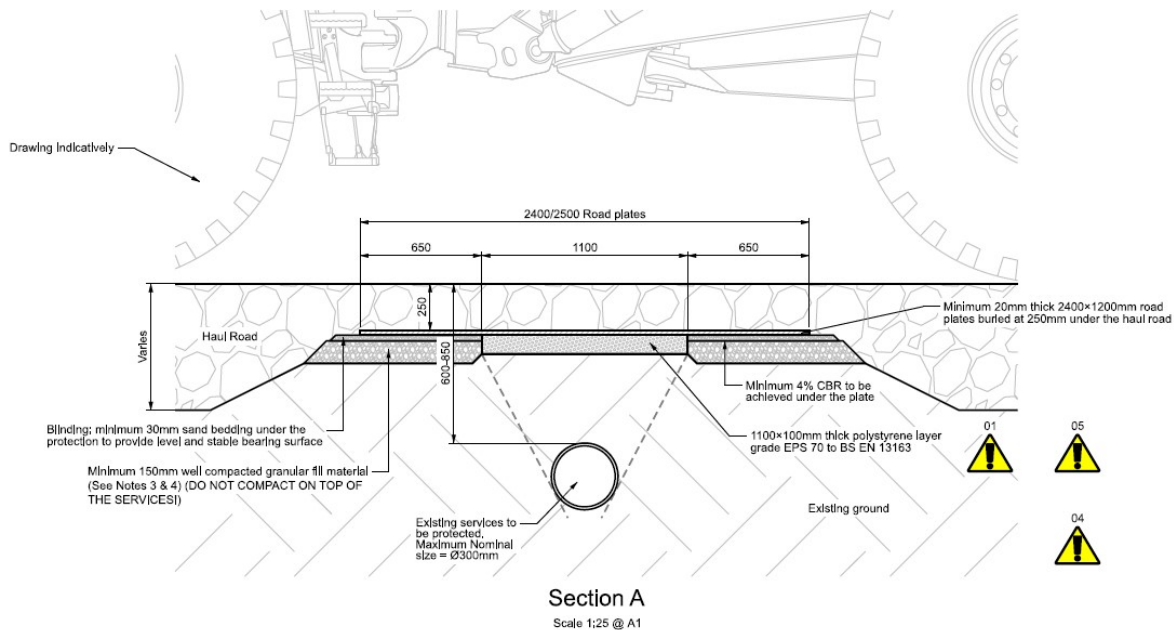


Fig 3 – Cross Section through road plate protection mat

Also refer to [APPENDIX 1](#) [V9N909-VCUK-XX-XX-DR-Y-020603] for further details.

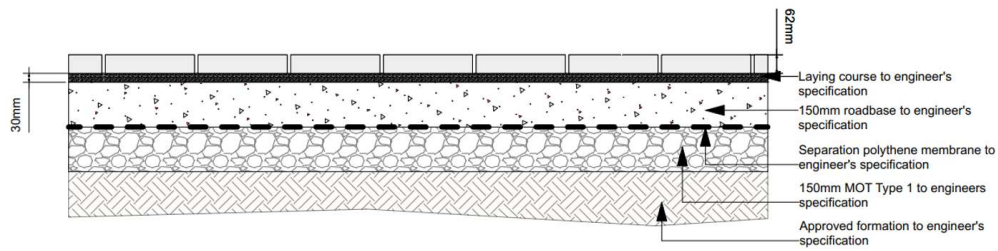
The temporary crossing point is to be formed immediately in front of the gate, and passage over the watermain is not permitted at other locations. This can easily be managed by the proximity of the adjacent solid hoardings at either side of the crossing point, and local signage.

Area 2

The 300mm watermain sits on the edge of the site boundary. Depth measurements taken at the time of the GPR survey put the watermain at between 0.9m – 1.33m deep. Development work in this area includes new public realm paving works, new drainage, and some landscaping. The planned drainage works and the planting of a new tree, is planned to be outside of the 3m easement.

The proposed new paving surface level follows the existing surface closely as we are required to tie the paving in at Dale Street, Blackburn Street, and the front entrance to the adjacent Bridge Tavern.

