BISSET ADAMS

Birkbeck, University of London Toddlerlab 32 Torrington square, Bloomsbury, London, WC1E 7HX

> CONSTRUCTION MANAGEMENT PLAN July 2017



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1.0 Introduction

This Construction Management Plan has been prepared to support a planning application for the *restoration of 32 Torrington Square (Listed Grade II) including internal changes together with development of an annexe on land to the north for Class D1 Use to accommodate a Toddler Lab for Birkbeck, University of London.*

Its purpose is to provide Camden Council with outline information regarding the proposed construction methods, programme duration and how the interfaces with the public will be handled. It will also highlight how the impact of the construction on the surrounding community will be minimised, both for the construction on site and the transport arrangements for servicing the site.

The Construction Management Plan is a live document and will be revised as the design develops and more information is available.

Once a Main Contractor has been appointed the Construction Management Plan will be revised and submitted to Camden Council before any works start on site. Revised documents shall include contact details of the Main Contractor and the personnel responsible for the day-to-day management of the project. The Construction Management Plan will detail how liaison and dealing with any complaints from the local community will be handled in line with the principles set out in this document.

The Construction Management Plan has been produced in line with the London Borough of Camden's Construction Management Plan Pro-forma and their Minimum Requirements for Building / Construction / Demolition Sites.



2.0 The Site

Location

The site is located at 32 Torrington Square, London WC1E 7JL. The location is shown in the Location Map below.



Location Map (Map Data © 2016 Google)

Description

The site is bound by Byng Place/Gordon Square to the north and Torrington Square to the west. The site overlooks a large open area just to the south of Byng Place, which is used on a weekly basis for the Bloomsbury Farmer's Market. There are buildings of academic use on all sides and no known residential properties in close proximity to the site. The site is shown in the Site Plan below.



Approximate site boundary for existing no.32 Torrington Square and proposed Annex

Site Plan (Imagery © 2016 Bluesky, DigitalGlobe, Getmapping plc, Infoterra Ltd & Bluesky, Map Data © 2016 Google.)



A thorough site analysis was carried out looking at the various site constraints and opportunities, including the local climate data, history, traffic routes, servicing, retained estate and site structure and infrastructures. The results are further developed on consultant's reports and on detailed studies looking at the site in respect of the detail of landscape, soil conditions and wider traffic implications.



The main issues and challenges associated with redeveloping this site are:

- the general level of traffic in the surrounding area.
- the numbers of people in what is a campus area, especially mid week and how they interface with the construction works.
- main site access off Torrington Square.
- limited access to the rear of the site.
- phasing the works.
- control of noise and dust.
- traffic management.
- · Load limitations due to existing basements and retaining structures

The remainder of the Construction Management Plan sets out how it is envisaged that these items can be managed.

Working Hours

Prior to commencement on site, the Main Contractor should apply for a Section 61 agreement from LBC to regularise the hours of working. However, due to the proximity of the general public and campus activities to the site, it is likely that standard hours of work will be agreed as set out below:

08:00 - 18:00 hours Monday to Friday; 08:00 - 13:00 hours Saturday; and, No working on Sundays or Bank Holidays.

The programme assumes that the site will be closed on Bank Holidays and Christmas. There should be no routine operations undertaken outside the agreed working hours. Any work outside these hours will be subject to prior agreement, and / or reasonable notice to Camden Council who may impose further restrictions.

It is not known of any further restrictions that apply to the site, such as Section 60 notices, which may affect the working hours of the project.

Although night-time (18:00 - 08:00), out-of-hours or weekend working would not normally be permitted, it is conceivable that certain works for example, highway works and tower crane dismantling may have to be undertaken during these periods. If necessary, the hours of operation for such works would be subject to prior agreement and reasonable notice with LBC, except in emergency conditions.

Early warning of these planned operations will be given via newsletter or email, and in consultation with local liaison groups well ahead of time. However there is the potential for emergency situations to dictate that some unplanned operations may be required, however if these situations do occur, the Main contractor should make all reasonable efforts to reduce the nuisance to neighbours and the general public, with full communication with the London Borough of Camden Environmental Health team.

Services

Existing services are present on site. A full utility survey has not been undertaken as part of the design and services are to be investigated to avoid damaging existing services.. A CCTV survey to the existing drainage helped determine the current condition of the existing below ground drainage.

The utilities serving the site (Gas, Electricity, Water) will all require to be diverted and probably upgraded during the construction. The Main Contractor will commence these discussions once they have been appointed, as well as discussing any temporary construction services that may be required. There are heating pipes situated in the Warburg Institute wall that will require diversion ideally scheduled for the summer months when the system is not in use.

To note that the Warburg Institute have planned works that might occur in parallel with the Toddler Lab construction.

Upon appointment, the Main Contractor will consult with the Warburg Institute regarding the proposals for the construction of the development. Where possible, any planned maintenance will be coordinated with the works. We have carried out preliminary discussions with Warburg Institute.

Investigations

Asbestos, lead, anthrax and geo-environmental surveys have recently been carried out. Once a Main Contractor has been appointed, the surveys will be made available.



3.0 The Building

The new proposals for the development

The proposed new facility will be comprised of a refurbishment to the existing 32 Torrington Square Grade II listed townhouse and the construction of a new-build facility in filling the gap between 32 Torrington Square and The Warburg Institute. The building is to house the Centre for Brain and Cognitive Development (CDCB) Toddler Lab, specifically to be known as the Wolfson Toddler Lab.

