

Construction Environmental Management Plan (CEMP)

Whiteknights Campus

Construction Environmental Management Plan: Draft

Prepared by:
RPS for Stride Treglown

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RPS
Mallams Court
18 Milton Park
Abingdon
Oxon
OX14 4RP

Tel 01235 821888
Fax 01235 820351
Email rpsox@rpsplc.co.uk

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Appendices

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Summary

- S.1 This report has been prepared by RPS on behalf of Stride Treglown Limited and the University of Reading. Stride Treglown Limited has been appointed by the University of Reading to develop an integrated Development Plan for its Whiteknights campus (Reading, Berkshire) to meet its likely requirements for development over the next 10 years. The project is the subject of an Environmental Impact Assessment (EIA), reported within an Environmental Statement (ES). This draft Construction Environmental Management Plan (CEMP) forms Appendix 2.1 of the ES.
- S.2 This CEMP explains how the applicant (the University of Reading), intends to manage the construction activities associated with the works at the Whiteknights campus.
- S.3 The strategy, standards, control measures and monitoring procedures that the Applicant intends to observe to manage any adverse environmental effects of the construction process, to meet the Applicants own commitments to high standards and address the requirements and aspirations of the local authorities and key stakeholders are set out in this CEMP.
- S.4 The CEMP defines the specific commitments made by the Applicant, both for general site management (including working hours, site layout and appearance, security and health and safety) and for particular environmental topics (including Public Access and Traffic Management, Noise and Vibration, Air Quality, Contaminated Land, Waste Management, Protection of Surface and Groundwater Resources, Landscape and Visual Impact, Ecology and Cultural Heritage).
- S.5 This CEMP also defines how the commitments made would be implemented through the Contractors' Project Management Plans and how stakeholders would be consulted leading up to and during the construction process.

1 Introduction

Purpose

- 1.1 This report has been prepared by RPS on behalf of Stride Treglown Limited and the University of Reading. Stride Treglown Limited has been appointed by the University of Reading to develop an integrated Development Plan for its Whiteknights campus (Reading, Berkshire) to meet its likely requirements for development over the next 10 years. The project is the subject of an Environmental Impact Assessment (EIA), reported within an Environmental Statement (ES). This draft Construction Environmental Management Plan (CEMP) forms Appendix 2.1 of the ES.
- 1.2 This CEMP explains how the University of Reading, the Applicant, intends to manage the construction¹ activities associated with the project. The document explains the Applicants' intended approach to construction environmental management. In due course its application and implementation could be secured by planning conditions and/or legal agreement.
- 1.3 The Applicant is committed to the use of best practice in the management of the environmental impacts of construction. Best practice guidance will be followed throughout development work at the Whiteknights campus. The Whiteknights campus is located within the administrative areas of both Wokingham and Reading Borough Councils. Therefore guidance from both Local Authorities has been drawn upon in the preparation of this CoCP. Wokingham Borough Council has policies to control environmental effects from new development, as set out in the Unitary Development Plan (UDP) (adopted March 1997). The UDP will soon be replaced by the emerging Local Development Framework (LDF) which will include a Sustainable Design and Construction Supplementary Planning Document (SPD). This document was not available at the time of writing. Reading Borough Council has produced the '*Reading Borough LDF Sustainable Design and Construction Supplementary Planning Document*'. Reading Borough Council formally adopted this document in March 2007.
- 1.4 The Applicant is committed to the use of construction best practice as set out in the Reading Borough Supplementary Planning Document on Sustainable Design and Construction (March 2007) and the relevant saved policies detailed in the Wokingham Borough UDP (1997).
- 1.5 This CEMP has been prepared to meet the Applicants' own commitments to high standards and address the requirements and aspirations of the Local Authorities.

¹ The term 'construction' is used to refer to all those works, activities and processes that would be involved in carrying out the proposed development, including excavation and other earthworks, the erection and dismantling of buildings and structures, demolition and other works.

Scope

- 1.6 This CEMP applies to the proposed development at the Whiteknights campus, University of Reading, as defined in the ES.

Structure

- 1.7 This CEMP sets out a series of objectives and measures to be applied throughout the construction period by the appointed contractors. It comprises four sections:
- **Part A Construction Environmental Management Strategy.** This section defines the overall strategy for managing environmental impacts that may arise during the construction phase. It outlines how the CEMP would be implemented, including the liaison/consultation strategy.
 - **Part B: General Site Specific Requirements.** This section sets out the requirements for managing the construction impacts of all site operations.
 - **Part C: Environmental Topic Specific Requirements.** This section sets out the specific requirements for environmental topics. This covers the following topic areas:
 - Public Access and Traffic Management;
 - Noise and Vibration;
 - Air Quality;
 - Contaminated Land;
 - Waste Management;
 - Protection of Surface and Groundwater Resources;
 - Landscape and Visual Impact;
 - Ecology;
 - Cultural Heritage; and
 - Socio Economic.
 - **Part D: Monitoring.** This section sets out the specific requirements for monitoring the construction activities.