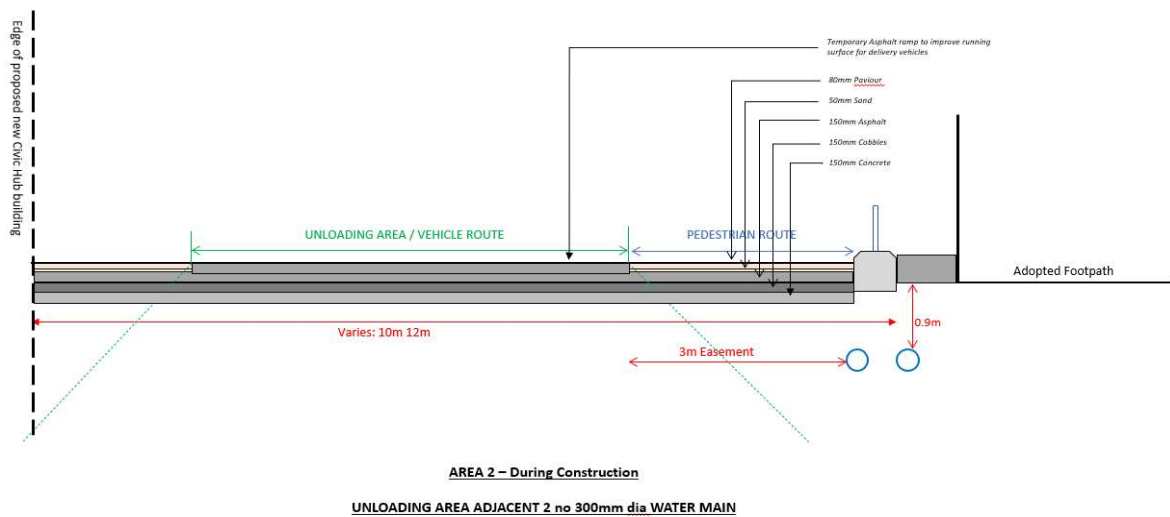
The paving works are limited to approx. 400mm construction depth (below existing level)



TYPICAL PAVEMENT CONSTRUCTION

Fig 4 Typical Pavement Construction

During the construction phase, the unloading area for delivery vehicles is adjacent the watermain, but outside of the 3m easement boundary. We have approximately 12m of width available so do not require access into the 3m zone. (refer to Fig 2 for location)



AREA 2 – During Construction

UNLOADING AREA ADJACENT 2 no 300mm dia WATER MAIN

Fig 5 – Cross section through loading area

Notwithstanding this, we have undertaken trial pits within the proposed unloading area, and found the subgrade to be of a very robust construction. There is currently block paving at the surface, this is underlain with a mix of concrete slabs, several layers of road construction and the original cobbled surface of the former Blackburn Street which used to run parallel with the watermain.

In addition, we propose to remove the block paving and replace with a new tarmac running surface (min 150mm tarmac base course) which will remain in place for the majority of the construction period as this will provide a clean surface for site traffic and unloading activities. This will only be removed prior to paving works in the proposed public realm space.



Top Left: 80mm Paviour over 200mm concrete, over 150mm asphalt, over gravelly sand clay

Top Right: 80mm Paviour, over 150mm asphalt, over 250mm concrete, over sandy gravelly clay

Bottom Left: 80mm paviour, over 150mm asphalt over 150mm cobble, Over 150mm concrete, over sandy gravelly clay.

Fig 6 Photos of excavations to demonstrate existing pavement construction

As a result of the depth of cover above the mains (0.9m – 1.33m), the robust pavement construction and the unloading area being outside of the easement zone, we feel that no further mitigation measures are required in this location.

Area 3

The 4" Cast Iron water main in this area is located below the existing footpath. Depth measurements undertaken during the GPR survey put this at approximately 1.54m deep.

The edge of the proposed building is between 7.4m and 10.5m from the pipe. The construction sequence for the new building is such that the craneage required will be sat within the building footprint, so >10m away from the watermain.

A 3m running strip will be prepared immediately adjacent the western edge of the building, and this has been included to allow safe access for cladding and building envelope installation from a scissor lift. The edge of this scissor lift zone will be between 4.4m – 7.5m from the edge of the watermain easement.

During the construction phase we will require to operate plant in this area for distribution of materials. This will consist of 17m telehandler and 3 tonne dumpers.