Under one roof the ToddlerLab will incorporate facilities for studying toddler brain development, developing early interventions, and for assessing the point at which these will have greatest impact. Its purpose-built, natural-environment rooms, each with a dedicated floor, will include:

• Home Environment Lab: to enable the study of toddlers in a natural domestic environment

- NapLab: for the study of brain development during periods of sleep
- The CAVE: a 3D virtual reality environment designed to simulate outdoor scenarios

• Pre-school Early Education Environment Lab: similar to the living room but with the scope to test multiple toddlers simultaneously

• Early Intervention Clinic and Biosample collection/storage suite: to facilitate development and testing of early intervention treatments

Firstly, it is proposed to build a new building in the empty site between the Warburg Institute and the currently vacant 32 Torrington Square. This will contain the specialist highly bespoke laboratory and testing accommodation and will be the main entrance and visitor reception, with level access from the street. We propose a new highly serviced, high quality contemporary architecture, which will be in keeping with the tone and proportion of the Georgian terrace as well as the wider campus context.

Secondly, it is proposed that the currently vacant 32 Torrington Square be restored and refurbished to be used primarily for academic staff. This is an exercise in sensitive restoration as well as minimal adaptation for its new use. We wish to de-clutter the interior and restore the original room configuration. The structure requires upgrading, with floor strengthening and essential facade restoration works. To enable the ToddlerLab research to be successfully undertaken on this key site, a small amount of adaptation and intervention will be required to the rear of the building at ground and first floor levels as well as an extension to the basement floor to the rear, which would be concealed below the garden. This rear elevation has been adapted in the 19th and 20th centuries and it is felt that a small sensitive further 21st century adaption will be a positive addition to the history of the building. Combining both the new architectural infill and the restoration of the existing Georgian townhouse will create a new research facility which will be of huge benefit to countless children and families throughout the world, whilst also creating a positive addition to the urban fabric of Torrington Square.

Structural Works

Webb Yates Engineers have been appointed by Birkbeck University of London to undertake the structural design of the proposed redevelopment of 32 and associated Annex.

The existing building is of traditional construction utilising masonry vertical elements and timber floor

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structures with a basement enclosed on three sides and part submerged to the rear of the property.

Several structural defects within the existing structure have been identified through non-intrusive structural surveys. Further surveys are to be undertaken to confirm the extent of these defects. Repair works will be required to ensure the stability of the existing structure and to justify it for the future use of the building.

The proposed development is retaining the existing finished floor level of the existing basement floor; however, a new basement floor build up is proposed to allow for sufficient waterproofing and insulation.

BASEMENT

• Underpinning of existing foundation walls along new basement perimeter with new basement FFL being approximately 2.3m lower than the existing basement floor.

• Installation of retaining structure for new basement areas with permanent steel sheet pile and reinforced concrete retaining structure.

• Underpinning of the Warburg Institute. The depth of the foundations of the Warburg Institute was confirmed through trial pits to approximately level +22.14. FFL of the Warburg Institute is approximately 1.3m higher than the proposed basement level approximately at level +23.0.

• Temporarily underpin of buttresses during basement excavation until superstructure is constructed and acting as permanent propping to the gable end wall to allow buttresses to be removed.

- Installation of a new raft foundations to support the new build structure.
- Installation of ground floor slab to act as permanent propping to retaining structure at ground floor level.
- Installation of water proofing system to existing basement to improve waterproofing;
- Installation of waterproofing through drained cavity in the new basement.

EXISTING BUILDING - 32 TORRINGTON SQUARE

Based on the non-intrusive survey, defects have been observed for the existing building. The following works includes proposed repair work to the existing structure as well as proposed works as part of the proposed development.

• Remove existing buttress walls by new structure permanently propping the gable end wall.

• Rebuilding front façade from second floor up and rear façade from third floor up.

• Installation of structural columns and floors. The new primary structure is suggested as a precast concrete structure with hollow core slabs supported on composite steel/concrete beams as Delta beams on precast concrete columns and on precast concrete core structure.

• The existing floor structure has insufficient capacity and needs to be strengthened or replaced.

Installation of new steel floor joists on all floors, between the existing (due to heritage requirements the existing joists are proposed to remain in-situ).

• Lintel above window in rear extension, where cracks have been observed, and the bearing of the lintel is to be investigated further. Repair work of masonry or replacement of lintel may be necessary.

• Installation of supporting structures to existing upper floor walls (Subject to intrusive works to identify existing support condition). This includes supports of existing walls that are not sufficiently supported or to make new openings in loadbearing walls.

- Installation of new staircase to third floor to replace fire damaged stair
- Strengthening main stair case and existing balustrade.
- Install new supporting structures for new openings in gable end wall towards 33 Torrington Square
- Repoint and repair brickwork facades (minor repairs)

• Repair work of rear façade structure at second and third floor (subject to continuous monitoring of existing defects)

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• Strengthening/replacement of brackets supporting existing front and rear balcony due to corrosion. The brackets are to be replaced with similar brackets to heritage consultant's requirements.

• Repair work of lintel in rear façade at first floor of the smaller rear volume

• Stability of existing chimney stacks if required following monitoring and site measurements of deflection.

• Repair work of waterproofing and flashing at roof level.

ANNEX

• Installation of new concrete stability core around new lift core, by new service riser and along the stair case. The stability of the gable end wall of 32 Torrington Square is also secured by these stabilizing elements. The reinforces concrete slabs in the new building will ensure the load distribution to stability elements through diaphragm action. The new reinforced concrete flat slabs are transferring horizontal loads into these stabilizing elements.

• Installation of structural columns and floors. The new primary structure is suggested as a reinforced concrete structure with flat slabs supported concrete beam columns and cores, strengthened through the use of concrete edge beams.

CONSTRUCTION METHOD AND SEQUENCE

The following outlined construction sequence is suggested for the refurbishment and new build, based on the information supplied to date and outlines a possible method of achieving the project goals.

• Reroute existing services to allow for new basement excavation and installation of sheet piles.

• Install sheet pile retaining structure

• Prop existing floors and roof structure to basement level and carefully take down existing front façade to second floor level and rear façade to third floor level.

• Remove temporary scaffold support of front façade;

• Install new ties between existing facades, gable end wall and party wall into the floor structure of the existing building at every level. The installation of ties is to be carefully coordinated with the installation of new floor joists in the existing building, rebuilding of front and rear façade and erection of the new Annex.

