Thompsons of Prudhoe Limited
Princess Way, Low Prudhoe, Northumberland, NE42 6PL
Tel: 01661 832422 Fax: 01661 833687

# OUTLINE METHOD STATEMENT

## DEMOLITION OF ARMSTRONG HOUSE &
## DISMANTLING OF MANCUNIAN WAY SPUR

**REF: WMT/CD/3530**

**REVISION STATUS**

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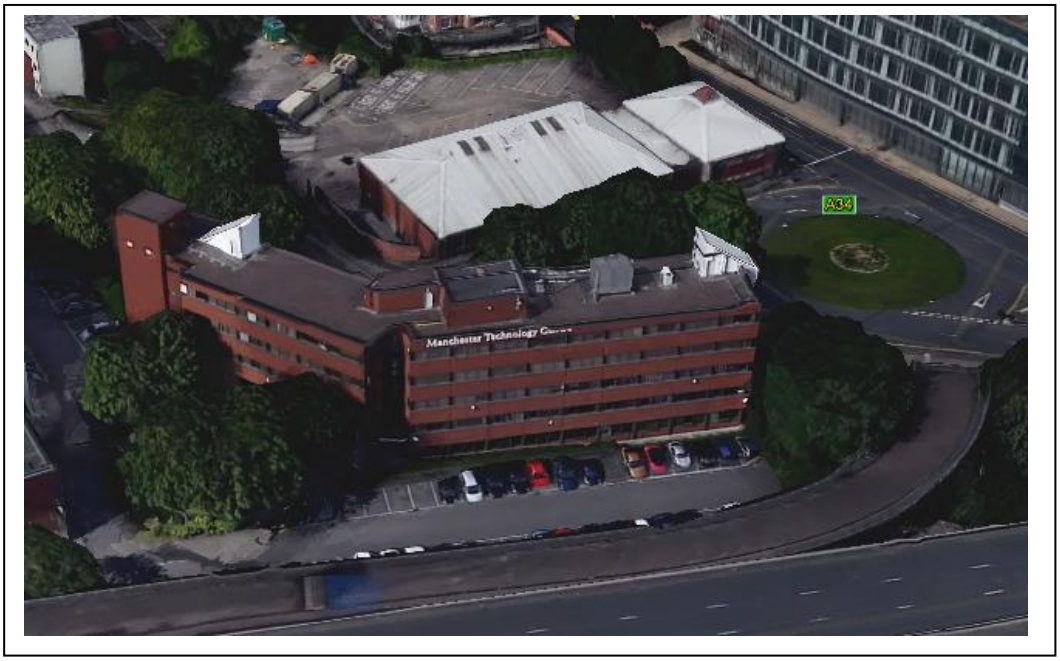
| Revision: | **Revision:** 5<br>**Date of Issue:** 3rd August 2017 |

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# REVISION HISTORY

| Revision | Date of Revision | Reasons for Revision |
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| 2 | 20.01.17 | Further to receipt of client comments. |
| 3 | 16.02.17 | Reference to Oxford House and power supply to welfare unit. |
| 4 | 03.03.17 | Further reference to Oxford House. |
| 5 | 03.08.17 | Additional comments regarding soft strip material removal from building. Changes highlighted in red for clarity |
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# 1. SUMMARY OF WORKS

Thompsons have been invited to tender to undertake the demolition of Armstrong House and the dismantling of the Mancunian Way spur. The works involve asbestos removal, a soft strip and demolition of the existing Armstrong House office building. This includes grubbing up surfacing, foundations, crushing of demolition material, breaking out of existing piles to 1.50m below the existing pile cap level and surveying pile locations.

Works include the careful dismantling of the Mancunian Way Spur (Mancunian Way Brooke Street Spur North Ramp), installation of a piling mat and excavation of trenches for archaeological investigation works. This work will be carried out in 2nr Phases, with the second phase is to be carried out at weekends. Thompsons will demolish the ramp, supports and foundations, removing all piles down to a depth of 1.50 below the pile cap soffit.

Works also include the demolition of a single storey building in front of Armstrong House. Post demolition works comprise the removal of all ground slabs and foundations and remove piles down to a depth of 1.50m below the pile cap level. Works include the demolition of the former tower crane base.

Post demolition works include the crushing of all suitable material arising from demolition of structures on site. The crushed material is to be spread, level and then compacted to the levels indicated. Any excess material from crushing is to be stockpiled on site as directed by the Structural Engineer.

