



Maritime Centre of Excellence

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University of Southampton

**Demolition and Construction Method
Statement (DCMS) – Demolition Works**

November 2010

Updated Jan 2011 Rev 5E

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1.0 Executive Summary

This document details our outline proposals for the methodology and sequence for the Demolition of Building 62 (B62) on the University of Southampton's Boldrewood Campus. This proposal also includes the preparation works (bulk earthworks) for Phase 1 of the Maritime Centre of Excellence project.

Included in this document is the material to discharge the relevant planning conditions for the above works. This includes; material movement, dirt and dust suppression, vehicular movement and cleaning and noise control. Environmental impacts and mitigation measures are also included.

Given the project is progressing in stages this document provides an update on previous works and identifies future subsequent submissions which will be issued prior to implementation of each element of the works which includes:

1. Enabling Works & initial demolition – Works complete
2. Off site highways – Works complete
3. Plot C Construction – Works complete
4. Demolition of Building 62 and Bulk Earthworks
5. Plot A Construction
6. Plot B Construction
7. On site Infrastructure and Car Parking

Following the appointment of a Principal Contractor for each of the subsequent stages a detailed method statement will be developed. The demolition works of B62 to release the site for the Plot A and Plot B works can now be undertaken following the decant of existing staff to Building 85 a new building located on the Highfield Campus.

Each stage of the operation will be subject to the compilation of a detailed Method Statement and the associated Risk Assessments before works commence. The demolition works and the bulk earthworks are therefore covered in greater detail in this report.

This report seeks to identify the key environmental impacts of the Works including; demolition, crushing, backfilling and piling operations.

1.1 Objective of the report

To seek the partial discharge of the conditions 20, 21, 22 as set out in the Section 106 Agreement dated 17 June 2008 (07/00985/OUT/295) by Southampton City Council (SCC) to provide an Outline DCMS for this phase of the Maritime Centre of Excellence development.

To establish the procedures and method to be used to demolish the existing structures on the Boldrewood campus and identify measures that will be taken to eliminate / reduce potential environmental effects and associated risk. To identify the studies that have been taken by demolition experts to inform the preferred method of demolition in terms of safety for the site users and to reduce potentially adverse environmental impacts.

This DCMS considers the sites access, egress, natural features and adjoining properties and sets out a practical and logical approach to setting up the site establishment and implementing the works.

Informal discussion has been held with the council's Environmental Health Officer ([EHO](#)) to ensure that statutory and planning obligations have been met prior to consultation with local residents and formal submission to the council.

2.0 Project Details

2.1 Site Address

University of Southampton
Boldrewood Campus,
Basset Crescent East,
Southampton
SO16 7PX

2.2 Working Hours

The agreed hours of work are in accordance with Planning Condition 22 and are restricted as set out below:

0800 – 1800 hours Mondays to Fridays
0900 – 1300 hours Saturdays

No works will be undertaken on bank holidays or weekends outside of the above hours, except with prior written approval of SCC. Currently, there is no intention to work outside the above times.

2.3 Construction Logistics

2.3.1 Contractor Parking

There will be a general policy in that on site car parking for contractors will be provided and contractors will be discouraged from parking in local roads. Access to the car park will be via Basset Crescent East [with parking located to the north of site. Please refer to Appendix A.](#) All contractors are notified at tender stage of the parking rules and are requested to comply as part of their appointment.

The Principal Contractor will develop the Local traffic management measures for the site during the enabling works however further details can be found under Section 3.5 of this report.

2.3.2 Construction vehicles wheel cleaning strategy

Measures will be taken on site to prevent mud, concrete, dust and debris littering onto the highway. Facilities such as wash down areas, wheel washers and jet washers will be in place at each exit points from the site [please see the Site Logistic Plan in Appendix A.](#) During the Demolition and Bulk Earthwork phase this will be undertaken by jet washers, with consideration being given to a full wheel wash establishment, as appropriate for the bulk earthworks to Plots A & B.

Lorry loads will be sheeted when they leave site to prevent wind blown debris littering the road and neighbourhood.

The Principal Contractor will appoint a Construction Liaison officer to monitor the effectiveness of these methods and to direct the workings of a road sweeper as required.

