

Alberton House

Demolition Specification

Curtins Ref: ALBH-CUR-XX-XX-SP-S-00010

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Client Name: Bruntwood

Client Address: 30 St Mary's Parsonage, Manchester M3 2WJ

Site Address: Alberton House,

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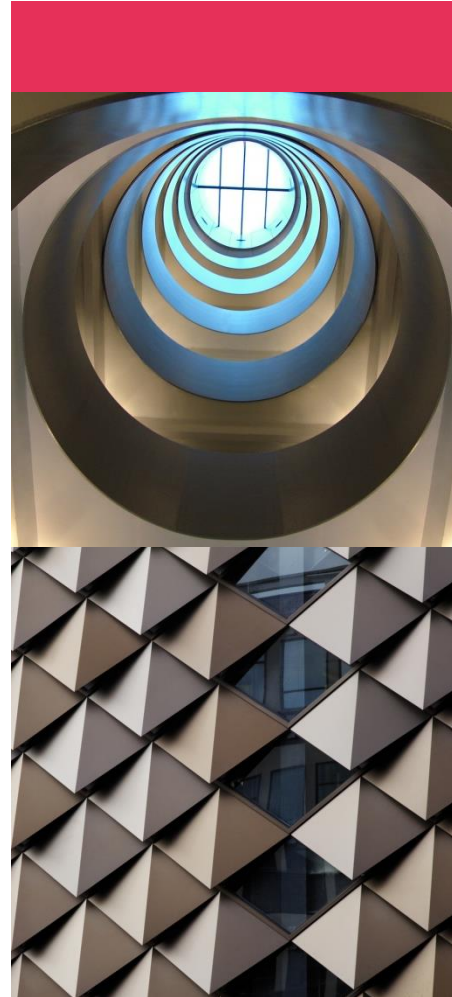




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1.0 Overview

This specification deals with the demolition, associated with the Alberton House building in the context of the requirements for, but not exclusive to, Site preparatory works, Surveys, Health and Safety, site management, treatment of hazardous materials and the finished condition of the site as defined on Curtins and the Architect's drawings and in the Definitions section of this specification.

This document shall be read in conjunction with the general conditions of contract and all associated tender documentation, specifications and drawings and shall not preclude the Contractor from any of their responsibilities defined therein. Reference should be made to the relevant Documents that form the "Building Contract".

These documents contain information specific to the Demolition works and shall be considered to accompany the performance criteria defined in the architectural and building services engineering specifications and drawings included within the tender documentation. The design shall also comply with all relevant Health & Safety requirements.

Preamble

The drawings and this Specification shall be regarded as the "Project Specification" for the defined extent of the works.

This specification forms part of the tender and contract documents for the Project as defined in Definitions below.

It is deemed that the Contractor has inspected this specification, is able to comply with it, and has allowed for all its requirements particularly in terms of cost, site constraints and programme

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Definitions

The Contractor has responsibility for the demolition works and that of any Sub-Contractor's employed as part of the works. As sole contractor acting on a site they will be considered as "Principal Contractor" engaged directly by the client.

The Works'

Name: Alberton House

Description: 13 storey Concrete frame building on the banks of the River Irwell, abutting a sister building Cardinal House (to remain) via a shared staircase (to stay).

Location: St Marys Parsonage

Reference	Company Details	Contact	Tel No
Client	Bruntwood	Vinny Rigby	07464 497733
Contract Administrator	Bruntwood		
Architect	EPR	Daniel Barker	+44 7958 305 584
Structural Engineer	Curtins Merchant Exchange 17-19 Whitworth St, M1 5WG	Kieran Geoghegan	07515064690
Contractor	Demolition Contractor TBC		

'Contractor'

The term "Contractor" shall refer to the company/firm responsible for the demolition and site clearance & temporary works of the works described on the drawings and in the letter of invitation to tender (if appropriate). For the purposes of this Phase they are deemed to be the Principal Contractor with the associated Health and Safety obligations.

'Design Drawings'

Curtins', EPR Architects and other designers' (where appropriate) drawings are the 'Design Drawings'. General dimensions, setting-out requirements, and any specific requirements will be defined on these drawings, sufficient to define the extent of the proposed works.

Any historic drawings pertinent to the structures that are defined within the proposed works will be provided but these should be treated with manner in which they are provided.



‘Subcontractors’	Other subcontractors responsible for design, detailing and construction of elements of the project. In particular, other subcontractors with whom the Steelwork Contractor must co-ordinate and liaise, both in terms of construction and design/detailing.
‘Other Designers’	Design team members other than the Engineer and Architect. Includes specialist sub-contractors, theatre designers, interior designers etc.

2.0 Contract Particulars

It is the responsibility of the Employer to provide appropriate information for the intended works. Section 2.1.1 outlines the information to be provided by the consultant team. The list is not exhaustive and reference should be made to the Design Drawings or information in the Project Specification.

Precedence

Where there is a conflict in specified requirements the Project Specification takes precedence over other documents.

2.1 Consultant Team Information

The following tables define the principal responsibilities and information to be provided by the Consultant Engineer, Architect and client associated with the demolition works

2.1.1 Design Responsibility Matrix – Information

Activity	MEP Engineer	Structural Engineer	Architect	Client
Site Location Plan			L	A
Planning boundary			L	
Site Access & Egress Strategy		L	A	
Existing Building Plans		A	A	L
Existing Site Information				L
Existing MEP Services Information	L		A	A
Proposed site plan showing finished levels and proposed finish		A	L	

L = Lead (coordinate), D= Design and A= Advise

The contractor must refer to both the Engineer's and the Architect's drawings and report any conflicts.

The contractor must co-ordinate dimensional and detail information from both the Architect's, Engineer's and specialist subcontractor drawings.

Overall setting-out is shown on the Architect's drawings. Other, detailed, setting-out is shown on the Engineer's drawings.

2.2 General Requirements

The Contractor shall take full responsibility for the specified works, and ensure they comply with the provisions outlined in this specification. The Contractor shall identify any conflicting information and bring this to the attention of the CA and advice sought prior to Contract award. Notwithstanding the above, the Contractor will be required to complete the following: -

2.3 Compliance with drawings and specification

The whole of the works encompassed by the Invitation to Tender including the buildings to be demolished together with all the related site clearance, protection of adjacent buildings and services both during the works and upon completion and site fencing shall be carried out strictly in accordance with the drawings provided by the Contract Administrator and with this Specification. All work shall be carried out in compliance with the British Standard Code of Practice BS6187 "Code of Practice for Demolition, (and where appropriate BS5609 "Safe Use of Explosives").

2.4 Form of contract and form of tender

The form of contract shall be as per the RLB contract documents.

The tender shall be submitted on the Form of Tender supplied and shall be an accurate fixed price lump sum based on the drawing(s) and specification(s) supplied with the tender documents. The Contractor shall indicate in their tender the sum of money he expects to realise by the sale of materials removed from the site. This shall be indicated as a credit towards the Employer for the value of materials arising from the work exceeding the Tender for demolition work, the difference between these amounts will be required to be paid to the Employer before the commencement of the work.

2.5 Site start

The Contractor shall state in their tender the period of time they require between receipt of order and commencement of demolition works together with the length of time the Contract shall take from commencement to completion. If so required by the Contract Administrator the Contractor shall submit for approval a detailed programme of the demolition works and date of commencement, including any lead-in period prior to Start On Site date. Also:

- We require a GA plan of welfare and site proposals, e.g. hoarding lines, access gates and path & road closures.
- The Contractor shall also state the length of time their tender is valid.

2.6 Inspection

The contractor shall visit the site to ascertain the nature and extent of the work involved before submitting their tender. The tender shall include information enabling the costs incidental to the demolition of the work to be accurately assessed.

Examples of such items to be included are:-

- a) Work involved in gaining access to the site e.g. widening of openings etc.
- b) Necessity for the removal of overhead wires.
- c) Details of any ramps required between changes of level.

Any points not so noted in the tender shall be deemed to be included in the Contractor's own tender figure.

Tendering contractors will be expected to visit the site to inspect site conditions and understand the works prior to returning a completed tender. They must also submit a detailed programme of demolition works identifying all key activities within the tender return, and all demolition is to be in accordance with BS6187:2011, Code Of Practice For Demolition.

2.7 Variations

The Client & Contract Administrator may, without invalidating the Contract, vary the works by increasing or decreasing the amount as they consider necessary for the completion of the Work. Such variations shall be measured and valued by the Contract Administrator in accordance with the conditions laid down in the National Federation of Demolition Contractors Limited Form of Direct Contract 2015 Edition. This will also need to be in accordance with the contract type selected by Contract Administrators RLB Ltd.

2.8 Mud, water supply and dust

Before leaving the site, all vehicles shall be hosed down and all mud removed from the tyres of vehicles. The Contractor will be responsible for ensuring that the surface to adjoining roads remain clean at all times during the Contract.

The Contractor is to arrange with the Local Water Authority for the provision of temporary standpipes near the areas being cleared and is to pay all charges for temporary water supplies and hoses.

Lorry loads of demolition material and rubbish are to be sprayed with water to keep down dust and each loading and pulling down operation is to be sprayed continuously.

2.9 Insurances

The Contractor shall, during the continuance of the Contract, effect and maintain in terms to be approved by the Contract Administrator (and shall cause any sub-contractor to effect and maintain) all insurances required as specified in the Standard Form of Building Contract.

2.10 CDM

The appointed contractor must submit detailed method statements and satisfy the Principal Designer on all Health and Safety aspects.

Nothing in this specification should be taken as an instruction to adopt working methods which contravene the CDM Regulations, and all Contractors/Sub-contractors etc are responsible for ensuring safe procedures which comply with the Regulations. Refer to issued PCI documents (Pre-Construction Information).

3.0 Design Standards and Bye Laws

The Contractor shall comply in all respects with local bye-laws and statutory requirements with all current legislation and should seek the appropriate approvals for demolition, either as part of a general building contract or as a separate, direct contract. The list is relevant to general approvals and does not include local byelaws and legislation applicable to particular site conditions (e.g. party wall rights), hazards and processes. The list not exhaustive and the contractor should complete further enquiries to discharge any planning conditions or restrictions.