Demolitions and associated works will comply with BS6187:2011 Code of Practice for Demolition Operations. All works will be undertaken within a designed demolition exclusion zone and adhering to pre-planned sequencing to ensure the safety of the public and all third parties and to reduce dust, noise and vibration to a minimum.

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# 2. PRE-AMBLE

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| Project Address: | Armstrong House & Mancunian Way Spur (Mancunian Way Brooke Street Spur North Ramp)<br>Manchester |

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| Client: | Bruntwood |

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| Principal Designer: | RLB |

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| Structural Engineer: | Booth King |

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| Proposed Principal Contractor: | Thompsons of Prudhoe Ltd. |

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| Project Management: | J. Thompson | Managing Director | 07702 491 333 |
| | N. Shilling | Project Director | 07919 491 705 |
| | T. Koerner | Contracts Manager | 07789 170 613 |
| | C. Dobson | Health, Safety & Quality Manager | 07919 491 702 |
| | R. Molly | Environmental Manager | 07919 491 706 |

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| Details of local A&E Hospital | Manchester Royal Infirmary<br>Oxford Road<br>Manchester<br>M13 9WL |

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| Hours of work | Approved working hours are as follows:<br>• 08.00 - 18.00 hrs Mondays<br>• 07.00 - 18.00 hrs Tuesday to Thursday<br>• 07.00 - 13.00 hrs Friday |

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| Plant & Equipment: | Asbestos removal<br>• H grade "shadow" vacuums<br>• Hand tools (screw drivers, socket-set, spanners, wire cutters)<br>• SMH asbestos fibre suppressant solution (in low pressure spray)<br>• Consumables (cloths, asbestos waste bags**,** duct tape, 1000 gaage polythene sheeting)<br>• Asbestos waste skip<br>• Timber<br>• Decontamination unit<br>• Asbestos waste skip<br>• Hepa filtered vacuum<br>• Tower scaffold working platform<br><br>Soft strip<br>• Demolition hand tools (pry-bar, hammer, saw, screwdriver, wire cutters)<br>• Wheel barrows & bins<br>• Tele-handler forklift truck<br>• Recip saw<br>• Circular saw<br>• Tower scaffold working platform<br><br>Demolition & post-demolition<br>• High reach demolition specification 360º excavator machine (equipped with universal processor attachment)<br>• Demolition specification 360º excavator machine (equipped with choice of pulveriser, rotating grab and bucket attachments)<br>• 8 Wheel tipper bodied wagons<br>• Skips |

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| | • Mobile crusher |

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| Personal Protective Equipment | Mandatory<br>• Hard hat (BS EN397 – Thompsons supplied only)<br>• Safety boots (incl. reinforced toe cap and mid-sole)<br>• Hi-vis clothing (Class 2 minimum i.e. waistcoat)<br>• Gloves – General use (minimum of BS EN888:1994)<br>• Light eye protection (Safety Specs – BS EN166)<br><br>NNLW & Non-licensable asbestos removal<br>• 3M 7500 P3 Ori-nasal half mask equipped with P3 filter<br>• Disposable coveralls (Category 5/6)<br>• Safety wellington boots<br>• Gloves<br>• Light eye protection<br><br>Licensable asbestos removal<br>• Scott Phantom Vision or Kamira Pro Respirator (P3 Powered)<br>• White Disposable Overalls (Category 5/6) – Transiting<br>• Red Disposable Overalls (Category 5/6) – Asbestos removal<br>• Gloves - General use (minimum of BS EN888:1994)<br>• Safety wellington boots<br><br>Use of spray adhesive<br>• Gloves - General use (minimum of BS EN888:1994)<br>• Light eye protection (Safety Specs – BS EN166)<br>• Sundstrom or 3M 7500 P3 ori-nasal half mask with particulate and gas filter<br><br>Use of powered hand tools<br>• Impact resistant eye protection<br>• P3 ori-nasal respirators (Sundstrom SR100 or 3M 7500)<br>• Gloves |

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| | • Hearing protection (Ear plugs – BS EN352-2)<br>*Note specific risk assessments may require the use of additional PPE* |