2.4 Site Establishment

A secure perimeter fence has been installed to define and protect the site. For the demolition works there will be 2 access points for vehicles with separate pedestrian accesses at both Basset Crescent East and Burgess Road.

Each access point will have a double gate fitted which will be locked out of hours. During working hours the entrance gate to Bassett Crescent East will be permanently manned by a trained banksman who will be responsible for the traffic control at the entrance and the safe routing of pedestrians. The entrance gate to Burgess Road will be controlled by the traffic light management system that has been constructed during an earlier phase. Pedestrian access via Burgess Road will be controlled by security.

A full time security officer will be present during the agreed hours of work to ensure that the site is not subjected to trespass or unauthorized access.

Within the site boundary there are trees with Tree Preservation Orders together with root protection zones. Planning permission has been obtained to remove certain trees in advance of the demolition works. In accordance with the agreed Arboricultural Method Statement tree protection measures will be installed the object of which is to enhance the access routes from site entrances up to the demolition area. The protection measures will also ensure that trees do not get damaged during the works.

Please refer to Appendix B for the Site Boundary Layout, the Tree Removal and the Tree Protection Plan.

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3.0 Environmental Compliance Schedule

Prior to the commencement of works on each of the elements of work an Environmental Management Plan will be produced. This document will then be reviewed at regular intervals and will be updated as the works progress.

The Environmental Management plan will address the areas of potential impact during the Demolition and Construction. Below is a table summarizing the environmental impacts and also the mitigation actions:

Issue	Potential Impact	Mitigation action
Noise	Increased road noise levels from vehicles, plant during demolition and piling operations and general construction operations e.g. compressor usage	Consideration has been given to the application for a Section 61 notice. However, following consultation with the EHO, ongoing dialogue will be maintained to minimise all noise generating activities and instigate mitigation measures. Our proposed methodology will be assessed in accordance with the current BS5228 for dB(A) levels. <u>Type A monitors will installed.</u>
Vibration	Increased vibration from vehicles & structure borne during demolition operations	Vibration monitoring at boundaries to control <u>levels in</u> accordance with <u>BS5472-1</u> <u>The Guide to Evaluation of Human Exposure to Vibration in Buildings.</u>
Dust / Air Quality	Windblown dust from ground surfaces, stockpiles, vehicles, workfaces & cutting and grinding of	A dust suppression scheme will be implemented to reduce airborne dust at source by the means of

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Issue	Potential Impact	Mitigation action
	materials. Exhaust emissions from lorries and plant deliveries.	directly applied water jets etc. Stockpile management plan to be instigated. Dust quality <u>light scatter monitors</u> will be instigated at boundary locations. <u>These will provide upwind and downwind measurements. A guide has been set by the EHO 125µg/m3, as a 15 minutes average.</u> All diamond cutting tools will be provided with local water suppression. Due consideration will be given to the ceasing of operations in high winds if appropriate.
Waste & Material Storage	Waste generation and its disposal	The Demolition Contractor will put in place a Site Waste Management Plan prior to the commencement of the works.
	Increased sediment loadings to storm water system. Potential for contaminated storm water run off.	All drains monitored for duration of the works. All site works will be undertaken in accordance with the Environment Agency’s Pollution Prevention Guidelines, in particular Pollution Prevention Guidance Note 6 ‘Working at Construction and Demolition Sites’
	Traffic congestion caused by site traffic and traffic associated with road diversions and deliveries. Increased vehicle movements mainly consisting of HGVs. Transfer of mud on to the highway. Disruption from abnormal or hazardous loads.	Traffic management plans to be instigated to minimize impact on adjacent neighbours

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The exact monitoring details will be issued to the EHO prior to any demolition works commencing on site. It has been agreed with the EHO that a minimum of 1 Real Time monitors will be installed to monitor noise, and a minimum of 1 Real Time monitor will be installed to monitor vibration, which may be extended at a later date.

The following measures will be pursued to eliminate, reduce or offset the potential adverse environmental effects identified above. Any detrimental or potential adverse effects will be appropriately mitigated through a variety of procedures and actions:

- Compliance with Health and Safety statutory requirements and guidelines, and preparation of procedures which will clearly set out the methods of managing environmental issues for all involved with the construction works, including supply chain management;
- All construction site works will be undertaken in accordance with the Environment Agency’s Pollution Prevention Guidelines, in particular Pollution Prevention Guidance Note 6 ‘Working at Construction and Demolition Sites’.
- Implementation of dust suppression systems that seek to reduce the generation at source, with water, with a contractor designed distribution network, and approved by the local authority.