Underpin buttresses and gable end wall of 32 Torrington Square – generally prop where necessary
 Reduce ramp level

- Underpin Warburg Institute generally prop where necessary
- For underpinning of existing basement of 32 Torrington Square generally prop where necessary
- Underpin gable wall and buttresses to final excavation level and cut back brick footings.
- Form basement slab under new building footprint (raft foundation)

• Form basement box including reinforced concrete walls, ramp and ground floor slab

• Remove temporary propping of basement retaining structure once new structure is fully cured to 28 days strength;

• Form new superstructure including stability cores, slabs and columns in new building

- Remove buttresses by gable wall
- Infill concrete slab where buttresses of gable end wall were located

• Install new supporting structures to form new openings in existing building and create openings.

• Rebuild existing front and rear façade of 32 Torrington Square and reinstate joist and roof bearings along façade.

• Install new floor joists in existing building and secure ties to existing structure and existing. To be coordinated with the rebuild of the façades.



• Undertake any repair work required in existing building.• Undertake any work required in existing building.

LATERAL STABILITY

TEMPORARY SITUATION

The lateral stability of the building in the temporary situation is to be secured through temporary propping designed by the contractor. Refer to WYE outlined construction sequence. Detailed construction sequence and temporary works design by the contractor. As the existing buttresses, currently part of the lateral stability of 32 Torrington Square, are to be demolished as part of the development, temporary propping and demolition is to be planned carefully.

PERMANENT SITUATION

The lateral stability of the basement structure is secured by the reinforced concrete basement retaining walls and liner walls as well as concrete cores from super structure continuing down to basement raft level.

The new Annex is to be designed to support the existing building at 32 Torrington Square laterally as existing buttresses are being demolished. No further changes are made to existing stabilizing elements of 32 Torrington Square. New floor slabs in the annex are assessed to have sufficient stiffness to distribute horizontal load to stabilizing elements.

4.0 Transportation Issues Associated with the Site

It is envisaged that all site logistics (welfare, offices, storage) will be contained within a Compound located on Woburn Place. Gantries will be required.

Defined traffic management procedures are imperative for the efficient handling of materials and waste for the project, but also to ensure effective management of vehicles, passing traffic and pedestrians. The traffic management plan will be controlled by a Logistics Manager and reviewed regularly. The material deliveries and waste away will be within the controlled zone in the Road. Vehicles will turn off engines when delivering and will be turned away when the loading area is in use to ensure no localised waiting. The Project Manager and Logistics Manager will manage the traffic and working within the unloading point on the road within the loading bay in front of no.32 Torrington Square or by the Woburn Square Compound. All deliveries will be booked electronically in advance to ensure single delivery accommodation and co-ordination with waste removal.

At this stage it is not possible to ascertain the exact numbers and sizes of vehicles that will be accessing the site or at what times. It is usual that approximately 80% - 85% of vehicle movements will be by Heavy Duty Vehicles (HDV) and 15% - 20% will be by Light Duty Vehicles (under 3.5 Tonnes). However, due to the existence of the Heating Chamber tunnels, this could reduce the numbers of HDV movements on Torrington Square.

The anticipated vehicle movements per day figures will be assessed by the Contractor.

Sizes of deliveries will be restricted and kept to a 'just in time' policy. All suppliers and contractors will be given prior instruction for the route and procedure for deliveries and vehicle details. All materials will be delivered and offloaded into the building by crane or forklift onto the ground floor hoisting area or via the ground floor hoarding entrances. A lifting plan will be implemented in relation to all lifting operations involving lifting equipment. All lifting operations will be undertaken in accordance with Lifting Operations and Lifting Equipment Regulations 1998 (LOLER).

Stage 1 Demolition - There will be a maximum of 3 lorry movements per day. The loading bay in front of no.33 will be used to site a 14 yard skip, to allow loading of waste and access for removal.

Stage 2 Groundworks - there will be a maximum of 5 muck away lorries per day.

Stage 2 and 3 Concrete Pours - 3 concrete lorries per day, pumping of concrete will be done from the front entrance of the site, we will be able to hold the pump and concrete vehicles within the hoarding line loading bay. Mobile crane and tower crane erection commences in stage 3.

Stage 4 Deliveries of cladding and glazing for core fit out.

- Stage 5 Deliveries for specialist and office fit outs.
- Debris/ rubble/ waste 14 yarder skip
- Muck away Lorry 9m x 2.5m (Dwell time 30min per load)



- Concrete Lorry 9m x 2.5m (Dwell time 20min per delivery)
- Mobile crane 12.300m x 2.430m Dwell time 8hours)
- Delivery vehicle type 1 5m x 2.15m (Dwell time 20min to 1hour)
- Delivery vehicle type 2 7m x 2.15m (Dwell time 20min to 1hour)
- Delivery vehicle type 3 10m x 2.500m (Dwell time 20min to 1hour)
- Delivery vehicle type 4 14.154m x 2.520(Dwell time 20min to 30min)

Torrington Square will not need to be closed to day-to-day traffic throughout the life of the project but occasional closure will occur if a mobile crane needs to be parked by the front façade to unload material.

These numbers are indicative only and will be revised and agreed once the main contractor is appointed.

Any Contractors and their supply chain will have to be signed up to the Construction Logistics and Community Safety (CLOCS) standards for construction logistics. This sets out a set of standards for items such as traffic routing; warning signage; side under-run protection; blind-spot minimisation; vehicle manoeuvring warnings; driver training, development and licensing; collision reporting; control of site access and egress; vehicle loading and unloading on site.

The hours that road vehicles service the site will be finalized once a Main Contractor has been appointed. However it is likely that Camden's acceptable hours of between 09:30 and 16:30 on weekdays and between 08:00 and 13:00 on Saturdays will be adopted, unless there are specific reasons why these hours should be varied.

A Mobile Crane will be used to construct the buildings with sufficient capacity to carry out the required tasks. Details will be firmed up once there is more detailed design and added into the Construction Management Plan.