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| Services | Prior to commencement of works Thompsons will contact the statutory service providers to determine the status and location of service supplies to the structures marked for demolition and within the confines of the development site. All live services will be terminated prior to commencement of demolition works. Thompsons will not commence works until confirmation of service disconnection is in place from the service providers.<br><br>There is the possibility of unrecorded services to which the Thompsons will remain vigilant. All operatives will be briefed via the project Induction. The Daily Safety Briefings will be used to manage such issues as works progress.<br><br>The large diameter water main (and associated equipment) and car park feed lighting etc will be retained. The existing water main to the building will be disconnected and shortened to enable a new standpipe to be installed (location to be agreed). Thompsons will then protect the standpipe.<br><br>Thompsons will arrange to disconnect the existing drain at the live manhole in Cloak Street and to grout up the external drain runs fully from Cloak Street to the building line. Thompsons will grub up the drain runs and will backfill under the building footprint.<br><br>Oxford House and the associated Sub Station will be occupied throughout the works and no disruption to their operation is permitted. All hardstanding, access roads and drainage is to be retained. Parking bays and access routes running beneath the Mancunian Way and through to Oxford House will to be protected.<br><br>Thompsons will appoint the services of a specialist sub-contractor to undertake CCTV surveys for drainage works adjacent to the contract works to demonstrate their condition, both before and after works have been carried out. |

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| Security Fencing and Protection | Prior to commencement of works measures will be installed to ensure the security of the security of the site and the protection of the public and third parties. Thompsons will appoint the services of a specialist sub-contractor to install a 2.40m high painted ply-hoarding (with matching gates) fence line to secure the full site perimeter. The hoarding will be modified as required throughout the works to respect working methods, site boundaries and shared accesses etc.<br><br>All persons working on or visiting the site will be required to sign-in on arrival and sign-out on departure. No persons will be allowed on site unaccompanied unless they have received the site specific Thompsons induction.<br><br>Oxford House will be in occupation throughout the works and Thompsons will take the greatest care and maintain access and parking.<br><br>All works will be contained within the existing site boundary. Heras fencing and barriers will be erected within the confines of the site to partition pedestrian routes and the welfare from vehicle routes and to establish the demolition exclusion zone boundaries.<br><br>Thompsons will erect warning signage in prominent positions and in sufficient numbers to ensure that all persons approaching the site are aware of the works and the associated hazards.<br><br>During mechanical demolition a demolition exclusion zone will be put into place around the building and spur ramp, in accordance with BS6187:2011 Code of Practice for Demolition Operations. Access to this exclusion zone during active demolitions will be permitted to the plant operator only. The Site Supervisor will monitor works from external to the exclusion zone fence line, but with a clear view of the works. |

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| Working at Height: | Thompsons ensure that where possible work at height is eliminated. Thompsons achieve this through the selection of demolition plant as the primary demolition method.<br><br>Access to heights to conduct asbestos removal and strip-out at height will be gained using a tower scaffold working platform. The tower will be erected by a PASMA trained operative. The tower will be sited on firm and level ground free of debris. Exclusion zones will be in force below all work at heights. The tower will incorporate toe boards and outriggers. Operatives will be instructed not to overreach and to move the tower frequently during works allowing for safe access.<br><br>Access to form isolation cuts to the Mancunian Way Spur will be gained via specialist erected access scaffold. The scaffold will be constructed, maintained and dismantled by a specialist scaffold sub-contractor. |

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| Traffic Management | Prior to commencement of works Thompsons will develop a traffic management plan to ensure the safe interface of vehicles and pedestrians on-site and at the site entrance / exit. Oxford House will be in occupation throughout the works and Thompsons will take the greatest care and maintain access and parking. In the initial stages of the project, Thompsons will access site via the existing (shared) access gate off Sorton Street. Thompsons will then create a designated access route to the East of the site. Vehicles will proceed to the stockpile area to load / un-load under banksman control. Vehicles will then turn under banksman control to exit site in a forward gear. Due care will be forwarded to adjacent premises. All vehicles will park within the confines of the site, within a designated area. |

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| Dust control | Thompsons will minimize dust emissions. A water supply will be established form an approved and metered source. Thompsons will use water to dampen the demolition workface and the arisings produced during the demolition works. Care will be taken not to flood working areas.<br><br>Operatives will be required to wear P3 ori-nasal half mask respirators whilst |

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| | undertaking tasks which generate dust. Operatives are face fit tested.<br><br>Demolition hand tools will be used with low pressure spray systems and vacuum systems to reduce dusts.<br><br>During the formation of isolation cuts to the Mancunian Way Spur a dust suppression system will be in place.<br><br>During the demolition phase of operations the high reach excavators dust suppression system (water misting directly at the attachment of the machine) will be in use. Demolition arisings will be further dampened at ground level.<br><br>Thompsons will also ensure that the skips / wagons leaving site are first sheeted / covered to prevent the arising of dust during transportation. All waste will be transferred to authorised, licensed waste disposal sites. |