Part A - Construction Environmental Management Strategy

A1 Implementation

Responsibilities

- A1.1 The Applicant would retain overall responsibility for the development during all stages of construction. An individual would be appointed who would have overall responsibility to ensure that all construction activities are in compliance with the CEMP, statutory and other obligations. This individual would also ensure that construction activities are successfully managed and integrated with estate management arrangements. He/she would have sufficient powers to require immediate cessation or modification of any works that are contrary to the CEMP.
- A1.2 The CEMP would be a contract requirement and therefore form part of each Contractor's contract documents. It would be updated as the design progresses and as new information becomes available. Each Contractor would be responsible for implementing the requirements of the CEMP through the development of a Project Management Plan (see below). All site staff would have a duty to minimise the risk of impacts to the environment from the activities on the site, and therefore, environmental responsibilities would be required to be put in place at all levels within the Contractor's team.
- A1.3 The Principal Contractor would be responsible for managing their sub-contractors and for ensuring they understand and comply with the environmental obligations of the CEMP. All construction personnel should be briefed regularly on how these obligations affect their working practice, and such briefing should include considerate off-site behaviour thus reducing the risk of statutory nuisance to neighbouring properties as much as possible through site management.
- A1.4 The Principal Contractor would nominate a representative who would provide a point of contact for residents and the public. The representative would be empowered within the contract to take action where necessary.
- A1.5 A key part of the CEMP is the provision of sufficient and timely information to campus users and, where appropriate, the general public.

Project Environmental Management Plans

- A1.6 Within the suite of contract documents, the Principal Contractor would be required to produce a Project Environmental Management Plan (EMP), which would explain how the Contractor would comply with all the requirements set out in the CEMP. This would function as the

Contractor's Environmental Management System (EMS). Appendix 1 defines the minimum environmental requirements of the EMP, which would be developed in consultation with the Local Authorities, and be subject to approval by the Applicant. The Applicant would make available the approved EMP to both Wokingham and Reading Borough Councils and relevant statutory bodies. They would be publicly available, on request.

A2 Liaison/Consultation

- A2.1 The Applicant would ensure that there is a single point of contact at the strategic and day-to-day liaison levels for construction related stakeholder communication, as defined in paragraph A1.4.
- A2.2 The Applicant would identify a Focal Point for the dissemination of information and handling of any complaints arising from the construction of the development.
- A2.3 A Helpline number would be clearly advertised on prominent displays of information around the site. The Helpline service would ensure that calls are answered on a freephone basis and, where appropriate, are passed directly to the duty manager on site for immediate action. Return calls should normally be made within 24 hours. The Helpline would be manned during normal construction working hours and connected to an answering machine out of hours.
- A2.4 The Applicant would keep campus residents, academic facilities and other potential receptors informed about the impacts of the works by issue of emails and newsletters and/or flyers. The University's website would also include information on works and the Helpline number.

Part B – General Site Specific Requirements

B1 Introduction

B1.1 The general management of the site is important in controlling environmental impacts from all construction activities. The following section sets out the requirements for all major phases of the development with respect to working hours, general site layout and appearance, and security. The controls related to specific environmental topics are set out in Part C.

B2 Working Hours

B2.1 In normal circumstances, works would be undertaken during normal hours, i.e. 0800 to 1800 on weekdays and 0800 to 1300 on Saturdays, with no planned work on bank holidays or Sundays. Where this is not practicable, preference would be given to undertaking works during the evening rather than at night, and consideration would be given to additional weekend (day) working.

B2.2 Activities likely to generate noise that could temporarily affect sensitive receptors (particularly residential properties) would be undertaken during normal working hours other than in exceptional circumstances. In the event that such activities have to occur outside normal hours, occupiers of nearby residential halls or other properties would be given notification of the time of the works and their likely duration, not less than two weeks in advance.

B2.3 In the case of work required outside normal working hours in response to an emergency, the Local Authority and local residents would be advised as soon as is reasonably practicable that the works are taking/have taken place and their (likely) duration.

