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UNIVERSITY COLLEGE LONDON
BLOOMSBURY CAMPUS
MASTERPLAN



CONSTRUCTION MANAGEMENT PLAN

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CONSTRUCTION MANAGEMENT PLAN

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1 INTRODUCTION

1.1 Introduction

1.1.1 The *UCL Bloomsbury Masterplan* sets out a vision for the long term improvement and development of the UCL core estate in Bloomsbury London WC1, to support the University's academic mission through the imaginative and effective use of its buildings and public spaces. This strategy was developed in a consultative way and was endorsed by UCL Council in 2011

1.1.2 A first phase of projects has been identified and is now being progressed.

1.1.3 This Central Campus Construction Management Plan describes the strategies UCL intend to implement to respond to Camden Planning Guidance 6 - Construction Management Plans and to inform how the UCL Masterplan construction work will be delivered.

1.1.4 It addresses plans to control environmental impacts and to minimise traffic disruption.

1.2 Project Construction Management Plans

1.2.1 Each major project on the campus will prepare where appropriate a *Project Construction Management Plan Addendum*, to be read alongside this Central *Campus Construction Management Plan*, explaining supplementary or specific measures relating to implementation relating to that specific development.

1.2.2 The Project Construction Management Plan provides project specific information that is set out in a Contents List in Appendix A of this document.

1.2.3 A schedule of current projects and their timescales will be published and made available via a UCL website providing information as to the 'transforming UCL programme' being progressed on the central campus at Bloomsbury.

1.3 Programme Control

1.3.1 A Central Campus Programme Integration Team is in place to control the overall programme, and coordinate the activities of each project. This team is responsible for seeing that construction activities are planned to allow the campus to operate safely and with minimum impact on normal campus life.

1.3.2 This team is responsible for ensuring that Project Construction Management Plans are prepared in accordance with this Central Campus Construction Management Plan, that plans are coordinated between projects, and are in compliance with the overall campus delivery programme. This team will review plans before they are approved for implementation and where necessary submitted to London Borough of Camden (LBC).

1.3.3 The Central Campus Construction Management Plan will be incorporated as an obligation in construction contracts and enforced through the contracts.

2 MANAGEMENT OF THE ENVIRONMENT

2.1 ECOLOGY MANAGEMENT

General Provisions

- 2.1.1 Whilst the UCL Campus is significantly an urban inner city site there will still be the need to address the potential impact on the urban wildlife and ecology.
- 2.1.2 Appropriate measures will be adopted to protect the ecology of the areas in which any projects are to be constructed, with special attention given to specified areas of ecological value.
- 2.1.3 Where construction works need to be controlled in terms of their potential environmental effects, Construction Environmental Management Plans (CEMP) will be developed by appointed contractors for each project.
- 2.1.4 UCL will require its contractors to manage impacts from construction on ecological resources, including the following:
- protected and notable species;
 - habitats and features of ecological importance
- 2.1.5 Where reasonably practicable, environmental mitigation will be provided through the design and implemented by the contractors. This may require preparatory work to be undertaken ahead of the start of construction to permit timely progress of the programme of work.
- 2.1.6 Ecological management measures will include the following, as appropriate:
- identification of features of interest for all known areas of nature conservation which may be affected due to construction;
 - plans showing the locations of all known areas of nature conservation interest that may be affected due to construction and access routes, and the location of any ecological features which are to be created/installed prior to construction e.g. bat roosting features/boxes.
 - provision of guidance on ecological best practice methods to be followed in order to mitigate potential ecological effects during construction;
 - procedures to be adopted in the event of unanticipated discovery or disturbance of protected species or habitats;
 - reference to the relevant procedures, including any special measures, to be implemented in the event of a pollution incident, where this occurs on or adjacent to a designated conservation site or where protected and/or notable species are known to be present
 - individual habitat management plans for:
 - a European Protected Species e.g. great crested newt, dormice and bats
 - b Invasive species such as Japanese knotweed.

- 2.1.7 Contractors will, where it is reasonably practicable prevent any urban habitat loss within the land required for the projects by keeping the working areas to the minimum required for construction.

Reducing Potential Impacts on Ecology

- 2.1.8 Measures are to be put in place for management of potential ecological impacts as a result of construction relating to:

- protection of identified retained habitats
- protection of bird nesting habitats
- potential destruction of urban wildlife habitats
- disturbance of bat presence and bat corridors
- protection of arboriculture
- control of noise and vibration
- control of dust
- control of water quality and flow
- control of light pollution.

Protected Habitats and Species

- 2.1.9 UCL will require its contractors to obtain and comply with all the requirements of any wildlife licences, including all protected species licences necessary for construction of the projects.

Control of Invasive / Non-Native Species

- 2.1.10 Appropriate strategies and measures for the treatment/control of invasive, non-native species (both plants and animals) and injurious weeds such as Japanese knotweed will be implemented across the Campus.
- 2.1.11 Appropriate construction, handling, treatment and disposal procedures will be implemented in relation to these and any other species listed in Schedule 9, Part I or Part II of Section 62 the Wildlife and Countryside Act 1981, as amended, or the Weeds Act 1959 to prevent the spread of such species.

2.2 ARBORICULTURE

General Provisions

- 2.2.1 Where trees are identified for retention construction work will be undertaken in accordance with the relevant guidelines in BS 5837 Trees in Relation to Design Demolition and Construction Recommendations to ensure that any construction within close proximity of these trees is undertaken without damage to them.

Tree Management

- 2.2.2 Trees which are identified that will affect projects are to be adequately protected from damage utilising tree protection measures which should include some or all of the following :
- preparation of detailed Arboricultural Tree Management Method Statements for specific operations near trees.
 - facilitation pruning and lifting of crowns.
 - assessment for bird or bat roosting potential.
 - assessment of location of roots and identification of the Root Protection Areas (RPA) which will be designated as construction exclusion zones (CEZ) within which trees will be protected from activities that have a potential to cause damage.
 - appropriate Tree Protection Fencing and Barriers. CEZ's will be appropriately protected using approved fencing / isolation methods.
 - protection from dust and plant fumes.
 - supervision of sensitive operations and regular monitoring by an Arboricultural Consultant.
 - measures to prevent compaction of soils;
 - maintenance of vegetation buffer strips, where reasonably practicable;
 - selective removal of lower branches to reduce the risk of damage by construction plant and vehicles;
 - standard guidance for working within root protection zones (RPZs) including
 - procedures to follow in the event that significant roots are uncovered during work;
 - provision of contractor guidance for working in close proximity to retained aged and veteran trees and areas of retained ancient woodland, and watching briefs as appropriate;
 - maintenance of trees on highways which are temporarily stopped as a result of the Proposed Scheme works prior to re-opening (e.g. selective branch removal) following consultation and agreement with relevant local authority; and
 - Any tree surgery and felling operations will comply with the recommendations in *BS 3998: Tree work*.

Tree planting and replacement

- 2.2.3 Trees intended to be retained which may be accidentally felled or die as a consequence of construction works will be replaced. Where reasonably practicable, the size and species of replacement trees will be selected to achieve a close resemblance of the original trees most effectively using locally occurring native species of local provenance and taking cognisance of any management plans for immediately adjacent areas of woodland.

- 2.2.4 The supply, storage, handling, planting and maintenance of new planting will be undertaken in accordance with appropriate British Standards, including BS 5837 Trees in relation to design, demolition and construction; BS 3998 Tree Work. Recommendations and BS 4428 Code of practice for general landscape operations (excluding hard surfaces) and other appropriate guidance including the *UK Forestry Standard* and the *UK Woodland Assurance Standard*.

2.3 LANDSCAPE AND TOWNSCAPE**Landscape Management**

2.3.1 Appropriate controls will be put in place to protect the visual amenity on the campus from construction activities including designated landscape areas and open spaces and the smaller green spaces in urban areas. Controls will include, as appropriate:

- the sustainable management of landscape issues;
- a plan showing areas of existing trees and vegetation within the campus to be retained (and protected), and those to be removed;
- the involvement of an ecological specialist as required, in relation to vegetation clearance, tree works and the creation of new wildlife habitats;
- a schedule of plant species and planting mixes to be used and provision of sufficient stock of specified species and provenance that typify the local area, including details of plant suppliers to be used;
- a programme for undertaking any planting works and protection of existing and new areas of planting;
- inspection, maintenance and management of existing and new planting;
- prevention of damage to the landscape and landscape features adjacent to the construction sites by movement of construction vehicles and machinery;
- removal, handling, storage and transplanting of any vegetation which is to be reused, relocated or transplanted;
- provision of suitable specialist landscape management staff with specific responsibility for monitoring and supervising the landscape works,
- the planting of trees and shrubs and the creation of new urban wildlife habitats;

Landscape Monitoring

2.3.2 UCL will require its contractors to implement appropriate inspection, monitoring and maintenance of landscaping and planting and seeding works throughout the construction period.

2.4 WATER RESOURCES AND MANAGEMENT**Surface Water and Groundwater Management**

2.4.1 UCL will require its contractors to manage their site activities and working methods to protect the quality of surface water and groundwater resources from other adverse effects, including significant changes to the hydrological regime through controls to manage the rate and volume of runoff.

2.4.2 Monitoring systems will be employed during the construction works and emergency procedures will be implemented in the case of any pollution incidents. Best Practice Management will be used (e.g. through the use of silt traps). Where required, the contractor will include arrangements to obtain appropriate approval for works from the

relevant regulatory body or statutory undertaker, which could affect any surface water or groundwater resource.