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| Noise | Thompsons will employ the best practicable means to prevent noise nuisance or disturbance to local residents resulting from site activities, including deliveries. Thompsons will follow the best practice outlined in the current edition of BS 5228 "Noise and Vibration Control on Construction and Open Sites" during the planning and implementation of site activities and operations. The recommendations within BS 5228 Parts 1 to 4 shall be employed at all times to minimise the emission of noise from the site.<br><br>Thompson's contracts are conducted with regard to our Noise at Work Policy and procedures. Methods will be sought which will eliminate the requirement to conduct such works where possible. If this is not possible then their use will be minimized and controlled. |

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| Vibration | The majority of the works will be conducted using mechanical means and using non-powered hand tools. Where vibratory hand tools are used then a system of monitoring and worker rotation will be put into place. Operatives will wear gloves to keep their hands warm.<br><br>Actions for Thompsons Operatives |

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| | • Report any signs of HAV – pins and needles, pain, numbness of the fingertips, pain in the wrists, reduced sensitivity in the touch<br>• Use the correct tools for the job<br>• Rotate the vibratory tools with fellow workers when notified by the Site Supervisor<br>• Wear gloves<br><br>Actions for Thompsons Site Supervisor<br>• Complete trigger time record sheet and rotate employees tasks<br>• Provide information to operatives on HAV<br>• Advise employees of the required safe working practices<br>• Eliminate or reduce vibration risks in line with the method statement and safe working procedures |

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| Environmental Precautions | At all times site operations will be undertaken with the protection of local stakeholders and the environment in mind. Works will be undertaken in a controlled manner to ensure the protection of and to minimise disruption to local stakeholders and all third parties. Thompsons will carry out our works to strictly minimise noise, vibration and airborne dust as much as possible.<br><br>All operatives will be advised of the aspects of the site that require attention or protection. Operatives will be provided with copies of the approved method statements prepared for the site working.<br><br>Thompsons will identify any hazardous materials and deal with the disposal of such materials in accordance with our statutory requirements.<br><br>Thompsons will ensure that our works do not pollute the environment including nuisance noise, windblown dust, spillages etc and will prevent polluting materials from leaving the site in accordance with the contract specification.<br>Thompsons will establish a designated re-fueling point on site. Spill kits will be present on site to deal with any incident. Operatives are Environmental Awareness trained and this includes emergency drills for clean-up / control of spillage. In the event of leakage / spillage operatives will follow the emergency |

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| | clean-up / control procedure. |

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| Known Hazards: | • Asbestos<br>• Working at height<br>• Demolition of structures<br>• Vehicle movement<br>• Dust<br>• Noise<br>• Vibration<br>• Use of powered hand tools<br>• Use of hand tools<br>• Erection of fencing<br>• Third parties & public<br>• Services<br>• UXBs |

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| Oxford House | Oxford House will be in occupation throughout the works and Thompsons will take the greatest care to maintain access and parking. Thompsons will aim to ensure that the occupants of Oxford House remain as unaffected as possible throughout the works. A road sweeper will be brought to site when necessary to ensure that adjacent roads are kept clean to mitigate mud being brought into the building.<br><br>At all times site operations will be undertaken with the protection of local stakeholders and the environment in mind. Works will be undertaken in a controlled manner to ensure the protection of and to minimise disruption to local stakeholders and all third parties. Thompsons will carry out our works to strictly minimise noise, vibration and airborne dust as much as possible.<br><br>All works will be contained within the existing site boundary. Heras fencing and barriers will be erected within the confines of the site to partition pedestrian routes and the welfare from vehicle routes and to establish the demolition exclusion zone boundaries. |

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| | Thompsons will erect warning signage in prominent positions and in sufficient numbers to ensure that all persons approaching the site are aware of the works and the associated hazards.<br><br>Thompsons will minimize dust emissions. A water supply will be established form an approved and metered source. Thompsons will use water to dampen the demolition workface and the arisings produced during the demolition works. Care will be taken not to flood working areas.<br><br>Thompsons will employ the best practicable means to prevent noise nuisance or disturbance to local residents resulting from site activities, including deliveries. Thompsons will follow the best practice outlined in the current edition of BS 5228 "Noise and Vibration Control on Construction and Open Sites" during the planning and implementation of site activities and operations. The recommendations within BS 5228 Parts 1 to 4 shall be employed at all times to minimise the emission of noise from the site.<br><br>Thompsons will use low-impact plant and machinery where possible to mitigate vibration and noise as much as practicable |