B3 Layout and Site Appearance

B3.1 All phases of construction would be carried out following a general ‘good housekeeping’ policy, including:

- All work areas would be kept clean and tidy. Rubbish would be removed at frequent intervals. Burning of materials on site would be prohibited.
- Hoardings and security fences would be inspected frequently, and repaired and re-painted as necessary (see below for further details on security).
- Reinstatement/good upkeep of existing street surfaces, even where temporary.
- Street cleaning (avoidance of mud on the road).

- Site entrances/gates would be positioned to minimise traffic congestion and noise transmitted from site activities and deliveries.

B3.2 Storage sites, fixed plant and machinery, equipment and temporary buildings etc., would be located to limit adverse environmental effects. All reasonable precautions would be taken for the operation of plant and equipment, including screening where appropriate, to avoid nuisance and excessive noise impact on surrounding residents or academic uses. The environmental effects to be considered are not just the proximity of operations to sensitive properties or ecologically sensitive locations, but also the risks of pollution.

B3.3 Lighting of the site boundary and associated areas would be provided to ensure sufficient illumination for safety of the passing campus residents/personnel, and positioned such that it does not intrude unnecessarily on adjacent buildings and land uses, cause distraction or confusion to passing drivers, or constitute a road hazard. The aim would be to minimise light pollution effects and discourage crime/anti-social behaviour. The visual intrusion of construction sites on nearby residents and users of campus amenities would be contained and limited.

B4 Security

B4.1 Site security is of the utmost importance. The following security measures would be adopted from the beginning of the works:

- The construction site would be security patrolled by the existing Whiteknights Campus security.
- Informal surveillance through presence of workers on site.
- CCTV and lighting (lighting designed not to create shadowing of footpaths and roads by the site hoarding).
- All mobile construction equipment would be stored in a compound when it is not in use.

B4.2 All fencing, gates and other such structures, temporary or permanent, would be maintained in a safe, clean and tidy condition, and fit for purpose.

B5 Health and Safety

B5.1 The safety of construction workers would be dealt with in the Contractor's Health and Safety Plan, which would set out how all health and safety risks are identified and managed in accordance with current best practice and legal requirements. The Contractor would also be responsible for ensuring the safety of the general public and any visitors to the site. Traffic

and pedestrians would be segregated from construction areas by means of alternative routes and traffic management (temporary traffic lights where needed).

B5.2 The project will fall within the scope of the Construction (Design and Management) Regulations 2007 and a CDM coordinator has been appointed. Health and safety has been considered during the design phase. Prior to commencement of the construction phase, a Construction Phase Health and Safety Plan (CPH&SP) will be prepared and maintained for the lifetime of the project by the Principal Contractor. The University of Reading will ensure that suitable and sufficient management arrangements are in place for the lifetime of the project.

Part C - Environmental Topic Specific Requirements

C1 Public Access and Traffic Management

Objectives

- C1.1 To carry out works in such a way that inconvenience to the public and site users arising from increases in traffic flows and disruptive effects of construction traffic on local and main roads is limited.
- C1.2 Where necessary, ensure that temporary diversion routes are established, signposted and notified in advance.

Control Measures

Traffic control measures

- C1.3 A restricted speed limit would be set for sections of road where construction work is being completed.
- C1.4 Routes through residential areas, or close to other sensitive receptors, would be avoided where practicable. The Applicant would ensure that traffic movement through the site would be maintained at peak hours. Impacts on highway traffic and public roads would be minimal as the traffic management would aim to ensure that traffic does not back up onto the public highway.
- C1.5 Although route changes and closures would only affect site users, the Contractor would be required to ensure that notices are issued to provide information on the dates and duration of any closure of routes. These would be appropriately distributed and would display the Helpline telephone number and web address of the development as well as a plan showing the alternative route.
- C1.6 All pedestrian routes would be clearly defined utilising temporary fencing and pedestrian route signage where necessary. Pedestrian crossover routes would have appropriate warning signs displayed e.g. giveaway signs, vehicle crossings etc.
- C1.7 In the case of temporary footways, reasonable access would be provided for all people, including those with disabilities, wheelchairs and pushchairs.
- C1.8 Routes shall be maintained in a clean, safe and tidy manner.

Access to the works – for personnel/vehicles

- C1.9 During the early stages of development vehicle circulation through the site would be on existing highways and new routes created within the site. Construction traffic would shift to completed roads within the site as these become available for use.
- C1.10 Good public transport links are available for all construction workers to site and they would be encouraged to use them. All operatives would be given a specific site induction, and briefed with reference to the use of designated pedestrian access ways and crossover points.

Traffic management procedures for waste disposal vehicles

- C1.11 Options would be considered for reducing the quantities of construction materials requiring transport by public roads as far as reasonably practicable.
- C1.12 Delivery vehicles would be used to take materials away from site where practicable.