- Planning (Listed Buildings and Conservation Areas) Act 1990. Extends to England and Wales Section 7: Control of works in respect of listed building.
- Section 74: Control of demolition in conservation areas.
- Planning and Compensation Act 1991. Extends to England, Wales and Scotland.
- Section 13: Demolition of buildings.
- Building Act 1984. Extends to England and Wales.
- Section 80 : Notice to local authority of intended demolition.
- Control of Pollution Act 1974. Extends to England, Wales and Scotland.
- Section 61: Prior consent for work on construction sites (Noise and Vibration).
- Highways Act 1980. Extends to England and Wales.
- Section 165: Dangerous land adjoining street.
- Section 167: Powers relating to retaining walls near streets.
- Section 169: Control of scaffolding on highways.
- Section 172: Hoardings to be set up during building etc
- See also full list in rear of BS 6187:2011.

Codes of Practice

- British Standards Institution
- BS 1722: 2006 - Fences
- BS 6187:2011 - Code of practice for demolition
- Health and Safety Executive Control of Asbestos Regulations 2012
- Approved Code of Practice L143: The control of asbestos at work.
- Any other standard code or specification mentioned in the body or preface of the above to be considered as part of this specification.

4.0 Proposed Works

4.1 Overview

The works are generally to demolish the existing Alberton House building down to basement level including the removal of the existing foundations. Refer to the Architects demolition plans for exact extent. The existing building structure is assumed to be an insitu RC frame with flat slabs and columns supporting the gravity loading and RC core and shear wall providing lateral stability.

The exact structural layout is unknown at this point and a soft strip will be necessary to understand the structural load paths and construction fully.

4.2 Site Description

The existing site is within Manchester city centre and has been extensively re-developed in the past with replacement buildings. Refer to APPENDIX C Historic information.

The site location is a business & commercial district situated near Salford Central & Victoria Stations. The new development seeks to provide Grade A office space, along with rooftop leisure space.

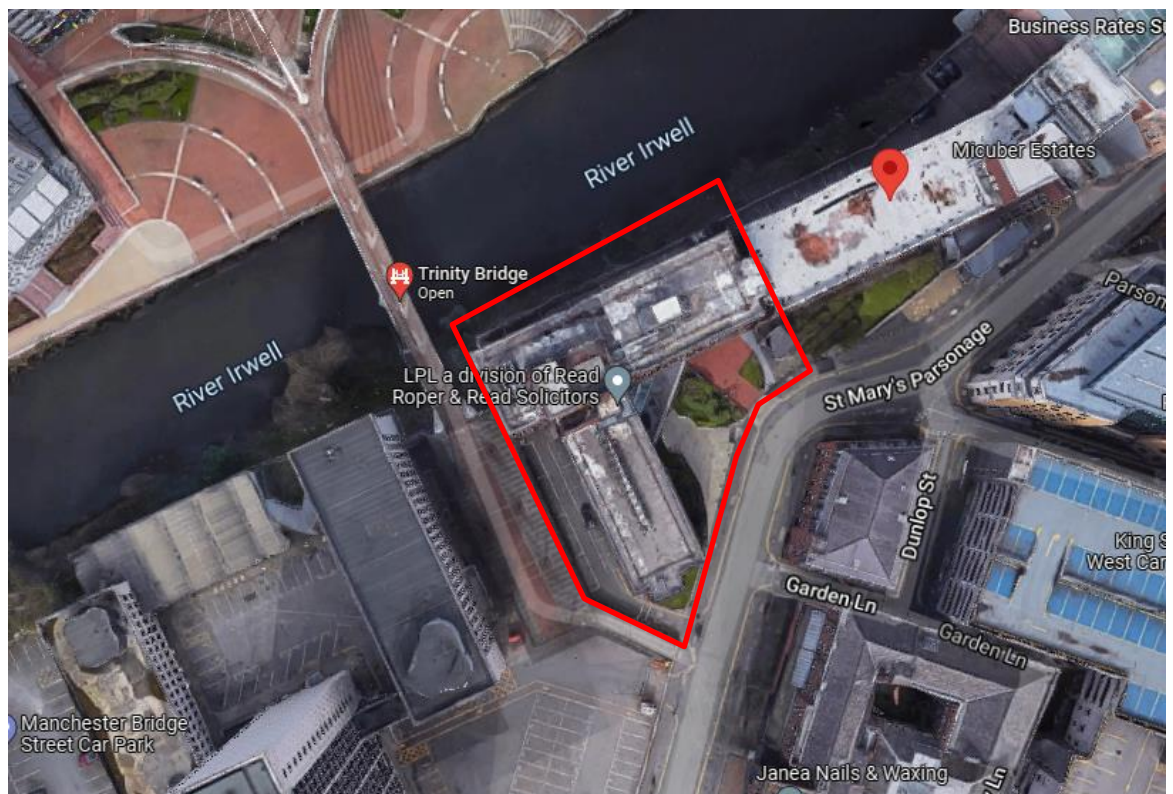


Figure 4-1 - Aerial view showing location of existing Alberton House (Google Maps)

Bounded by the river, and bridge public realm, the site is only accessible from St Marys Parsonage and essentially divided in to two distinct points for vehicular access

- Basement access through the Western ramp

- Ground floor vehicular access/ deliveries through a dropped kerb from Eastern side of the site.

The building is bordered by the River Irwell (Peel owned) to the North, St Mary's Parsonage to the SE, Trinity Footbridge Public realm Trinity Way to the West, and Cardinal House to the East. The building takes up most of the site, abutting the riverbank, cardinal house (shared staircase) and Trinity way public realm. Some of the building extends to the St Marys Parsonage boundary.

The ground floor of the site is relatively level due to the building entrance and concrete river overhang. The exception being the basement ramp which cuts below the Trinity way public realm levels.

4.2.1 Building Summary

The building dates from the early 1970's and is of insitu concrete construction. The building footprint is 'T' shaped on plan. The top of the T is 12 storeys in height and the Stem pf T is storeys.

There is a vehicle half basement to the Northern part of the building footprint, which is open sided to the river. This is accessed from a ramp to the Western boundary with the trinity way public realm.

There is a shared fire escape stairwell between Alberton House and Cardinal House which services both the buildings and will need to remain in use during demolition and construction works to serve Cardinal House occupants.

4.2.2 Extent of Demolition

The majority of Alberton House superstructure & substructure including river-side 12 storey portion & Southern 4-storey portion is to be demolished. **Figure 4-2** below shows a typical floor plan of the existing building highlighting the structure to be demolished for detailed demolition extents refer to architects' demolition drawings.

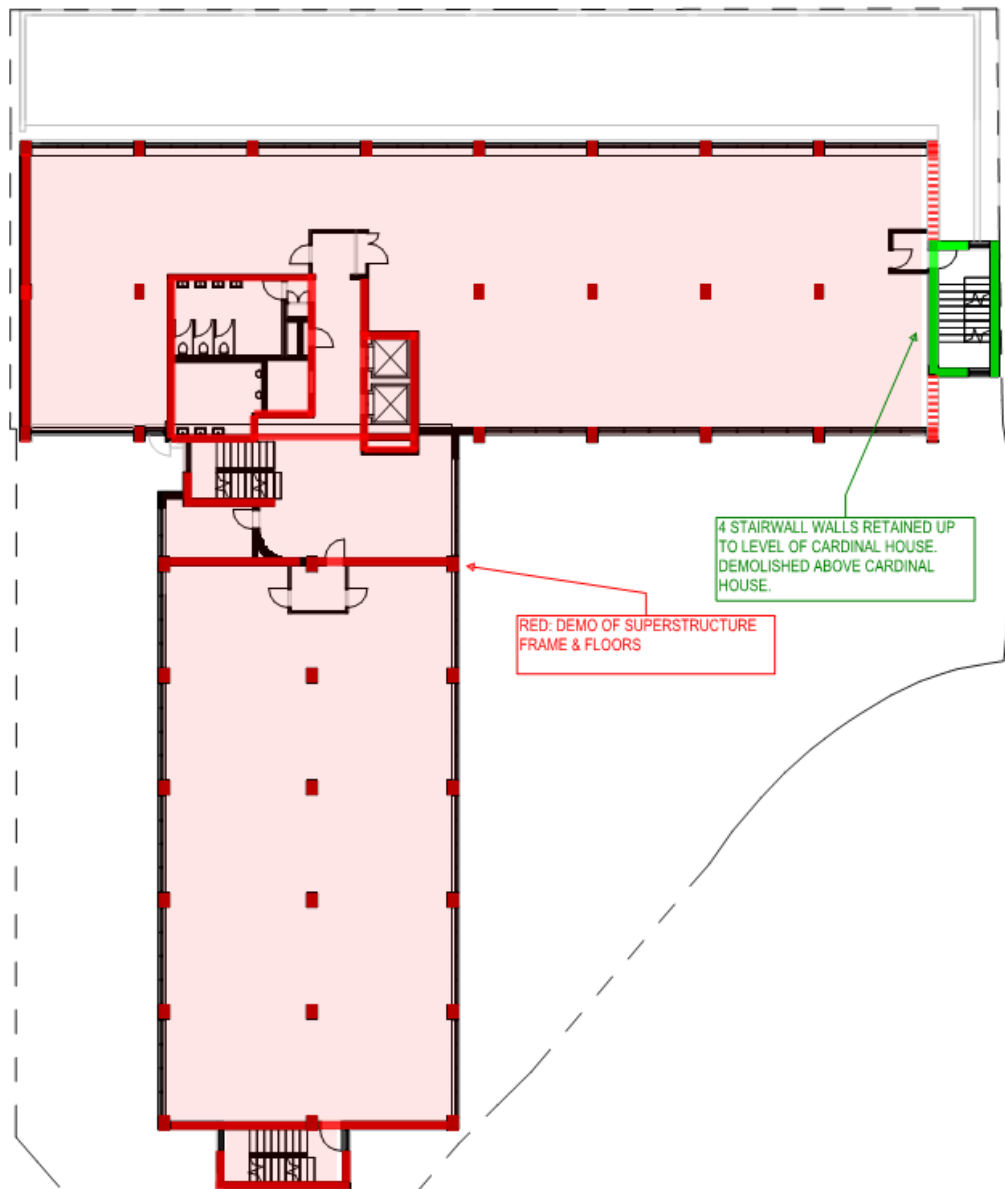


Figure 4-2 – Typical floor plan of existing building showing extent of demolition

Figure 4-4 below shows the Eastern shared staircase which is to be partially retained due to maintain the safe escape route from Cardinal House, which remains in use. Therefore, all levels of the stairwell below Existing level 10 to Cardinal Basement must remain in safe use and occupants protected during Alberton demolition / Construction phases.