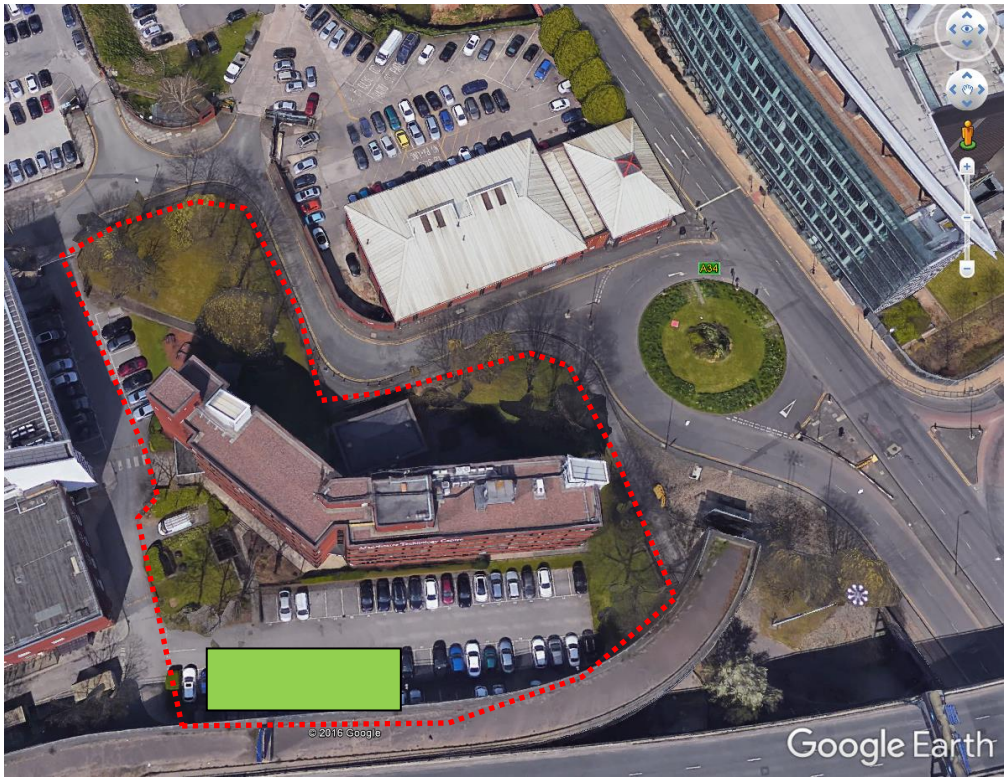
## 3. METHOD STATEMENT

*Welfare arrangements*

- Thompsons will provide a modular integrated welfare for use by site personnel and visitors for the duration of the project. The welfare will comprise an office, mess, drying room and WCs. The facility Welfare unit is self-contained and houses an integral diesel-powered generator, along with foul and clean water tanks which are emptied and re-filled on a weekly basis by a visiting service vehicle

- The welfare will be located within the confines of the site within a specified compound area. The compound will be partitioned from vehicle access, demolition working areas, stockpile areas and parking etc using crowd barriers.

- All welfare facilities will be maintained and kept in a clean order and efficient working manner.
- Welfare facilities to be sited in position indicated below (in green), site boundary line indicated in red:




*Removal of asbestos containing materials*

- Prior to commencement of works a UKAS approved asbestos surveyor will be appointed to undertake a Pre-Demolition Asbestos Survey of Armstrong House and all structures specified for demolition.
- Thompsons hold a full asbestos license. Prior to commencement of demolition works Thompsons will remove all asbestos containing materials as identified within the Asbestos Survey.
- Upon approval to commence works Thompsons Project Management Team will review the survey. A series of site visits will then be conducted to identify each ACM, using the survey as a reference guide. To aid operatives during the asbestos removal and associated works the location of each ACM will be physically marked.
- If any errors in the survey are noted, or if asbestos containing materials noted within the survey cannot be identified then Thompsons will alert the Clients Team.