Large or abnormal loads

- C1.13 Movements of large or abnormal loads would be discussed in advance with the local Boroughs, other relevant highway authorities and the Police in order to ensure compliance with regulations and advance notification for local residents.

C2 Noise and Vibration

Objectives

- C2.1 Control and limit noise and vibration levels, so far as is reasonably practicable, so that residential properties and other sensitive receptors are protected from excessive or unnecessary noise and vibration levels arising from the construction activities.

Control Measures

- C2.2 Where the potential for temporary noise or vibration effects exists “Best Practicable Means” would be used to reduce noise to achieve compliance consistent with the recommendations in BS 5228, and may include:
- Careful selection of plant items, construction methods, programming, implementing a ‘noise and vibration protocol’ which outlines quiet periods/monitoring frequency/action levels etc.
 - Design and use of site hoardings and screens/noise barriers, to provide acoustic screening at the earliest opportunity.
 - Informing local and campus residents if any particularly noisy operations are planned, and addressing any complaints that may arise.

- Choice of routes and programming of transport of construction materials.

C2.3 In the event of a 'noisy activity' an application would be made to Wokingham and Reading Borough Councils for a Section 61 consent, as defined under The Control of Pollution Act, 1974. The application would include a description of the proposed works, the likely noise impacts from the activities, the equipment to be used and the measures that would be taken to minimise disturbance.

C3 Air Quality

Objectives

C3.1 To minimise the dust and emissions to air by ensuring that vehicle movements, equipment and materials are controlled in such a way as to prevent, contain or limit adverse environmental effects as far as is reasonably practicable.

Control Measures

C3.2 The following control measures would be implemented:

Materials Storage and Handling

- Materials handling and storage areas would be sited as far away as reasonably practicable from public/residential areas and sensitive academic uses. These areas would be actively managed, dry material would be stored inside enclosed shields/buildings or within a central storage area. Material that cannot be used immediately would be stored in stockpiles that would either be covered with tarpaulin or kept damp to avoid dust generation. Prolonged storage of debris on site would be avoided.
- Handling areas would be kept as clean as practicable to avoid nuisance from dust.
- Other dusty materials would be dampened down using water sprays in dry weather.

Construction Plant

- Site plant and equipment would be kept in good repair and maintained in accordance with the manufacturer's specifications.
- No plant would be left running when not in use.
- Any fixed plant and equipment would be located away from sensitive receptors and residential areas near the site.
- Fencing/enclosures would be erected around major construction plant items, including any onsite concrete batching plant.

Vehicle Movements

- All-weather surfaces would be provided on heavily used haul roads and at access points onto the public highway, and near sensitive locations. These would be cleaned frequently according to deposition and weather conditions, and any unsurfaced haul routes and verges kept damped down.
- Effective wheel cleaning would be undertaken of traffic leaving the construction sites onto site haul/public highway roads by the use of wheel washes. Road sweepers and vacuum sweepers would be used to maintain such roads in a clean condition at all times, and avoid sweeping mud and detritus into drains and gullies.
- Speeds would be restricted to 10 mph on haul roads across the site.
- No vehicles would be left running when not in use.
- All site vehicles would be kept in a good state of repair and maintenance.
- All vehicles carrying dusty materials into or out of the site would be sheeted to prevent escape of materials.
- Any contaminated material that could not be remediated in situ would be trucked to properly certified landfill sites and would be covered (or sealed if hazardous) during haulage.

Operational Control

- Site operations would be planned to take into account local residents and site users.
- Burning of materials on site would be prohibited.
- Loading and unloading would only be permitted on designated areas.
- Immediate clean up of spillage would be employed.
- Completed earthworks on soft landscaping areas and road verges would be sealed or planted as early as practicable.
- Where parts of the site have been identified as potentially contaminated, any necessary precautions indicated by risk assessments would be specified for dust control, spoil removal and disposal.
- The Contractor would maintain a log book and carry out site inspections.

C3.3 The above measures would also be applied to those parts of the overall site not being used directly for construction activities.

C4 Contaminated Land

Objectives

- C4.1 Carry out the works in such a way as to prevent, contain or limit, as far as reasonably practicable, any adverse impacts arising from the presence of contaminated material encountered during the construction activities.

