



STATION HILL NORTH

Phase 2 Enabling Works Technical Specification

For

Station Hill, Reading

March 2020

project no. 1620004716

Ramboll UK

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Revision History

Rev	Date	Purpose/Status	Document Ref.	Comments
P01	16/03/20	For Tender		

Prepared by:

Reviewed by:

Approved by:

Sheena Patel
Associate

Sheena Patel
Associate

Mark Nevill
Director

C05 ENABLING WORKS CONTRACT PRELIMINARIES

PROJECT PARTICULARS

- 110 THE PROJECT:
Name: Station Hill, Reading – North site
Location: Station Hill, Reading, Berkshire

- 120 EMPLOYER (CLIENT):

Company	Contact Name	Email	Phone number
LPC	Lee Fearnhead	lfearnhead@LPC.com	07950 182062

- 130 PROJECT MANAGER AND PROJECT SUPERVISOR (as defined in NEC contract) hereinafter referred to as the 'Contract Administrator' or 'CA'): As set out in the Enabling Works Contract to be read in this specification as below.

Role	Company	Contact Name	Email	Phone number
'CA '	Cast	Rudo Manokore-Addy	rudo.manokore-addy@cast-consultancy.com	07717 347 584

- 140 PRINCIPAL CONTRACTOR:
The Contractor.

- 150 CDM CO-ORDINATOR:

Company	Contact Name	Email	Phone number
TBC	TBC	TBC	TBC

- 160 CONSULTANTS:

Role	Company	Contact Name	Email	Phone number
Project Manager	Cast	Rudo Manokore-Addy	rudo.manokore-addy@cast-consultancy.com	07717 347584
Cost consultant	Cast	Vicki Legrove	vicki.legrove@cast-consultancy.com	07341 782056
Structural Engineer	Ramboll	Sheena Patel	Sheena.patel@ramboll.co.uk	07929 044639
Site Investigations				
Archaeology				
Utilities	Hoare Lea			

THE SITE AND THE WORKS

210 PREPARATORY WORK BY OTHERS:

- Geotechnical site investigation:
- Ground contamination interpretative report: trial pits were carried out as part of the project ground contamination investigation. The factual and interpretative report was produced by Ramboll reference SHR-RAM-NB-XX-RP-G-000022 dated 12/12/2019.
- A Below Ground Services survey for the site was conducted by Plowman Craven. Refer to Plowman Craven drawings 40652T-01A
- A CCTV survey of the existing drainage has been procured by the Client. The results of the survey should be available prior to commencement of the Works

220 THE WORKS:

- Demolition / excavation of the space to the north of the NCP car park in front of Reading train station, including part demolition of existing NCP retaining wall to a proposed formation level identified on drawing SHRN-RAM-S2-ZZ-DR-S-0021 and SHRN-CRL-S2-ZZ-PL-8010. *Note that new retaining wall to the north of the site is not part of the enabling works and is to be constructed as a part of the main Phase 2 construction works.*
- Removal of foundations
- Removal of existing ground obstructions and below ground structures within the site boundary; all areas of the site which have been dug below the target formation level should be brought back up to that level. This should be achieved by using site won material as noted in the excavation and filling specification.
- Protection from damage and falling debris from demolition during the works.
- Crush and stockpile building material on site in accordance with clause C20 355
- Installation of site hoardings and welfare and removal of welfare after completion of the Works. Site hoarding to be coordinated with wider site activities – to be agreed. Site hoarding licence to be applied for and consented.
- Stop all existing utilities at site boundary and remove or retain as shown on the tender information provided by Hoare Lea

230 THE TENDER DOCUMENTS are:

As provided by Cast

240 INSPECTION: Drawings and other documents relating to the Contract but not included in the tender documents may be seen by arrangement

250 THE SITE:

The boundary of the site is indicated on the site plan drawing within the tender package

261 EXISTING BUILDINGS ON THE SITE:

The site was previously occupied by a shopping arcade and the Western Tower to the west. The site was previously demolished and the temporary event space created as an interim use before redevelopment. No post demolition or records have been made available. To mitigate the risk of future clashes with previous foundations an enabling works package of works is to be carried out – to reduce the level of this part of the site, remove obstructions and record the location of any remaining piles. Appendix A include demolition photographs and elevation survey prior to demolition.

262 EXISTING BUILDINGS ADJACENT TO THE SITE:

Refer to drawings the tender information for a selection of available drawing information.

Adjacent to the site to the north is Reading train station.

Adjacent to the site, to the east is Thames Tower – a recently updated office building which is now occupied and overlooks the site.

To the south the site is bounded by the NCP car park access road and boundary wall.

To the west is the 'phase 3' part of the wider development and currently being used as a stockpile for the demolition crush material from 'phase 1'.

271 EXISTING MAINS/SERVICES:

A Below Ground Services survey for the site was conducted by Plowman Craven. Refer to Plowman Craven drawing 40652T-01A

The Contractor is to verify all information related to existing services before proceeding with demolition work and make allowances for any unrecorded services. Refer to Hoare Lea information for more details.

273 SITE INVESTIGATION: A report produced by Geotechnical Engineering Ltd – reference 35248 dated 23/08/2019 - is included in the tender documents.

276 A HEALTH AND SAFETY FILE and PRE-CONSTRUCTION INFORMATION for the site/building will be available from the CDM Coordinator prior to commencement of the site works

279 ACCESS TO THE SITE:

Access to the site is to be agreed.