Crane usage times will be added to the Construction Management Plan when and if the need is identified. When accessed from Byng Place in proximity of the northern boundary of the site, we believe that a portion of Torrington Square road would be closed while wilts the crane is in usage.

The site plan identifies Parking bay suspension. We do not have cycle lanes within the immediate vicinity of the site. The footpath in front of no.32 Torrington Square will also need to be closed. This will be for the duration of the project. The main contractor will apply for the required amount of Parking bays 17 days in advance of any required suspension as stated within Camden suspension Parking requirement. 3 bays will be required throughout the project.

As previously mentioned, the Warburg Institute might have works occurring within our construction phase.

Due to existing basements and retaining structures on and adjacent to the site (including the heating chamber below Torrington Square, basements of Warburg Institute and 32, 31 Torrington Square) as well as existing below ground services, loading limitations apply. The contractor is to consider this for the Construction Management Plan. This especially apply to crane outrigger locations and loads.

5.0 Traffic Management for the Site

Traffic Routes – Approaching the Site

Due to the location of the Site, the most feasible way onto site will be to approach from the northwest. Vehicles will turn into the Site without crossing any oncoming lanes of traffic and provides a direct route (via the A400).

Any issues will have to be addressed through a Traffic Management Plan by the Main Contractor.

Traffic Routes - Exiting the Site

Vehicles will turn right out of the Site, along Byng Place. The preferred route for vehicles will then be to follow Torrington Place and take a right into Torrington Square or to the Woburn Place.

Site Accesses

The main vehicle site access will be from Byng Place onto Torrington Square at the northern end of the Site. This will take Heavy Duty Vehicles, mainly during the initial construction phase of the project when bulk deliveries of materials will be required which will be used for the main structures.

The vehicles can be driven into Torrington Square to be loaded or unloaded and then backed out into Byng Place before being driven out of the Site. All vehicle movements would be controlled by Traffic Marshals, along with a logistics manager on all deliveries.

The same applies to access to Woburn Place traffic.

There is the potential for secondary access from southeast corner of the site. This would require negotiation and agreement with 3rd Parties. They would be more suitable for smaller vehicles, and goods will have to be craned down to the back yard, so would not remove the requirement for the access for larger vehicles.

Small vehicles can also be parked on the south part of Torrington Square minimising the impact of construction traffic in the area.

Pedestrian and cyclist safety should not be affected. We are also segregating pedestrians from site traffic. We are not affecting any overhead works where pedestrians are required to walk under any overhead gantries. We have diverted the footpath to allow access to Malet Street. Safety signs on hoarding and on footpaths will be installed to show clear and safe access routes to site.

The access route to divert pedestrian to the footpaths/pavement will all be pre-agreed with Camden and meet the traffic act code of practice.

We will take into account the existing drop-down curbs to allow access for wheelchair users, individuals with walking impairment, young children, prams, blind and partially sighted people.

Access onto site will be monitored through swipe cards which will allow only approved site personnel access.



Traffic Management

Delivery vehicle movements to and around the site is the most significant public interface risk that the project presents.

Maintaining the safety of the general public and campus students and staff is of paramount importance and with a series of robust controls and proactive measures the risk of this key interface can be mitigated.

The following measures should be adopted around the perimeter of the project for security and protection purposes:

• All site access will be well lit, clean, robust level hardstandings, well signed and controlled by experienced gatemen. Doors and gates will be closed at all times when not providing access.

• Installation of a barrier system across the footpath while vehicles are delivering to or leaving the site, providing a definitive demarcation between site traffic and the general public.

• The traffic management team will be clean and well presented at all times.

A Logistics Plan will be provided by the Main contractor and included within the Construction Management Plan.

Wherever vehicles and pedestrians should utilise adjacent access during construction around the project, suitable physical segregation with signage shall be installed to demarcate safe pedestrian routes. The entrance gate points will be isolated from site pedestrians by use of designated pedestrian routes and physical barriers. This arrangement will be reviewed as the project proceeds to ensure that any construction activity do not present any additional risks. Should any additional risk be subsequently identified then appropriate action will be taken to eliminate or minimise such risk.

Appropriate signage will be fixed to the gates and all areas where it is possible for vehicles to come into contact with pedestrians and to denote vehicle and pedestrian crossover areas. If they cannot reasonably be avoided Traffic Marshalls will be in attendance.

It is essential that care is taken over keeping pedestrians and vehicles apart. The vicinity of the site is very busy with the general public visiting the markets other local facilities.

An important part of safely segregating the public from construction traffic will be through the site induction process where the workforce will be briefed and also during subcontractor meetings when the Supply Chain will be briefed.

Regular updates should be carried out with the workforce through daily briefing sessions before starting work where any changes to the traffic system will be picked up.

Advanced warning signage of the changes will be required as will directional signage.

Discussions can take place with the emergency services (Fire Brigade, Police and Ambulance).

Delivery Management

Use of the agreed vehicle routes shall be included as a contractual requirement of the Sub-Contractors. Delivery vehicles arriving to site unannounced, failing to adequately book deliveries or 'booking in' of deliveries in an adhoc manner, will lead to traffic congestion and safety risk to the general public, local businesses and the local authority in addition to the chaos and risk caused to the construction team.

To prevent such problems, electronic delivery management systems such as 'Datascope' would be used to manage the deliveries to site. This provides an efficient and effective means of controlling all deliveries. Its implementation will ensure that all deliveries arrive at the right time and ensure that the space available is used as effectively as possible.

Delivery bookings would need to be submitted at least 48 hours in advance to allow sufficient time to coordinate delivery vehicle movements and the associated use of on-site materials handling equipment. Regular delivery meetings will be held between all parties and the Logistic Manager to make any adjustments and ensure that the delivery schedules are pre-agreed. The system should be able to be



read remotely to allow suppliers to view delivery schedules, crane bookings, hoist / goods lift bookings.