Control Measures

- C4.2 The measures would include the following as appropriate:
- Sampling and testing of excavated spoil would be undertaken, in order to assess the suitability of materials for reuse on site against site-specific criteria.
 - Stockpiling of contaminating materials would be avoided where practicable. Where it is necessary, stockpiles would be located on areas of hardstanding or plastic sheeting to prevent contaminants infiltrating into the underlying ground.
 - Materials handling facilities would be located as far as practicable from public/residential areas. Storage areas would be enclosed or covered/sheeted over.
 - In the event that remediation is required, on-site treatment would be carried out wherever practicable.
 - Any necessary licences would be obtained for the storage, treatment and disposal of waste.
 - Where significant unforeseen contamination is identified during the course of the work, the Principal Contractor would instruct specific investigations in the areas in question. The Principal Contractor would advise the Local Authority and liaise on the appropriate remediation methodology. In the event of contamination being identified, adequate on site containment measures would be designed to prevent material contaminating water bodies, including bunds, screens, fences clearly marked working areas and use of sheeting to contain stockpiles. Contaminated material would be stockpiled in suitably bunded lay-downs, sheeted over with a minimum 300mm (preferably 500mm) lips. Stockpiles would be sheeted during periods of heavy rain further preventing leaching and run-off.
 - In the event that contamination is identified in construction of service trenches, ground would need to be dug over to give a minimum clearance of 0.3m around the service and backfilled with clean material to prevent future ground works and service repair engineers coming into direct contact with contamination.

- Suitable welfare facilities and protection equipment would be provided. Designated 'clean' and 'dirty' areas would be established and clearly marked out.
- Appropriate personal protective equipment (PPE) to be worn at all times by all site personnel and visitors. Visitors to construction worksites to be supervised as necessary.

C5 Waste Management

Objectives

- C5.1 The disposal of waste, including surplus spoil, would be managed to maximise the environmental and development benefits from the use of surplus material and to minimise any adverse effects of disposal, as far as practicable. In general, the principles of the waste management hierarchy, reduce-reuse-recycle, would be applied.

Control Measures

- C5.2 The works would require a Site Waste Management Plan under the Site Waste Management Plan Regulations 2008.

Waste Minimisation

- C5.3 Raw material waste would be reduced through analysing design and construction techniques (e.g. pre-fabrication) where possible. (Refer to section 10 of the Reading Borough Council Sustainable Design and Construction SPD for further details on waste minimisation).

Reuse

- C5.4 Wherever practical, concrete and masonry would be crushed for reuse for backfilling and other purposes.
- C5.5 The Contractor(s) would liaise with suppliers to enable packaging material to be sent back for reuse.

Segregation and Recycling

- C5.6 Opportunities would be investigated to maximise the use of recycled aggregate. Where possible spoil arisings would be used on-site or re-used locally.
- C5.7 Recyclable materials such as metals, timber, cardboard and office paper, would be put in colour coded bins, ready for collection by the appropriate contractor.

Disposal of residual waste

- C5.8 All wastes would be subject to controlled collection and storage on-site, to keep the construction site tidy, avoid unsightly accumulations of waste and minimise dust, pest

infestation, odour and litter. Wastes would not be stored in areas of the site adjacent to sensitive environmental features or receptors.

- C5.9 All residual waste would be removed from site by registered carriers to an appropriate authorised waste management licensed facility following the waste transfer or consignment note system (for hazardous waste), whichever is appropriate. Suitable disposal sites would be identified in consultation with the local authorities and the Environment Agency.
- C5.10 Waste transfer and waste consignment notes would be held by the Construction Manager and would fully describe the waste in terms of type, quantity and containment in accordance with the relevant regulations.

Contaminated materials

- C5.11 The Contractors would obtain any necessary licences for the storage, treatment and disposal of waste and use registered waste carriers, or seek registration as a waste carrier for the handling of contaminated materials.
- C5.12 Any arisings from areas containing remnants of invasive/noxious weeds would be treated as controlled waste and disposed of off-site at a landfill site that is licensed to receive such material. The disposal recommendations referred to within the relevant Environment Agency best practice guidance would be followed.

C6 Protection of Surface and Groundwater Resources

Objectives

- C6.1 Implement working methods to protect surface and groundwater from pollution and other adverse impacts including changes to water levels, flows and quality. Particular consideration would be given to the prevention of pollution of the lake.

Control Measures

- C6.2 All works would be carried out taking full account of the requirements of the Environment Agency “*General Guide to the Prevention of Pollution of Controlled Waters*” and other Environment Agency Pollution Prevention Guidance.
- C6.3 Adequate on site drainage would be adopted to intercept all run-off and would include measures such as cut-off trenches, settlement tanks, interceptors, stilling ponds and testing, where appropriate, to manage the surface water discharge to the combined sewer with the approval of Thames Water. Stilling ponds and testing would be used to achieve agreement to discharge. Any groundwater treatment would be contained within a bund.