- Asbestos removal works will be in accordance with detailed and specific Asbestos Removal Method Statements, compiled by our Asbestos Managers.
- Asbestos removal works will be conducted within exclusion zones, ensuring that access is only permitted to essential asbestos removal personnel.
- During works Thompsons will appoint the services of an asbestos analyst, where required, to conduct daily background and personal air monitoring to assess the effectiveness of the asbestos removal technique and control measures.
- Prior to completion of each section of notifiable / licensable works the analyst will conduct a four stage clearance air test to confirm that the asbestos has been removed and that the area has been thoroughly cleaned.
- Copies of all documentation received from the analyst will be retained on site for the duration of the works for inspection by the Client, the HSE or other interested party. This information will also be forwarded to the Principal Designer (either on completion of works or as works progress, as required) as part of the project Health & Safety File.

*Armstrong House – Removal of soft strip fittings, fixtures & waste items from building*

- A controlled drop zone will be established to minimise manual handling and to permit Arisings will be removed to the drop zone entry point. A window at the front elevation of the property has been selected, away from the building entrance.
- The window will require careful removal to enable the transfer of arisings from the building and directly into a skip below. The window will be removed using hand tools.
- Prior to use of the drop zone establish the following safe working controls:
  1. Fence-off the area below the window and surrounding the skip using Heras fence panels. Display drop zone warning signage. Securely clip the fence panels.
  2. Ensure that a banksman is on duty during the use of the drop zone. The banksman will monitor for persons approaching and will prohibit access to the drop zone to all persons.
  3. Skip to be positioned within drop zone to enable transfer of arisings directly into the skip. Ensure that all arisings are suitably processed and sorted prior to removal to the skip.
  4. The drop zone will only be re-opened when the excavator machine requires access or the skip is removed from site. No transfer of materials form the

building will be permitted at this time. The Site Supervisor will strictly control works.

*Armstrong House - Soft strip of fittings, fixtures & waste items*

- Thompsons will progress pre-demolition works to soft-strip Armstrong House and the adjacent single storey building of fittings and fixtures to prepare for later demolition. Works will be conducted by hand and by trained and experienced demolition operatives. All arisings will be processed, sorted / partitioned as works progress, allowing for maximum recycling and minimal removal to landfill.
- Large items (for example lift plant and equipment located within Armstrong House) will be left in-situ to be removed via mechanical means during the demolition phase of operations.
- Prior to commencement of works Thompsons will assess the existing lighting levels within the building. Where required Thompsons will establish temporary lighting, as required to enable safe access through the building.
- Operatives will commence works by removing doors throughout the buildings to improve access. Doors will be supported and then removed from their hinge fittings via a two man team. Doors will be carefully carried via team lift to the drop zone access windows.
- Loose items remaining within the building will be collated, processed as required into sections and then removed from the building with due care.
- Works will progress to remove door frames and back moulds. Saws will be used to cut the frames and moulds to release tension. The frames and moulds will be pulled free using pry-bars. The sections will be reduced as required and then removed to the drop zone.
- Works will progress to free the specified skirting boards. Pry-bars will be used to remove the skirtings from their fixings. The skirting sections will be further reduced and then removed to the drop zone.
- Fixed / fitted items will be freed from their holding points using hand tools (screwdriver etc). The fixtures / fittings will then be processed (using demolition hand tools) into small and hand sized sections to allow for their safe removal from the building.
- Thompsons will remove all specified floor finishes, all layers including adhesive, gripper rods, nosings etc as the soft strip works progress. Carpets will be pre-cut into

lengths via safety knife, enabling safe removal. Operatives will work with care to lift and remove the carpet strips using a combination of shovel and pry-bar. The carpets will then be rolled and removed with care to the drop zone.

- Carpet tiles will be lifted, stacked in groups and removed in small groups to the drop zone.