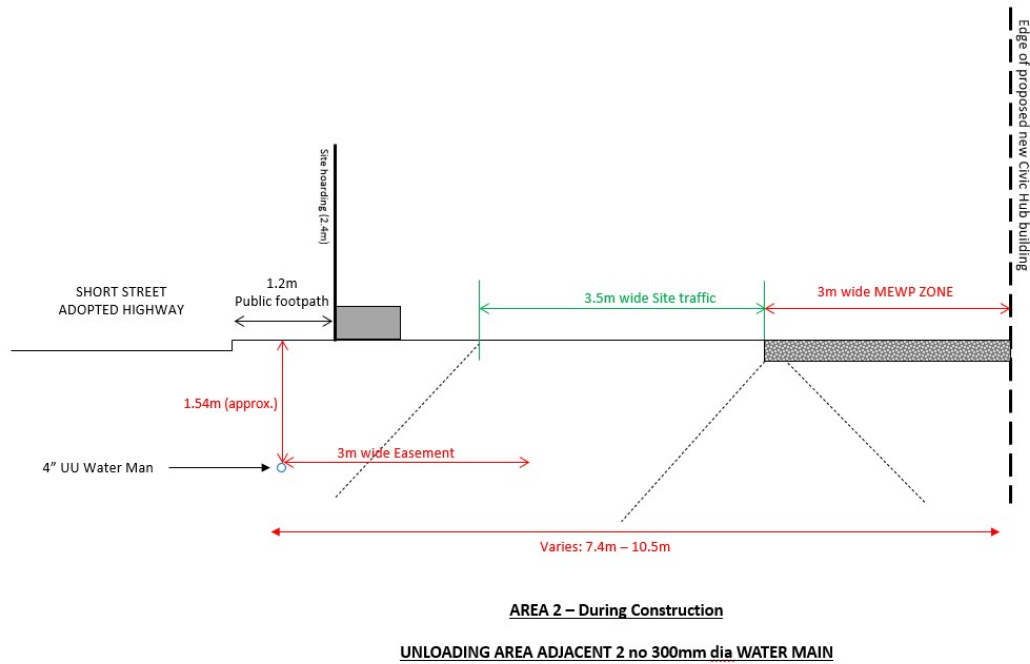


Fig 7 Cross Section through MEWP Zone and Site Traffic route

Other than that, the other work in this area is limited to public realm paving works. As in Area 2, the proposed new surface level follows the existing surface closely as we are required to tie the paving in to existing levels adjacent Short Street, and the Lidl Car Park.

The paving works are limited to approx. 400mm construction depth (below existing level) as shown on the paving section drawing overleaf.

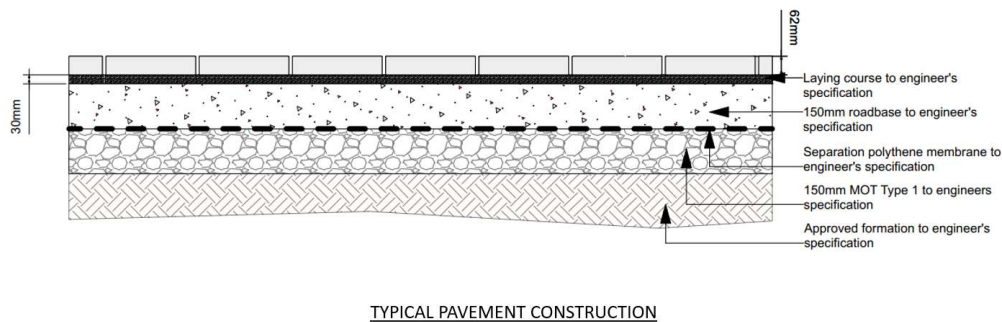


Fig 8 Typical Pavement Construction

In addition to the paving adjacent this watermain, there is some low-level landscaping proposed. Generally the planting is low level ornamental (Height 30 – 50cm)