- C6.4 Any water that may result from the localised dewatering during excavation would be discharged to the combined sewers (after agreement with Thames Water). Stilling ponds and testing would be used to achieve agreement prior to any discharge to the combined sewer. Any groundwater treatment undertaken would be contained within a bund.
- C6.5 Particular measures would be required to protect the lake and surrounding wetland during construction of the road link and the bridge structure. Care would be taken to ensure that the tree and grassland loss associated with the construction of the bridge and link roads would be as low as practicably possible. Consideration would be given to the careful siting of main construction compounds away from the lake and wetland habitat.
- C6.6 The control structures between the three lakes would be maintained on a regular basis in order to ensure that these remain effective in controlling water levels.
- C6.7 Any haul route required for construction of the bridge would be carefully considered to minimise its potential for water pollution effects. Where such a route would be additional to the footprint of the new route itself, in the more open areas of the campus approaching the lake, this could be constructed on a geotextile blanket raised above the existing ground level in order to avoid the need for topsoil stripping.
- C6.8 Measures would be taken to minimise the risk of pollution to ground and surface water arising from the construction of the bridge structure itself. This could include construction of parts of the bridge away from the lake and wetland areas in order to minimise the required activity over the lake. No debris would be allowed to enter the lake.
- C6.9 In order to protect the lake during construction and contain the working area, construction of the piers closest to the lake may require the use of metal sheeting as cofferdams to surround the construction area.
- C6.10 Spoil and other materials on site would be controlled to pre-empt spillages. The handling and storage of potentially hazardous liquids on site, e.g. fuels and chemicals, would be controlled and Best Practice Guidance from the HSE would be followed. Storage tanks/container facilities would be appropriately bunded within designated areas and sited as far as practicable from any watercourse or surface drain. Stockpiled material would be sheeted in adverse weather conditions. Biodegradable oils would be used where possible. Any areas for vehicle washing would be kept separate, with run-off treated and disposed of in an appropriate manner and taking into account PPG13: Vehicle Washing and Cleaning.
- C6.11 Within the area surrounding the lake, the use of potential contaminants would be limited to those essential for the construction process in that area. Storage tank/container facilities and on-site fuelling areas for construction and excavation machinery would be appropriately bunded within designated areas and sited as far as practicable from the lake and its surrounding wetland habitat.

- C6.12 A Spillage Response Plan would be developed and implemented by the Contractor, in consultation with the appropriate statutory bodies (including the HSE and local Fire/Civil Defence Authority, as well as the Environment Agency and the Local Authority Environmental Health Department). It would set out systems to ensure that pollution impacts upon people, flora, fauna, land, air and water are contained and minimised and that clean-up procedures and spill kits are in place to respond effectively once an incident is discovered.
- C6.13 Routes approaching the bridge and lake would incorporate methods for oil interceptors and sediment settlement or other treatment facilities. These would be regularly inspected and maintained.
- C6.14 After the construction process is completed there would need to be some reinstatement of the land used for the construction. Throughout the construction area, a suitable native planting mix would be applied.

C7 Landscape and Visual Impact

Objectives

- C7.1 Construction works would be carried out to ensure that, as far as reasonably practicable, disturbance to landscape and views is contained.

Control Measures

- C7.2 The following measures would be adopted as appropriate:
- Clear identification of the trees within the site or in the vicinity of the works that are to be retained as part of the development. All such trees would be subject to appropriate protection to ensure that they are not affected by the construction works. The distance for tree protection shall be equivalent to not less than the spread from the trunk, or any other such distance as may be agreed in writing with the planning authority.
 - Where consent is required for tree works, this would be sought and obtained by the Contractor.
 - Erect hoardings to minimise as far as reasonably practicable the visual intrusion of the worksites.
 - Site specific measures for tree/shrub planting and the protection of existing trees and landscaping would form part of the detailed landscaping proposals.

C8 Ecology

Objectives

- C8.1 Construction works would be carried out in such a way as to ensure that disturbance to ecological resources is controlled and that appropriate measures are adopted to protect ecology and avoid impacts on protected species, in accordance with relevant good practice and statutory provisions/legislative requirements.