282 USE OF THE SITE:

- Do not use the site for any purpose other than carrying out the Works.
- Do not display or permit advertisements to be displayed on site without consent of the CA.
- No use of mobile cranes on site without approval from Network Rail as required.

285 WORKING AREA:

- The Contractor will be confined to the area within the site boundary as indicated on tender drawings.
- Work adjacent to the site boundary is to be by agreement - erect, maintain and remove on completion any necessary extensions of fences and hoardings.

288 SURROUNDING LAND/BUILDING USES:

Refer to clause 262.

291 RISKS TO HEALTH AND SAFETY:

The nature and condition of the site/building cannot be fully and certainly ascertained before it is opened up. The accuracy and sufficiency of this information is not guaranteed by the Employer or the CA and the Contractor must ascertain for himself any information he may require to ensure the safety of all persons and the Works. However the following structural or material hazards are or may be present:

- Asbestos.
- Concrete elements.
- Mould/spores.
- Rats/Leptospirosis.
- Adjacent railway.
- Adjacent public spaces and access routes

294 SITE VISIT: Before tendering, ascertain the nature of the site, access thereto and all local conditions and restrictions likely to affect the execution of the Works.

297 SITE VISIT may be made by arrangement with the CA.

298 LOCAL PLANNING and BUILDING CONTROL REQUIREMENTS

-A separate planning application is being submitted for these works as they sit outside of the scope of the earlier planning permissions on the site.

-outline planning consent imposes a number of conditions which apply to the demolition phase. The Contractor is to allow for discharging the conditions and adhering to the restrictions within during the Works.

- An initial Site Waste Management Plan (SWMP) may be required, reference Clause 210. The Contractor is responsible for updating and maintaining the SWMP as required by the local planning authority. The Contractor should ensure the method for removal and disposal of identified and non-identified asbestos is included in the SWMP
- Furthermore, the planning consent requires a site wide Demolition and Construction Environmental Management Plan (DCEMP) to be approved prior to the commencement of The Project. The Contractor is responsible for providing and submitting all information required within the DCEMP to the local planning authority.
- The demolition and enabling works contractor will be required to undertake work as per the methodology and mitigation measures that are to be submitted and agreed with the Natural England

299 SUSTAINABILITY AUDITS

The works should conform to the ICE's Demolition Protocol as required for new developments. The Contractor should indicate clearly to the CA the cost saving associated with not conforming to the protocol.

THE CONTRACT AND TENDERING

301 FORM OF CONTRACT

Refer to separate documentation by Cast.

360 PRICING OF SPECIFICATION:

Alterations and qualifications to the specification must not be made without the written consent of the CA. Tenders containing unauthorised alterations or qualifications may be rejected. Costs relating to items in the specification which are not priced will be deemed to have been included elsewhere in the tender.

366 CREDITS FOR MATERIALS ARISING:

- The Contractor is to itemise in his tender all components and materials which are to become his property giving, for each one, the value of the credit included in the tender.
- The value of such components and materials must be allowed for in applications for payment under the Contract.

370 DAYWORK CHARGES: Refer to separate documentation by Cast.

380 METHOD STATEMENTS, an outline method statement must be submitted with the tender, describing how and when the Contractor proposes and undertakes to carry out the following:

- Excavation / earthworks to achieve target excavation level.
- Retention and protection of the foundations at the boundary

- Crushing of building material on site to clause C20 355
- Recording / survey of remaining foundations
- The Contractor may, at his discretion and at the same time, submit method statements for other parts of the Works.

A full method statement for the above must be submitted and approved before commencement of the Works.

- 381 RAILWAY APPROVAL. It is not anticipated that any methodology would require Network Rail approval. However, design submissions for any tower cranes/scaffolding on the railway elevations and other temporary works that may be deemed to affect the railway will be required including excavation and ground preparation for mobile cranes.

The final list of required submissions will be confirmed by Network Rail following a review of the Contractor's initial method statement.

Cast have initiated discussions with Network Rail in relation to the wider site redevelopment and can provide contact details for the case engineer and details of any conditions and agreements in place to enable the contract to gain Network Rail approval for the Works

- 390 HEALTH AND SAFETY INFORMATION: A statement must be submitted with the tender describing the organisation and resources which the Contractor proposes and undertakes to provide to safeguard the health and safety of operatives, including those of subcontractors and of any person who may be affected by the works, including:
- A copy of the Contractors health and safety policy document, including risk assessment procedures.
 - Accident and illness records for the past five years.
 - Records of previous Health and Safety Executive enforcement action.
 - Records of training and training policy.
 - The number and type of staff responsible for health and safety on this project with details of their qualifications and duties.

MANAGEMENT OF THE WORKS

- 410 IN WRITING: When required to notify, inform, instruct, agree, confirm, obtain information, obtain approval or obtain instructions do so in writing.
- 420 APPROVAL (and words derived there from) means the approval in writing of the CA unless specified otherwise.
- 430 SUPERVISION:
- Accept responsibility for coordination, supervision and administration of the Works, including all subcontracts.
 - Arrange and monitor a programme with each subcontractor, supplier, statutory undertaker and the Local Authority and obtain and supply information as necessary for coordination of the work.
 - Allow in the programme for any periods of notice for inspection required by the Local Authority or statutory undertaker.
- 435 PROGRAMME:

As soon as possible and before starting work on site prepare, in an approved form, a programme for the Works, based on the Enabling Works programme produced by Cast, which must make allowance for all:

- Planning and mobilisation by the Contractor.
- Subcontractor's work.
- Work resulting from instructions issued in regard to the expenditure of provisional sums (if any).
- Work by others concurrent with the Contract.
- Archaeological watching brief/approvals.