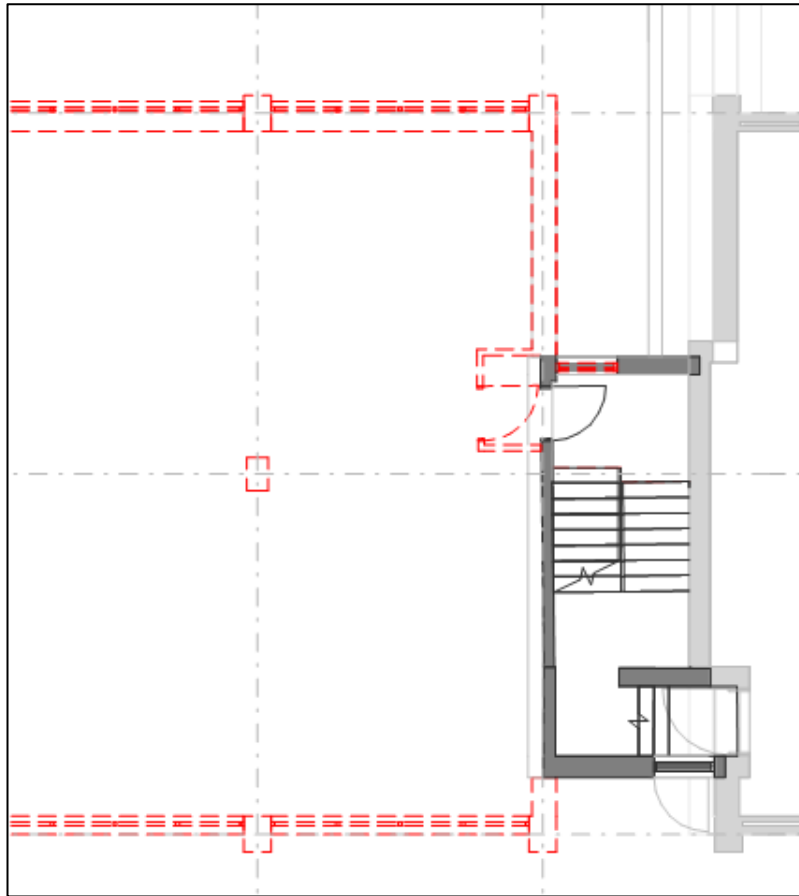


Figure 4-3 Typical Stairwell retention serving Cardinal offices

Figure 4.4 below shows the extent of walls / retaining walls in the Alberton Basement which are to be retained. In essence, the RC walls enclosing the shared staircase are to be retained except any non-structural (brick) coverings.

Figure 4.5 below shows ground floor escape routes that must be retained in safe service: A southern escape from Cardinal Basement and a Northern escape from Ground & upper floors of Cardinal.

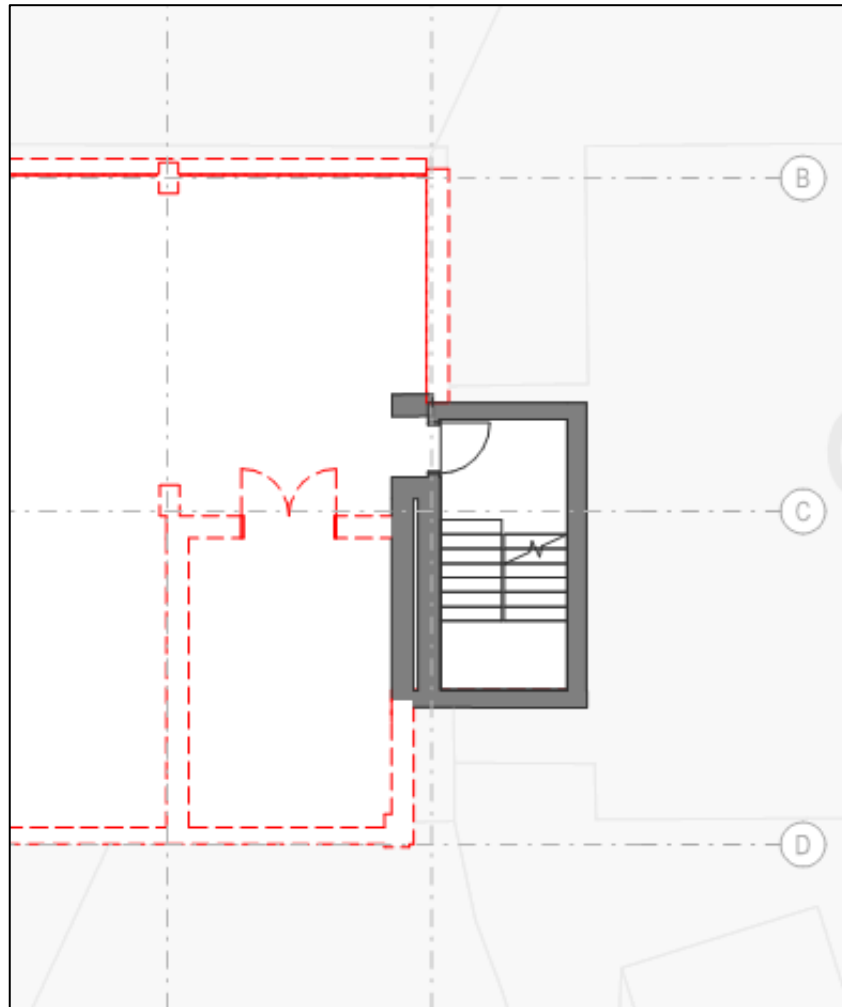


Figure 4-4 – Shared fire escape staircase Retained- Basement (flights serve Alberton House basement only)

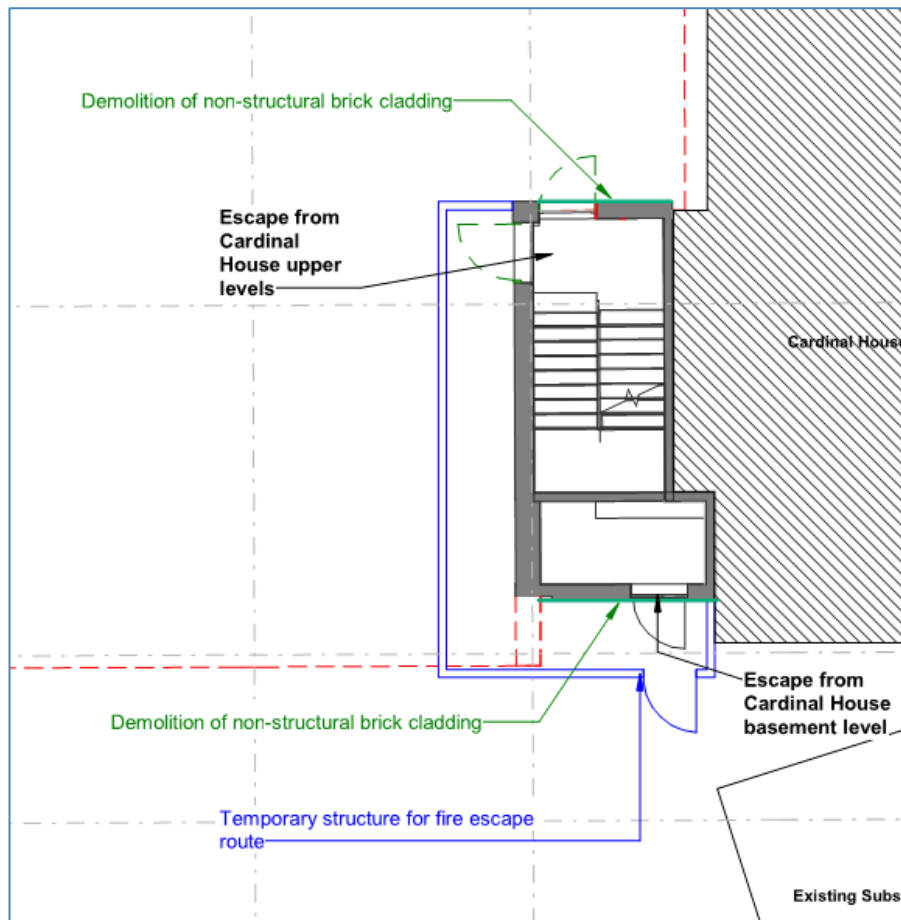
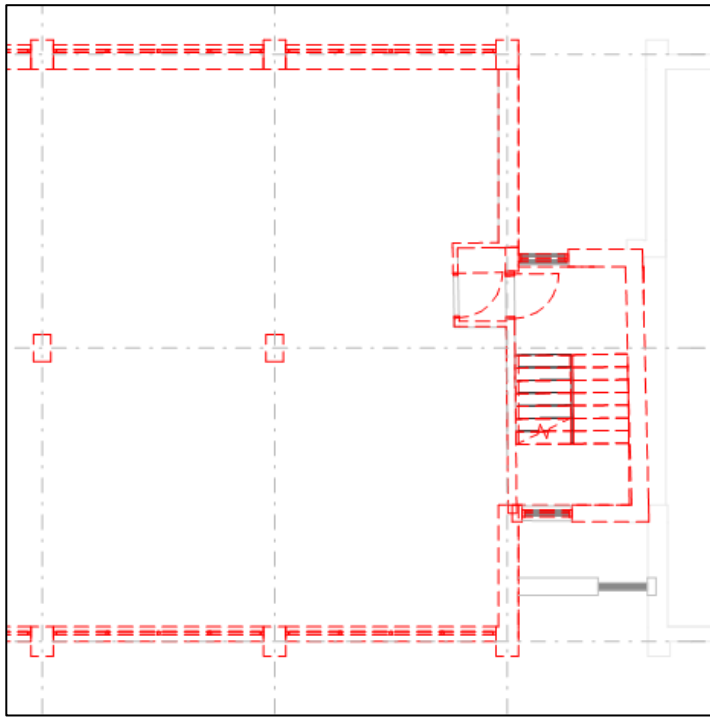


Figure 4-5 – Ground floor level Architect demo GA showing stairwell retention to provide safe escapes from Cardinal basement & Above-Ground levels (two different exits).