*Removal of Waste Electrical Equipment*

- It is important that items / appliances which have the potential to be classified as either scrap metal or WEEE are identified from the onset and are put into the waste chain to avoid illegal crushing and treatment of these items.
- In accordance with Thompson's waste requirements, Thompsons Site Supervisor will identify all WEEE items to determine scrap classifications (i.e. what classifies as scrap and what classifies as WEEE). Circuit boards and any electrical components will be classified as WEEE. Where circuit boards and any electrical components can be removed, then the remaining items / appliances will be regarded as scrap metal. Electrical motors will fall under WEEE. Electrical cable, sockets and switches do not fall into WEEE including distribution boards or switch gear.
- In accordance with the Carriage of Dangerous Goods Act 2009 requirements Thompsons will provide the Client with copies of environmental permits for each disposal point for each waste stream; e.g. mixed waste, cabling, WEEE, scrap metal, plant and equipment. etc). Thompsons will also provide our Waste Carriers License.
- As the soft strip works progress loose electrical equipment will be collected and stored in a separate area so that they can be catalogued and their status determined (i.e. non-hazardous or hazardous) prior to separation for disposal to an approved treatment facility (AFT).
- Fixed electrical equipment will be carefully dismantled (using hand tools) to separate WEEE elements from recyclable materials prior to cataloguing and disposal to AFT.
- Thompsons will also recover light bulbs and light fittings to ensure they are not damaged for safe disposal under the WEEE regulations.

*Demolition of lightweight partition walls*

- Thompsons will remove plasterboard partition walls throughout the building as the soft strip works progress.
- Each lightweight partition wall will be reduced into sections, working top-down. Access to heights will be gained via tower scaffold and Podium.
- Operatives will use hand tools (pry-bar and claw hammer) to pull the plasterboard sheets downwards and from the timber support frame.
- The boards will be processed as required into sections and then stored within a defined area of the building, to enable all plasterboard to be removed from site in one load (via drop zone).
- The exposed timber frame will be cut into sections using saws and the sections carefully removed to ground level. Operatives will forward due care for safe manual handling during transfer of the sections to the drop zone.

*Demolition of Armstrong House*

- Armstrong House will be demolished by remote mechanical means, using demolition spec 360º excavator machines. The primary tool for demolition will be a high reach excavator machine (equipped with a universal processor attachment). An additional 40te excavator machine (equipped with a pulveriser attachment) will assist in low-level demolition and the processing and sorting of arisings.
- Each excavator machine will be operated by a time served and CPCS trained operator, working under the direct control of our Site Supervisor.
- During demolition works the perimeter of the building will be controlled as a demolition exclusion zone, in accordance with BS6187:2011 Code of Practice for Demolition Operations. Access during active demolitions will be permitted to the plant operator only. The Site Supervisor will monitor works from within the boundary of the site, but external to the exclusion zone.
- The excavator machine will be positioned within the footprint of the site, to face the building. The excavator will be sited at a 2:1 standoff distance (to ensure a safe standoff from demolition arisings whilst ensuring sufficient reach for the demolition attachment) in accordance with *BS6187 Code of Practice for Demolition*.
- Demolitions will progress systematically through each floor of the structure, from roof height to ground floor slab level (working on a top to bottom basis).

- Demolitions will commence at 5th floor level with the removal of external brickwork facings to expose the concrete framework of the building. The brickwork will be reduced working top-down and will be pushed downwards and permitted to accumulate at ground level, within the confines of the exclusion zone.
- Works will progress to reduce the concrete roof slab. The concrete shear attachment will progressively reduce the concrete. The arisings will accumulate within the exclusion zone at ground level. All arisings will be sorted at ground level and stockpiled within the confines of the exclusion zone.
- Demolitions will then progress top-down to remove further brickwork external cladding to enable access to reduce the concrete frame of the building.
- The universal processor will be used to reduce the concrete frame of the building on a top to bottom basis. Beam and column will be reduced into sections. The arisings will accumulate within the exclusion zone at ground level and will be cleared-back to the stockpile area, within the confines of the exclusion zone.
- Demolitions will progress as per the above sequence working progressively through the structure, reducing the internal partition walls and floor slabs as works progress.
- As demolition works progress arisings will be sorted and stockpiled at ground level, within the confines of the exclusion zone.
- The processed demolition arisings will be retained on site to await later crushing and will be removed to a designated stockpile within the confines of the site boundary.

*Removal of ground floor slab & foundations*

- Following completion of demolition works the reinforced concrete ground floor slab of Armstrong House, followed by the buildings foundations will be grubbed up and removed. All works will adhere to the recommendations detailed within the 6 Alpha (Bomb Search Report).
- To minimise the requirement to conduct vibratory / noisy works the excavator machine will be equipped with a bucket attachment.
- Commencing at the leading edge of the slab the attachment will be used to first lift and then to fold / roll the slab. This procedure will be repeated across the slab, allowing it to be reduced into sections.
- The foundation sections will be progressively excavated and then reduced to enable later crushing on site.