Submit pdf and native format copies to the CA.

440 SITE MEETINGS:

- Before commencement of work on site, hold a meeting with the CA, Local Authority, statutory undertakers
- The CA may arrange site meetings to review progress and other matters arising from the administration of the Contract.

450 SITE INSPECTIONS: The CA will require access to the site at all reasonable times. Agree dates and times of inspections with the CA several days in advance, to enable the CA and other affected parties to be present.

453 STAKEHOLDERS: Make and maintain regular contact through the full period of the works with all relevant stakeholders, including but not limited to:

- Thames Tower
- Network Rail
- Police
- Statutory Authorities

SECURITY/SAFETY/PROTECTION GENERALLY

500 THE PRE-TENDER HEALTH AND SAFETY PLAN is integral with the Preliminaries and Specification. Commonplace hazards which should be controlled by good management and good site practices are not listed. Specific hazards which may present a risk to the health and safety of demolition workers and others are given elsewhere in the Preliminaries and Specification. Refer to Clause 276.

505 THE DEMOLITION PHASE HEALTH AND SAFETY PLAN, developed from the Pre-tender Health and Safety Plan must be submitted to the CA not less than two weeks before the proposed date for start of demolition work. Do not start demolition work until the Employer has confirmed in writing that in his view the Demolition Phase Health and Safety Plan includes the procedures and arrangements required by the CDM Regulations. The plan must include:

- Detailed proposals for managing health and safety during the demolition phase together with site rules and emergency procedures.
- Method statements related to the hazards identified in the Preliminaries and Specification and/or statements on how the hazards will be addressed and other significant hazards identified by the Contractor.

508 HSE APPROVED CODES OF PRACTICE: Comply with all health and safety legislation including the following:

- Management of health and safety at work.
- Managing construction for health and safety.

510 SECURITY: Adequately safeguard the site, the Works, products, materials arising, plant, and any existing buildings affected by the Works from damage and theft. Take

all reasonable precautions to prevent unauthorised access to the site, the Works and adjoining property.

520 PUBLIC SAFETY:

- Protect the public and occupiers of adjoining property by erection of temporary fences, hoardings, fans, footpaths, warning lights, etc. before starting work.
- Ensure that means of escape from adjoining property in the event of fire are maintained for the duration of the Works.

530 OCCUPIED PREMISES:

- There are no existing buildings on the site that will be occupied and/or used during the Contract.

533 EMPLOYER'S REPRESENTATIVES SITE VISITS:

Inform the CA in advance of all safety provisions and procedures (including those relating to materials which may be deleterious) which will require the compliance of the Employer or his representatives when visiting the site. Provide protective clothing and/or equipment for the Employer and his representatives as appropriate.

538 THE HEALTH AND SAFETY FILE: Provide such information as is reasonably required by the CDM Co-ordinator and in accordance with the relevant legislation.

PROTECT AGAINST THE FOLLOWING

540 EXPLOSIVES: Do not use.

552 NOISE:

- Comply generally with BS 5228.
- Noise levels from the works are to be kept below a level to be agreed with the Local Authority and the CA.
- Fit all compressors, percussion tools, and vehicles with effective silencers of a type recommended by manufacturers of the compressors, tools or vehicles.
- Do not use pneumatic drills and other noisy appliances outside the site working hours without consent of the CA.
- Do not use or permit employees to use radios or other audio equipment in ways or at times which may cause nuisance.

560 POLLUTION: Take all reasonable precautions to prevent pollution of the site, the Works and the general environment including streams and waterways. If pollution occurs, inform the appropriate authorities and the CA without delay and provide them with all relevant information.

570 NUISANCE: Take all necessary precautions to prevent nuisance from smoke, dust, rubbish, vermin and other causes.

580 FIRE: Take all necessary precautions to prevent personal injury, death, and damage to the Works or other property from fire.

590 FLOOD: Ensure that there is no hazardous build-up of water. Provide for temporary conveyance and disposal of rainwater from existing structures and the site during the course of the Works.

600 BURNING ON SITE of materials arising from the work will not be permitted.

610 RUBBISH:

- Remove rubbish, debris and surplus material and spoil regularly and keep the site and Works clean and tidy.
- Remove all rubbish, dirt and residues from voids and cavities before filling or closing in.
- Ensure that unwanted non-hazardous material and rubbish is disposed of at a tip approved by the Waste Regulation Authority.
- Remove all surplus hazardous materials and their containers regularly for disposal off site in a safe and competent manner as approved by the Waste Regulation Authority and in accordance with relevant regulations.
- Retain copies of waste transfer documentation on site and make available for inspection by the CA on request.

620 ELECTROMAGNETIC INTERFERENCE: Take all necessary precautions to avoid excessive electromagnetic disturbance of apparatus outside the site.

PROTECT THE FOLLOWING

640 EXISTING SERVICES:

- Notify all service authorities and/or adjacent owners of the proposed works not less than one week before commencing site operations.
- Before starting work check positions of existing services.
- Observe service authority's recommendations for work adjacent to existing services. Do not interfere with their operation without consent of the service authorities or other owners.
- If any damage to services results from the Works notify CA and appropriate service authority without delay. Make arrangements for making good without delay to the satisfaction of the service authority or other owner as appropriate.
- Replace marker tapes or protective covers disturbed by site operations to the service authority's recommendations.
- Make allowance for unknown services.