Control Measures

- C8.2 Where species are protected by specific legislation, approved guidance would be followed in order to comply with the relevant requirements and sufficient time would be allowed for any licences or consents to be obtained.
- C8.3 The following control measures would be employed as appropriate:
- Areas of scrub and similar vegetation where birds may nest, and which would be directly affected by construction, would be cleared outside the bird-breeding season (mid-February-mid-September inclusive) wherever practicable. If clearance during the bird-breeding season cannot be avoided, an ecologist would resurvey the areas to be removed immediately prior to clearance and advise whether nesting birds are present. If active nests are recorded, no vegetation clearance would proceed until the young have left the nest.
 - Within parts of the site that are suitable for reptiles, any construction worksite would be made reptile proof and reptiles would be trapped over a 4-week period prior to removal of vegetation. Immediately prior to vegetation removal the site will be hand searched to capture reptiles which may remain. An ecologist would be present during soil stripping to capture any remaining reptiles disturbed by the works. All reptiles caught would be released in a safe area elsewhere on the site outside the area of the works. If construction is programmed to start during the winter months when reptiles are inactive, then a temporary reptile fence would be erected around the working area during the preceding summer, reptiles trapped as described above, and the fence maintained to prevent re-entry of lizards prior to the start of construction.
 - The loss of habitat during construction would be minimised through careful siting of construction compounds and haul routes. The loss of grassland and trees would be kept to the minimum reasonably possible for the construction of the scheme.
 - Due to the large and viable population of common toads (a UK Biodiversity Action Plan priority species) recorded within the Wildlife Heritage Site (WHS), measures would be undertaken to reduce toad mortality during site clearances, new road movements and to

maintain habitat quality for toads around the grassland lake habitat. These measures include:

- Suitable habitat in areas due to be cleared should be rendered unsuitable for toads prior to construction in order to encourage toads to move to areas which will not be affected by clearance activities;
- A suitably qualified ecologist should undertake a destructive search of any terrestrial habitat scheduled for removal as part of the road and bridge works. Any toads, frogs and smooth newts found will be moved to suitable habitat around the lake which will not be affected by clearance activities;
- The provision of herpetofauna fencing along the proposed road alignment during the construction works to stop trenches etc. acting as pitfall traps. The fencing would allow the amphibians access to both the waterbodies and terrestrial habitats;
- Any of the wood from the trees that are to be felled as part of the project would be retained on site and hibernacula created in suitable locations to benefit herpetofauna i.e. along the lake edges and within the woodland to the east of Whiteknights lake;
- Provisions for amphibian crossings and tunnels would be incorporated into the road design to allow safe crossing to habitats through the active season and reduce risk of predation crossing over areas of hardstanding. The crossings and tunnels would be used to maintain connectivity of habitats (especially between breeding and terrestrial habitats) and to reduce toad mortality due to traffic, especially during the migration from hibernation sites to breeding sites in the late winter/early spring;
- Development on the site would create additional disturbance. Whilst this additional disturbance would only be of a temporary nature, the works would be undertaken following standard good practice guidelines to minimise disturbance. Appropriate mitigation measures would be incorporated such as siting construction compounds away from more sensitive areas such as the waterbodies and wet woodland and by minimising direct impacts by restricting working areas, where possible.

C9 Cultural Heritage

Objectives

- C9.1 Construction works would be carried out to ensure that, as far as reasonably practicable, disturbance to the settings of the on site Listed Buildings is minimised and disturbance to potential undiscovered archaeological resources is avoided.

Control Measures

C9.2 Desktop studies have shown several Listed Buildings to be located within the Whiteknights campus. No construction or renovation will occur to the interior or exterior of these Listed Buildings. However, the following control measures would be employed as appropriate:

- Erect hoardings to minimise as far as reasonably practicable the visual intrusion of the worksites on the settings of the Listed Buildings. All equipment should be moved to the compound on evenings and weekends to minimise adverse effects.
- The archaeological potential within any construction site would be confirmed prior to the start of any excavation work. If it is found that pre development archaeological works are required these would conform to 'good practice' required by IFA.
- Desktop studies have indicated that there is little potential for archaeological resource aside from the Listed Buildings. Although this has been acknowledged, this strategy also requires the engineering contractors to notify the developer or his site representative of any encounter of heritage assets found in the made-ground and in the underlying clay or superficial natural soils.

C10 Socio Economic Aspects

Objectives

C10.1 Construction works to be carried out in such a way as to minimise any detrimental effects to the health of local residents, visitors to the area and construction workers.

Control Measures

C10.2 The measures described throughout this document are consistent with achieving the objective of minimising the health impact of the construction of the development on the surrounding receptors.

C10.3 The safety of construction workers would be dealt with in the Contractor's Health and Safety Plan, which would set out how all health and safety risks are identified and managed in accordance with current best practice and legal requirements. The Contractor would also be responsible for ensuring the safety of the general public and any visitors to the site. Each site would have first aid facilities for their workers and visitors to site, as required by normal practice.