- 2.4.3 Surface water and groundwater control measures will include the following, as appropriate:
- ground water-dependent ecosystems, and ground and surface water which could be affected during construction (including maps and schedules);
 - plans showing all watercourses, surface water bodies and ground water bodies
 - plans identifying sources of potential pollution;
 - plans showing drainage within the site;
 - a description of the measures to be used to protect surface water and groundwater from pollution, including site good practice and the *EA Groundwater protection: Principles and practice (GP3)*; and precautions to be taken to prevent damage to services and to avoid pollution.
- 2.4.4 UCL will require its contractors to consult with the relevant regulatory bodies where required, regarding the measures to be implemented to contain and manage surface water run-off from the construction site. In order to prevent deterioration of the water environment and other adverse impacts including changes to flow volume, water levels and water quality. Measures to be implemented will include the following, as appropriate:
- use of oil interceptors, if required by the relevant regulatory body or where relevant the statutory undertaker, at site offices and works compounds;
 - use of pollution shut-off valves in compounds with formal drainage;
 - obtaining the necessary approval to enable discharge of dewatering, surface water run-off and waste water from the construction site to soakaway or filtration systems, watercourses, foul sewers or disposal off-site;
 - appropriate measures such as use of bunds of non-erodible material or silt or sediment fences adjacent to watercourses – NB. No water courses present;
 - implementing a surface water or groundwater monitoring plan, particularly in relation to works which may affect aquifers;
- Control of Pollution, Including Storage and Control of Oils and Chemicals**
- 2.4.5 In relation to storage of any oil-based materials including petrol, diesel, waste and vegetable and plant oil, and above ground fuel and oil storage tanks, UCL will require its contractors to comply with the Control of Pollution (Oil Storage) (England) Regulations 2001, as amended, and the *EA Pollution Prevention Guidelines 2*:
- 2.4.6 Stationary plant will be used with secondary containment measures such as interceptor drip trays to retain any leakage of oil or fuel, which will be emptied at regular intervals to prevent overflow.
- 2.4.7 Spillage kits will be stored at key locations on site as set out in the pollution incident control plans, in particular at refuelling areas, spillage kits will also be kept with mobile bowsers

- 2.4.8 Control plan and in particular at refuelling areas. Spillage kits will also be kept with mobile bowsers.

Control and Management of Foul Drainage

- 2.4.9 UCL will require its principal contractors (and subcontractors) to manage and dispose of foul water and sewage effluents from site facilities, and take the following measures, as appropriate:

- containment by temporary foul drainage facilities and disposal off-site by a licensed contractor; or
- by preference, connection to the local foul sewer system as agreed with the relevant authorities;

- 2.4.10 Any foul drainage discharge to the public sewer will require approval from UCL. If not permitted, provisions need to be adopted to remove the liquid from site for disposal, such as via tanker.

Excavations and Dewatering

- 2.4.11 UCL will require its contractors to undertake risk assessments as appropriate associated with excavation work and dewatering impacts on surface water, groundwater and abstractions.

2.5 NOISE AND VIBRATION

General Provisions

- 2.5.1 Best practice measures will be applied during construction works to minimise noise and vibration impacts arising from construction activities to UCL community and any designated quiet areas, sensitive equipment used for on-going research and experimentation, student accommodation neighbouring residential properties, local businesses and offices and the public generally.
- 2.5.2 Best Practice Means are defined in Section 72 of the *Control of Pollution Act 1974* and Section 79 of the *Environmental Protection Act 1990* as those measures which are practicable having regard among other things to local conditions and circumstances, to the current state of technical knowledge and to financial implications.
- 2.5.3 The equipment and construction plant used by UCL's Contractors will comply with relevant *EC Directives* and corresponding UK legislation on noise emissions, namely the noise limitations stipulated in *European Commission Directive 2000/14/EC* transposed into *UK Statutory Instrument 2001/1701*.
- 2.5.4 Projects will need to identify the sources of likely noise from the major primary activities required in particular the following:
- Demolition
 - Excavations
 - Concreting Operations
 - Plant and Equipment

- Drilling and Grinding
- Scaffolding
- Construction Traffic
- Loading and Unloading Operations
- Steel erection
- Fabrication work

2.5.5 * UCL will require its contractors to consider mitigation in the following order:

- **prediction evaluation** - understanding noise regulations, legal limits and establishing effective assessments and method statements for managing and monitoring noisy activity and where possible select alternative construction methods
- **noise and vibration control at source** – where noise is unavoidable consider the selection of quiet and low vibration equipment, the placement of equipment on site, construction activity that can be undertaken off site and programme and methodology to consider quieter methods at times that will not disturb occupants
- **screening** – utilisation of acoustic enclosures, acoustic barriers, perimeter hoardings and other forms of insulating and shielding and muffling measures
- **out of hours working and quiet periods** – agreeing with UCL a plan for undertaking noisy works in short periods with breaks and out of hours where it may affect administrative workers and students or could affect exam periods. Out of hours working would be by arrangement with UCL.

2.5.6 The recommendations of *BS 5228 Code of practice for noise and vibration control* on construction and open sites will be implemented.

Control of Noise

2.5.7 The effects of noise from construction sites will be controlled by introducing management and monitoring processes to ensure that best practice methods are planned and employed to minimise noise during construction.

All Projects will need to produce a Noise Management Plan to be reviewed and agreed by UCL prior to start on site.

The plan will include management and monitoring processes to ensure as a minimum:

- integration of noise control into the preparation of method statements;
- ensuring proactive links between noise management activities and community relations activities (including UCL neighbours);
- preparing details of site hoardings, screens or bunds that will be put in place to provide acoustic screening during construction, together with an inspection and maintenance schedule for such features;

* UCL specific requirement

- developing procedures for the installation of noise insulation or provision of temporary re-housing and to ensure such measures are, where required, in place as early as reasonably practicable;
- developing a noise monitoring protocol including a schedule of locations and stages during construction of the Projects when monitoring will be undertaken, that compliments the UCL cumulative monitoring schedule;
- preparing and submitting Section 61 consent applications where required;
- undertaking and providing to UCL, and where required the local authority Environmental Health Officer, all monitoring required to ensure compliance with all acoustic commitments and consents; and
- implementing management processes to ensure on-going compliance, improvement and rapid corrective actions to avoid any potential non-compliance.

2.5.8 * UCL's Contractors will, as far as reasonably practicable, ensure that the noise from reversing alarms is controlled and limited. The use of traffic marshalling and off-site consolidation of goods and materials with controlled distribution to site by the UCL Logistics Partner will eliminate the need for reversing alarms in most areas. Where reversing alarms are to be used, this will be managed through the following hierarchy of techniques:

- the site layout will be designed to limit and, where reasonably practicable, avoid the need for the reversing of vehicles. UCL's Contractors will seek to ensure that drivers are familiar with the worksite layout;
- reversing alarms incorporating one of more of the features listed below or any other comparable system will be used where reasonably practicable;
 - a highly directional sounders;
 - b use of broadband signals;
 - c self-adjusting output sounders; and
 - d flashing warning lights
- reversing alarms will be set to the minimum output noise level required for health and safety compliance.

2.5.9 *A register of plant and equipment and statutory certification will be maintained on site.

2.5.10 Plant and equipment liable to create noise and/or vibration whilst in operation will, as far as reasonably practicable, be located away from sensitive receptors, such as some specific UCL teaching or research activities and Camden neighbourhood stakeholders & local residents. Use of generators on-site will be minimised.

2.5.11 All plant, equipment and noise control measures applied to plant and equipment shall be maintained in good working order and operated such that noise emissions are minimised as far as reasonably practicable. As far as reasonably practicable, any plant, equipment or items fitted with noise control equipment found to be defective will not be operated until repaired.

2.5.12 Machines in intermittent use will be shut down or throttled down to a minimum during periods between working. Static noise emitting equipment operating continuously will be housed within suitable acoustic enclosures, where appropriate.

* UCL specific requirement

Control of Vibration

- 2.5.13 UCL's Contractors will use Best Practicable Means to control ground borne vibration and any consequent ground borne noise. UCL's Contractors will undertake vibration risk assessments, and where significant impact thresholds are expected to be exceeded, UCL's Contractors will develop a Vibration Control and Mitigation Plan. The relevant thresholds for determining significant impacts (for both building damage risk and human disturbance) will be sourced from relevant standards and guidance including *BS 5228 Part 2*, *BS 7385 Parts 1 and 2*, and *BS 6472 Part 1*. Where relevant, other stakeholder imposed threshold values will also be complied with particularly in the case of buried utilities infrastructure, and vibration-sensitive equipment operating at UCL.
- 2.5.14 Criteria and/or procedures for vibration control are specified for three purposes and assessed using three different sets of parameters:
- to protect the occupants and users of buildings from disturbance, for which vibration dose values are assessed (vibration dose values (VDVs) are defined and their application to occupants of buildings is discussed in *BS 6472- 1 Guide to evaluation of human exposure to vibration in buildings – Vibration sources other than blasting, 2008*;
 - to protect buildings from risk of physical damage, for which peak component particle velocities are assessed in accordance with *BS 7385-2 Evaluation and measurement for vibration in buildings*. Guide to damage levels from ground borne vibration, 1993;
 - to protect particularly vibration-sensitive equipment and processes from damage or disruption, for which peak component acceleration, velocity or displacement are assessed as appropriate to each process or item of equipment.
- 2.5.15 UCL will require its contractors to notify and consult it and the relevant local authority regarding any works predicted to generate a PPV above 10mm/s. Where it is agreed that there is no reasonable or practicable means to reduce predicted or measured vibration then the contractors will:
- In consultation with UCL, seek to agree with the local authority, monitoring for vibration and strain induced in the building during the works;
 - In consultation with UCL, seek to agree with occupiers of properties:
 - a. the surveys to be carried out and any consequent actions;
 - b. any additional reasonable and practicable mitigation to be provided for occupants;
- 2.5.16 * In addition, any old buildings, or buildings that may be unusually vulnerable to vibration, that are located within 50m of any activities that may give rise to significant vibration shall be identified.
- 2.5.17 Where the predicted vibration at the foundations of such buildings exceeds 5mm/s PPV then UCL will require its contractors to undertake an initial structural survey of the building. Based on the survey, the level of vibration above which condition

* UCL specific requirement

surveys and continuous vibration monitoring are required will be confirmed and agreed with the building owner.

- 2.5.18 Where the condition and vibration monitoring surveys demonstrate that vibration from the Projects works has given rise to building damage then UCL will require its contractors to make good that damage.
- 2.5.19 Protection will be required for any vibration-sensitive equipment/processes. UCL will endeavour to avoid any impact on sensitive equipment. Any actions to control or mitigate impacts will be agreed between its contractors and the operator of the equipment. Where a Section 61 consent is in place, the local authority will be notified.
- preparing risk assessments to inform structural surveys of buildings and structures which may be affected by vibration from construction;
- 2.5.20 Projects will be considered and identified for the requirement of an application for *Section 61 of the Control of Pollution Act 1974* and agreed with LBC. For these identified projects UCL contractors will be requested to obtain consents from LBC for the proposed construction works, excluding non-intrusive surveys. Applications will normally be made to the relevant local authority for a Section 61 consent at least 6 weeks before the relevant work is due to start.
- 2.5.21 Details of construction activities, prediction methods, location of sensitive receivers and noise and vibration levels will be discussed with LBC and UCL both prior to construction work and throughout the construction period.
- 2.5.22 The “Section 61” projects contractors will follow the requirements of *BS 5228 Code of Practice for Noise and Vibration Control on Construction*, and UCL will seek to agree with LBC a common format and model consent conditions for Section 61 applications.