641 EXISTING SERVICES TO BE PROTECTED

- Existing drainage infrastructure to be protected is shown on drawings SHRN-RAM-S2-ZZ-DR-S-0021. Refer to Clause C20 160.
- Other existing services to be retained refer to Hoare Lea

650 ROADS AND FOOTPATHS: Adequately maintain roads, footpaths, and cycle routes within and adjacent to the site and keep clear of mud and debris. Any damage to roads and footpaths caused by site traffic or otherwise consequent upon the Works must be made good to the satisfaction of the Local Authority or other owner. Bear any costs arising. In addition to the requirements of clause 520, the Contractor should, as a minimum, provide the protection necessary to pedestrians and to users of adjacent buildings through use of scaffold fans, crash decks or similar.

684 ADJACENT PROPERTY CONDITION

Adjacent properties including the rail and road must not be damaged by the demolition works.

690 MATERIALS FOR REUSE: The phrase 'keep for reuse' means:

- During removal prevent damage to the stated components or materials, and clean off bedding and jointing materials.
- Stack neatly, adequately protect and store until required by the Employer or for use in the Works as instructed.
- Retain materials sufficient for use as fill and pile mat to Section C20 Clause 355. All material to be stored in the location as shown on Ramboll drawings unless agreed otherwise.

SPECIFIC LIMITATIONS ON METHOD/SEQUENCE/ TIMING

710 METHOD/SEQUENCE OF WORK:
To be agreed with the CA.

750 WORKING HOURS:
The working hours for the site are in accordance with the Local Authority planning conditions and are between 0800 hours to 1800 hours, Monday to Friday, and 0800 hours to 1300 hours on Saturday and at no time on Sundays, Bank or Public Holidays, unless in accordance with agreed emergency procedures for deviation. Prior notice and agreement procedures for works outside agreed limits and hours

FACILITIES/TEMPORARY WORK/SERVICES

810 GENERAL COST ITEMS: Include for all such items:
- Management and staff.
- Site accommodation.
- Services and facilities.
- Mechanical plant.
- Temporary works.

821 LOCATIONS: Inform CA of the intended siting of all spoil heaps, temporary works, services and welfare facilities.

825 WELFARE FACILITIES: Provide, maintain and remove on completion, welfare facilities for all staff working on site in accordance with health and safety regulations.

830 MAINTAIN, alter, adapt and move temporary works and services as necessary. Clear away when no longer required and make good.

855 TEMPORARY HOARDING(S): At locations to be determined by the contractor and agreed with the CA

865 TEMPORARY SHORING:
Requirements to be determined by the contractor

866 TEMPORARY PROPPING:
Requirements to be determined by the contractor

880 LIGHTING AND POWER:
- The Contractor must allow for making all arrangements for supply and separate metering of electricity for the works and pay all costs.

891 WATER:
- The Contractor must make all arrangements for supply and separate metering of water for the works and pay all costs.

C20 DEMOLISHING STRUCTURES

To be read with Preliminaries/General conditions.

GENERAL REQUIREMENTS

- 110 SURVEY: Before starting work, examine all available information, carry out a survey of the structures, site and surrounding area, and submit a survey report and method statement to the CA covering all relevant matters listed below and in the Health and Safety Executive Guidance Note GS29/1 paragraph 32:
- The form, condition and demolition methods of the structure(s).
 - The form, location and removal methods of any toxic or hazardous materials.
 - The type, condition, and location of adjoining of surrounding premises which may be adversely affected by noise, vibration, dust or removal of structure.
 - The identification and location of services above and below ground.
- 120 EXTENT OF DEMOLITION: Subject to the retention of features, structures, retaining walls, etc., specified elsewhere, excavate and demolish structures down to target formation level identified on drawing SHRN-RAM-S2-ZZ-DR-S-0021.
- 130 GROUNDWORKS:
- Break out old foundations, slabs, tanks, etc. where not identified for retention in Ramboll drawings SHRN-RAM-S2-ZZ-DR-S-0021, to the extent stated and requirements as noted on the drawings.
 - Remove contaminated material as required by the Local Authority and to the requirements of the SWMP
 - Backfill all excavation as specified on the drawings. Record the location of any remaining elements.
- 140 BENCHMARKS: Report to the CA any benchmarks and other survey information found on structures to be demolished. Do not remove or destroy unless instructed.
- 150 FEATURE(S) TO BE RETAINED: The following are to be kept in place and adequately protected:
- None
- 155 EXISTING SLAB TO BE RETAINED
- None
- 160 EXISTING DRAINAGE TO BE RETAINED
- Protect drainage runs at boundary
 - Cap off incoming drainage runs which are to be removed and seal at manholes

SERVICES AFFECTED BY DEMOLITION

- 210 SERVICES REGULATIONS: Any work carried out to or which affects new or existing services must be in accordance with the byelaws or regulations of the relevant statutory authority.
- 220 LOCATION OF SERVICES: Locate and mark the positions of services affected by the work. Arrange with the appropriate authorities for the location and marking of the positions of mains services.
- 231 DISCONNECTION OF SERVICES: Before starting demolition arrange with the appropriate authorities for the disconnection of services and removal of fittings and equipment.
- 241 DISCONNECTION OF DRAINS: Locate and disconnect all disused drain connections. Seal within the site at boundary to approval by plugging at least 400 mm length with grout.

- 250 DRAINS IN USE: Protect drains, manholes, gullies, vent pipes and fittings still in use and ensure that they are kept free of debris at all times. Make good any damage arising from demolition work and leave clean and in working order at completion.
- 260 BYPASS CONNECTIONS: Provide as necessary to maintain continuity of services to occupied areas of the same and adjoining properties. Give a minimum 72 hours' notice to occupiers if shutdown is necessary during changeover.
- 270 SERVICES WHICH ARE TO REMAIN: Notify the CA and service authority or owner of any damage. Make all arrangements for repair to the satisfaction of the CA and service authority or owner. Bear any costs arising.