- Requirement to comply with these procedures will be included as part of the Contract conditions for each element of the work. All contractors tendering for work will be required to demonstrate that their proposals can comply with the procedures, and current best practice techniques;
- Establishing a dedicated point of contact and responsibility to deal with issues if they arise. The point of contact will be a named representative from the construction manager or contractor.
- Production of a regular newsletter to be circulated to neighboring occupiers, local residents and the relevant authorities; and
- Regular structured dialogue with SCC with a pre-start review once the demolition contractor has been appointed and a series of periodic reviews throughout the works.

The agreed procedures will be set and circulated to SCC and other relevant bodies, prior to commencement of the works. This will include the following:

- The broad plan of the phasing of the works and its context within the whole project;
- Housekeeping procedures and environmental control measures;
- Contact details during normal working hours and emergency details outside working hours;
- Provision for reporting, public liaison, and prior notification;
- The mechanism for local residents and other members of the public to register complaints and the procedures for responding to complaints;

3.1 Noise

A base line noise level survey has been undertaken, a copy of which can be found in Appendix C with daily periodic monitoring of the site being currently undertaken during the decommissioning works. The monitoring will then extend during the course of the works. This consists of monitors being placed at boundary locations which are then checked periodically during the day with the results recorded. Following further consultation with the EHO real time monitoring to the north of site is to be implemented. Although noise cannot entirely be eliminated reasonable steps will be taken to reduce any adverse effects of noise generated by the works. The nature and capability of the plant proposed to be used is such that all operations will be carried out with the minimum of noise and emissions generated on the site.

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All plant will be modern, well maintained and under 3 years old. Details of the plant can be found in Appendix D. The working locations of the Long Reach crushing machines will be positioned/ moved around the site to undertake the demolition works. The processing crush machinery will be located in dedicated plant crushing zone to the south of B62. Noise mitigation measures will be implemented to control noise at source.

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3.2 Dust

During the demolition works the impact of dust to surrounding areas will be reduced through using a number of dust suppression measures. These will include a direct water source on the end of the Long Arm Reach that will spray water at the face of the surface being demolished effectively dealing with the dust at source, a high powered dust curtain will also be employed which is a water propelled device that envelopes dust with water (see Appendix D), the use of hand held hose pipes and also a Fire Tender which will be employed to “damp down” and keep damped down the works as required and the management of stockpiles washing of wheel washing of vehicles and lorries carrying debris to be properly covered and the cleaning of site entrances. All on site transfer routes will be controlled and specifically designated to limit trafficking through the implementation of the contractors traffic management plan. The various methods of dust suppression will be reviewed throughout the demolition process and should changes be required then these will be implemented.

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The incoming water main to B62 is 225mm in diameter. The flow rate of this pipe exceeds 50 litres per second. Therefore there is an adequate supply to the site for the dust suppression systems.

3.3 Waste Management, Recycling and Disposal

All contractors will be required to investigate opportunities to minimize waste arising at source and, where such waste generation is unavoidable, to maximize the recycling and reuse potential of construction materials.

Prior to the commencement of any works a Site Waste Management Plan will be agreed to establish methods and procedures for dealing with all materials. This will be submitted to the EHO at SCC. Wherever feasible, such arising will be dealt with in a manner that reduces environmental impact and maximizes potential re-use of materials. Recycling of materials arising from the demolition of buildings and structures is a key element of the construction programme. This will concentrate on the fabricated structural steelwork, embedded metal reinforcement and crushed concrete.

The destination of all waste or other materials removed from site will be notified by the Contractor/Construction Manager for approval (via consultation with the Authorities). Loads will only be deposited at authorized waste treatment and disposal sites. Deposition will be in accordance with the requirements of the Environment Agency, the Environmental Protection Act 1990, Controlled Waste Regulations 1992, Controlled Waste (Amendment) Regulations 1993, the Special Waste Regulations 1996 and Special Waste (Amendment) Regulations 1996 and 1997, the Duty of Care Regulations 1991, the Landfill Regulations 2002 and the Landfill (Amendment) Regulations 2004, Hazardous Waste Regulations 2005 and List of Waste Regulations 2005.