Above Existing Alberton Level 10; Proposed Level 6.5 (above which Cardinal house has terminated) it is proposed to demolish the stairwell shaft fully. This is because beyond Level 9.5 (Cardinal's flat Roof level), the stairwell only serves the to-be demolished original Alberton House, so is no longer required (and the stairwell lateral stability is lost). See temporary works requirements relating to temporary lateral stability issues surrounding retained lower half of stairwell.



Typical complete stairwell demo above Existing Level 10.

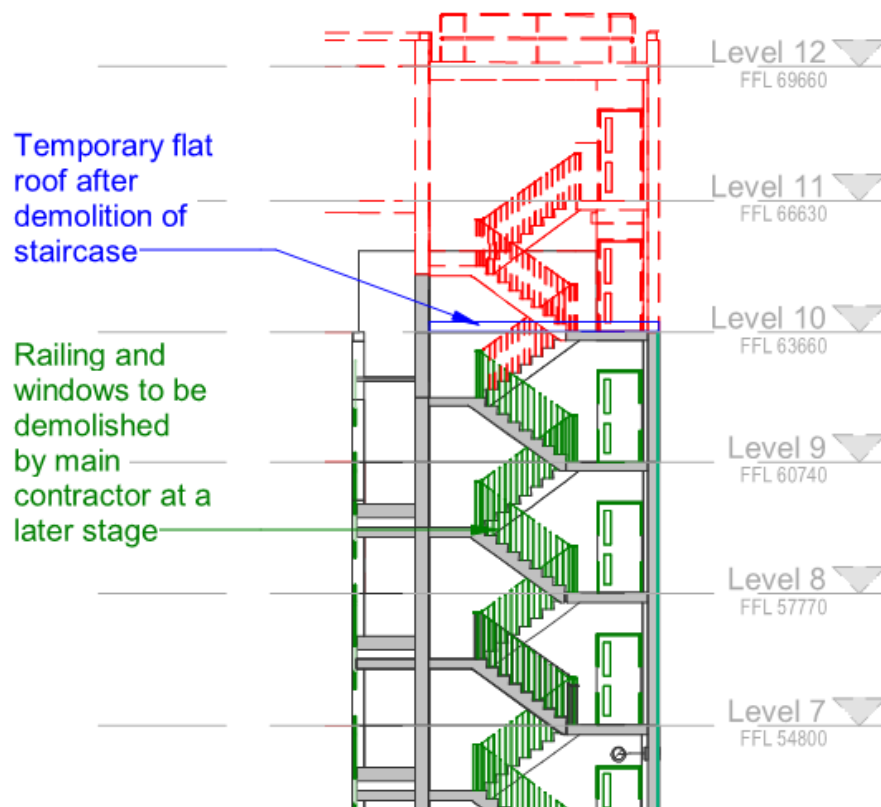


Figure 4-6 Architect's stairwell section showing demolition above existing level 10 and temporary waterproofing (roof) at Level 10 prior to new building.

For the indicative site boundary, refer to information contained in APPENDIX A DRAWINGS. Reference should be made to the Client's Pre-Tender Health and Safety Information for further details.

This includes all superstructure and excavatable sub-structure elements as well as other residual demolition material. All demolition material removed from site. The site is to be left in a clean and safe condition with the demolished areas reinstated to existing site levels once completed.

4.3 Building Description.

4.3.1 Superstructure

There is no archived as-built information relating to the existing building identified for demolition.

Based on visual inspection and survey drawings, the superstructure comprises insitu reinforced concrete slabs spanning between rectangular reinforced concrete columns that run longitudinally the length of the building, at the corridor and the external elevations. The ground floor slab which spans above the basement is supported from additional RC down stand beams, which also continue to the ground floor overhang over the river.

The flat roof structures will be a similar RC flat slab form of construction as the occupied floors. Generally, a flat roof asphalt makeup is constructed off a flat slab.

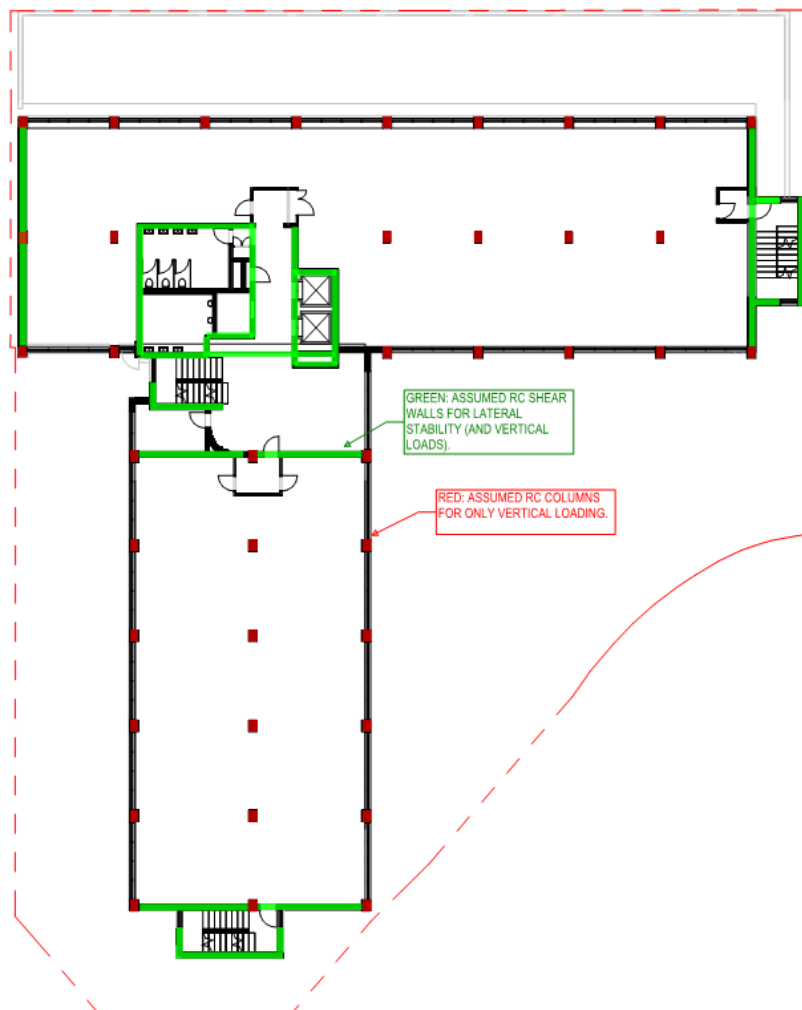


Figure 4-7 – Typical superstructure layout with lateral stability elements highlighted in green

4.3.2 Sub-Structure

There is no archive as-built information available relating to the existing building foundations and initial intrusive investigations during the phase 2 SI were inconclusive. Based on construction era, building height and riverside location we assume the existing foundations to be either RC spread foundations or piled with pile caps and ground beams.

Below ground level is a partial basement to only the Northern half of the building (and opening out to the river on the North side / Western alleyway). The basement is formed by insitu RC retaining walls (shown Purple below) which also support the building columns above (Red).

Figure 4-8 below shows the basement layout and highlights anticipated locations of retaining walls which form the existing basement. There is also a retaining wall towards the riverbank edge of the building as shown in **Figure 4-9** below to extend the foundation level down to a lower bearing level and protect the riverbank from lateral surcharges.