DEMOLITION WORK

- 310 WORKMANSHIP GENERALLY:
- Standard: Demolish structure(s) in accordance with BS 6187:2011 and Health and Safety Executive Guidance Notes GS29/1, 3 and 4.
 - Operatives must be appropriately skilled and experienced for the type of work and hold or be training to obtain relevant CITB Certificates of Competence.
 - Site staff responsible for supervision and control of the work are to be experienced in the assessment of the risks involved and in the methods of demolition to be used.
- 320 GAS OR VAPOUR RISKS: Take adequate precautions to prevent fire or explosion caused by gas or vapour.
- 330 DUST: Reduce dust by periodically spraying demolition works with water in accordance with an approved Demolition and Construction Environmental Management Plan (DCEMP).
- 340 HEALTH HAZARDS: Take adequate precautions to protect site operatives and the general public from health hazards associated with dangerous fumes and dust arising during the course of the Works.
- 351 ADJOINING PROPERTY:
- When demolishing structure(s) against adjoining property leave adequate temporary support and protection at each stage and arrange for inspection by the CA. Maintain and alter temporary supports and protection as necessary as work progresses.
 - Demolish structures causing a minimum of damage to adjoining property and leave no unnecessary or unstable projections.
 - Do not disturb support to foundations of adjoining property unless otherwise instructed.
 - Report to the CA any defects exposed or becoming apparent in adjoining property.
 - Promptly repair any damage caused to adjoining property by demolition work. Make good to ensure safety, stability, weather protection and security.
- 355 RECYCLING CONCRETE AND BRICK:
- All permitted material is to be crushed for reuse as backfill for voids and as piling mat on site. Material to be crushed and graded to Highways Agency 'Specification for highway works', Table 6/1, Class 6F1 or 6F2.
 - Refer to section D20 620 for filling requirements
 - Tests as required by Highways Agency Specification for Highway Works.
 - Grade certificate from accredited laboratory to be provided to the CA
 - Steel reinforcement, including prestressing strands, to be removed for recycling.
 - Crushing of material is to take place in a location as far reasonable possible from adjacent residential and education areas.

- 360 STRUCTURE(S) TO BE RETAINED:
- Adequately protect parts of existing structure(s) which are to be kept in place.
 - Cut away and strip out the minimum necessary and with care to reduce the amount of making good to a minimum.
 - Prevent debris from overloading any part of the structure which is not to be demolished.
- 370 PARTLY DEMOLISHED STRUCTURE(S):
- Leave partly demolished structure(s) in a stable condition, with adequate temporary support at each stage to prevent risk of uncontrolled collapse.
 - Prevent debris from overloading scaffolding platforms or parts of the structures not yet demolished.
 - Prevent access of unauthorised persons to partly demolished structure(s). Leave safe outside working hours.
- 380 DANGEROUS OPENINGS: Illuminate and protect as necessary.
- 392 ASBESTOS BASED MATERIALS:
- Asbestos containing materials may be encountered during demolition.
 - Report immediately to the CA any suspected asbestos based materials discovered during demolition work. Avoid disturbing such materials. Agree with the CA methods for safe removal.
 - Removal is to be carried out by a Contractor licensed by the Health and Safety Executive and prior to any other works starting in these locations.
 - The Contractor is to comply with the requirements of The Control of Asbestos Regulations 2012.
- 410 UNKNOWN HAZARDS: Inform the CA of any unrecorded voids, tanks, chemicals, etc. discovered during demolition work. Agree with the CA, methods for safe removal, filling, etc.
- 415 GROUNDWATER: Take adequate precautions, including pumping if necessary, when working below the water table.
- 431 FILLING OF BASEMENTS, VOIDS ETC:
- Excavations are to be battered back during demolition as appropriate to avoid destabilising the surrounding ground.
 - Remove all organic material and soil from voids. Fill and consolidate with graded crushed concrete.

MATERIALS ARISING

- 510 OWNERSHIP: Components and materials arising from the demolition work are to become the property of the Contractor except where retained for use on site as fill material, or otherwise provided. Remove from site as work proceeds, except where noted in clause 511.
- 511 OWNERSHIP: The following components and materials are to remain the property of the Employer. Carefully remove and store on site where directed. Protect until removed by the Employer, reused in the works, or end of the Contract.
- Crushed and graded concrete for void backfill and piling mat.
 - Crushed and graded material, including brick for hardcore
- 520 BUILDING MATERIALS TO BE RECYCLED: Brick, stone and concrete arising from demolition work to be crushed, graded and stockpiled for use as hard-core or piling material subject to compliance with clause D20 620.

COMPLETION

- 611 Clear away all debris, vegetation, rubbish and other loose materials, and leave the site in a tidy condition on completion.
- 621 The site perimeter hoarding, including gates, locks etc. to be made good where damaged, and painted in colour(s) agreed with the CA. All to become the property of the Cambridge Assessment / main contractor on completion. All keys to site gates, at least three sets, to be handed over to the CA.
- 631 Produce as demolished drawings indicating the locations and dimensions of any known remaining obstructions, foundations, structures, hoardings and gates. Also to include finished piling mat and ground levels. Pass to the CA.