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3.4 Environmental Mitigation

The following summarises further mitigation measures to be adopted in relation to noise, vibration and air quality issues:

- Designated and supervised areas and compounds for storage of materials, storage of plant and equipment, site huts and parking of vehicles, storage of building materials, and locations for loading and unloading of vehicles;
- Agreed construction methodology to minimize generation of noise, vibration and dust;
- Use of appropriate machinery to minimize dust generation at source, allowing for controlled discharge via the on-site drainage systems. All hoardings and stockpiling will be considered, where appropriate, to assist acoustic screening;
- Requirement for engines to be switched off on-site when not in use, use of quieter plant, noise suppression equipment, regular plant maintenance, screening of plant (if appropriate);
- Spraying of spoil heaps, excavated material and other areas with water when conditions dictate, these are explained under Section 3.2 – Dust;
- A road sweeper will be used as and when the need for off-site road cleaning arises;
- Restriction on the use of fires on site; and
- Prior notice to residents via web site / leaflet drop for any particularly noisy operations.

3.5 Traffic Management

To redevelop the site additional vehicle movements will be required on surrounding roads, potentially affecting local residents.

All construction traffic entering and leaving the site will be closely controlled. Vehicles making deliveries to the site or removing spoil or other material, will travel via the designated routes as shown in Appendix E.

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All access points to any demolition work area, except the designated access and egress points will be physically sealed up and secured via the installation of boarding, scaffold barriers or fencing, prior to work commencing. Warning notices will also be applied.

Where mechanical plant is carrying out demolition works these fenced off and secured areas will also be under the supervision of a designated competent person (banksman), who will be in constant contact with the plant operators, via mobile phone, visual, 2 way radio.

Deliveries will be phased and controlled on a 'just in time' basis, all being clearly marked to show their destination. This will minimise travel time around the site and any associated noise. All transportation to and from the site will be on rubber tyred vehicles. Tracked vehicles will only operate within the site.

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The 'just in time' basis will be implemented by 2 way communication between the lorry drivers and the security on the gate. This will be marshaled by the lorry drivers contacting the security gate so as to plan their movements. When lorries come from Southampton Docks they will contact the security gate to advise that they are on route. Likewise when lorries come from the Portsmouth direction the drivers will use the University of Southampton's Wide Lane site as a park up place from which they will contact the security gate. Should the gates not be accessible when the lorry arrives on site the lorries will stand clear from the carriageways.

The Principal Contractor will be responsible for ensuring that these obligations are imposed on the trade contractors.

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We have reviewed the benefits of crushing material on or off site. The current view is that the North West wing, the east wing and the lecture theatre slab will be crushed on site. The remaining part of the building could either be crushed on or off site. Depending on the method adopted, or a combination of the methods vehicle movement throughout the works will vary. It is estimated that 30 lorries per day will enter and leave the site for a period of 8 months. This equates to 60 lorry movements per day with no more than 20% of lorry movements being during peak times. The earthwork lorries will enter and exit through the South gate onto Burgess Road with the demolition lorries using the Bassett Crescent East gate. These lorries will turn right so as to access Burgess Road.

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The number of lorry movements through the Bassett Crescent East gate has been kept to a minimum. Due to there being no access between the North and the South of the site and the drop in levels over the site it is not possible to use just the Burgess Road gate.

Other vehicle movements will occur throughout this period for movement of recycling materials and general surplus waste material.

During the demolition phase of the project it may be necessary to bring in heavy plant to facilitate the works for example, crane, crushing plant, piling rig. Prior warning will be given when abnormal size loads enter or leave the site.

On site dust suppression measures appropriate to the road surfaces will be applied to control dust at source

3.6 On site materials storage

On site storage of hazardous materials will be in accordance with the relevant COSHH regulations and EA pollution prevention guidelines. Diesel fuel will be contained within a twin skinned bowser or fuel tanks with suitable local bunding, which will have the capacity to contain a spill of 110% of the full fuel load. These fuel containers will be locked and will be monitored during out of hours by the site security guard. Grease and lubricating oils will be stored in the on site secure container. Oxy acetylene gas bottles will be stored in a lockable storage cage away from any building fabric.