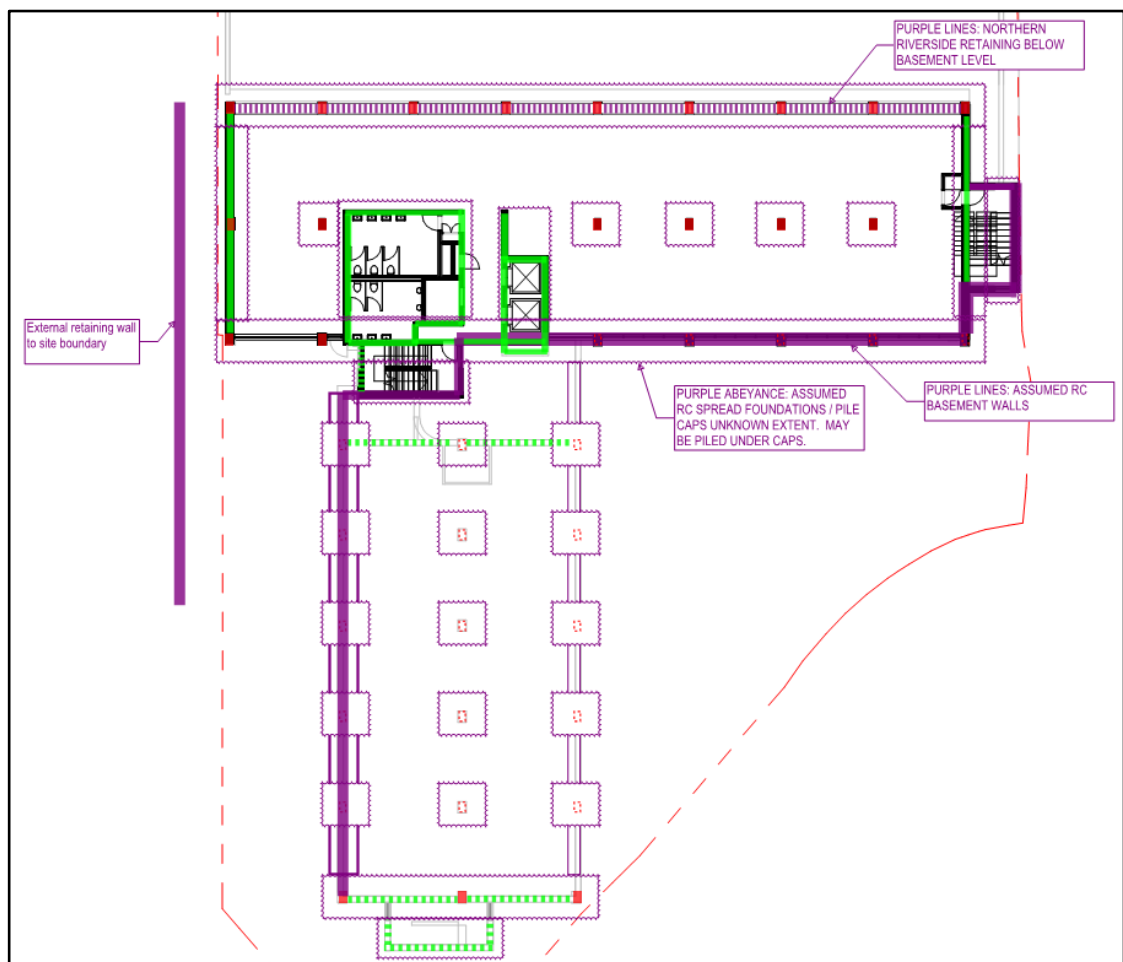


Figure 4-8 – Basement layout showing retaining wall locations

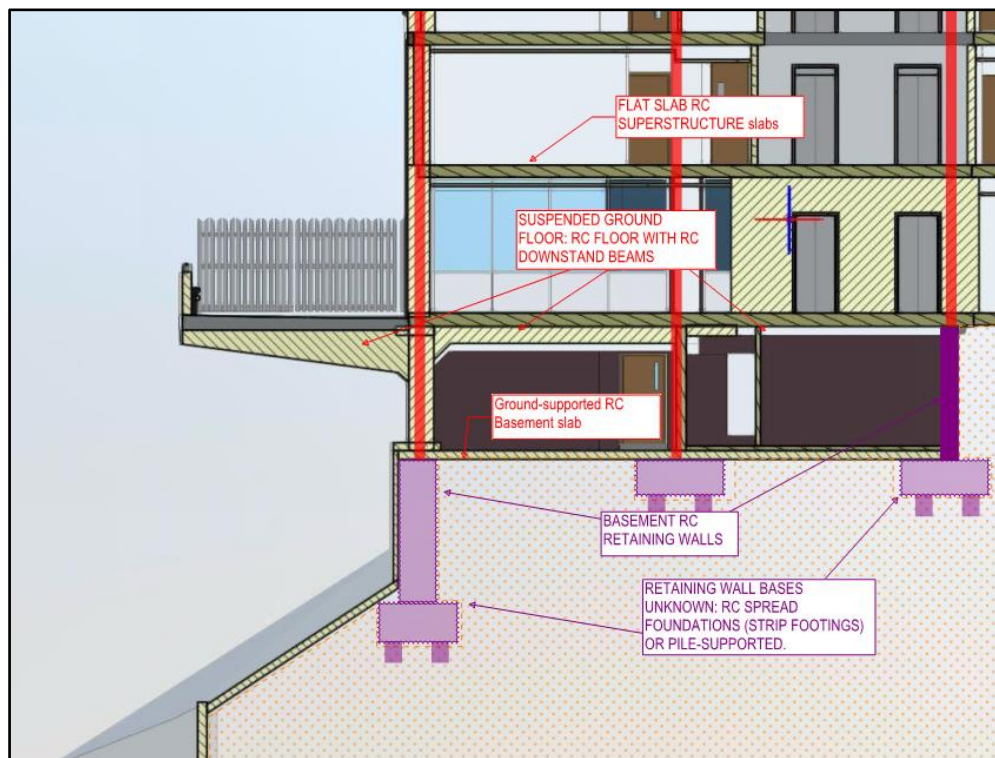


Figure 4-9 – Typical anticipated existing substructure section

4.3.3 Lateral Stability

There is no archive information defining how the existing buildings are stabilised under lateral loadings but from site observation, it appears that stability is achieved through the various reinforced concrete walls located within the stair cores and opaque wing walls acting as shear walls (see **Figure 4-7**). These forces are in turn transferred to the underlying foundations. It is recommended lateral stability elements are removed later than adjacent columns/ floor slabs so that temporary lateral stability to the storey is maintained. A temporary works design will be required for this demolition sequencing.

Retained staircase

The shared staircase adjoins Cardinal House to serve it, but is laterally isolated from Cardinal house and relies upon Alberton House for its lateral stability (see structural inspection report in Appendix F). **Therefore, demolition of Alberton house will temporarily remove lateral stability from the stairwell. Additional temporary works will be required to be added to provide temporary lateral stability until the new Alberton building is constructed. Overall responsibility for stairwell temporary stability works is for the demolition contractor.**

Once replacement Alberton is completed, it will be re-connected to the retained concrete staircase to provide it lateral stability in the permanent case (i.e. to reinstate

the original arrangement). Any temporary tying to Cardinal House should be removed to ensure no lateral load is transferred between the 2 buildings.

Note the stairwell height is being reduced by Alberton demolition (approximately to the Existing level 09; Proposed level 6.5). Therefore, the height of the stairwell which is to be demolished may not require temporary lateral stability, but the retained portion of the staircase will need the additional temporary stability. Temporary tying to Cardinal house should be assumed not possible, due to party wall ownership/ structural issues.

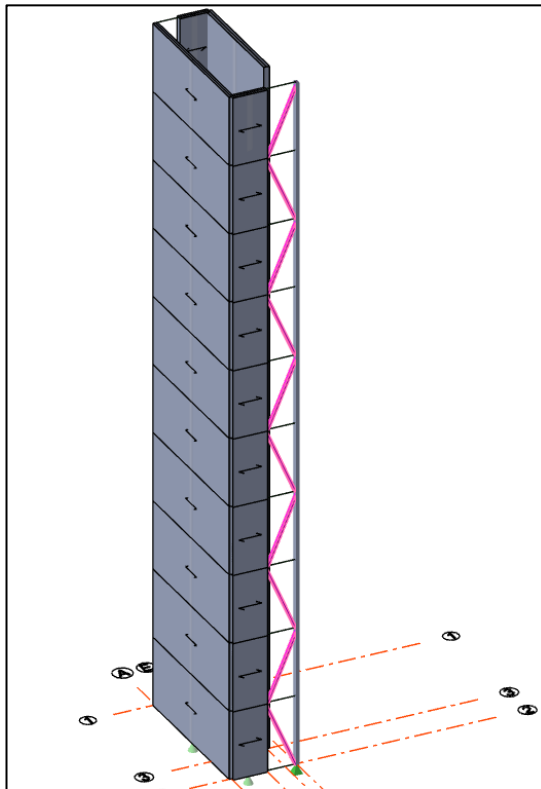


Figure 4-10 Typical suggested temporary works option for retained stairwell by specialist

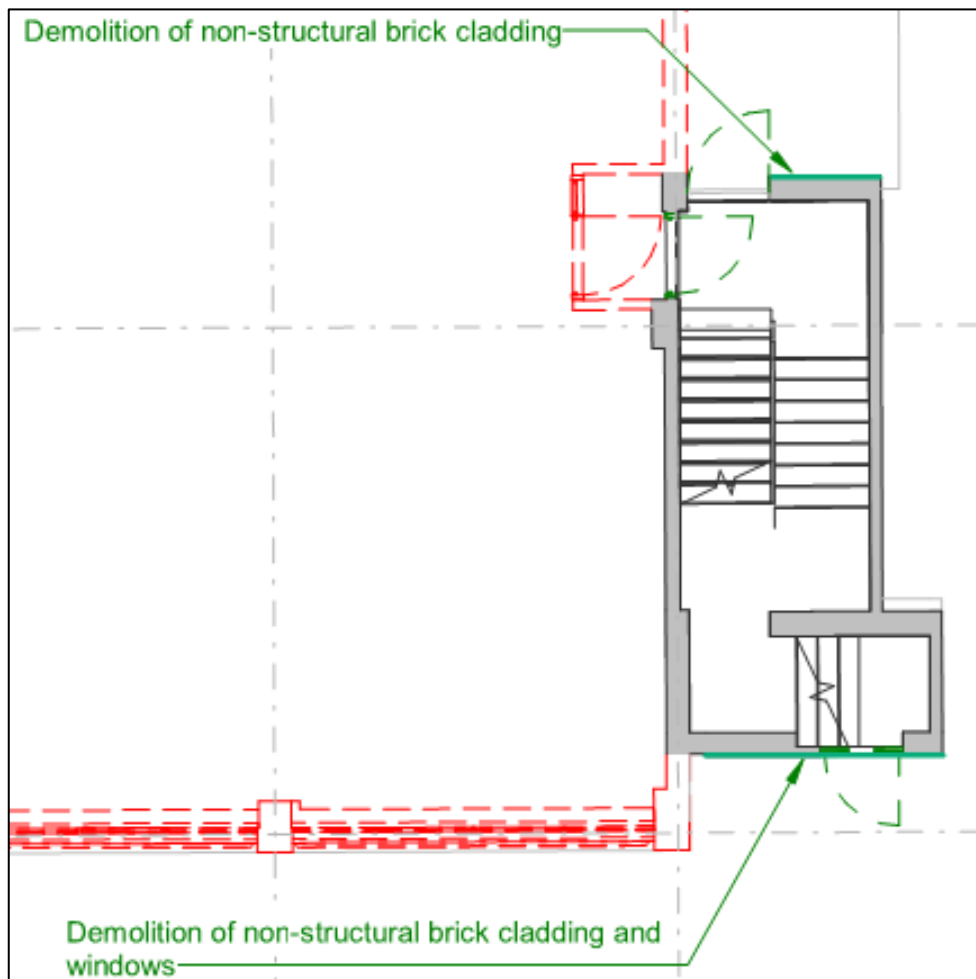
Figure above shows suggested typical additional temporary lateral stability that may be required if existing stairwell is deemed by temporary works designed as requiring additional lateral support. This may involve additional steel diagonal bracing & steel UC columns face-fixed to existing concrete walls/columns (column only 150mm width): To both North & South ends which have window/ door openings. Note temporary bracing needs to be coordinated around Architect's construction-phase stairwell strategy, such as Ground floor exits.

Protected temporary access routing is also required to be provided by the Contractor to maintain these exits in safe use routes during demolition. See Architect demolition plans for details.

Further intrusive investigation will be required to confirm make-up of inferred existing stairwell concrete frame structure.

4.3.4 Stairwell Facades

Facades are composed of glazing & non-structural brick & block cladding, which is supported from every flat slab floor at the edge (out leaf by hidden metal brackets / concrete nibs). Therefore, to-be removed brickwork may be all be removed prior to the structural RC frame if it is preferable. See structural inspection report for details & architect's demolition elevations/plans. It is currently proposed by the Architect to remove the external brick leaf of the retained stairwell to tie into final proposals. However this should have no adverse effects on temporary use as an escape route nor temporary stability of the stairwell (Wind resistance; weather tightness. Therefore works should be sequenced in a manor that ensures this.