Daily delivery schedules should be displayed in prominent locations (notice boards, hoists, etc.) and distributed to relevant parties (Logistic Manager and his distribution team, contractors, Main Contractor's team, etc.). These schedules will incorporate contractor information and contact details to ensure that the recipient may be contacted promptly when a delivery arrives.

For the delivery management systems to operate correctly the information needed from the Sub - Contractors is as follows:

- Delivery Forecast
- Types of Materials
- Volume of packaging (area)
- Types of Stillage/Pallets
- Weights of Products
- Specific lifting locations
- COSHH Information
- Fragile Goods To Be Identified
- Identify what is Reusable / Returnable

Sub-contractors will also need to identify what is reusable and returnable so as to reduce waste removal and ensure the main contractor is aware of these other vehicle movements by booking collections on the delivery management system.

These requirements will develop as the project develops and the sub-contractors needs become better understood.

The main benefits of the system are:

- More efficient operations
- Avoids congestion on adjacent streets which if uncontrolled can be the cause for complaint or a safety issue for emergency vehicles
- Daily allocation of banksmen and plant
- Enables suppliers to request their preferred delivery time and receive confirmation of their allocated slot
- Greater visibility to all application users
- Advanced notice to gate personnel allowing for a more efficient flow of site traffic

Through the system, the following information should be able to be provided to assist with the BREEAM requirement for the scheme:

- The number of deliveries
- The mode of transport, and with minor additional input
- The mileage travelled for all deliveries

From this data the main contractor can calculate and monitor CO2 or energy arising from transport to and from site.

Visitors to site will be made aware of local transport trains, buses and the main route if driving. We will endeavour to stress that they use public transport to prevent any added traffic to the local area.

An important part of the traffic management will be the continued engagement with the community throughout the project. As set out further in Section 6.0, the Contractor's Community Engagement Manager will be responsible to liaise with the community and liaison groups, providing regular monthly newsletter updates on the scheme, which will be distributed locally and via email. There should also be



regular updates displayed on the perimeter hoardings at prominent locations.

Frequent updates will be provided to neighboring businesses and residents, detailing any changes to traffic flows and the duration of such changes. The timely publishing of such information will allow neighbors to plan for the changes and so minimise disruption.



6.0 Environmental issues

Noise, Vibration and Dust Management

To minimise impacts due to noise, vibration and dust, site-specific best practice measures will need to be implemented by all contractors involved in the project. These will need to be formulated by the Main Contractor upon appointment and added to the Construction Management Plan. The framework of this will include a detailed review of the mitigation measures that should be in operation during the demolition and construction works, but a summary of likely suitable mitigation measures and actions are provided below:

• Careful selection of demolition / construction methods and plant to be used in order to minimise noise and vibration impacts at source, as far as reasonably practicable;

- Switching off of plant and vehicle engines when not in use;
- Regular maintenance and servicing of vehicles, equipment and plant;
- Appropriate handling and storage of materials;
- Operational hours (to be agreed with Camden);
- The use of temporary acoustic barriers where appropriate;

• Breaking out of concrete structures will be undertaken using concrete 'munching' equipment where possible, if percussive breaking has to be used then it will be used during agreed hours;

• Implementation of measures to reduce dust emissions during transport (for example, sheeting the sides of vehicles carrying fine material);

- Use of dust screens and covers and the appropriate location of dusty materials storage;
- Use of water sprayers and proprietary dust inhibitors;
- Restriction of drop heights onto lorries;
- The use of quieter alternative methods or mechanical plant, where reasonably practical.

• Locating plant, equipment, site offices, storage areas and worksites away from neighbouring properties where reasonably practical.

• Maintaining and operating all vehicles, plant and equipment such that extraneous noise from mechanical vibration, creaking and squeaking is kept to a minimum.

• All temporary site lighting will be faced into the site, and not directed towards any neighbouring properties.

• Damping down surfaces during dry weather;

During works the main air pollution emissions are the dust generated when building materials are broken up and the fumes from machinery. Use of high pressure hoses to saturate all bulk materials with water during the process and whilst loading the waste materials for disposal. Machinery exhaust emissions will be kept as low as is practical by using well maintained vehicles and machinery at all times.
Hoarding will be erected around the site. Along with reducing the visual impact and providing protection

for the construction workers and public, this will also act as a barrier for dust and dirt originating from within the site.

• All HGV's removing spoil from the site will be fully sheeted to minimise the risk of any mud over spilling onto the highway. A wheel-washing facility is not required. The wheel-washing facilities will be in the form of a hose down point located adjacent to the entrance. The excavation is being loaded directly from conveyors into a lorry. So the wheel-washing requirement is minimised, any overspill will be washed off the Road surface.

• Ensure that the area around the site including the public highway is regularly and adequately swept to



prevent any accumulation of dust and dirt.

• Burning of materials on site will not be permitted in order to prevent smoke emissions.

The potential receptors for **Noise** will be the Warburg Institute to the north; the adjacent terrace houses to the southeast and east of the Site and Birkbeck's main building to the west.

All work activities will be planned to reduce noise emissions to an acceptable level to protect the workforce in the first instance, which in turn will benefit neighbours by reducing the overall noise levels within the site. If the action levels are exceeded the activity will cease and rectification measures implemented.

The final measures implemented to mitigate and control noise and vibration will be determined by the final design decisions and be in accordance with the requirements identified within any planning conditions.

Prior to the commencement of the works on site, the Main Contractor will undertake a background noise survey to assess the current ambient noise levels around key areas of the site and noted in a detailed record document. Threshold Noise Action Levels (NALs) will be agreed with Camden, as part of any Section 61 application and noise levels will be monitored during the construction phase. Noise mapping exercises can be undertaken using proprietary computer software. This can calculate, assess and predict noise exposure, allowing noise reduction measures to be planned.

A copy of the noise survey will provided to Camden.