It is envisaged that a lockable cage will be situated within the site compound to house oxygen and propane bottles used for cutting and burning works. Hot work permits will be issued for these aspects of work with adequate fire points being provided throughout the site area and close to hot works.

Small items of plant will be stored within the secure site containers. Larger items such as excavators, dumpers, compressors, generators etc will be locked up and secured and will be monitored during out of hours by the security guard.

3.7 Personal Protective Equipment

All site personnel will be issued with standard Personal Protective Equipment (PPE). Each operative will have general protection issued by the Site Supervisor dependent upon the work in hand. Safety wear will include standard construction issue PPE including: high visibility vests/jackets, hard hats, ear and eye defenders, nasal protection against high volume of dust, dermal protection to exposed vulnerable areas and footwear against risk of penetration and impact..

3.8 Asbestos

The Pre Demolition asbestos surveys have been carried out by the clients Environmental Consultant and the necessary clearance for its removal has been obtained from the Health & safety Executive.

Asbestos removal will form part of the demolition Contract.

Given the age of the structures it is envisaged that some asbestos containing materials will remain undetected until the soft strip and main demolition works are progressed. All on site demolition contractors are asbestos aware trained. Should further areas of suspected asbestos be found during demolition, then works will stop and samples will be taken for analysis. Once the results are known should asbestos be proven then controlled measures will be put into place to remove the asbestos together with the required notification being undertaken. Demolition in that area will then recommence once a reoccupation certification has been issued.

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4.0 External Consultations

4.1 Neighbours

As part of the MCE consultation strategy the University has appointed a Communications Manager for their Capital Development Programme. A full strategy has been developed to co-ordinate all external public consultation / engagement.

This includes letter drops from appointed contractor, and fortnightly Contractor Liaison Group meetings for the duration of the demolition contract which will provide the neighbours with an update on the forthcoming events and also an update on the programme of the works.

Within Appendix F is the summary of the key concerns/questions raised by residence during a consultation meeting held on 14 December 2010. These concerns were discussed during a further resident’s consultation meeting held on 17 January 2011. The next consultation meeting will be on 2 February 2011.

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A hotline number 0800 7834597 is operational for all of the on going Boldrewood works. This number should be used for any issues relating to works on the Boldrewood/MCE site, and will be effective for the lifetime of the Phase 1 development of the Maritime Centre of Excellence. During work hours calls will be answered by the PMU Communications Office; out-of-hours these calls will be diverted to a mobile contact who will be provided with a list of named contacts for any out-of-hours issues needing immediate resolution.

4.2 Considerate Contractors Agreement

In line with best practice both the University of Southampton & Lloyd’s Register are committed to ensuring all contractors sign a considerate contractor agreement. This would be implemented by means of the Environmental Management Plan.

5.0 Initial Demolition Works (Lecture Block)

5.1 Progress Update

The demolition and construction programme for the Lecture Theatre Block has been completed.

6.0 Demolition of Building 62

6.1 Programme

The demolition and earthworks programme for B62 will span approximately 35 weeks over the period from March 2011 to November 2011.

6.2 Decanting and disposal of loose equipment

Prior to the demolition works the decanting and disposal of loose equipment will be complete. This includes the disposal/ recycling of redundant equipment and waste materials together with the process for signing off and managing vacated space.

Specialist waste removal contractors have been appointed to decontaminate the building further information is available upon request.

A decommissioning document will be handed over by the University to the appointed Demolition Contractor prior to commencement of the works which will identify any residual hazards prior to works commencing.

6.3 Asbestos Removal Operations

Some soft strip operations have been undertaken as part of the decommissioning phase. The Demolition Contractor will clear the remaining soft strip items in advance of any asbestos removal.

A Refurbishment/Major Demolition survey (Type 3) and work plan has been undertaken. The Demolition contractor has been forwarded the Type 3 survey works which have formed part of their tender submission. Prior to any works commencing the appropriate requisite notices will be issued to the Health and Safety Executive in accordance with legislation requirements.

All Asbestos will be removed by an approved contractor which forms part of the principle contractor works team.