4.4 Demolition/ Site Constraints & Risks

4.4.1 Adjacent Building & Staircase

Use of adjoining Cardinal House is to be maintained throughout the demolition works contract and working practices should respect this. The escape stairwell and surrounding site (Trinity Way public realm, St Mary's Parsonage Road, River Irwell) is to be kept in operation during the demolition works and as such, safe access is to be maintained at all times with suitable hoarding / protective measures if required. The contractor's attention is drawn to the maintenance of this segregation, together with the safe management of demolition vehicle movements to and from the site (presumably St Marys Parsonage Road).

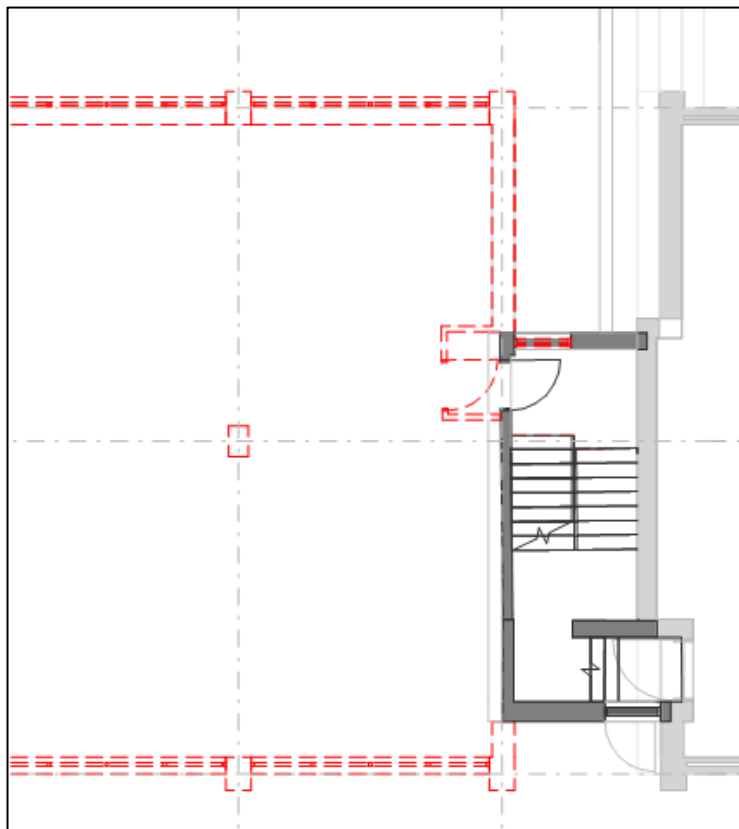


Figure 4-11 Ground floor showing 2 Escape doors from Cardinal (South and North)

4.4.2 River-side working

The Irwell riverbank is a steep slope posing risks & constraints relating to demolition and ground working. A methodology will need to be developed for safe demolition of superstructure and foundation grubbing- Which may adversely impact riverbank stability subject to type of existing foundations and working levels/ loads.

- See Curtins Site Constraints drawing for existing site section illustrating river bank adjacency.

- See Curtins CDM risk assessment for systematic identification of CDM risks associated to demolition phase. Demolition contractor is expected to set up their own risk register for the Method Statement.
- See Curtins Phase I Ground Risk Assessment (Desktop Study) for issues relating to Existing ground. A Phase II SI is pending.

4.4.3 Site Access & Services beyond Red line

There are several existing buried services, and drainage runs along these areas outside the site boundary. The demolition contractors proposed deconstruction methodology and equipment should be coordinated to avoid disruption of these.

It is anticipated that access and egress to the demolition site will be from the Southern Boundary only.

4.4.1 Existing Foundation Demolition

There are no archive drawings showing the existing foundation type, construction, or details. If the existing foundations are RC pads, core bases and strips footings then the foundations are to be removed completely. If the foundations are RC pile caps, core bases and ground beams on piles then the RC pile caps, core bases and ground beams are to be removed completely and the piles are to be cropped to a AOD of 25.000 (TBC) and the positions are to be surveyed recording the location and size of piles.

4.4.2 Working Platform Level

The proposed new basement layout comprises of a contig pile wall around the perimeter of the footprint of the building. The contig pile wall along the Northern elevation of the basement is set at a lower level to the remaining sides of the proposed building footprint. In addition to this the structure which extends into the basement will have foundations set below the new basement level. The proposed piling platform level requirements will depend on the main contractors piling sequence.

- Co-ordination between main contractor and demo contractor to set platform levels
- Warranties if platform level laid by demo contractor

5.0 Demolition Scope

This document should be read in conjunction with the prelim documents and all other applicable contract documents with any discrepancies to be brought to the attention of the Contract Administrator and Client.

General responsibilities of the demolition contractor are noted within the Curtins Consulting Demolition Specification contained in Section 6 and 7

All earthworks and filling where required will be undertaken in accordance with the Curtins Consulting Earthworks and Filling Specification contained in Section 8. This is to be carried out by the contractor as part of the contract.

5.1 Site Management

The contractor must be mindful and account for the following:

- Prevention of nuisance to the public and neighbouring properties and businesses.
- Working hours in accordance with Local Authority requirements.
- Dust suppression. The Contractor's proposal for dust suppression to be submitted to the design team for approval at least 1 week prior to start on site.
- Vibration.
- Noise.
- Safe and co coordinated stockpiling of materials.
- Noxious odours.
- Licensed waste disposal.
- Fire prevention.

The contractor must also note the position of the site relative to the surrounding buildings and the complexities of the site layout which is shown APPENDIX A.

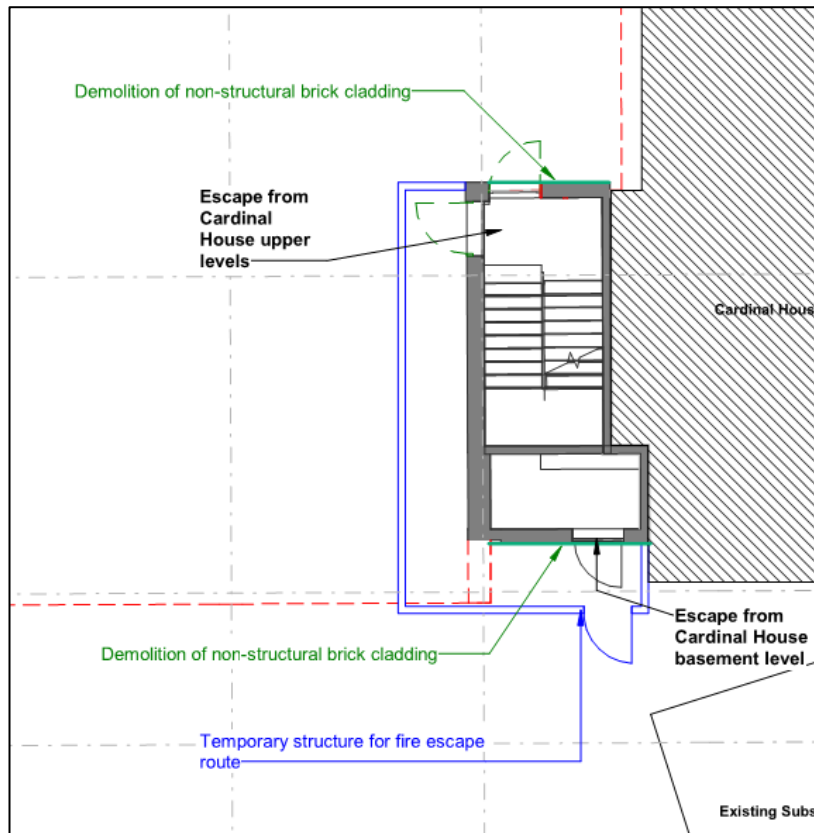
The contractor must liaise with the relevant authorities for access prior to commencement of any demolition works.

5.2 Access and Egress

A traffic management plan must be submitted, clearly identifying how the works will be accessed for the demolition contract duration. The demolition contractor will take possession of the whole site for the duration of the works and the site boundaries must be maintained adequately for the whole duration of the works.

The contractor must establish safe access and egress for staff and visitors throughout the site during the entire contract period.

Protected temporary access routing is also required to be provided by the Contractor to maintain these exits in safe use routes during demolition. See Architect demolition plans for details.



5.3 Drains and Services

Prior to site set-up, the contractor should complete a drainage survey prior to demolition, to include the retained drains identified in APPENDIX A. The contractor should complete a survey of the same drains upon completion to validate their condition after completion of the demolition works. Any drains that are recorded damaged should be brought to the attention of the CA.

Locate and disconnect all disused drain connections and seal within the site to the approval of the engineer. Refer to APPENDIX A for the approximate extent of the existing drainage on site in the areas of proposed demolition.

Record the location of each service termination at the boundary of the site and include this information within the Health and Safety File.

5.3.1 Drains in use:

Protect drains, manholes, inspection chambers, gullies, vent pipes, and fittings still in use to ensure that they remain free of debris at all times. See topographical drawing in that shows the existing drains surrounding the building.

Make good extent of any damage arising from the demolition works.

Build up chambers as necessary and adjust covers to finished ground levels, leave clean and in working order.

All drains that are to be retained are to have a CCTV survey undertaken post demolition and any damage that occurs during the demolition period is to be repaired at the contractor's expense. The CCTV report/DVD are to be provided to the engineer/client upon completion.

All finishes to the external areas within the site boundary such as yard areas, slabs, paving and roads are to be removed as required in accordance with Landscape Drawing.

5.3.2 Services

All service disconnections will be undertaken before commencement of the contract and statutory consents will not be required.

Before starting demolition, the contractor is to ensure that the appropriate disconnections have been completed – Reference should be made to the Pre-Tender Health and Safety Information and if in doubt the Principal Designer. The position of each service termination is to be recorded on a drawing to be included in the project Health and Safety File.