*Crushing of demolition arisings*

- All hardcore generated during the demolition and associated works will be retained on site and crushed to a specified grade.
- The crusher plant will be operated in accordance with Thompson's site license requirements and the enclosed Safe Working Procedure. The crusher plant will only operate during designated working hours. The crusher will be operated by a CPCS trained and experienced operator. The crusher will be operated by a CPCS trained and experienced operator. The machine will operate within a defined area and site operatives will be instructed not to come within proximity to the crushing working area.
- To minimise dust release the crusher will be connected to a water supply (from the approved site source). The crusher's water suppression system will be operational at all times. Where required an additional water hose will be used to wet stockpiles of concrete awaiting crushing and crushed concrete.
- The stockpiled hardcore will be loaded into the hopper of the mobile crusher plant using a 360$^{o}$ excavator machine equipped with bucket attachment. The excavator machine will be operated by a CPCS trained and experienced operator.
- The crushed, graded material will be allowed to neatly stockpile at the crusher belt end. The crushed material will be transferred to stockpile locations to enable later re-use on site.
- On completion of works the crushed material will be spread, level and compacted to the levels indicated by the Clients team. Any excess material from crushing is to be stockpiled on site as directed by the Structural Engineer.

*Demolition of single storey building*

- Thompsons will use remote mechanical means to demolish the single storey building located in front of Armstrong House. The structure will be carefully and systematically reduced using the 40te excavator machine. Demolitions will progress working top-down through the structure.
- The resulting arisings will be sorted and processed within the confines of the site boundary. All hardcore will be retained for later re-use. All remaining arisings will be removed from site.

- On completion of demolition works Thompsons will remove all ground slabs and foundations and piles down to a depth of 1.50m below the pile cap level. Works will be undertaken using the excavator machine equipped with bucket attachment.

*Demolition of tower crane base*

- The former tower crane base located below the single storey building will be grubbed-up and removed in accordance with the contract specification. All works will adhere to the recommendations detailed within the 6 Alpha (Bomb Search Report). The tower crane base will be exposed using the excavator mounted bucket attachment and then reduced using a combination of pulveriser attachment and breaker attachment (where required). All hardcore will be retained for later re-use.

*Dismantling of the Mancunian Way Spur (Mancunian Way Brooke Street Spur North Ramp)*

- The dismantling of the Mancunian Way Spur will be carried out in 2nr Phases in accordance with the contract specification. The approved site working hours will be strictly adhered to to minimise disruption to local stakeholders.
- Prior to commencement of demolition works Thompsons will install a barricade fence line along the edge of the spur, parallel with the Mancunian Way highway. This will obstruct the view of passing motorists, preventing distraction. The fence will be progressively removed as works progress.
- In accordance with the contract specification an isolation cut will be required to separate the retained portion of the Mancunian Way Spur from the remaining section of the structure (to be demolished). Thompsons will appoint the services of a specialist sub-contractor to form the isolation cut. At an agreed period Thompsons will cease demolition works to permit safe access. Temporary propping arrangements will be installed in accordance with the requirements of an independent structural engineer. The sub-contractor will work from an access scaffold to cleanly cut through the concrete using a saw. Noise, dust and vibration mitigation systems will be in place.
- Thompsons will undertake the demolition of the ramp, supports and foundations via remote mechanical means. The demolition of the spur will be conducted via remote mechanical means, with a high reach excavator machine selected as the primary demolition tool. The spur will be demolished in sections, working from the bottom and up to the pre-formed isolation cut. The excavator machines universal processor attachment will be used to reduce the spur into sections, first reducing the central

portion of the deck and parapet side walls and finally the support columns of that section.

- On completion of demolition works Thompsons will remove all piles down to a depth of 1.50 below the pile cap soffit.

*Ground probing, excavation & surveying*

- Thompsons will progress works to probe the locations of all new foundation piles as required for the proposed MSCP to a depth of 10m (or refusal at bedrock). A total of 245 pile locations will be probed. Thompsons will adhere to the approved pile location plan. All works will adhere to the recommendations detailed within the 6 Alpha (Bomb Search Report).
- Thompsons will use mechanical means to excavate each of the 245 pile locations. As works progress Thompsons will remove all encountered obstructions. Excavations will progress to a depth of 4m or less. Thompsons will advise the client's team of the presence and nature of obstructions deeper than 4m. On completion of works all excavations will be backfilled with crushed material.

*Completion of works*

- Following completion of works the site will be fully tidied to ensure a clean and safe finish. The site will then be inspected to the satisfaction of our client. Following approval all plant and resources will be removed from site.