As the Construction Management Plan is a live document, details and times of noisy operations will be introduced into the plan by the Main Contractor as the information becomes available.

Safety, Health and Environment Advisers who are trained and experienced in the use of noise monitoring equipment will be employed.

The limitations of noisy works within a campus environment need to be considered, and all subcontractors should be aware of the site restrictions on noisy work as detailed within subcontract orders and the site rules. Noisy work will be covered under our permit to work system which will identify the activity, its location, the duration and any applicable control measures necessary to mitigate its effect.

Noisy activities within operations will restricted to the following times:

- In two time-slots for breaking out concrete 10.00 to 12.00 and 14.00 to 16.00
- Cutting and high noise level will follow the same timing.

Reasonable request to reduce the duration of noisy activities further if required will be respected. Contractors will be required to have all plant and tools fitted with either silencers or dampers so far as is practical and working methods will be regularly reviewed to ensure that nuisance to adjacent properties and residents is mitigated wherever practical.

Should noise levels reach 80dB (A) operatives will be informed of the risks to their hearing and supplied (if requested) with either appropriately attenuated ear defenders or earplugs.

Should noise levels reach 85dB (A) or above operatives will be informed of the risks to their hearing and supplied with appropriately attenuated ear defenders or earplugs and instructed to wear them during noisy operations. The contractors are to ensure compliance by carrying out regular active monitoring.

Health and Safety Director will undertake noise surveys during their regular site inspections. However, operatives will be informed that as a general rule, if they need to raise their voice when standing 2 metres away from a noise source, it is too loud and hearing protection must be worn.

Contractors are encouraged to purchase equipment that is advanced in technology and equipped with



vibration absorbing features.

To ensure that operatives are aware of the effects of hand arm vibration they will be provided with adequate information on the hazard and controls and given information in order to reduce the risk. Should it be deemed necessary, contractors are to undertake noise and hand arm vibration monitoring and, dependent on the results, further control measures will be required.

While noisy activities are in operation we will monitor noise level to make sure the levels are within specified limits. Noisy work will be covered under our permit-to-work system which will identify the activity, its location and duration, and any applicable control measures necessary to mitigate its affect. Sub-contractors are encouraged to purchase equipment that is advanced in technology and equipped with vibration absorbing features.

A degree of **vibration** associated with the major structural works are inevitable due to the nature of works to be undertaken, however this nuisance will be carefully controlled, if it cannot be eliminated altogether. A vibration and movement strategy monitoring strategy can be produced, which sets limits with British Standard 5228 and 7385. The effect of vibration is often subjective and dependent upon the structures adjacent to the works.

The prediction of vibration levels and the likely effects are often difficult to foresee. However we can predict the activities that are likely to cause vibration:

- Movement of heavy vehicles across uneven ground
- Installation of sheet piles
- Breaking out of below ground concrete obstructions
- Compaction of sub bases to ground slabs and external roads and footpaths

Dust monitoring will be undertaken during all of the construction phases. A safety method statement will outline the control measures necessary to minimize the risks to an acceptable level, and all statutory notices will be placed with the Health and Safety Executive (HSE).

Monitoring of dust, vibration and noise will be undertaken using proprietary monitoring units such as Casella Monitoring units, placed at strategic locations. In addition to this wheel washing at the boundary will prevent dirt from being transferred to the surrounding streets, which could create dust.

Once a Main Contractor has been appointed, the Construction Management Plan will be updated with the Contractor's proposals.

The principal construction activities that will generate dust are typically demolition, excavation, foundations and external works.

The materials disturbed by excavation activities are inert materials (principally crushed concrete and clay/gravel fill) and therefore the dust generated during their removal and transportation does not represent a hazard to either people or the environment. We will also add shielding to cutting equipment

When activities are being carried out that risk generating large volumes of airborne dust, dust suppression measures will be employed. This will normally take the form of damping down and dust screens. Good site management will be strictly enforced to ensure work areas are kept clean and tidy at all times to prevent the migration of dust throughout the site.

A full site boundary will be erected, keeping away from sensitive receptors, and there will be a fully trained Manager on site throughout the construction period. Water as dust suppressant will be used where applicable and muck-away trucks will be covered to prevent wind effects on contents.

A hose and pressure washer will be placed at the main entrance to prevent any dirt/dust leaving the site. Road sweeper will be employed on a day-to-day basis, as required to maintain a clean road surface. The main time where the roads will need to be cleaned within the project will be when ground works



commence i.e. removal of soil /clay etc. We will monitor this carefully.

An **Air Quality** Assessment was undertaken focussing on the impact of construction dust and emissions. This assessment was prepared taking into account all relevant local and national guidance and regulations.

The risk levels of Dust Soiling and PM10 effects have both been assessed and identified.

The mitigation measures, emanating from the risk assessment, will be delivered on site via communication, a dust management plan, site management, waste management and monitoring and measures specific to earthworks, construction and track-out.

This is not a high risk site. As it is low risk, Air quality on dust in line with SPG was completed.

Waste Management, Recycling and Disposal

An unavoidable by-product of demolition and construction activities is the generation of waste. Major sources of waste within the construction process are:

• Demolition spoil - concrete, brick rubble, steel, aluminium, plastics, wood etc.;

• Packaging - plastics, pallets, expanded foams etc.;

• Waste materials generated from inaccurate ordering, poor usage, badly stored materials, poor handling, spillage etc.;

Main contractors should strive to drive-out waste from its own activities and from those of the supply chain. This can be done in a variety of ways:

- Using 'Lessons Learnt' reports from other projects
- Engaging with product and materials suppliers to review value stream
- Carrying out specific studies
- Shared Systems and Processes

Upon appointment of the Main Contractor, a Site Waste Management Plan will be instigated on the project. All relevant contractors will be required to investigate opportunities to:

• Eliminate waste at source; i.e. avoiding un-necessary packaging;

• Reducing waste; cutting back on packaging, ordering materials to fit where traditionally brought in standard sizes, i.e. plasterboard;

- Maximising re-use of packaging; i.e. returning packaging to source for re-use;
- Recycling where we are unable to eliminate, reduce or re-use;

• Where waste generation is unavoidable, to maximise the recycling and reuse potential of demolition and construction materials.