5.4 Notifications

A summary of the key demolition works are described below:

- Notify client/ Contract Administrator of the intention to commence demolition and clearance of the site and submit all appropriate notices.
- Liaise with relevant bodies in relation to the access to the surrounding roads to ensure safe access and egress of the site.
- Secure site boundaries and complete all necessary service disconnections.
- Undertake a joint schedule of condition with the contractor prior to site setup. This shall include the wider site area and the properties adjacent to the site before commencement.
- The contractor is to agree the condition of the public highways associated street furniture.
- Confirm methods of demolition and serve appropriate notices to the HSE for all asbestos related works
- Removal of asbestos containing materials under controlled conditions by licensed specialist. The Contractor is to inspect the buildings and site and ensure that all asbestos containing materials have been removed completely and properly prior to demolition works commencing. Any materials found to be remaining are to be retrospectively removed by the specialist at their own cost prior to demolition commencing.
- The contractor is to serve appropriate notices to the HSE for all asbestos related works

5.5 Demolition

All buildings identified in Appendix A (Site Plans) & D (Architect Demo Plans) to be demolished, taking due consideration for the type of construction material used in the existing construction

- The contractor will consider the need and provide for any temporary works to facilitate the safe execution of the works.
- The contractor is to ensure the site boundary and any adjacent structures outside the boundary are not undermined while demolishing or excavating material on site.
- All raised building slabs, ramps, retaining walls to be removed.
- All tanks above and below ground to be decommissioned, with the appropriate notifications and application to the CLO, and removed from site and disposed of.

5.5.1 Existing Foundations

The demolition is to be undertaken down to a level to ensure removal of all foundation elements. In addition, a minimum of 1m depth of ground below the existing external level or below existing ground floor SSL, whichever is the lower, must be turned over.

- Any buried structures that are uncovered or project into the 1m clearance zone must be excavated, in their entirety, to the base of the buried obstruction, unless written consent is given by the Contract Administrator for it to remain. If a structure is to remain, it must be surveyed to define the extent on plan and recorded on the site topographical survey plan capturing the level to its base and depth below the existing surface. All relic structures uncovered as part of the excavations will be recorded by the Contractor and a copy of the drawing in DWG format provided as part of the site handover at completion
- All backfill material shall be placed in accordance with the earthworks and filling specification included in this document.
- Changes in slab level are to have 1:2 slopes formed to prevent retaining conditions and ensure that no hazardous steps are left on the site.
- The site must be left in a clean and tidy condition at handover, ensuring that all boundaries are secure and any capping requirements, defined by statutory planning conditions, are in place.
- If not identified or directed, Contractor to leave site to be left at a level matching current external ground level or as directed by the CA.

5.6 Demolition Materials

Demolition material is to be removed from site at the contractor's expense. All waste transfer notes for materials removed from the site must be retained and 1 copy provided to the client for record purposes.

5.6.1 Contamination

Areas of potentially contaminated arisings must be isolated and stockpiled separately from clean material. Contaminated material is to be tested by the Contractor, as directed by the Engineer. If during the demolition works unusual visual and or olfactory evidence of previously unrecorded contamination or buried structures are observed, the Demolition Contractor shall inform the Contract Administrator immediately. The Contract Administrator shall decide upon the chemical testing suite at the time of sampling after having reviewed the materials in question/give instruction as to the treatment/removal of the substructures.

All credit items such as steel frames, fixtures and fittings to go to the contractor.

5.6.2 Demolition Arisings

All demolition material removed from the site must go to suitably licensed tips or for legitimate recycling. All waste transfer notes for materials removed from site must be retained and 1 copy provided to the client for record purposes. The contractor is to undertake a waste acceptance criteria (WAC) test and an asbestos test on all spoil removed from site arising from excavation/demolition at a rate of 1 sample per 500m³. This does not include building demolition material.

The demolition contractor must remove all unsuitable material from site, including all waste skips, mobile cabins etc. This should be carried out strictly in accordance with all relevant legislation and guidance.

5.7 Vibration Monitoring

The proposed demolition work will require the contractor to provide a method statement for vibration monitoring. The vibration monitoring performance requirements will be in accordance with the levels set down in BS5228 Pt. 1 and 2.

The purpose of the vibration monitoring is to ensure that any levels of vibration do not exceed threshold levels defined in the relevant British Standards that could be considered to be excessive or contribute to structural damage of third party property. The choice of limits on vibration to be measured at the site boundaries as a consequence of the construction should not exceed the threshold of 7.5mm/sec.

Monitoring must be undertaken on a continuous basis. The vibration monitors will be set up adjacent to all demolition and crushing work areas, and enough should be provided to ensure this, and will record peak particle velocity.

Control limits for vibration is therefore proposed as follows – 7.5mm/sec during all work activities.

Monitoring works must be undertaken by suitably qualified/accredited persons.

Vibration data/detailed logs need to be kept for the duration of the works and a weekly report prepared confirming the results of the monitoring.

In the event of measurements recorded exceeding the foregoing control limit, the carrying out of work activities on-going at the time shall be suspended pending review.

If the contractor is unclear with any statements made in this specification, clarification should be sought from the engineer.

5.8 Records

At the end of the contract period the Contractor is to provide all relevant documents to complete the Health and Safety file, including but not limited to :-

- Photographic and daily record sheets
- Records of statutory approvals / certificates etc....
- Waste disposal receipts / Tank disposal certification
- WAC testing
- Cut and Fill volumetric analysis – if appropriate
- CBR / Plate Bearing or Geo Testing
- As built Topographical survey
- Residual relic structures survey
- Monitoring results

Allowance should be made for two paper copies and two electronic PDF copies of the validation handover document.

6.0 Demolition Responsibilities

6.1 Method of demolition

Before commencement of the work the Contractor shall submit to the Contract Administrator their proposals for the method and sequence of demolition including details of temporary works and shoring. Demolition shall not be started on any section of the Contract until the Engineer's approval has been given to the Contractor's proposals for that section.

6.2 Incidental shoring, scaffolding and screens

The Contractor shall be fully responsible for the cost, design and safety of all shoring and scaffolding incidental to the demolition works and for making good all work disturbed by such shoring and scaffolding which shall be deemed to be included in their tender.

The Contractor shall be fully responsible for the cost, design and safety of all protective screens that may be required to prevent damage, nuisance and disturbance to adjoining properties, public highways, persons or passing traffic.

The Contractor will be held responsible for any damage occurring thereto, however caused, and will be charged for their necessary repair.

6.3 Special shoring

All shoring shall be designed by the Contractor.

The Contractor is reminded of the Health and Safety CDM Principal Designer's duty to ensure that the temporary works designer complies with Regulations 13(a) and (b). This duty will be limited to those temporary works which are specifically designed and, in particular, impinge on the permanent structure. The information shall include an analysis of the hazards and risks associated with the design and method of construction.

6.4 Insecure work

During the demolition works, no wall, part of the structure or site shall be left in a dangerous or insecure condition at any time.

6.5 Public footpaths and pavement crossings

The Contractor shall keep all public footpaths adjoining the site available at all times for use by the public and the stacking of timber or other materials thereon is forbidden.

No mechanical plant or vehicles shall be permitted to cross a paved public footpath unless there is a permanent footway crossing in existence or unless a temporary footway crossing has been constructed. The footway crossing shall be the only point at which mechanical plant or vehicles shall enter the site. A joint site inspection between the Contractor and Contract Administrator shall occur to record on photographs the condition of pavements and surrounding areas. These shall be used as a record in assessing the extent of making good by the Contractor upon completion.

6.6 Fires on site

The disposal of materials and rubbish by burning on site will not be permitted under any circumstances whatever and no fires will be permitted on site without prior permission from Local Authority.

6.7 Watching and lighting

The Contractor shall maintain at their own cost all lights, guards, fencing and watching necessitated by the works.

6.8 Avoidance of nuisance and protection of members of the public and vehicular traffic

The demolition of the property is to be carried out in such a manner as to cause as little inconvenience to adjoining property owners and/or the public as possible, and the Contractor will be held responsible for any claim which may arise in respect of nuisance, disruption or inconvenience to adjoining owners and/or the public.

A close-boarded (or similar approved) hoarding at least 2.4m high and of construction to be approved by the Contract Administrator is to be erected along the front of the property being demolished and retained on site on completion. It is intended for this hoarding to also be used for the main contract works, which will notionally include a period for the duration of the contract completion of the demolition works.

Design calculations for the hoarding which confirm compliance with relevant loading, design criteria and intended use are to be submitted for approval.

As the hoarding is to be retained, The Contractor shall include the cost of this hoarding in their tender. The location of the hoarding is to be agreed with the design team to ensure compliance with tree protection criteria.

Fans of adequate close-boarded construction are to be extended from the property being demolished. Notices of adequate size and construction are to be placed to warn passers-by of any danger.

6.9 Foreman

The Contractor is to allow in their tender for the cost of keeping competent foremen in charge and in attendance throughout the duration of the work.

6.10 Coins and antiquities

Any coins or antiquities found on the site are to become the property of the Employer and are to be handed over to the Engineer.

6.11 Plant

The Contractor is to provide all requisite plant, scaffolding and hoists and any cartage, labour and materials which, although not specifically mentioned, may be necessary for the proper completion of the work described herein.

6.12 Salvaged materials

Should the Contract Administrator decide that parts of any building are of historic interest or of particular use to the Employer, these parts shall be carefully dismantled and stored on site as directed by the Contract Administrator for retention by the Employer. If the Contract Administrator deems it to be reasonable an allowance will be made for the value thereof.

6.13 Electricity, gas, telephone, water supplies, removal of signs

Services disconnections are to be undertaken by the Contractor. Reference should be made to the Principal Designer for specific details. The Contractor shall record and convey to the Contract Administrator the position and size of services not previously recorded on the drawings and seek further instruction.

6.14 Temporary roads/Use of existing highways

The Contractor shall provide any necessary temporary roads and clear them away on completion of the works. When using existing highways, the route should be clearly sign-posted for sub-contractor's strict adherence and made as direct as possible.

6.15 Demolition of buildings

Unless shown otherwise on the drawings the Contractor shall demolish all the building(s) described in the Invitation to Tender and shown on the drawings down to ground level. The work shall include the grubbing up and carting away of all existing footings and foundations to a depth of approximately 2000mm (or greater if shown on the contract drawings).

Basements, cellars, inspection pits and the like are to be cleared of rubbish and then back filled with clean gap graded concrete or other approved broken down demolition material.

The Contractor shall record on a drawing the size, depth and location of all foundations grubbed out by him during the works, together with the depth, size and location of any foundations of adjoining property uncovered during the works. Duplicate copies of these record drawings shall be issued to the Contract Administrator on completion of the works.

The contractor is invited to submit, for consideration, an alternative cost associated with limiting the extent of foundation removal to the removal of the ground slab and obstructions within 0.5m of the existing external ground level.