Noise and Vibration Monitoring

- 2.5.23 The “Section 61” projects contractors shall maintain an overall programme for submitting applications based upon the construction programme and for seeking additional dispensations and variations as required.
- 2.5.24 UCL’s Contractors will:
- Provide a description of the construction activities and the method of working as well as proposed hours of working;
 - Establish an inventory of sound power levels, either from measurements, manufacturers’ specifications, or *BS 5228* databases;
 - Use sound power levels, the description of the works and the construction programme to establish predicted airborne noise levels in accordance with *BS 5228: Part 1*. Predicted noise levels will initially be based on construction noise only, 1m from any affected façade containing windows to bedrooms or living rooms in any residential property or noise-sensitive business, and account for acoustic screening;
 - Identify suitable mitigation measures as appropriate, review BPM and re-work all calculations as necessary;
 - Adopt appropriate baseline ambient noise monitoring results, from various sources including:

- a UCL's baseline ambient noise and vibration information;
 - b Measurements by UCL's other Contractors, where available;
- 2.5.25 Undertake additional baseline noise surveys at the reasonable request of UCL or LBC;
- 2.5.26 Undertake a vibration (and ground borne noise) risk assessment as part of the early planning of the works to establish whether significant magnitudes of vibration which could affect building occupants, or introduce a risk of damage to other infrastructure or buildings, and identify suitable mitigation, control and monitoring strategies;
- 2.5.27 Seek draft consent conditions from LBC to enable unreasonable or unenforceable conditions to be identified and resolved prior to formal issuing of the consent;

2.6 AIR QUALITY

- 2.6.1 UCL will require its contractors to manage dust, air pollution, odour and exhaust emissions during the construction works in accordance with Best Practicable Means. Dust control procedures will be implemented to avoid as far as is reasonably practicable the emission of dust and other particulates that would adversely affect the air quality to ensure there is no significant deterioration of current air quality as a result of construction works.
- 2.6.2 Prior to starting each construction project an assessment should be undertaken by the contractor to assess the overall risk from atmospheric pollutants from the site following the *GLA and IAQM Guidance* (it is understood that the GLA guidance is currently being updated to follow the IAQM methodology). It is considered that almost all construction activities during the UCL works are likely to fall into the Medium to Low Risk category's owing to the urban nature of the site with receptors likely to be near to the works, but with a high level of internal refurbishment works. The risk assessment should, however, examine the specific activities planned for the project, identify the main likely sources of atmospheric pollutants and undertake site and project planning to attempt to minimise these emissions and to place them away from sensitive receptors.
- 2.6.3 Dust monitoring will comprise agreed monitoring techniques at locations on site boundaries or near to local receptors. Results will be reviewed and available for inspection upon request.
- 2.6.4 Construction and demolition works will be carried out in such a way as to limit the emissions to air of pollutants particularly dust and fine particles (PM10) and exhaust emissions (NOx). This will include the following as appropriate:
- good housekeeping procedures relevant to limiting dust and air pollution;
 - controls and measures to control or mitigate the effect of potential emissions or nuisance caused by the construction works;
 - dust and air pollution monitoring measures to be employed during construction of the project;
 - measures relevant to control risks associated with asbestos dust
- 2.6.5 Cumulative monitoring of dust and air quality will be undertaken throughout the construction period to enable proactive management of dust levels.

- 2.6.6 Projects will comply with the *Environmental Protection Act 1990* and local policy guidelines to ensure that the developments are managed in a way that is not detrimental to the local amenity or local residents.
- 2.6.7 Proposed site layouts will be planned to locate machinery and dust-causing activities away from sensitive receptors, where reasonably practicable. Appropriate methods, such as the erection of hoardings or other barriers along the site boundary, will be used, where appropriate, to mitigate the spread of dust to any sensitive buildings or other environmental receptors.

Control of Emissions from Construction Plant and Equipment

- 2.6.8 Vehicles that are under the control of the contractor will be required to meet as minimum *Euro VI emission standards*. Central logistics delivery vehicles will be Euro V compliant.
- 2.6.9 All Non-Road Mobile Machinery (NRMM) shall comply with the *Non-Road Mobile Machinery (Emissions of Gaseous and Particulate Pollutants) (Amendment) Regulations 1999* (including latest applicable amendments). Where the contractor is able to source equipment that complies with emerging more stringent European controls this will be undertaken. All NRMM will use fuel equivalent to ultra-low sulphur diesel.
- 2.6.10 All NRMM with a power output above 37kW will be fitted with suitable after-treatment devices that are on the approved list of the *Energy Savings Trust* or have an equivalent or better performance for emissions of NO_x and PM₁₀.
- 2.6.11 Measures will be implemented to limit emissions from construction plant and vehicles, which will include the following, as appropriate:
- operation of construction plant in accordance with the manufacturer written recommendations;
 - vehicles and plant will be switched off and secured when not in use;
 - vehicle and construction plant exhausts to be directed away from the ground and be positioned at a height to facilitate appropriate dispersal of exhaust emissions;
 - using low emission vehicles and plant fitted with catalysts, diesel particulate filters or similar devices.
 - the enclosure, shielding or provision of filters on plant likely to generate excessive quantities of dust beyond the site boundaries;
 - devices such as dust extractors, filters and collectors will be used on drilling and sawing equipment;
 - movement of construction traffic around the site will be controlled by the UCL Logistics Partner and kept to the minimum reasonable for the effective and efficient operation of the site and construction of the projects;
 - use of tower cranes to reduce vehicle movements;
 - construction plant will be located away from site boundaries which are close to sensitive receptors where reasonable and practicable;
 - the Logistics Zone for receipt of site deliveries and unloading will be designed to minimise the requirement for onsite plant. Scheduling of deliveries will be in place;

- the use of diesel or petrol powered generators will be reduced by using mains electricity or battery powered equipment where reasonably practicable;
- non-road mobile machinery will use ultra-low sulphur diesel, where reasonably practicable;
- cutting and grinding operations will be conducted using equipment and techniques which reduce emissions and incorporate appropriate particle suppression measures;
- damping down of dust generating equipment and road surfaces where dust may be generated
- measures to keep roads and accesses clean;
- vehicle, plant and equipment maintenance records will be kept on site and reviewed regularly.
- using ultra low sulphur fuels in plant and vehicles where possible.
- all project vehicles will hold current MOT certificates, where applicable to demonstrate that they will comply with exhaust emission regulations for their class. (European Emission Standards pursuant to the *EC Directive 98/69/EC*)

Control of Dust and Emissions from Demolition Activity

2.6.12 Any appointed demolition contractors will be required to provide Demolition Plans for demolition and associated activity. The methodology will be dictated by the type of construction and other influencing factors, such as the location of adjacent buildings and noise and dust generation

2.6.13 Dust pollution from demolition activities will be limited through the use of the following measures, as appropriate:

- stripping of insides of buildings before demolition;
- buildings or structures to be demolished will be sprayed with water or screened as necessary, prior to and during demolition;
- rubble chutes will be shielded or enclosed or water used to suppress dust emissions from such equipment;
- skips and bins are to be covered and secured;
- burning of any material will not be permitted on sites;
- avoidance of the prolonged storage of waste materials on site;
- removal of waste from the site will comply with the requirements of this CMP relating to the transportation of materials

Control of Dust and Emissions from Excavations Activity

2.6.14 Dust pollution from excavations and earthworks activities will be limited through the use of the following measures, as appropriate:

- excavated material to be carted away will be loaded using minimum 'drop heights' from excavators into vehicles involved in the transport of excavated material;
- imported bedding and backfill material that could generate dust such as gravels and sands are to be kept damped down prior to being placed into excavations

- compacting and rolling of large areas of excavated areas, and spreading of fill is to be undertaken using dust damping down measures
- ensure there are adequate wheel-wash facilities provided at site exit, wherever there is to be significant excavation works and where there is adequate space to locate these

Control of Dust from Material Transportation, Storage and Handling

2.6.15 The unloading, storage and handling of construction materials can be a significant source of dust emission. The adoption of appropriate control measures will be applied starting with storage areas being sited in locations away from work areas where operatives and public can be exposed to the effects of any emissions

2.6.16 Dust and air quality management measures will be implemented to limit pollution arising from the transportation and storage of materials, including the following, as appropriate:

- covering materials, deliveries or loads entering and leaving the construction site for the purposes of preventing materials and dust spillage.
- vehicles transporting materials within or outside the construction site will not be overloaded;
- stockpiles and mounds will be kept away from sensitive receptors where reasonably practicable and sited to take into account the predominant wind direction relative to sensitive receptors;
- materials stockpiles likely to generate dust will be enclosed or securely sheeted, kept watered or stabilised as appropriate;
- fine dry material will be stored inside buildings or enclosures with measures in place to ensure no escape of material and of overfilling during delivery;
- mixing of large quantities of concrete will be undertaken in enclosed areas or shielded;
- the number of handling operations for materials will be kept to the minimum reasonably practicable;
- materials handling areas will be maintained to constrain dust emissions through the use of measures such as damping facilities or others appropriate to reduce or prevent escape of dust

Control of Dust on Temporary Haul Routes

2.6.17 It is unlikely that on the urban UCL Campus that there will be a significant introduction of haul roads.

Air Quality Monitoring

2.6.18 Air quality monitoring can be a valuable tool for dust management on site and this will be implemented where risk assessments on typical construction activities have identified a high risk site. At all sites, the general principles from the GLA guidance for air quality would be followed. It is recognised that the most sensitive receptors during

some of the planned works will be those within the UCL estate itself and not owned by other parties.

- 2.6.19 During all construction works, regular visual inspections would be undertaken by the responsible person to identify dusty activities and to ensure that the appropriate planned mitigation is being used. Where visible dust is seen, further mitigation measures (usually the use of water sprays) will be applied to reduce these as far as practicable.
- 2.6.20 Dust and air quality monitoring will be undertaken across the programme to manage cumulative impacts, including PM10 monitoring and dust soiling rates. Monitoring stations will be located at the UCL boundary adjacent to construction activity and at opposite ends of the works so that the contribution by the Programme of work can be determined. Based on pre start monitoring baseline data action trigger levels will be determined and where these levels are breached this will be investigated by UCL and the appropriate Construction Manager to determine if the construction activities were responsible and appropriate action will be taken.