Part D – Monitoring

D1 General

- D1.1 The Applicant would take an active role in monitoring and reviewing the delivery of all requirements defined in this CEMP, from the start of works.
- D1.2 In addition, the monitoring of the Helpline/web site would be used as a tool to assist in informing all interested parties on the success of the CEMP and so advise whether methods should be changed.
- D1.3 The design of any monitoring would be discussed by the Contractor(s) and the relevant consultees.

D3 Reporting

- D3.1 The results of any monitoring would be reviewed as agreed to be appropriate.

Appendices

Minimum Requirements of Project Environmental Management Plans

- An implementation schedule, which is consistent with the overall Contract work programme.
- A Management Structure, which includes an organisation chart encompassing all staff (including sub-contractors) responsible for the work. This would set out the respective roles and responsibilities with regard to the environment. This would show the nominated Environmental Site Manager.
- Procedures for meeting the requirements of the Code of Construction Practice, including the General Site Specific Requirements at Part B and the Environmental Topics Specific Requirements at Part C.
- Procedures for environmental training of site staff.
- Procedure(s) setting out how internal communication would be programmed, managed and documented in respect of all environmental matters.
- Procedures for handling external communications, liaison and complaints including the development and maintenance of a clear audit trail.
- An Environmental Risk Register (which may be a discrete part of the project risk register) and associated procedures which show how environmental risks would be addressed.
- A register of permissions and consents required with responsibilities allocated and a programme for obtaining them.
- Procedures for dealing with unexpected occurrences or finds during construction.
- Procedures for monitoring, recording and disseminating environmental performance throughout the Contract.
- An internal environmental audit programme (which may be part of an overall project audit programme).
- Procedures for addressing non-compliance and corrective actions.

Appendix 2

Regulatory Framework

General

Town and Country Planning Act 1990 (as amended)

Environmental Protection Act 1990

Environment Act 1995

Public Access and Traffic Management

Transport Act 1968

Highways Act 1980 – particularly Part IX. Includes it is an offence to obstruct a highway, for example with builders materials, which results in a public danger/nuisance.

Road Traffic Regulation Act 1988

Town and Country Planning Act 1990 (Part X) requires that a Public Right of Way may not be obstructed or diverted without an Order permitting it.

New Roads and Street Works Act 1991

The Traffic Signs Regulations and General Directions, 1994.

Noise and Vibration

Principal controls contain within Part III, of the Control of Pollution Act (COPA) 1974. In addition, statutory nuisance provisions contained within Environmental Protection Act 1990 (ss.79-82) also apply to noise.

Prior permission to be sought from Local Authority relating to noise from construction activities (s.61 of COPA 1974).

Best Practicable Means (BPM) as defined in Section 72, Part III, of the Control of Pollution Act (COPA) 1974.

British Standards Institution (1997) BS 5228: *Part 1: 1997 Noise and vibration control on construction sites and open sites: Code of practice for basic information and procedures for noise and vibration control.*

Air Quality

Environment Protection Act 1990. Dust can give rise to a statutory nuisance if it is considered to be 'prejudicial to health or a nuisance'.

Smoke, e.g. from burning waste on site, controlled by Clean Air Act 1993.

Ambient air quality standards and objectives set for PM10 and a number of other substances in the - Air Quality (England) Regulations 2000 and Air Quality (England) (Amendment) Regulations 2002.

Vehicle Emissions – Road Vehicles (Construction and Use) Regulations as amended, and the Motor Vehicle (Type Approval) (Great Britain) Regulations made under the Road Traffic Act 1988. Emissions controlled through MOT Test.

Contaminated Land

Environmental Protection Act 1990

Environment Act 1995

Contaminated Land Regulations 2000

Waste Management

The management of waste would be undertaken in accordance with Part II of the Environmental Protection Act 1990 and the Environment Act 1995.

Special Waste Regulations 1996.

Environmental Protection (Duty of Care) Regulations 1991

The Site Waste Management Plan Regulations 2008

Protection of Surface and Groundwater Resources

Water Resources Act 1991 – It is an offence to cause or knowingly permit pollution of controlled water, either deliberately or accidentally. In addition, formal consent of the Agency is required for many discharges to controlled waters, including both direct and indirect discharges to soakaway. Such consents are granted subject to conditions.

Landscape and Visual

Environmental Protection Act 1990

BS 5837:1991 Trees in Relation to Construction

Ecology

Wildlife and Countryside Act 1981 (and amendments),

The Conservation (Natural Habitats &c) Regulations 1994 (as amended) – implements the EC Habitats Directive.

Countryside and Rights of Way Act 2000

Cultural Heritage

Ancient Monuments and Archaeological Areas Act 1979

Planning (Listed Buildings and Conservation Areas) Act 1990