D20 EXCAVATION AND FILLING

GENERALLY/THE SITE

- 110 SITE INVESTIGATION
 - Report: See section C05.
- 150 EXISTING SERVICES
 - Locations: See section C05.
- 155 SITE FEATURES TO BE RETAINED
 - Details: See section C05.
- 159 EXISTING STRUCTURES
 - Protection: See section C05.

CLEARANCE/EXCAVATING

- 164 TREE ROOTS
 - Protected area: Do not cut roots within an area which is the larger of:
 - the branch spread of the tree.
 - an area with a radius of half the tree's height, measured from the trunk.
 - Outside protected area: Give notice of roots exceeding 25 mm and do not cut without approval.
 - Cutting:
 - Make clean smooth cuts with no ragged edges.
 - Pare cut surfaces smooth with a sharp knife.
 - Backfill: As dug material
- 170 REMOVING TREES, SHRUBS AND HEDGES
 - Refer to LDA Landscape architects information for trees to be kept / removed from site.
 - Identification: Clearly mark trees to be removed.
 - Safety: Comply with Forestry and Arboriculture Safety and Training Council Safety Guides.
 - Felling: Cut down and grub up roots of shrubs and smaller trees. Fell larger trees as close to the ground as possible
 - Work near retained trees: Take down trees carefully in small sections to avoid damage to adjacent trees that are to be retained, where tree canopies overlap and in confined spaces generally.
 - Stumps: Obtain approval before removing stumps by winching and do not use other trees as supports or anchors.

181 SITE CLEARANCE

- Generally: Clear site of rubbish, debris and vegetation.
- Large roots: Grub up and dispose of without undue disturbance of soil and adjacent areas.
- Chipping and shredding: permitted.

210 MATERIALS ARISING

Ownership: Excavated materials, including topsoil, surplus to requirements for filling remain the property of the Employer unless the Contractor:

- Is instructed to remove them from the site, or
- Purchases them at a price to be agreed.

220 STRIPPING TOPSOIL

- General: Before beginning general excavation or filling, strip topsoil from areas where there will be regarding, buildings, pavings/roads and other areas shown on drawings.

225 HANDLING TOPSOIL

- Aggressive weeds: Give notice and, obtain instructions before moving topsoil.
- Plant: Select and use plant to minimize disturbance, trafficking and compaction.
- Contamination: Do not mix topsoil with:
 - Subsoil, stone, hardcore, rubbish or material from demolition work.
 - Other grades of topsoil.
 - Oil, fuel, cement or other substances harmful to plant growth
- Multiple handling: Keep to a minimum. Use topsoil immediately after stripping.
- Wet conditions: Handle topsoil in the driest condition possible. Do not handle during or after heavy rainfall

230 BENCHING

- Surfaces of excavations with a gradient greater than 1:5 (20%) and which are to receive filling: Provide horizontal benches cut to match the depths of compacted layers of filling.

240 ADJACENT EXCAVATIONS

- Proximity: Where an excavation encroaches below a line drawn at an angle from the nearest formation level of another higher excavation, the lower excavation, all work within it and backfilling thereto must be completed before the higher excavation is made.
- Angle of line from horizontal: 30 °.

250 PERMISSIBLE DEVIATIONS FROM FORMATION LEVELS

- Beneath mass concrete foundations: ±25 mm.
- Beneath ground bearing slabs and r.c. foundations: ±15 mm.
- Embankments and cuttings: ±50 mm.
- Ground abutting external walls: ±50 mm, but such as to ensure that finished level is not less than 150 mm below dpc.

255 ACCURACY - LINEAR DIMENSIONS

- Permissible deviations from linear dimensions generally: ±25 mm.

310 UNSTABLE GROUND

- Generally: Ensure that the excavation remains stable at all times.
- Give notice: Without delay if any newly excavated faces are too unstable to allow earthwork support to be inserted.

- Take action: If instability is likely to affect adjacent structures or roadways, take appropriate emergency action.

320 RECORDED FEATURES

- Recorded foundations, beds, drains, manholes, etc: Break out and seal drain ends.
- Contaminated earth: Remove and disinfect as required by local authority.

330 UNRECORDED FEATURES

- Give notice: If unrecorded foundations, beds, voids, basements, filling, tanks, pipes, cables, drains, manholes, watercourses, ditches, etc. not shown on the drawings are encountered.

370 UNDERGROUND STRUCTURES IN LANDSCAPE AREAS

- Generally: Remove walls, roads, foundations, disused services, drains, manholes and the like to minimum depth.
- Minimum depth below finished levels:
 - Grass, ground cover and perennial planting: 500 mm.
 - Shrub planting: 750 mm.
 - Within 2 m of tree planting: 1000 mm.

DISPOSAL OF MATERIALS

415 EXCAVATED TOPSOIL

- Generally: Remove from site.

441 SURPLUS SUBSOIL

- Excavated material: Stockpile in temporary spoil heaps.
- Retained material: Spread and level surplus subsoil on site.
 - Locations: As directed by the CA.
 - Protected areas: Do not raise soil level within root spread of trees that are to be retained.
- Remaining material: Remove from site.

450 WATER

- Generally: Keep all excavations free from water until:
 - Formations are covered.
 - Below ground construction are completed.
 - Basement structures and retaining walls are able to resist leakage, water pressure and flotation.
- Drainage: Form surfaces of excavations and fill to provide adequate falls.
- Removal of water: Provide temporary drains, sumps and pumping as necessary.

454 GROUND WATER LEVEL

- Give notice: If it is considered that the excavations are below water table.