2.7 LIGHT POLLUTION

- 2.7.1 In determining the lighting arrangement on Projects, consideration will be given to local residents and other sensitive receptors that may experience a nuisance by light. Where appropriate, measures will be implemented to reduce obtrusive light.
- 2.7.2 Where possible, daylight only construction schedules will be adopted to minimise adverse lighting. It is unavoidable that construction work will require work during the hours of darkness over the winter months.
- 2.7.3 Where appropriate the following measures will be considered for implementation:
- dim or switch off lights where it is safe to do so
 - use specifically designed low lighting equipment that reduces the effects of pollution
 - consider careful location of lights required for the works
 - avoid flood-lighting in areas adjacent to sensitive receptors i.e. nearby residential properties
 - where light glare may cause a nuisance, light shielding will be considered.
 - use of timers and sensors for switching off lights

2.8 GROUND SETTLEMENT AND LAND CONTAMINATION

Controls for Ground Settlement

- 2.8.1 Techniques for controlling settlement of buildings and protecting buildings from irreparable damage are well developed for projects within London. Each UCL project will have the responsibility to implement all the required and appropriate techniques in order to control and limit, as far as reasonably practicable, the effects of settlement which would be generated by this project.
- 2.8.2 An assessment will be carried out using established methods to identify the risk of damage to buildings. Details of any necessary protective works, including their design

and method of implementation will be established and agreement sought with the building owner, prior to protective works being carried out.

- 2.8.3 Structural condition surveys will be undertaken prior to commencement of the construction works, for any buildings predicted to be potentially subject to ground settlement above threshold values which could possibly lead to damage.
- 2.8.4 Monitoring of ground settlement will be carried out from the start of construction, during and after construction, to check that the recorded ground movement is within designed limits.
- 2.8.5 Monitoring of buildings will be carried out on case-by-case basis, depending upon the assessment of risk of damage. Monitoring will begin prior to commencement of tunnelling construction work to enable base-line values to be determined accurately, and will continue until settlement due to the works, as shown by the monitoring, has effectively ceased for a period of three months.

Controls for Contamination and Discovery

- 2.8.6 Any site assessment and remedial works required will be undertaken in accordance with *DEFRA/ Environment Agency's Model Procedures for the Management of Land Contamination (CLR11)*
- 2.8.7 Adequate site investigation data will be used to enable an assessment of the possible adverse effects arising due to land affected by contamination, development of appropriate construction methods and design of appropriate mitigation to be undertaken. Additional site investigation work will be undertaken, if necessary and this will include the following, as appropriate;
- historical and current land uses;
 - historical and current activities, processes and waste products;
 - geological and hydrogeological setting;
 - existing results of soils, gas, surface water and groundwater
 - monitoring/sampling/testing; and
 - appropriate risk assessments
- 2.8.8 Site investigations will be undertaken in accordance with the following;
- *BS 10175:2011 Investigation of potentially contaminated sites. Code of practice;*
 - *BS 5930:1999 & A2: 2010 Code of practice for site investigations;*
- 2.8.9 Relevant local authorities and the EA will be consulted regarding site investigations for areas of land affected by contamination and, where appropriate, the risk to ground and water resources, processes and abstractions will be assessed.
- 2.8.10 Measures to be implemented will include, as appropriate, undertaking ground investigation work, risk assessments, monitoring of ground movement, groundwater and ground gas, and undertaking structural or condition survey of buildings or structures adjacent to the works where there may be potential risks of ground movements which may damage structures.

2.9 * WASTE MANAGEMENT

General Provisions

- 2.9.1 It is intended that UCL will operate a centralised waste management service for all contractors. The Logistics Partner will service each project through the provision of empty bins and removal of full bins to a centralised bin store. Each bin will be weighed on collection and allocated to each project. Waste will be transferred to an off-site MRF for further segregation and recycling. Out-of-gauge waste will also be managed by the Logistics Partner with skips located within the Logistics Zone for collection by UCL waste contractor. This approach will reduce waste vehicles on site, provide accurate project waste tonnages and costs, improve UCL waste benchmarks and enable UCL to set waste reduction targets. All contractors are required to provide to the Logistics Partner project waste forecasts as would have previously been required under the *Site Waste Management Regulations 2008*. UCL will request that all contractors and consultants working on Project continue to follow the principles of the SWMP Regulations and operate responsibly in respect of the disposal of waste.
- 2.9.2 Demolition waste will be managed separately by the Project demolition contractor, but will follow the principles of the *SWMP Regulations 2008*.
- 2.9.3 The disposal of waste generated during the construction of Projects including any surplus spoil will be managed to maximise the environmental and development benefits from the use of surplus material and to reduce any adverse effects of disposal
- 2.9.4 In general the principles of the waste management hierarchy will apply which favours waste minimisation, reuse of materials and recycling over disposal to landfill.
- 2.9.5 The principle objectives of sustainable resource and waste management are:
- to use material resources more efficiently,
 - reduce waste at source
 - reduce the quantity of waste that requires final disposal to landfill in accordance with the waste hierarchy.
- 2.9.6 These are to be translated to the Projects as follows
- the application of designing-out waste principles to minimise construction waste;
 - working towards a cut and fill balance in relation to excavation arisings;
 - the part segregation of construction and demolition materials on-site and further segregation through the UCL waste contractor, to maximise diversion from landfill via re-use, recycling and recovery.
- 2.9.7 UCL will require its lead contractors to undertake regular audit and inspection of waste management activities to ensure compliance with the requirements of statutory controls.
- 2.9.8 The types, quantities and fate of waste generated during the construction process shall be identified, measured and recorded. This information shall be reported on a periodic basis to facilitate monitoring against any UCL key performance indicators and

* UCL specific requirements

to measure progress against any waste reduction performance targets that may apply.

- 2.9.9 A register of all waste loads leaving the site will be maintained to provide a suitable audit trail for compliance purposes and to facilitate monitoring and reporting of waste types, quantities and management methods.

Minimisation of Waste Generation

- 2.9.10 UCL will require that its contractors act to minimise the waste generated from their construction activities where reasonably practicable. This will include measures such as 'just-in-time' deliveries, careful storage of materials on-site, minimisation of packaging and use of re-usable packaging etc.

- 2.9.11 All waste will be managed in accordance with the waste hierarchy (i.e. prevention, preparing for re-use, recycling, other recovery and disposal as set out in the *Waste (England and Wales) Regulations 2011*), and in such a way as to prevent harm to human health, amenity and the environment. Waste management measures will be prepared that facilitate the re-use and recovery of material and diversion of waste from landfill in line with the waste hierarchy.

- 2.9.12 UCL will require its contractors to maintain responsibility for the management of waste generated from their project until it is collected by the Logistics Partner. The contractors' staff will be suitably trained to undertake these duties, which will include, waste management handling, inspection and reporting.

Management of Excavated Material Waste

- 2.9.13 Excavated material that is either uncontaminated or which can be remediated to a suitable standard and can be used for site engineering and restoration purposes will be managed in accordance with the controls specified by the *CL:AIRE Definition of Waste: Development Industry Code of Practice* and/or in accordance with an appropriate environmental permit or exemption from permitting.

- 2.9.14 Materials Management Plan(s) (MMP) will be developed describing the methods for reusing soil waste generated from sites. The movement and placement of materials will be as described in the MMP tracking system and recorded in a verification report for each site. This will help to maximise opportunities for re-use of excavated material.

- 2.9.15 Suitable projects or other opportunities for reuse of excavated material may be identified as the detailed construction planning of the Projects progress.

Segregation and Storage of Waste

- 2.9.16 Skips and other storage receptacles will be sheeted, and bins will remain lidded or closed, during times when waste is not being deposited into them. They will also be covered to prevent the escape of waste whilst in transit and loaded for maximum payload efficiency.

- 2.9.17 Skips and storage receptacles shall be inspected by the Logistics Partner on arrival to ensure they are fit for purpose.

- 2.9.18 Mixing of inert, hazardous and non-hazardous wastes, either whilst stored on-site or upon collection will not be permitted.

- 2.9.19 Liquid wastes will be stored on hard-surfaced areas with secondary containment systems to prevent spillages.
- 2.9.20 The storage and segregation of waste will comply with any air quality management measures that are necessary to prevent harm to human health, amenity and the environment through nuisances such as dust, odour or pests.
- 2.9.21 Waste bins will be used for the collection and storage of waste within site boundaries to facilitate the segregation of waste for re-use, recycling and recovering where appropriate.

Waste Control during Construction

- 2.9.22 The contractor will ensure minimisation of wastes arising on site and reuse where possible either directly or by recycling using the bins provided.
- 2.9.23 Initiatives to reduce other waste streams will include as far as practically possible:
- Minimising raw material waste through analysing design and construction techniques where possible;
 - Making a commitment to develop waste minimisation opportunities by maintaining a role in the management of the supply chain during construction.
 - Liaison with suppliers through the off-site consolidation centre to enable packaging material to be sent back for reuse, the use of off-cuts where possible and the recycling of off-cut material by the supplier
 - Engaging subcontractors in the process of maximising the use of recycled aggregates hard-core and alternative cements according to application ;
 - Optimising reverse logistics in liaison with the Logistics Partner for vehicles delivering from the off-site consolidation centre.
- 2.9.24 To ensure compliance with legislative requirements only Environment Agency licenced waste hauliers, waste management contractors and approved landfill sites will be used.
- 2.9.25 Suitable protection measures will be incorporated in the design of the waste management areas to prevent pollution and regular inspections carried out.
- 2.9.26 Movement of waste from site will be in vehicles that are properly covered and inspected prior to entry onto public highways.
- 2.9.27 Waste transfer notes will be retained and will fully describe the waste in terms of type, quantity and containment.

Duty of Care Requirements

- 2.9.28 UCL will require its contractors to maintain a duty of care at all times to ensure that waste generated during the construction period is handled in accordance with the relevant legislation governing its storage, transfer, treatment and disposal.
- 2.9.29 Demolitions Contractors will be expected to put in place all relevant authorisations prior to the removal of any waste from site and maintain a register of this information. This will be in relation to the transfer of waste (waste carriers); any off-site waste

management facilities (permitted or exempt sites) to which waste is taken to and any requirements for hazardous waste premises notification.

- 2.9.30 UCL will ensure that an environmental permit or registered exemption is in place prior to any on-site transfer, treatment or disposal of waste being undertaken, if required.
- 2.9.31 Any waste leaving the site will be accompanied by appropriate duty of care documentation in line with the relevant statutory requirements for waste transfer and hazardous wastes (as appropriate). Duty of care documentation will be retained by the contractors in line with statutory requirements.
- 2.9.32 Contractors will maintain a register of all waste loads leaving the site and/or a tracking system for excavated material destined for reuse to provide a suitable audit trail and to facilitate monitoring and reporting of waste and material types, quantities and management methods.