Wherever feasible, arising's will be dealt with in a manner that reduces their environmental impact and maximises potential reuse of materials. Recycling of materials will largely take place off-site where noise and dust are less likely to result in impacts to the occupants of surrounding properties.

Excavated material will have to be taken away from the waste transfer station to landfill.

There is the opportunity for some construction materials such as reinforcing steel, bricks etc. to be brought to site on barges, reducing the reliance on vehicular deliveries. This would be investigated in more depth once a Main Contractor has been appointed.

The destination of all waste or other materials removed from site will be notified to the relevant authority by the Contractor /

Construction Manager for approval. 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, Special Waste (Amendment) Regulations 1996 & 1997, and the Duty of Care Regulations 1991 and with due regard for the London Borough of Camden's environmental and waste management strategies.

The Site Waste Management Plan will be maintained, compiled with the aid of the logistics and other contractors, and regularly monitored. To prove the correct depositing of excavated material and to prevent the occurrence of fly-tipping, a docket system/waste monitoring system off-site will be used. The Contractor / Trade-contractor will operate a sequentially numbered docket system, to confirm that each load is received at the approved disposal site. Copies of the dockets are to be provided to the nominated manager, and available for inspection on site. Waste targets (and the use of early indicators) will be set for each trade/trade-contractor, based on measurements taken from previous experience.

As mentioned above: No burning of demolition or construction waste will be undertaken on the site. Building materials containing asbestos material, will be fully assessed in advance of any demolition works commencing, and will be removed in a controlled manner in accordance with current legislation and approved codes of practice and guidance.

In addition to the usual waste associated with a 'normal' construction project, due to the site's early industrial use there may be quantities of contaminants or hazardous materials found during demolition and excavation. This is thought to be unlikely but the control, handling and disposal of these materials will require special attention and the Site Waste Management Plan will detail the necessary requirements following a more thorough pre-commencement geotechnical investigation.

Safety and Security

Jon Felix to comment – Birkbeck Security Consultant

Due to the location of the site and the nature of the surrounding premises it is important to address the issue of safety and security around the site boundary. The strategy is to combine CCTV perimeter monitoring, including the recording of all 'events' on a hard disc drive to assist in any Police investigations. The monitoring operative will be able to safely challenge intruders where appropriate, or call the Police if necessary. Prominent signage will warn all potential intruders of the monitoring in progress. As with all security systems, regular reviews will be undertaken to challenge the efficiency of the system, and additional measures such as canine support may be implemented if required.

The key factors to consider are:

• Security guards will be required to provide site entrance and perimeter control during the Demolition and new

Construction works, supported with a monitored CCTV system.

• A 2.4m perimeter hoarding will be maintained in order to establish a secure site boundary and to segregate the public from the construction area;

• The perimeter hoarding will require amendment as areas of the market development are handed back for use and taken out of use for redevelopment. At all times the hoarding will be maintained to provide a secure site boundary segregating the public from ongoing construction operations;

• Security gates installed at access points to control site access and movements; Public safety around



the site perimeter must be considered and measures put in place to control vehicle access and unloading;

• All safety and security provisions will be undertaken in accordance with Camden's code of practice.

- The hoardings on the development will be maintained to comply with the following requirements:
- Hoarding positioning is to ensure that there are no instances where people can hide or drug deal;

• All hoardings will be lit to comply with LBC requirements with respect to red lights on interfaces with traffic, pedestrian lighting in dark corners, etc.

• A 2m or 2.5m high physical hoarding will be required around the perimeter of the site. Hoarding to be plywood backing / with vinyl graphic prints etc to be confirmed.

- The hoarding will include way-finding and community information;
- The project will be registered under the Considerate Contractor scheme;
- Public routes will be re-opened as soon as is practically possible.

Pest Management

The control of pests in and around the site is a key responsibility when planning works and caring for the workforce and neighbours. The buildings have become vacant and no site inspections have been carried out to date. A specialist contractor will be appointed to carry out a site inspection and remove rodents if they are found on site prevent them from moving to other properties around the area. The crucial factor in pest management is investing in prevention and restricting the opportunities for pests such rats and mice to thrive. This should be achievable by eliminating food sources and nesting sites which can be achieved through good housekeeping and management. During the demolition and clearance element of each phase, as many as possible of the resident rodents and other pests can be caught. The remaining pests will be driven from site prior to the commencement of the main works, meaning the task of control should provide an opportunity to instigate control measures from a position of strength.

Other initiatives we will implement are as follows:

- No waste on site
- No eating or drinking on site other than canteen area
- Capping of drains
- Traps installed



7.0 Monitoring, compliance, Reporting

and consultation

Response to Complaints & Community Engagement

The Main Contractor should undertake a programme of positive community engagement in addition to membership of the Considerate Constructors Scheme. They would fully engage with any Liaison Groups, and in addition to this will issue regular monthly newsletter updates on the scheme which will be distributed locally and via email. There should also be regular updates displayed on the perimeter hoardings at prominent locations.

Given the presence of a food Market on the square, a single point of contact for complaints and comments on any aspects of the scheme should be established. The Main Contractor should arrange a manner to receive all complaints and comments, in addition to the organisation of local community engagement initiatives. Prior to the full connection of telephone lines, they should be contactable via a specially arranged email address.

A Community Plan will be produced for the food Market to capture key information, potential performance measures and sharing insights relating to the surrounding area. The plan is multidimensional, including how the supply chain is engaged, the local community, local authorities and other stakeholders such as universities and employment providers.

Food market operates every Thursday. The contractor will review the programme of work and plan accordingly to avoid and mitigate impact of disruptive work on Thursday accordingly.