All asbestos removal works will be carried out in accordance with current asbestos legislation and developed specific risk assessments and method statements that will be produced and issued as separate documents for each category of asbestos containing materials.

On completion of each asbestos removal area, a 4-stage clearance procedure will be undertaken by an appointed UKAS accredited laboratory.

6.4 Soft strip

B62 will be demolished by undertaking a soft strip which is envisaged to commence from the roof level downwards. The soft strip would require removal of the following:

- General fixtures and fittings
- Suspended and plasterboard ceilings
- Raised floors and Floor coverings
- Non-load bearing partitions

- Toilet fixtures and fittings
- Mechanical and electrical installations

Demolition operatives will undertake the soft strip, reducing the materials generated into manageable sized pieces via the use of hand tools such as mattocks, crow bars, sledgehammers, angle grinders etc. The operatives may also use oxygen /propane burning equipment to cut out non load bearing metalwork. The debris generated, will be transported manually and stacked in an orderly fashion in a pre-selected location on each floor.

Any materials that have been identified for reuse / recycling will be segregated from general waste and removed from the floor in a separate skip.

6.5 Building Services

All services (except the electrical sub station) to B62 will be isolated and will be disconnected as part of the works. This will include the decommissioning of plant and equipment. The timing of the sub station disconnection will be decided by the demolition contractor. A pre-commencement period will be established to work with the client and all statutory undertakers to ensure all services are identified and isolated or their positions marked/recorded as required.

Prior to the demolition of B62 a new SSE sub station and Switch room will be installed by way of a separate project. This will provide power to the site.

6.6 Demolition Sequence

It is important to understand the make up of B62 as this has a bearing on the sequencing of the demolition works which is explained in this section. B62 consists of 3 sections namely the Western extension, the Central block, and the Eastern/Library block as illustrated below.



The sequencing and methodology for the demolition works has been assessed to take into account the environmental impact, the surrounding area and the construction of B62 to minimise uncontrolled progressive collapse.

It is intended that the Eastern/Library block will be demolished first as this will provide a clearing and release areas for backfill so that access to the remainder of the building can be permitted from within the site demise. [Please refer to the Site Logistic Plan in Appendix A and also the selected contractors outline Method Statement in Appendix G.](#)

6.7 Structural Demolition of Building 62

Glasshouse

The Glasshouse will be demolished prior to B62 which will make way to maintain the access route to the new SSE enclosure and Switch room. The building will have been decontaminated by appropriate means prior to the commencement of demolition operations.

Library and B62

Please refer to Appendix G which provides the selected contractors outline method statement, should any significant changes to the strategy occur these will be discussed with the EHO in a pre-start review. This shows the works being conducted in a series of discrete phases to ensure the structural stability of the remaining parts of the building and safety of the work force are maintained at all times. Phases 2 & 3 are mutually exclusive, so that work can be undertaken at the same time in these areas. Phase 4 would not commence until both phases 2 & 3 have been completed.

Deleted: Below is the envisaged demolition technique which will be reviewed with the successful Demolition Contractor, all

- Phase 1: Preliminaries & Soft-strip operations
- Phase 2: Two Storey Library Block
- Phase 3: Steel Frame Roof to main building
- Phase 4: Main Building

6.8 Stockpile

We have explored ways with the selected contractor to balance on and off site crushing of materials which will reduce the size of any stockpiling while consideration is given to the number of vehicle movements on and off site. It is therefore envisaged that surface stockpiles of materials will be minimal to reduce the impact of air blown dust; however where these are required to facilitate recycling a management plan will be put into place by the contractor.

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To mitigate airborne dust a dust suppression scheme will be implemented to ensure the material is adequately damped down. Further details on dust suppression can be found under Section 3.2 of this report.

When on site crushing of materials occurs the crushed stockpile will be located to the south of the site. The crushed material will be used to form the piling mat to the south of the site in readiness for Plot A and B and will be used to infill the basement of B62 as the demolition works progress. The size of the stockpile will be minimal as the crushed materials will be used continually as described above as the work progresses. This will be monitored throughout the works.

The drains will be fitted with gauze filters to ensure fines are not washed into the drainage system.

Deleted: The stockpile is located over existing hard standing of the northern car park and existing drainage points will be used to collect run-off.