2.10 ARCHAEOLOGY

- 2.10.1 UCL will identify already known areas of archaeological interest which may exist on the Campus and to reduce the construction effects on these areas. A watching brief will be put in place and adhered to by the contractors.
- 2.10.2 Where it is thought appropriate on Projects a desk-based study will be undertaken to assess the potential of any archaeological finds based on historic records.
- 2.10.3 In the event of unexpected finds contractors will be expected to report these immediately to UCL. In such circumstances all works will cease in the vicinity and an exclusion zone will be established until further advice has been obtained from a specialist archaeological consultant.
- 2.10.4 Consultations will be held with the *Greater London Archaeology Advisory Service (GLAAS)* to agree the *Written Scheme of Investigation (WSI)* for a programme of archaeological works prior to submission to the Local Planning Authority for approval. The Sites and Monuments Records (SMR) will be used as the core data through which GLAAS are able to base their advice and subsequent reports.
- 2.10.5 Once approval is granted by the relevant authority, the WSI will be used as the basis to procure a registered Archaeological consultant / contractor for recording and carrying out further investigations.
- 2.10.6 The Principal Stages for handling archaeology in the planning process, in line with the *Government's Planning Policy Statement 5 (PPS5)* are:

Pre-Determination:

- Desk-based assessment

Post-Determination:

- Field Evaluation
- Preservation in situ
- Preservation by record (excavation)
- Public dissemination of results

3 TRAFFIC AND TRANSPORT

3.1 MASTERPLAN CONSTRUCTION PROGRAMME AND DATES

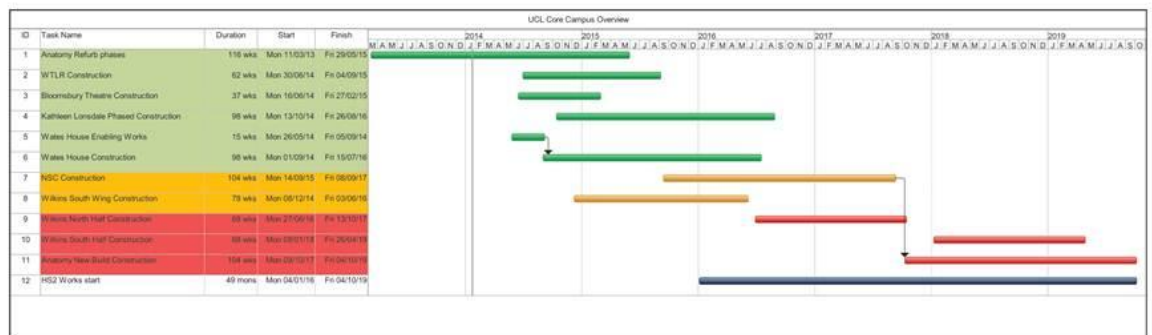
3.1.1 The Transforming UCL Programme constitutes a number of individual Projects of various scales, being delivered at various Central Campus locations within different time frames.

3.1.2 All major projects, will prepare a Project Construction Management Plan taking cognisance of this overarching Construction Management Plan in readiness for implementation.

3.1.3 Current known Projects are illustrated on the map below with an indicative time frame



One Programme : 2014 - 2024



3.1.4 Current projects and their timescales will be published and made available via a UCL website providing information as to the 'Transforming UCL Programme'.

WORKING HOURS**Consents**

- 3.1.5 All contractors working for UCL at the Bloomsbury Campus will comply with hours of working stipulated in Planning Consents as set down by the local authority
- 3.1.6 Contractors who require to work outside these hours will be required to liaise with UCL and the Environmental Health Officer and obtain formal agreement. This will usually only be granted for limited operations when all other alternatives have been exhausted.
- 3.1.7 * Consents to working hours on Projects will be approved by UCL so that these do not interfere with UCL's operations. In particular exam periods and student and departmental events should be considered by all contractors in their programmes of work.

Core Working Hours

- 3.1.8 UCL will expect contractors to comply with consented working hours and adhere to the core working hours generally granted which will likely be from 08:00 to 18:00 on weekdays (excluding bank holidays) and 8am to 1pm on Saturdays.
- 3.1.9 *No work is to be undertaken outside the stipulated core hours on weekdays or Saturdays, and no work is to be undertaken on Sundays and Bank holidays, without prior arrangement with UCL and sanctioned by the Environmental Health Officer. This may be granted for certain operations which are influenced by other factors e.g. tower crane erection requiring road closures or transport escorts as dictated by the Police, concrete pours that need to be completed and fitting out work within buildings.
- 3.1.10 Night work is not to be undertaken without prior approval of the Environmental Health Officer and as agreed with UCL. Night work will require to be properly planned and be only for operations that cannot be undertaken in normal working hours. This work should only be for limited operations unless special sanctions are agreed with the Environmental Health Officer in advance.
- 3.1.11 Emergency work may be required to be undertaken outside of core hours and again should have prior approval.
- 3.1.12 To maximise productivity within the core hours, contractors may require a period of up to one hour before and up to one hour after normal working hours for start-up and close down of activities. This will include but not be limited to:
- preparation to receive early / late deliveries. To that effect, the Logistics Partner will operate the Logistics Zone outside the normal working hours to support that preparation.
 - labour movements to and from the place of work,
 - essential maintenance
- This will not include operation of plant or machinery likely to cause a disturbance to local residents or businesses; these periods will not be considered an extension of core working hours.

* UCL specific requirements

3.2 *VEHICULAR ACCESS AND MATERIAL DELIVERY MANAGEMENT ARRANGEMENTS**General Provisions**

- 3.2.1 UCL has appointed a Logistics Partner to manage vehicle deliveries to site. The contractor is required to arrange for all divisible palletised loads to be delivered to the Logistic Partners off-site consolidation centre in Silvertown, where loads will be broken down into 'work packages' for delivery to site. To call goods to site, the Contractor must book a delivery slot using the Delivery Management System. This will require forward planning by the Contractor to ensure that goods are received on-site when required. Goods will be delivered to site via the Logistics Zone in Gordon Square North where the vehicle will be unloaded prior to distribution to each project by the Logistics Partner. Contractors will be expected to work within the framework set down by the Logistics Partner. Non-divisible loads (such as concrete, rebar, cladding, concrete etc.) will be booked to site as 'direct to site' deliveries using the Delivery Management System. Deliveries that are not booked into a scheduled delivery slot will not be allowed onto site. All construction traffic will follow a mandated route via the Logistics Zone.
- 3.2.2 The Logistics Partner will minimise the effect of construction activities on the shared access points to the Campus, and dovetail all construction deliveries with business as usual deliveries from suppliers servicing UCL.
- 3.2.3 All contractors are required to provide to the Logistics Partner delivery and waste forecasts for the forthcoming month, 3 months and 6 month periods. Accuracy of within 10% is expected. The Logistics Partner will review these forecasts and use them to predict future resourcing. The Logistics Partner will generate a predicted delivery and waste schedule on a monthly basis to the UCL Logistics Manager, identifying the predicted movement quantities for each month.

3.3 *MATERIAL DELIVERY, LOGISTICS ZONE AND CONSOLIDATION CENTRE

- 3.3.1 UCL are investing in a centralised Logistics Zone to serve its Transformation programme. This facility will allow modern methods of Construction Logistics to be incorporated and will significantly improve the impact on the local area in the following ways:
- The LZ will enable the use of an off-site Consolidation Centre, which will reduce LGV traffic by up to 70%.
 - Timed deliveries will restrict LGV movements to specifically allocated time slots to reduce the risk to the students, staff and general public from delivery traffic.
 - The reduction in vehicles will significantly reduce emissions and congestion.
 - Safety will be significantly improved by reducing the number of vehicles arriving, by transferring the main construction logistics operations from inside the campus area or surrounding streets to a secure controlled zone and through the use of FORs silver accredited vehicles.
- 3.3.2 The Logistics Partner will establish and implement a Delivery Management System (DMS) to book all deliveries into the off-site consolidation centre and to call-off deliveries from the consolidation centre to site. Direct to site loads will also be booked in using the DMS. Use of the DMS is mandated.

* UCL specific requirements

3.3.3 The DMS will be used to manage the flow of materials to project sites in an orderly and planned manner to avoid congestion. It is expected that the use of the consolidation centre will reduce deliveries to site by 70%.

3.3.4 The Delivery Strategy for UCL will address the following:

- Delivery of materials to the consolidation centre by the contractors' supplier
- Controlled delivery of 'work package' combined loads to projects from the Consolidation Centre
- Controlled delivery of 'direct to site' non-divisible loads to site including any abnormal Loads, i.e. Cranes, Piling Rigs etc. (subject to relevant authority clearance)
- Controlled material returns from sites to the consolidation centre
- Direct material removal from sites by contractors/suppliers
- Waste vehicle access to site
-

Delivery Routes between UCL Campus and Transport for London Road Network

3.3.5 Construction LGV Traffic will have mandated routes to follow. These routes will be communicated to the supply chain through UCL project teams. All construction vehicles will access the strategic road network via Euston Road, Upper Woburn Place and Tavistock Square to the Logistics Zone in Gordon Square North. Vehicles will exit the Logistics Zone and turn right onto Gordon Street for Westbound traffic onto Euston Road, or turn left onto Gordon Street via Torrington Place for South, East and North bound traffic. .

3.3.6 UCL have applied for a temporary closure of Gordon Square North and partial road closure of Endsleigh Place lasting 18 months to facilitate a centralised logistics operating zone and lorry hold area.

3.3.7 The off-site consolidation centre will reduce the number of direct deliveries to Gordon Street by up to 70%. The Logistic Partner will use this road closure as a Logistic Zone (LZ) allowing construction unloading and onward delivery of materials to projects.

3.3.8 UCL will take cognisance of all public transport arrangements in any planning of logistics to facilitate operation of its Projects.

Delivery Vehicle Sizes and Frequency of Access

3.3.9 Based on the generated data and on campus activities the Logistics Partner will:

- Identify the vehicle sizes, volume of construction traffic and frequency of access for delivering loads from the consolidation centre and the Gordon Square North LZ, ensuring that the increase in construction traffic is maintained within the capacity of the highways feeding the campus.
- Analyse each project delivery and waste movement forecast requirements to generate a programme-wide logistics traffic profile. Frequencies of delivery and vehicle sizes will be adjusted to ensure that the logistic traffic profile does not exceed the capacity of the surrounding highways.