457 PUMPING

- General: Do not disturb excavated faces or stability of adjacent ground or structures.
- Pumped water: Discharge without flooding the site, or adjoining property.
- Sumps: Construct clear of excavations. Fill on completion.

460 PERMANENT DRAINAGE SYSTEM

- Disposal of water from the excavations through system: not permitted

FILLING

500 PROPOSED FILL MATERIALS

- Details: Submit full details of proposed fill materials to demonstrate compliance with specification, including:
 - Type and source of imported fill.
 - Proposals for processing and reuse of material excavated on site.
 - Test reports as required elsewhere.
 - Timing: At least 14 days before starting filling.
- 510 HAZARDOUS, AGGRESSIVE OR UNSTABLE MATERIALS
- General: Do not use fill materials which would, either in themselves or in combination with other materials or ground water, give rise to a health hazard, damage to building structures or instability in the filling, including material that is:
 - Frozen or containing ice.
 - Organic.
 - Contaminated or noxious.
 - Susceptible to spontaneous combustion.
 - Likely to erode or decay and cause voids.
 - With excessive moisture content, slurry, mud or from marshes or bogs.
 - Clay of liquid limit exceeding 80 and/or plasticity index exceeding 55.
 - Unacceptable, class U2 as defined in the Highways Agency 'Specification for highway works', clause 601.
- 512 LIMITATION OF SULFATE CONTENT IN FILL MATERIAL
- Soluble sulfate content (SO_3) of materials for filling under concrete slabs or within 1 m of substructures when tested to BS 1377-3, clause 5 using a 2:1 water-soil extract (maximum): <1g/litre.
- 520 FROST SUSCEPTIBILITY
- General: Except as allowed below, fill must be non-frost-susceptible as defined in Transport Research Laboratory Report SR 829 'Specification for the TRL frost-heave test'.
 - Test reports: If the following fill materials are proposed, submit a laboratory report confirming they are non-frost-susceptible:
 - Fine grained soil with a plasticity index less than 20%.
 - Coarse grained soil or crushed granite with more than 10% retained on a 0.063 mm sieve.
 - Crushed chalk.
 - Crushed limestone fill with average saturation moisture content in excess of 3%.
 - Burnt colliery shale.
 - Frost-susceptible fill: May only be used within the external walls of buildings below spaces that will be heated. Protect from frost during construction.
- 525 TESTING OF FILL MATERIALS
- Laboratory: Contractor to submit proposal to CA for approval.
 - Submit report to: CA.
 - Timing: 14 days before filling.
 - Samples: Deliver to laboratory as required.
 - Tests: as required by Highways Agency Specification for Highway Works.
 - Frequency: Submit to CA proposed frequency of testing to demonstrate continuing compliance of imported and reprocessed fill with specified properties.
- 530 PLACING FILL
- Excavations and areas to be filled: Free from loose soil, rubbish and standing water.
 - Freezing conditions: Do not place fill on frozen surfaces. Remove material affected by frost. Replace and recompact if not damaged after thawing.
 - Adjacent structures, membranes and buried services:
 - Do not overload, destabilise or damage.

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- Filling: Place and compact to Highways Agency Specification for highway works, Table 6/1, clause 612 and clause 613.3, 613.9 and 613.10.

625 COMPACTED GENERAL FILLING/EARTHWORKS

- Specification: Highways Agency 'Specification for highway works', Earthworks section, clauses 608, 610, 612, Table 6/1, Table 1/5 and Appendices 6/1 to 6/15.
- Definition: References to the 'Overseeing Organisation' are deemed to be to the CA.

650 PROTECTION OF COMPACTED FILLING

- Temporary protective filling: Before allowing construction traffic raise level of compacted cohesive soil filling at least 150 mm above formation level using properly compacted temporary filling.
- Removal: Remove temporary protective filling from site before permanent construction.

710 HARDCORE FILLING

- Fill: Granular material, free from excessive dust, well graded, all pieces less than 75 mm in any direction, minimum 10% fines value of 50 kN when tested in a soaked condition to BS 812-111, and in any one layer only one of the following:
 - Crushed rock (other than argillaceous rock) or quarry waste with not more binding material than is required to help hold the stone together.
 - Crushed concrete, crushed brick or tile, free from plaster, timber and metal.
 - Crushed non-expansive slag.
 - Gravel or hoggin with not more clay content than is required to bind the material together, and with no large lumps of clay.
 - Well-burned non-plastic colliery shale.
 - Natural gravel.
 - Natural sand.
- Filling: Spread and level in 150 mm maximum layers. Thoroughly compact each layer.