The Community Plan helps underpin commitments made through planning obligations and identifies key stakeholders to understand their perspective and enables better working relationships during the construction period. This will help in turn wider community buy-in for the project, helps the project staff make a difference in the community leaving a local legacy.

Mitigation of the cumulative impacts of construction in the vicinity of the site

There is no smoking policy on Birkbeck site or premises. Interaction can take place with non-construction personnel. Site personnel will not be permitted to loiter outside the main gate.

Health and safety plan should state 'No personnel shall indulge in fighting, horseplay, tomfoolery or practical jokes including wolf whistling etc.'

Any personal found to be acting within a manner we deem unacceptable, will be removed from site and consequently barred from working.

Main Contractor will employ a full-time logistics manager to oversee all deliveries schedules, they will work closely with sub-contractors and day-to-day delivery personnel to ensure deliveries are keeping to the pre-agreed schedule.

Due to the nature of this project, and the construction phasing, off-site material storage areas might be required.

Main Contractor will programmed the project to run in conjunction with the deliveries and installation schedules. The site will not allow for over-loading with materials. Scheduling of deliveries is the most reasonable way in which to prevent any logistical issues and prevent congestion.



Main Contractor will reviewed and confirm that all of the aforementioned conditions will be met prior to start on site or will be ongoing throughout the project.

Noise Monitoring

Monitoring of noise levels should be undertaken to determine the noise levels being generated. Depending upon the requirements of the project the levels of monitoring will vary considerably but the principles remain the same.

Where the project does not have specific noise monitoring requirements it is still necessary to determine that levels are not exceeding the standard 75dB at site boundary. In order to measure environmental noise a noise level meter that has been calibrated will be needed. The set points are determined around the project boundary where the readings will be take readings from. These set areas must provide a significant representation of the project and are usually in line with the receptors outside of the site boundary.

Prior to works commencing the background noise levels should be taken using a Sound Level Meter mounted on a tripod. This should be a reading of ten minutes usually at locations around the proposed works area. Make a log of times, duration, readings and detail what the noise consists of. Advise on the monitoring method should be provided by specialists.

Social Inclusion

The Main Contractor will be registering the project with Considerate Construction Scheme, CLOCS, and Guide for contractors working in Camden.

The Contractor's Community Engagement Manager will work to create a positive of construction sites.

The Draft Construction Management Plan is out for public consultation from December 22nd 2014 to January 23rd 2015.

Local stakeholders will be issued with letters providing a website whereby they are able to leave comments on the Draft Construction Management Plan. Once the consultation period has expired we will collate all comments and demonstrate that we have amended the CMP where appropriate.

A detailed newsletter 14 days prior to construction commencement on site should be provided by the Main Contractor. Meetings with the residents and business associations will be attended as appropriate.



8.0 Programme

We have included a programme, however this should be treated as indicative only as it may be revised by the Main Contractor when they are appointed.

CBCD WOHL WOLFSON TODDLERLAB, 32 TORRINGTON SQUARE

BIRKBECK, UNIVERSITY OF LONDON

GARDINER & THEOBALD LLP

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2 P	reparation of Planning Documents	8w	11 Apr 17	09 Jun 17					
3 15	sue of draft Planning Deliverables, by relevant nembers of the team	1d	14 Jul 17	14 Jul 17		38			
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8 8	IBA STAGE 3 (Developed Design)	10w Ad	30 May 17	11 Aug 1	7 / Partisumm	unimminimminimens 21			
9 G	round investigation surveys and report	2w	12 Jun 17	23 Jun 17					
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13 st	takeholder consultation and supply-chain ngagement sue of Stage 3 Design Reports in draft for	Sw	19 Jun 17	21 Jul 17	13				
14 6	omment and for pricing by G&T	ld	21 Jul 17	21 Jul 17		148			
15 P	roduction of Stage 3 Cost Plan	2w	24 Jul 17	04 Aug 17		15			
16 F	inalisation of Stage 3 Report	2w 1d	21 Jul 17	04 Aug 17		16			
17 5	ign-off and approval by Birkbeck Stakeholders	1w 1d	04 Aug 17	11 Aug 17					
18 8	IBA STAGE & (Technical Design)	10.0	21 Jul 17	29 Sep 13		18 000000000000000000000000000000000000			
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24 P	ROCUREMENT	30w 4d	12 Jun 17	26 Jan 18	8 24 24 24 24			anaciananaciananacianah	
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27 5	oordination of market queries	4w 2d	24 Jul 17	22 Aug 17		27			
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29 S	valuation of PQQ Returns and confirmation of hortlisted Contractors to Birkbeck	2w 2d	23 Aug 17	08 5ep 17		29			
30 A	pproval of shortlist by Birkbeck	1w	11 Sep 17	15 Sep 17			30	1 1	
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32 P	reparation of Invitation to Tender document	9w	28 Jul 17	29 Sep 17		32		1 1	
33 7	ender Period, including coordination of mid-tender ueries	8w	02 Oct 17	24 Nov 17			33		
34 N	Aid-Tender Site Vist/ Workshop	1d	18 Oct 17	18 Oct 17			34 8		
35 D	eadline for receipt of Tender Returns	1	23 Nov 17	23 Nov 17				35 🕸	
36 E	valuation of Tender Returns	Зw	27 Nov 17	15 Dec 17				36	
37 P	ost Tender Interviews (Provisional)	1d	08 Dec 17	08 Dec 17					37 55
38 R	reparation and issue of Tender Recommendation eport, including Award Letters, to Birkbeck	зw	27 Nov 17	15 Dec 17				38	
39 A	pproval of Recommendation by Birkbeck	Iw	18 Dec 17	22 Dec 17				1	39
40 N	lotification of Award and commencement of tandstill (alcatel) period - 10 Calendar Days	1w 3d	08 Jan 18	17 Jan 18				1	40
41 0	ontract Award		18 Jan 18	18 Jan 18				1 1	41.8
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on site

Proposed Site Plan - Preparation for enabling works										
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