3.4 *PARKING, LOADING AND UNLOADING ARRANGEMENTS

- 3.4.1 UCL will advise all contractors that there will be no provision for parking on the campus for operatives and staff undertaking work on projects. Arrangements for off-site parking and bussing in of the labour force will be the responsibility of the Contactor. Safe drop off points on campus will be arranged with the Logistics Partner.
- 3.4.2 UCL will advise all contractors that loading and unloading will be strictly managed by the Logistics Partner and any relaxation of highway restrictions will be applied for through LBC.

Parking Bays Suspension

- 3.4.3 UCL will discourage the suspension of parking bays as far as is reasonably practicable. Where this is unavoidable contractors will be expected to make the formal applications to the Highways department at LBC.
- 3.4.4 Parking bay suspensions should be kept to limited periods where possible and if long term suspension is necessary this should be factored into the Logistics Planning for the campus.

3.5 HIGHWAY WORKS**General Provisions**

- 3.5.1 Where it is deemed necessary UCL in conjunction with LBC will agree to Contractors undertaking any temporary works to the highways to facilitate access for large vehicular access to Projects. It is anticipated that all works undertaken will be reinstated at the end of the construction of each project.
- 3.5.2 Where utility connections are required with associated highway works for Projects these will be co-ordinated between the Utility Companies, Contractors, Logistics Partner and UCL.
- 3.5.3 Planned Highways Maintenance or Utility Infrastructure advance works plans will be obtained from LBC and co-ordinated with the Proposed Scheme programmes to identify any clashes or potential disruption to the projects.

Traffic Management Orders

- 3.5.4 Contractors requiring a temporary traffic management order must follow the requirements of *Section 14(1) of the Road Traffic Regulation Act 1984*. Alternatively, and in exceptional circumstances, the Council may issue a notice under Section 14(2), if there is an urgent need for the restriction to come into force without delay. Temporary orders under s14(1) may remain in force for up to 18 months, and those introduced by a notice under s14(2) may vary between 5 days and 21 days.
- 3.5.5 Orders or notices will be issued for matters such as:
- Parking restrictions
 - Road closures
 - Other traffic management measures such as one-way working, banned turns etc.

* UCL specific requirements

- Footpath closure

3.5.6 Applications must be made at least 10 weeks before the restriction needs to come into force. The Council will comply with statutory requirements (giving public notice, display of street notices, statutory notification) and, together with the applicant, must carry out local publicity. The Council's agreement is subject to other works programmed in the borough. Contractors must provide the following for Orders as follows:

- A temporary traffic management order application form
- A traffic management plan, in accordance with *Chapter 8 of the Traffic Signs Manual*.
- A method statement of the works to take place
- A risk assessment of the works to take place
- A draft letter to residents
- A temporary traffic signals notification form (if necessary)
- The specified payment

3.5.7 In most cases, a site meeting will be necessary between a Council officer and the applicant's works manager or representative.

Proposed Overhangs to the Public Highway

3.5.8 It is the intention of UCL to develop Central Welfare facilities to support its Programme of Projects. This is intended to be erected above the existing Christopher Ingold Building Auditorium along Gordon Street East. The design of this temporary facility is being developed.

3.5.9 The design application for this facility will confirm its footprint details and any impact on the highway. It is to be noted that any overhang would be within the closed section of Gordon Street highway.

3.5.10 Any scaffold overhangs and fans required for construction activity will be the responsibility of the Contractors to apply for as required for each individual Proposed Scheme.

Occupation of the Public Highway

3.5.11 The existing perimeter of the Campus is not clearly defined by a fence or wall, and can be viewed as an open area to staff, students and the general public. The interface of Projects boundaries and public facing space will be separated with the use of suitable hoardings and fencing with appropriate vehicular gates and pedestrian access to facilitate a safe working environment.

3.5.12 There will be a UCL centralised approach to the design and location of all hoarding and fencing requirements in conjunction with Contractors, the Logistics Partner and the local authority, including for the application and display all necessary licences. It is envisaged by UCL that this approach plus appropriate branding, incorporating the possibilities of site specific art-work, direction signage and key information will ensure commonality of image that UCL wants to convey to the public.

- 3.5.13 Hoarding and barriers will be used to segregate vehicles and plant from pedestrians. Banksmen will be utilised where necessary to provide maximum safety, and will be able to judge and coordinate traffic and pedestrian flow at all times.
- 3.5.14 Hoardings and/or signage will provide clear and concise specified areas for vehicles and pedestrians alike, and the Logistics Partner will be responsible for erecting standardised hoarding which will be erected in conjunction with the Logistics Partner for the various Project sites around the Campus.
- 3.5.15 The Logistics Partner will maintain all public facing hoardings, with a view to consistency as to standards.
- 3.5.16 Each Project will provide specific arrangements and details for their Project footprint, hoardings and vehicular / pedestrian accesses as appropriate.

3.6 PEDESTRIANS AND CYCLISTS

- 3.6.1 UCL has commissioned Pedestrian and Traffic Surveys of the main arterial roads surrounding the Campus to facilitate Logistics Planning. The location and delivery route to the LZ is designed to avoid impact on the cycle lane in Tavistock Square (south) and Gordon Square (south).
- 3.6.2 It is not envisaged that cycle parking will be impacted by project works.
- 3.6.3 Pedestrian crossings on roads adjacent to the campus will not be reduced or affected. Logistics Traffic Marshalls will ensure pedestrian/vehicle segregation and safe routes for pedestrians.

3.7 TRAFFIC MANAGEMENT AND AVOIDANCE OF CONGESTION

General Provisions

- 3.7.1 UCL will require that the impacts on the local community from construction traffic for the Projects are minimised and that public access is maintained where reasonably practicable. The impact of road based construction traffic will be reduced by identifying clear controls on vehicle types, hours of site operation, and routes for large goods vehicles. The use of off-site consolidation will reduce construction traffic by 70% so reducing congestion and vehicle emissions.
- 3.7.2 UCL will discuss the generic traffic management measures that may be required to be implemented with LBC and this will include:
- measures to ensure that the maintenance and condition of public roads,
 - traffic monitoring arrangements with local highway authorities;
 - measures to provide for road safety for the public and construction staff and temporary traffic control measures;
 - procedures to be followed for the temporary or permanent closure or diversion of roads
 - installation of any appropriate traffic management signage
 - measures to be implemented to reduce construction traffic impacts or impacts associated with parking on residential streets;

- permitted access routes and accesses for construction traffic;
 - procedures to address any highway incidents or vehicle breakdowns relating to construction traffic, especially at peak times;
- 3.7.3 Principal Contractors will be expected to produce traffic management plans as part of their own Construction Health and Safety Plans for approval by the CDM Co-ordinator.

Transporting the Workforce

- 3.7.4 Construction workforce travel plans will be prepared by the Principal Contractors with the aim of encouraging the use of sustainable modes of transport to reduce the impact of workforce travel on local residents and businesses. The plans will include:

- identification of a travel plan co-ordinator and a description of their responsibilities;
- site activities and surrounding transport network including relevant context plans;
- anticipated workforce trip generation and how it may change during the construction process;
- travel mitigation measures that will be introduced to reduce the impact of construction workforce on the transport network;
- there is no contractor parking on UCL campus;
- methods for surveying workforce travel patterns;
- process for monitoring and reviewing the construction workforce travel plan.

Traffic Management Plans

- 3.7.5 UCL will ensure that their contractors submit a Traffic Management Plan section within their Project Construction Management Plan prior to starting works. In addition to compliance with the Logistics Partner' Traffic Management Plan the TMP will include:

- compliance with the routes identified in the Logistics Partners' Traffic Management Plan for UCL
- a list of roads on the wider road network that may be used by direct-to-site construction traffic including any restrictions to construction traffic on these routes;
- a register of applications for consents associated with temporary traffic management measures;
- emergency access protocols;
- dealing with large goods vehicles and abnormal loads;
- monitoring for deviation from authorised routes;

*** Management of Large Loads and HGV Movements**

- 3.7.6 All construction vehicles, including those under 3 500 kg will be required to book-in through the Delivery Management System. Entrance to campus will be via the LZ and access will be denied unless they have been allocated a scheduled time-slot..
- 3.7.7 Onward movement vehicles from the LZ to the immediate vicinity of the site will be under the control of a Traffic Marshall.

Maintaining a Clean Public Highway

- 3.7.8 The Projects Main Contractors will be responsible to implement all reasonably practicable measures to avoid/limit and mitigate the deposition of mud and other debris outside of the site boundaries. These measures will have regard to the nature and use of the site(s) in question, and will include:
- hard standing at the access and egress points will be cleaned at appropriate intervals;
 - the correct loading of vehicles and sheeting of loads where necessary to avoid spillage during their journeys;
 - appropriate wheel cleaning measures will be employed to prevent the transfer and accumulation of mud and other granular deposits on the public highway;
 - the use of mechanical road sweepers combined with water sprays for the suppression of dust to clean hard standings, roads and footpaths in the vicinity of the sites;
 - the flushing of gullies in the vicinity of the site.
 - after completion of any works affecting a highway, all surplus materials arising from the works will be cleared from the highway, leaving it in a clean and tidy condition in accordance with the reasonable requirements of the highway authority.

* UCL specific requirements

4 COMMUNICATION WITH COMMUNITIES

4.1 NEIGHBOUR AND COMMUNITY LIAISON

4.1.1 UCL have a strong relationship with the community and endeavour to maintain and improve relations during all stages of a project. UCL focuses particularly on the groups who may be directly affected by construction impacts including local residents, businesses, land owners, community resources and the specific needs of protected groups (as defined in the *Equalities Act 2010*).

4.1.2 The scale and duration of the UCL development plans means that a Community Liaison Working Group will need to be established, involving 'Transforming UCL' programme. The group would comprise of representatives from:

- UCL Project Management Team
- UCL Communications Team
- UCL Health and Safety
- Neighbourhood
- Logistics Partner (as required)
- Project Lead Stakeholders (as required)
- London Borough of Camden (as required)
- Contractors Management Teams (as required)

4.1.3 The Group should sit at regular intervals to manage the concerns of both UCL Community and Wider Local Neighbourhood Community during the life of the development works.

4.1.4 This Group will provide appropriate information and be the first point of contact to resolve any community issues. Each contractor delivering a UCL project will have dedicated appointed community relations personnel who will work closely with the UCL community liaison team in order to provide the most up to date news and information on that project.

4.1.5 The Group should be a proactive forum for communicating and reporting on the following:

- Health and Safety Issues
- Ongoing Update of Masterplan and Programme of Projects
- Active Schemes Progress
- Key Upcoming Major Construction Activities that may impact the Community
- Traffic Management Issues
- Pedestrian & Cyclist Routes
- Signage and Wayfinding
- Town Planning – Community Engagement Plans
- Complaints

- UCL Events
- Newsletters and Other Communications

4.1.6 The Considerate Constructors Scheme highlights the importance of considering the needs of local people, businesses and visitors. Consultation should be carried out regularly, to ensure this is being achieved.