Appendix A – Historic and current site photographs

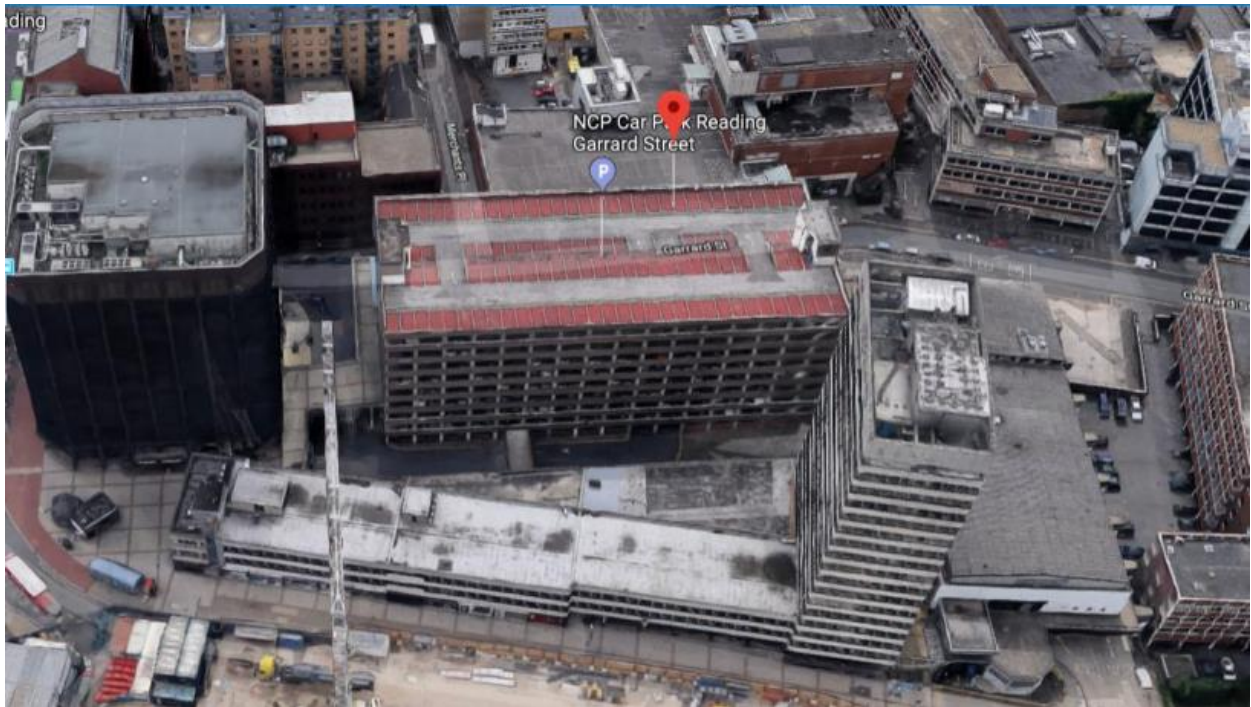


Figure 1: Historic plan view of site showing NCP car park, Western Tower and Bus station/Bingo hall buildings



RAMBOLL

<https://www.careysplc.co.uk/scudder-demolition/projects/station-hill>

Figure 2: Historic photographs showing frame of Thames Tower and demolition site north of NCP car park.

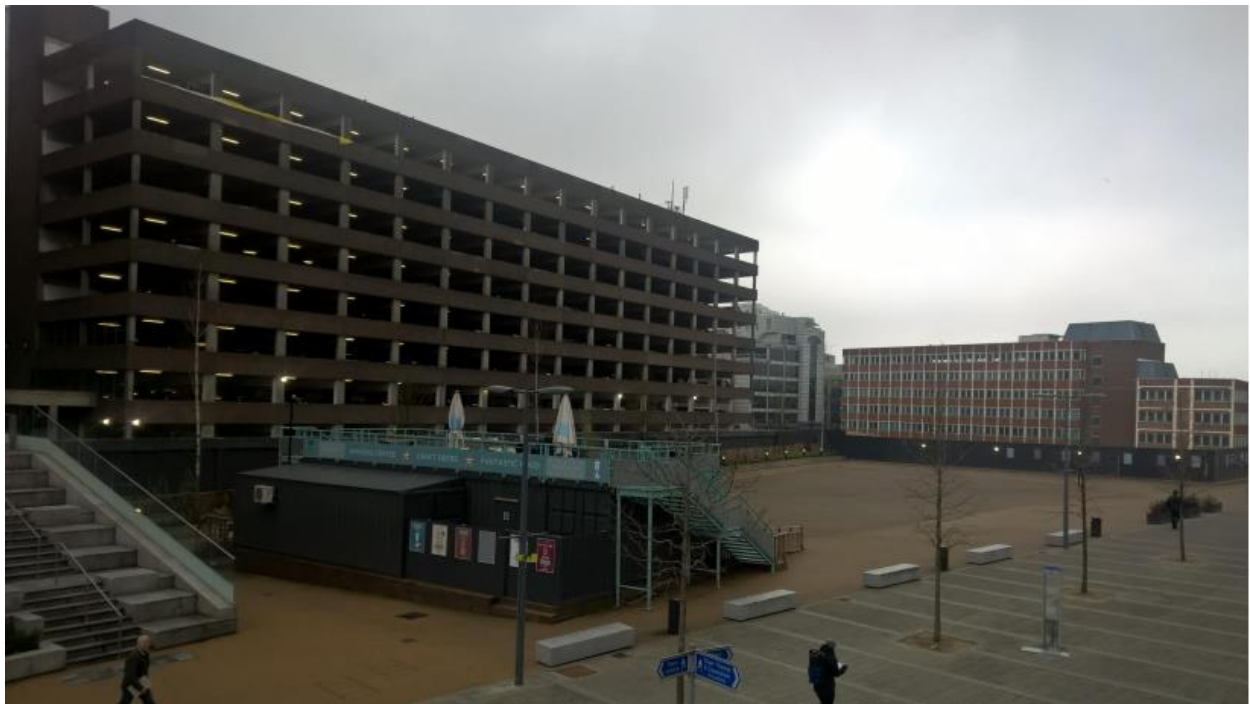


Figure 3: 2019 Existing NCP car park and Biscuit Tin



Figure 4: 2020 Relocation of Biscuit Tin



Figure 5: 2020 Phase 1 Enabling works site including existing retaining wall to NCP car park road



Figure 6: 2020 View of Phase 1 Enabling works site showing trees, lighting and other electrical items that are existing on the site