Other stockpiles will be allowed for by the contractor for processing and storage of surplus materials before removal from site to allocated processing facilities.

6.9 Water Management Plan

The proposed land drainage design is based on CIRIA 113 – Control of Ground Water for Temporary Works for draining down the ground water for the excavated basement for the Lloyds Register Building and the collection of run-off from the main demolition site. It comprise of a series of inter-connecting land drains wrapped in a geotextile surrounded and bedded with granular material. A geotextile membrane will be required on all faces of the drainage excavation to ensure that no fines will discharge through the proposed drainage system.

Any surface water run off which collects onto the existing basement slab areas of Building 62 after demolition are to be punctured to allow surface water to drain into the existing ground water. Surface water run off from batters created by excavations for the Lloyds Register Building will drain direct into the proposed land drainage system.

Discharge will be through a sump which will connect onto the public existing drainage system and approvals will be needed to obtain a trade effluent licence from Southern Water.

7.0 Substructure

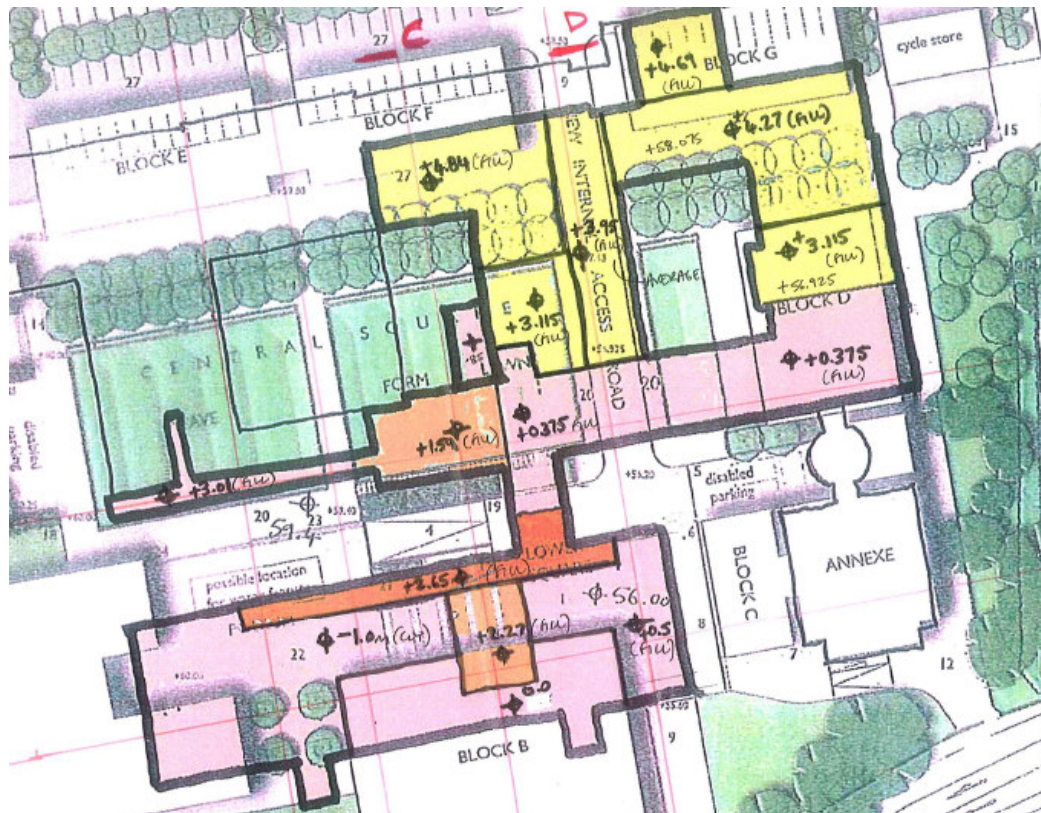
7.1 Basement Fill

The existing Basement of B62 extends beneath the existing building to the North and East areas of the building. At its deepest the basement is approximately 7m below the existing ground level with this being less deep at the south end of the site.

The sketch below indicates the extent of the basement below B62 and the fill to be undertaken. The fill will be generated from re-cycled components of the B62 structure. Concrete crushing plant will be located on site. The crushed material will then be transported to stockpiles, treated to minimise airborne dust and located within the existing car park area to the north.