4.1.7 Prior to commencement of each project at the Campus, where possible all neighbouring occupiers and UCL stakeholders will be contacted to be explained the activities to be undertaken, the duration of the works and the working hours. Communication with UCL and local communities will be enhanced by the use of newsletters, notice boards and the UCL website.

4.1.8 Each Principal Contractor will need to address the codes of conduct required from operatives and staff working at UCL, during their site inductions and ensure these standards are being adhered to.

4.1.9 Where relevant, neighbours will also be specifically informed about any abnormal work or road closures proposed.

4.1.10 The surrounding buildings are predominantly owned by UCL and therefore it is likely that the most significant impacts will be on UCL business itself. Regular meetings will be planned on a project by project basis for all stakeholders.

4.1.11 More important will be the need for Interface Meetings between projects to ensure there is a co-ordinated approach to communication with the communities and clear messages that are not ambiguous or conflicting.

4.2 CONSIDERATE CONSTRUCTORS SCHEME

4.2.1 Every major project Principal Contractor will be required to register with the Considerate Constructors Scheme and to comply with its requirements. The code commits those contractors in the Scheme to be considerate and good neighbours, as well as clean, respectful, safe, environmentally conscious, responsible and accountable.

4.2.2 The Scheme is independently audited by the Considerate Constructors Scheme and points are awarded depending upon the level of compliance.

4.2.3 This Scheme will assist UCL to monitor the Implementation of the CMP and Review by LBC

4.3 HELPLINE

4.3.1 A helpline will be set up and linked directly to the UCL community liaison team. The information regarding this helpline will be published alongside all community information issued as well as clearly presented on the project site hoarding.

4.3.2 The UCL community liaison team will work closely alongside the appointed contractor's community liaison personnel in order to deal with queries and issues logged through the helpline as quickly as possible.

- 4.3.3 The helpline will take the form of an email address and a telephone line directly linked to UCL community liaison team.
- 4.3.4 An automatic email subscription will be available by contacting UCL community liaison team on the information provided on all publications and site hoarding, stating the project(s) for which you require information.

4.4 COMPLAINTS PROCEDURES

- 4.4.1 A complaints procedure will be implemented to log and respond to issues raised by UCL employees, neighbours, or members of the public. Where possible, measures should be put in place to avoid recurrence of the complaint.
- 4.4.2 Complaints will be handled through the project helpline. UCL and contractors will work together to deal with related issues to their projects. Each complaint will be logged and a response issued directly to the initial source within 1-3 working days depending on the severity of the complaint.
- 4.4.3 Complaints will be reviewed at each community forum with evidence of dealing with the complaint illustrated to members of the community as well as the measures put in place in order to avoid recurrence.

4.5 NEWSLETTERS

- 4.5.1 A regular newsletter will be issued to the surrounding community in the form of an email or hardcopy to keep all parties informed about progress to date and the forthcoming works. This will act as an informal means of communication different to the community forum held at UCL.
- 4.5.2 Any special unusual activities to take place such as road closures or large deliveries of plant will be notified by way of a supplementary letter issued to the relevant parties again in the form of hard copy and email.

4.6 FEEDBACK AND IMPROVEMENT

- 4.6.1 UCL will strive to implement a lessons learned approach to every project they deliver. This will be carried out through the UCL Estates website in the custom of an online feedback form. Each comment will be logged on the system against its related project and used during the initiation stage of further projects to add value and improve on previous projects delivered by UCL.
- 4.6.2 Appointed contractors are encouraged to carry out the same procedure internally amongst their project team at the end of each project and feed these comments back to the UCL project manager for registration on the UCL system.
- 4.6.3 Perspectives from both organisations at the end of any project will allow for positive improvements on any future project being carried out by UCL

5 SECURITY AND SAFETY

5.1 *PUBLIC SAFETY

5.1.1 The UCL Safety policy should be taken into consideration by all appointed contractors when producing their Health and Safety Plans. It is accepted that contractors will use their organisations processes and documents for such plans however acknowledgement and understanding of UCL policies are required within any UCL related project safety plan.

5.1.2 Contractor's Health and Safety personnel are encouraged to liaise closely with UCL Safety Services throughout the life cycle of a project.

5.1.3 Public safety will be high priority on both UCL and the appointed contractor's agenda during a construction project. Due to the heavily populated UCL campuses and pedestrian flow around each campus, the public will be subjected to on-going construction work.

5.1.4 Contractors will carry out the following in order to make sure that the public are safe during construction work in conjunction with their organisational best practice for public safety;

- Ensure the erection of hoarding around the site perimeter to prevent public trespassing before any works start
- Security guards on each access gate
- All scaffolding to have netting and kickboards in place
- Temporary pedestrian walkways with overhead cover protection where the site is restricting dedicated routes
- No materials to be lifted by a crane outside of the site boundaries unless otherwise notified and area closed from public access

5.2 *SECURITY PLAN AND INTERFACE WITH UCL

5.2.1 Contractors will employ an independent security company as appropriate to manage site security in agreement with UCL Security Services. The interface between site security and UCL campus security is evident on any project and understanding of each Project's security management requirements is needed.

5.2.2 The contractor's will develop a site security plan in accordance with UCL campus security procedures outlining the key contacts on both sides and the approach to management of security during the construction phases of any UCL project.

5.3 EMERGENCY RESPONSE TEAM

5.3.1 Appointed contractors will develop an Emergency Response Plan and issue this to the campus security team prior to commencement. This plan will include procedures to address all foreseeable situations that may occur during construction. This will be approved by UCL Security Services.

* UCL specific requirements

5.3.2 Each appointed contractor is responsible for carrying out site safety inductions which will include information regarding instances of emergency response. Each construction site will also have a dedicated access point for emergency response teams.

5.4 *INCIDENT MANAGEMENT

5.4.1 Appointed contractors shall implement their own incident management procedures for all incidents associated with their project. Any incident that directly affects external parties outside of the site boundaries shall adhere to the UCL Major Incident Plan (MIP) which covers a range of processes and supporting documentation to provide a co-ordinated response to major incidents. The contractor shall have a direct contact within the Major Incident Team and will assist the contractor in managing the incident when it falls directly outside the site boundary.

5.5 *TERRORISM

5.5.1 In the event of a terrorism act that directly targets a construction project, the Major Incident Team will be despatched to handle this incident. The Major Incident Plan will therefore be initially implemented in the event of terrorism and associated processes followed, however national security services will be contacted immediately and will more than likely take control of the surrounding area.

5.5.2 Contractors are responsible for evacuating all worksite personnel and securing the site from public access until an emergency response team can attend the site.

5.5.3 The aftermath of a terrorist attack on a construction site will require the Major Incident Team, UCL Directors and the appointed contractor to meet together to discuss the path forward according to the Major Incident Plan structured procedures.

5.6 *FIRE CONTROL

5.6.1 All construction sites on UCL property and associated accommodation and welfare facilities will have in place appropriate plans and management controls to prevent fires in accordance with the UCL fire control strategy.

5.6.2 All appointed contractors must carry out fire control measures in accordance to the UCL Fire Strategy Management Standards which reflect the importance UCL attaches to fire safety and the commitment to achieving good practice in the management of fire safety.

5.6.3 Contractors must comply with 'Fire Prevention on Construction Sites'.

5.7 *WORKSITE SECURITY

5.7.1 Construction worksites will be under the control of appointed contractors, which have a statutory duty to prevent unauthorised access to the site. Appointed contractors will carry out site specific assessments of the security and trespass risk at each site and implement appropriate control measures.

5.7.2 The following measures may be used by the contractors in accordance with UCL Security Services approval to prevent unauthorised access to the site:

* UCL specific requirements

- use of high perimeter fencing or hoarding but only where necessary for site security and public safety;
- site lighting at site perimeters;
- adequate security guards and patrols;
- CCTV and infrared surveillance and alarm systems where required;
- communications initiatives for local community to warn of emergency situations
- consultation with neighbours on site security matters through the community liaison team;
- consultation with local crime prevention officers on security proposals for each site
- computerised identity card system used to control and monitor access to site
- immobilisation of plant out of hours, removing or securing hazardous materials from site, securing fuel storage containers and preventing unauthorised use of scaffolding to gain access to restricted areas and neighbouring properties.

5.8 *CCTV REQUIREMENTS

- 5.8.1 At the outset, it's important for the appointed contractor to consider what the CCTV system being installed is there to achieve. It can offer a deterrent against malicious damage, arson, or theft attacks. It can also help provide prosecution evidence for the police.
- 5.8.2 These intentions will determine the type of system and equipment required. The contractor will install CCTV around their worksite as part of their Site Security Plan.
- 5.8.3 The contractor must comply with UCL Security Services requirements for CCTV and their published CCTV policy document which outlines UCL's objectives of safeguarding personal data and movement.

5.9 *CAMPUS WORK INDUCTION

- 5.9.1 UCL will deliver a site safety briefing to all contractors working at UCL
- 5.9.2 Upon contractors being appointed to the UCL framework, their health and safety senior management will attend a campus induction organised by UCL Estates. This induction is aimed at cementing the universities procedures and governance as well as campus rules and regulations for construction sites. Any new contractor working for UCL will also attend the campus induction which UCL will provide as part of the preconstruction information.
- 5.9.3 The aim of the UCL campus induction is for the contractors to filter what they know into their own on site inductions. This allows for complete understanding from both parties from Senior Management to site operatives. Projects specific information will be included in the site induction.

* UCL specific requirements

5.9.4 All appointed contractors will carry out their individual site induction for their respective projects. Each induction will include essential information regarding the site and campus, working methods, and health and safety management on the site.

5.10 UNEXPLODED ORDNANCE

5.10.1 Appointed contractors will carry out risk assessments for the possibility of unexploded ordnance being found within construction areas. An emergency response procedure will be prepared and implemented by the contractors to respond to the discovery of unexploded ordnance.

This will include notifications to the relevant local authorities and emergency services.

5.11 *EVENTS MANAGEMENT

5.11.1 UCL will identify keys events that will produce larger crowds than originally anticipated by the contractor in their security management plan and issue a notice prior to the event occurring. The contractor will be expected to organise deliveries outside of these event times as well work closely with the UCL event management team in order to minimise impact on both parties.