6.16 Old material

All old materials arising from the demolition are to become the Contractor's property unless otherwise directed by the CA and, together with all rubbish and debris, are to be removed from the site and transported to a suitable tip or infill site. All transportation and tipping charges shall be included in the Contractor's tender sum. Neither the Contractor, nor any Sub-Contractor (where sub-letting is allowed) shall resort to fly tipping for the removal of old materials and any costs arising out of illicit fly tipping shall be borne solely by the Contractor.

6.17 Contaminated material

The Contractor is to allow for all necessary sampling and testing of demolition and other old material to identify any harmful, hazardous or contaminated material. The presence of any such material shall be notified to the Engineer, in addition to material noted in the Health and Safety Pack.

6.18 Disposal of contaminated material

The Contractor is to allow for the same disposal of any contaminated material including, where necessary, carting to appropriate licenced tips and including all licence and tipping charges of a quantity identified in the Bill of Quantities.

6.19 Old fences and hedges

The Contractor is to pull down all old fences, hedges and walls on the demolition site which are specified by the Architect.

Care will be taken to avoid causing damage to the fences and hedges of the adjoining properties and the Contractor will be held responsible for any damage, which shall be made good at their own expense.

7.0 Environmental

7.1 Noise control

The Contractor shall ensure that in addition to any statutory requirements noise from the work is kept to the lowest level practicable and without prejudice to the generality of this requirement they shall:

- a) Site noisy tools, plant, engines and equipment as far as possible from the adjoining roads and buildings.
- b) Fit and use efficient silencing devices on all tools, plant, engines and equipment in accordance with BS5228 Parts 1 and 2.
- c) Ensure that no engines or items of machinery are left running for long periods when not required to be used.
- d) Ensure that all entrances to the site are at points where the noise from vehicles entering or leaving the site will cause the least nuisance or disturbance.

7.2 Trees

No damage is to be caused to any tree or its root system on the site not scheduled for felling. The Contractor shall provide adequate protection to such trees. An ecologist will provide the necessary advice on how all features will be protected and the contractor will provide and maintain these protections for the duration of the works.

7.3 Welfare and safety measures

The Contractor is to provide and maintain welfare and safety measures and amenities up to a suitable standard in accordance with current legislation. The Contractor is also to ensure site operatives are issued with and use full personal protective equipment.

7.4 Asbestos

The contractor is to remove or manage the removal by others of building an encountered ground asbestos. Please see Asbestos surveys supplied in the contract pack (1 report is in Appendix but may not be the latest or full extent of surveys).

7.5 Completion

On completion of demolition the whole of the site as indicated on the contract drawings is to be back-bladed, cleared of all timber, reinforcement, rubbish and similar materials and left clean and tidy to the satisfaction of the Engineer.

8.0 Earthworks - Excavations

The following describes the minimum requirements for any elements of Earthworks including excavations and filling.

8.1 Line and level

Excavation shall be carried out to the lines and levels described in the Contract.

8.2 Soft spots

Any soft, loose or otherwise unsuitable material below these levels shall be removed and backfilled as directed in the Contract. If in doubt seek instructions.

The Contractor shall dispose of all excavated material to a suitably licensed disposal facility to the satisfaction of the Engineer.

8.3 Water

All excavations shall be kept free of standing water by pumping, temporary drainage, well point dewatering or by whatever means are necessary. It is the contractor's responsibility to organise and determine a strategy for the discharge of this water.

Any existing land drains, springs and other waterways should be temporarily diverted as necessary and if possible reinstated on completion. If not possible to reinstate, obtain instructions. Environment Agency approval/permissions maybe required.

8.4 Formations generally

The Contractor shall inform the Contract Administrator when the formation is ready for inspection. The last 150mm of excavation should be carried out just before inspection and filling/concreting. No fill or concrete shall be placed until approval is given.

The Contractor shall avoid damage to the formation from any means whatsoever, and any damage shall be made good by further excavation and filling at no cost to the Contract. Unless otherwise directed such filling shall be:-

- a) For roads, concrete slabs etc

Sub-base material of similar nature and compaction to the sub-base fill above formation.

- b) For foundation pits and trenches

15:1 lean concrete, 75mm slump.

Before placing of sub-base or concrete the formation is to be free from wet material, mud, slurry or otherwise unsuitable material. The surface shall be compacted if required by the Contract.

8.5 Benching

Surfaces of excavations with a gradient greater than 1 in 5 which are to receive filling must have horizontal benches cut to match the depths of compacted layers of filling.

8.6 Existing pits

Any historic pits encountered during excavation shall have all fill material, rubbish etc, removed from them, and broken out.

All pits and tanks, shall then be filled as described later in this Specification.

The Contractor shall dispose of all excavated material to a suitably licensed disposal facility to the satisfaction of the Engineer.

8.7 Foundation levels not given

Where no levels for foundations are given, for instance in the case of strip footings or trench fill, excavation shall be extended to the following, whichever is the deeper;-

- i) to permit the foundation to bear on ground of type and/or safe bearing capacity as described on the drawings.
- ii) to comply with minimum depth requirement as stated on the drawing.

Trench bottoms shall be level, or stepped as necessary to comply with Building Regulations.

8.8 Blinding concrete

Unless stated otherwise, all reinforced concrete foundations shall be provided with 50mm grade C10 concrete blinding. The blinding concrete is to be carefully placed to give a firm clean level surface on which to place reinforcement etc.

8.9 Trench fill

Excavations for trench fill type foundations shall be cut as neatly as possible to the minimum width shown on the drawings and concreted as soon as possible after cutting, subject to inspection requirements.

9.0 Earthworks Filling

9.1 Placing fill generally

Excavations and areas to be filled should be free from loose soil, rubbish and water.

Fill shall not be placed on frozen ground.

All necessary precautions shall be taken to ensure stability of adjacent structures. Fill shall be placed and compacted against structures, membranes or buried services in a sequence and manner which ensure stability and avoid damage.

Plant employed for the transporting, laying and compacting must be suited to the type of material.

Differing materials shall be laid separately so that only one type of material occurs in each layer.

9.2 Benching of fill

Where, during the progress of the work, the difference in level between adjacent areas of filling exceeds 600mm, the Contractor shall cut into the edge of the higher filling to form benches having a minimum width of 600mm and a height equivalent to the depth of a layer of compacted filling. New filling shall be spread and compacted to ensure maximum continuity with the previous filling.

9.3 Types of fill

The fill material to be used is described on the drawings, and will be one of the materials in the schedule below;-

- i) Acceptable excavated sub-soil material as defined in DoT Specification for Highway Works Clause 601. The largest pieces shall have a maximum dimension not exceeding 100mm.
- ii) Granular filling material which may be excavated material or imported but shall be clean and inert, evenly graded, 75mm to dust, crushed or broken rock such as granite, sandstone or limestone or weathered upper rock, rock overburden or sand/gravel.
- iii) Type 1 or Type 2 sub-base material to DoT Specification. Clauses 803 or 804 respectively.
- iv) 15:1 lean concrete.

9.4 Unacceptable material

Unacceptable material Class U1 or U2 as defined in the DoT Specification Clause 601 shall not be used in the Permanent Works.

9.5 Spreading and compaction of fill in trenches and pits

Lean concrete shall be supplied with 75mm slump so as to be self-compacting. Soil or granular filling materials shall be fully compacted in layers not greater than 150mm thick after compaction. Unless stated otherwise on the drawings compaction shall be with 8 passes of a vibrating roller of mass/metre width of roll not less than 700kg (or equivalent approved compaction method).

9.6 Excavation supports

Excavation supports shall be carefully removed as filling proceeds (except where such support is required to be left in position) but stability of the trench sides and adjacent ground must be maintained. The space left by the withdrawal of support shall be filled in the manner of the main fill.

9.7 Acceptability of fill in trenches and pits

The compacted fill should have a bearing capacity and stability at least equal to that of the adjacent undisturbed sub-grade. Where settlement, deterioration, inspection or test results indicate that the fill is not equal to the adjacent sub-grade such additional work necessary to produce a final reinstatement equal in capacity, performance and condition to that which existed before disturbance shall be carried out to the satisfaction of the Contract Administrator at no extra cost to the Contract.

9.8 Granular sub-base material below rafts, slabs, roads, etc.

Unless stated otherwise on the drawings, granular sub-base material shall be DoT Type 1 or Type 2 material in accordance with clauses 803 and 804 of the DoT Specification for Highway Work.

Compaction of the sub-base material shall be as stated in the Contract. Other equivalent methods of compaction may be used, subject to the written agreement of the Engineer.

Where the formation is wet or where directed by the Engineer, the first 150mm layer of granular sub-base material should be 75mm single size material.

9.9 Sand blinding

The top of the compacted sub-base should be blinded with a thin layer of sand or fine gravel, sufficient only to fill the irregularities in the surface of the fill.

9.10 Fill to old cellars, pits, etc

Unless stated otherwise on the drawings, or directed by the Engineers, existing cellars, pits etc, shall be filled with granular sub-base material, compacted in 150mm layer by 8 passes of a vibrating roller of mass/metre width of roll not less than 700kg. (or other equivalent method approved by the engineer).

9.11 Testing

The Contract Administrator may at any time order comparative field density tests determined in accordance with BS1377 Test No. 15 on material which they considered has been inadequately compacted. If the test results, when compared with the results of similar tests made on adjacent approved work in similar materials compacted to specification show the state of compaction to be inadequate, the Contractor shall carry out at their expense such further work as the Engineers may decide is required to comply with the terms of the Contract.

9.12 Filling of excavations adjacent to existing foundations

Unless directed otherwise, any excavation within a line drawn at 45° from the nearest point of the underside of an existing foundation (new or old) shall be backfilled with 15:1 lean concrete 75mm slump. In these circumstances excavation, should be kept to a reasonable minimum. No payment will be due for concrete fill to excess excavation.

9.13 Soluble sulphate content (SO₃)

The soluble sulphate content (SO₃) of imported materials for filling under concrete slabs or within 1m of substructures must not exceed 1.0g/litre when tested to BS1377, Test 10, using a 2:1 water extract. If required by the Engineer, the Contractor shall carry out such a test and obtain approval.

10.0 Appendices

10.1 Appendix A - Site Location Plans

10.2 Appendix B - Site Constraints & Below Ground Infrastructure

10.3 Appendix C- Historic Drawings / Photos

10.4 Appendix D- Architects Demolition Drawings

10.5 Appendix E- CDM Hazard Register

10.6 Appendix F – Structural Reports

10.7 Appendix G – Ground Investigation Reports

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