All suitable concrete material will be crushed on site to a recognised aggregate size. The existing basement internal retaining walls will be left in situ to provide strength and stability to the structure. The stockpiled aggregate will then be placed into the basement void in compacted layers (using a small vibrating roller) as engineered fill.

These areas will then be tested to ensure that fill is acceptable to take the landscaping scheme proposed.



B62 Basement – approx fill depths

8.0 Bulk Earthworks

8.1 Excavation and Retaining Structure

One of the operations during the demolition works will be to construct a temporary retaining wall for Plot A by implementing hydraulic pressed piling techniques. Once a sufficient area is cleared for the plant and equipment necessary for this work, this activity will commence. The plant which will be used for this work is likely to be tracked excavators, concrete lorries, pumping equipment and cart away trucks.

Contaminated subsoil will be encountered due to the findings of Japanese Knotweed on the site. Through the implementation of a successful mitigation plan the knotweed has been managed, controlled and eradicated from the areas of excavation. During the earthworks the infested area will be excavated and will be managed in one of the following ways:

- Excavated and moved to form a bund within an area that can remain undisturbed for at least 18 months; subsequent re-growth will be controlled regularly with herbicide;
- Excavated and buried on site, over 5 m deep;
- Excavated and buried on site less than 5 m deep and thoroughly encased in a root barrier system installed by a specialist contractor;
- Moved off site and disposed of by an approved contractor as controlled or hazardous waste (dependent on previous treatment with herbicide).

Soil samples will be taken as excavations proceed and a procedure on how to deal with it will be established in conjunction with the contractor prior to appointment and undertaking the works which will meet current legislation.

9.0 Substructure

9.1 Foundations

During the ground works stage some piling operations will take place on site, this will comprise sheet piling and a preliminary test pile. Sheet piling techniques vary due to ground conditions and type of pile adopted. It is anticipated that a clutch sheet pile system will be adopted on this site; the method of installation will be based on the resistant piling method. This process comprises of pushing piles into the ground with hydraulic rams. This system is popular in city centres as there is minimal noise or vibration as the piles are pushed rather than hammered into the ground.

Should the permanent contract require a test pile to be constructed on site this will be either a continuous flight auger (CFA) piling method or rotary bored pile. The construction of a test pile will comprise five piles to be installed, one test pile and four resisting piles.

Before any piling operations are undertaken on site, vibration monitoring equipment will be set-up on site and calibrated to establish background readings and trigger levels will be set in accordance with current practice. Should piling operations create vibrations above trigger levels piling will cease and mitigation measure will be investigated.

10.0 Summary

The demolition programme for B62 which includes earthworks will span approximately 35 weeks commencing in March 2011.

We are exploring partial on site and off site crushing with the preferred contractor. There is however a balance to be made between the size of the stockpile and the number of vehicle movements on and off site.

All waste streams and estimated quantities of waste generated from the demolition of B62 will be identified within the Waste Management Plan which will be issued prior to commencement of the demolition works.

The main elements of the demolition of B62 focus on the steel and concrete of the building to be demolished. Both elements will be recycled, and building concrete crushers will be installed and material will be used on site. It is proposed that any surplus crushed material will be exported by road. The recycled steel and scrap metal from the buildings will also be exported also by road.

The environmental management plan will be pursued to reduce any potential adverse environmental effects. Any detrimental or potential adverse effects will be appropriately mitigated through a variety of procedures and actions.

The management of a principal contractor and subcontractors will be through procurement procedures and an agreed commitment to the Code of Construction Practice. A designated liaison officer will be in regular contact with the public, will keep residents informed of all relevant matters, and will deal with complaints and inquiries. Monitoring of demolition activities will be reported back to the local authority on a regular basis.

Appendices

10.1 Appendix A: [Site Logistic Plan](#)

10.2 **Appendix B: Site Boundary Plan, Tree Removal and Tree Protection Plan**

10.3 Appendix C: Noise Survey

10.4 Appendix D: Plant Details

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10.5 Appendix E: Designated Travel Routes

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10.6 Appendix F: Neighbourly Questions and Answers

10.7 Appendix G: Selected Contractors Outline Method Statement