5.12 *SECURITY PERIMETERS

5.12.1 All construction sites will have secure perimeters to protect the community from construction work. The following measures will be applied, as appropriate:

- maintenance of adequate fencing and hoardings to an acceptable condition to prevent unwanted access to the construction site, to provide noise attenuation, screening, and site security where required. This will include the need to provide viewing points at relevant locations, if appropriate;
- use of different types of fencing, including hoardings used for noise control;
- painting the side of hoardings facing away from the site, and to keep them free of graffiti or posters;
- providing site information boards with out of hours contact details, telephone number (for comments/complaints), and information on the works programme, at key locations;
- displaying notices on site boundaries to warn of hazards on site such as deep excavations, construction access, etc.;
- providing signage to indicate re-routed pedestrian/cycle paths;
- providing information on routes to alternative community facilities;
- displaying notices confirming that facilities and / or businesses whose access or view may be affected by construction works, remain open with directions for how to access them;
- maintenance of protective fencing (Heras or equivalent) and/or specialist fencing (e.g. reptile fencing) to protect environmentally sensitive features during construction; and
- retaining existing walls, fences, hedges and earth banks for the purpose of screening as far as reasonably practicable.

* UCL specific requirements

- 5.12.2 Design of hoardings around construction activities shall ensure fitness for purpose and include consideration of the character of the surrounding landscape (e.g. solid hoarding in urban areas, use of artwork where appropriate). Fencing and hoarding shall be kept well maintained throughout construction.

- 5.12.3 Clear sight lines will be maintained around hoardings and fencing with no hidden corners in order to avoid, where reasonably practicable, opportunities for anti-social behaviour and crime and to ensure safety of vehicles. Footways of adequate width to facilitate pedestrian flows will be provided with signs provided to facilitate safe access around the site boundary. Adequate lighting will be installed near hoardings.

- 5.12.4 Businesses located close to hoardings will be consulted on their design, materials and construction to reduce impacts on access to and visibility of their premises.

- 5.12.5 Fencing and hoarding will, as far as is reasonably practicable, be located such that it does not damage sensitive habitats, trees or hedgerows.

6 CULTURAL HERITAGE

6.1 CULTURAL HERITAGE MANAGEMENT – GENERAL PROVISIONS

6.1.1 UCL and its Principal Contractors will manage the impact of construction works on cultural heritage assets, which will include:

- designated assets: scheduled monuments, listed buildings and conservation areas;
- non-designated assets: archaeological and palaeo-environmental remains including geological deposits that may contain evidence of the human past, historic landscapes and historic buildings and the built environment and locally designated assets.

6.1.2 All works will be managed in accordance with accepted industry practice and guidance, taking account of the relevant sections of the *National Planning Policy Framework (NPPF) (2012)*.

6.1.3 General cultural heritage management measures will include:

- provision to relevant contractors of locations and descriptions of all known cultural heritage assets within and adjacent to, construction works, including restrictions to construction methods to protect cultural heritage assets, where these have been identified;
- a programme detailing the implementation of cultural heritage investigation works prior to and during construction;
- that the cultural heritage works are properly programmed by the principal contractors;
- contractors monitoring compliance against the programme of cultural heritage investigation works using appropriately qualified environmental management staff;
- contractors facilitating archaeological and built heritage specialists undertaking the works as specified as an appropriate mitigation measure;
- all archaeological, built heritage and historic landscape intervention, recording, analysis, dissemination and archiving will be undertaken by a suitably qualified and demonstrably experienced organisation; and

6.1.4 UCL will ensure that suitable measures and procedures will be developed in consultation with EH and the local authorities and will include the following, as appropriate:

- implementation of controls at each site to avoid damage by settlement where reasonably practicable (and to record effects should these occur) to structures of historic importance or interest and the movement of construction vehicles and machinery as they relate to areas of heritage interest that may comprise standing archaeological remains and historic buildings;
- development of procedures for topsoil stripping and excavation before commencement of such works and the interface of those works with archaeological investigations, including procedures to be adopted in the event of a potentially nationally significant unanticipated discovery or disturbance of significant archaeological remains;

- procedures adopted to preserve archaeological remains in situ beneath earthworks;
- procedures for the recording, dismantling and re-erection of buildings of heritage significance;
- management of protective measures that will be implemented for heritage assets that are to be retained within the land required for construction;

Human remains

- 6.1.5 Should human remains be located during construction either during construction activity UCL and its contractors will comply with all relevant legislative and project specific requirements.

Treasure Act

- 6.1.6 Should during the course of construction artefacts be located that are deemed by their material content or context to be treasure, as defined by the *Treasure Act 1996*, then all necessary measures to comply with the requirements of the Act and any project specific requirements will be implemented.

Written Scheme of Investigation

- 6.1.7 A project-wide generic written scheme of investigation (WSI) will be prepared in advance of site preparation and construction, in consultation the Local Authority. This document will detail the generic principles, standards, methods and techniques to be employed on the project for cultural heritage works.
- 6.1.8 A site specific WSI will be developed for each area or site specific cultural heritage works.
- 6.1.9 All cultural heritage works will be undertaken in accordance with the generic and site specific WSIs.

APPENDIX A

Principal Contractors will be required to provide a Project Construction Management Plan.

A typical contents list for these plans is identified below but this is not exhaustive and will vary from Project to Project but it must contain reference to all matters set out in this overarching Construction Management Plan.

Project Construction Management Plan**Contents**

i	Project Participants
ii	Project Directory
iii	Purpose of Project Construction Management Plan
iv	Project Organisation and Site Management Team
v	Communication and Consultation Plan
vi	Planning and Programme of Works
vii	Key Dates Schedule
viii	Working Hours
ix	Site Logistics Plan
x	Interface with UCL Logistics Partner
xi	Interface with Campus Wide Projects
xii	Risk Management Plan
xiii	Health and Safety Plan
xiv	HSEQ Competence
xv	Key Activity Method Statements and Risk Assessments
xvi	Permits to Work Plan
xvii	Environmental Control Plan
	<ul style="list-style-type: none">• Traffic Management Plan• Waste Management Plan• Noise & Vibration Control• Air Quality & Dust Control• Flood, Chemical & Pollution Control
xviii	Ecology and Arboriculture
xix	Sustainability and BREEAM
xx	Supply Chain Management
xxi	Commercial and Change Management

- xxii Quality Control
- xxiii Testing, Commissioning and Handover

APPENDIX B**References:**

The main body of the present document is making reference to a number of standards, codes of practice, rules and regulations.

For ease of use of the CMP, these have been listed below, all are accessible from internet.

It is to be noted that these references are not exhaustive or limitative and it will be the responsibility of each party involved to identify the current legislations and recommendations to be implemented.

- Camden Planning Guidance 6 - Construction Management Plans
- Schedule 9, Part I or Part II of Section 62 the Wildlife and Countryside Act 1981
- BS 5837 Trees in Relation to Design Demolition and Construction Recommendations
- BS 3998: Tree works
- BS 4428 Code of practice for general landscape operations
- UK Forestry Standard
- UK Woodland Assurance Standard.
- EA Groundwater protection: Principles and practice (GP3)
- Control of Pollution (Oil Storage) (England) Regulations 2001
- EA Pollution Prevention Guidelines 2
- Sections 61 & 72 of the Control of Pollution Act 1974 and Section 79 of the Environmental Protection Act 1990
- European Commission Directive 2000/14/EC transposed into UK Statutory Instrument 2001/1701
- BS 5228 Code of practice for noise and vibration control on construction and open sites
- BS 7385 Parts 1 and 2
- BS 7385-2 Evaluation and measurement for vibration in buildings
- BS 6472- 1 Guide to evaluation of human exposure to vibration in buildings – Vibration sources other than blasting, 2008, Guide to damage levels from ground borne vibration, 1993
- Control of Pollution Act 1974
- GLA and IAQM Guidance (follow the IAQM methodology)
- Environmental Protection Act 1990
- Euro VI emission standards

- Non-Road Mobile Machinery (Emissions of Gaseous and Particulate Pollutants) (Amendment) Regulations 1999
- Energy Savings Trust
- European Emission Standards pursuant to the EC Directive 98/69/EC
- DEFRA/ Environment Agency's Model Procedures for the Management of Land Contamination (CLR11)
- BS 10175:2011 Investigation of potentially contaminated sites. Code of practice;
- BS 5930:1999 & A2: 2010 Code of practice for site investigations
- Site Waste Management Regulations 2008
- Waste (England and Wales) Regulations 2011
- CL:AIRE Definition of Waste: Development Industry Code of Practice
- Greater London Archaeology Advisory Service
- Sites and Monuments Records (SMR)
- Government's Planning Policy Statement 5 (PPS5)
- Section 61 of the Control of Pollution Act 1974
- Section 14 of the Road Traffic Regulation Act 1984.
- Chapter 8 of the Traffic Signs Manual
- Equalities Act 2010
- Considerate Constructors Scheme
- Fire Prevention on Construction Sites
- National Planning Policy Framework (NPPF) (2012)
- Treasure Act 1996

The following documents are UCL specifics and available via UCL websites

- UCL Bloomsbury Masterplan
www.ucl.ac.uk/masterplan
- UCL website (will be providing information as to the 'Transforming UCL Programme')
To be communicated

- UCL Major Incident Plan (MIP)
<https://www.ucl.ac.uk/emergency-planning>
- UCL Fire Strategy Management Standards
www.ucl.ac.uk/estates/maintenance/fire/documents/UCLFire_MI_05.pdf
- UCL Campus Security Procedures
www.ucl.ac.uk/estates/security/specifications/
- UCL Site Rules for Contractors
<http://www.ucl.ac.uk/estates/safety-arrangements/handbooks/contractors-safety-rules.pdf>

APPENDIX C

Abbreviations / Glossary:

- BPM = beat per minute
- BREEAM = Building research establishment environmental assessment methodology
- CCTV = Closed Circuit Television
- CEMP = Construction Environmental Management Plans
- CEZ = Construction Exclusion Zone
- CMP = Construction Management Plan
- EH = English Heritage
- ECD = European Commission Directives
- HSEQ = Health, Safety, Environmental & Quality
- LZ = Logistic Zone
- LBC = London Borough of Camden
- MMP = Materials Management Plan
- MRF = Material Recycling Facility
- NO_x = Nitrogen Oxide (Combustion Gases)
- NRMM = Non Road Mobile Machinery
- PM₁₀ = Particulate Matter with 10 micrometre Diameter or less (Aerosol)
- PPV = Peak Particle Vibration (mm/s)
- RPA = Root Protection Area
- TMP = Traffic Management Plan
- UCL = University College of London
- VDV = Vibration Dose Values