ORNAMENTAL	Abbreviations	Species	Common Name	Height	Pot Size	Density	Flowering
	Am	<i>Alchemilla mollis</i>	Lady's mantle	30-40cm	3L	5 per m ²	
	Da	<i>Dryopteris affinis</i>	Scaly male fern	20-30cm	5L	3 per m ²	
	Gp	<i>Geranium pratense</i>	Meadow Cranesbill	30-40cm	3L	5 per m ²	
	Hf	<i>Heleborus foetidus</i>	Stinking hellebore	40-50cm	3L	3 per m ²	
	Hs	<i>Heuchera 'Spearmint'</i>	Heuchera	30-40cm	3L	4 per m ²	
	Lm	<i>Liriope muscari</i>	Lily turf	30-40cm	3L	5 per m ²	
	Ln	<i>Luzula nivea</i>	Snow-white wood-rush	40-50cm	3L	5 per m ²	
	Pa	<i>Persicaria affinis 'Darjeeling red'</i>	Knotweed	30-40cm	3L	5 per m ²	
	So	<i>Salvia officinalis 'Purpurascens'</i>	Purple sage	30-40cm	5L	4 per m ²	
	Sj	<i>Skimmia japonica 'White Globe'</i>	Skimmia	30-40cm	5L	3 per m ²	
	Vd	<i>Viburnum davidii</i>	David viburnum	30-40cm	5L	3 per m ²	

Fig 9 Ornamental Planting Schedule

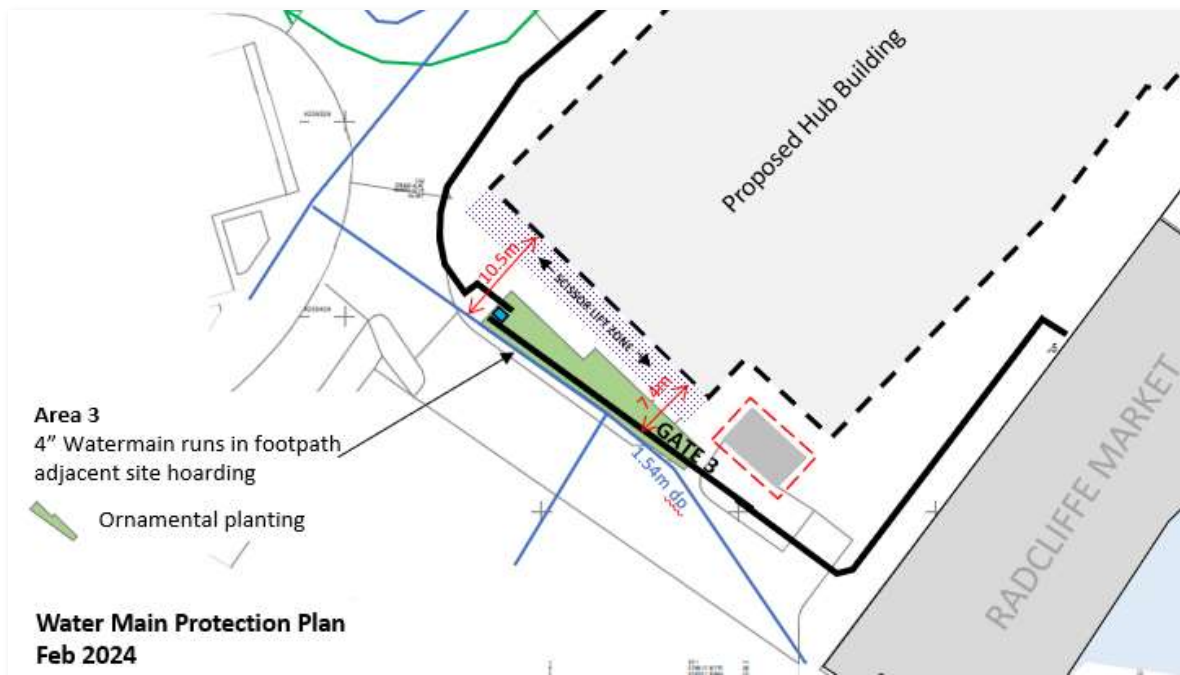


Fig 10 Extract from Site plan indicating area of low level ornamental planting over UU Watermain

Due to the arrangement of working areas and site traffic routes during the construction phase, together with the depth (~1.5m) and alignment of the water main at the edge of the site, we consider that no further mitigation measures are required in this location.

Also, due to the shallow construction zone for paving and low-level landscaping, in the finished condition, we also consider that no long term protection measures are required.

APPENDIX 1

Road Plate Service Protection Mat – VINCI Standard Solution

Drawing No V9N909-VCUK-XX-XX-DR-Y-020603_C01

Designed by Taylor Woodrow Infrastructure Limited

VINCI Technical Services Department