

CONSTRUCTION ENVIRONMENTAL MANAGEMENT PLAN

for the proposed Construction Works Phase
at: Campus Park East



Produced by:
Bellway Homes Limited (North London)

Prepared by:	Reviewed by:	Approved by:
David Howell-Bewsey MAPM		
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1. INTRODUCTION

1.1. Scheme Description

1.1.1. Proposed Construction works at Campus East Car Park, College Way, Welwyn Garden City, AL8

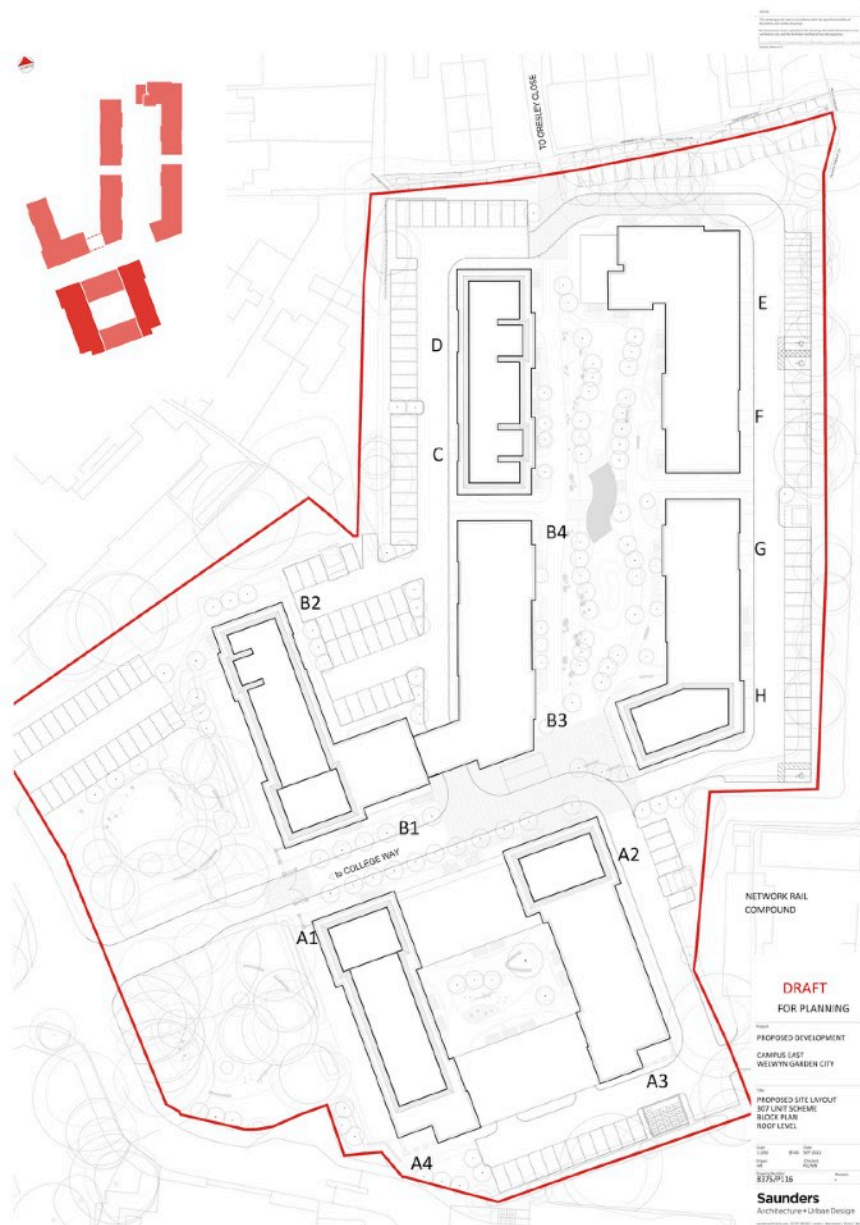


Fig. 1.1 Proposed site layout

1.2. Planning Application Reference

1.2.1. Application Number: TBC

1.3. Planning Authority

1.3.1. Welwyn Hatfield Borough Council (WHBC).

1.4. Highways Authority

1.4.1. Hertfordshire County Council (HCC)

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1.5. Purpose & Content of the CEMP

- 1.5.1. Bellway Homes Limited (North London) [Bellway] have prepared this Construction Management Plan (CEMP) to provide the framework and explanation required for the planning and implementation of the Construction works phase of the scheme.
- 1.5.2. This CEMP provides information to illustrate how any adverse environmental effects of the proposed construction works are to be mitigated. It should be read in conjunction with the other documents submitted by Bellway to accompany the application cross referenced within this document. Measures set out in these other documents to mitigate the impact of the proposed works will be adopted by Bellway during the course of the Construction Works.
- 1.5.3. This CEMP includes cross references to the following associated documents:
 - a) CTMP - Construction traffic management Plan (by Ardent Consulting Engineers)
 - b) AQA - Air Quality Assessment (by Ardent Consulting Engineers)
 - c) EcA - Ecological Appraisal (by Aspect Ecology)
 - d) FRA - Flood Risk Assessment (by Ardent Consulting Engineers)
 - e) NVA - Noise Assessment (by Ardent Consulting Engineers)

2. SITE SETTING

2.1. Project Description

- 2.1.1. Construction of all existing buildings and structures followed by the erection of five buildings to provide 313 residential units (Use Class C3) including 30% affordable housing, resident's car parking, cycle storage, refuse storage, hard and soft landscaping, external lighting, drainage, infrastructure and all associated works.

2.2. Description of the Site

- 2.2.1. The application site comprises Campus East Car Park, College Way, Welwyn Garden City, AL8.
- 2.2.2. The area of the site is approximately 2.115ha.

2.3. Neighbouring Land Uses

- 2.3.1. The Site is set within urban surroundings, predominantly consisting of residential properties, commercial premises and educational facilities. The Site is bound to the north by residential properties, to the east by the Great Northern route railway line and Welwyn rail depot, to the south by a supermarket with incorporated car parking and to the west by College Way, residential properties and Oaklands College Welwyn Garden City Campus. The Site is currently occupied by the Campus East car park.

2.4. Development Operations

- 2.4.1. This CEMP relates to the works to be undertaken during the Construction works stage of the scheme.
- 2.4.2. All works will be carried out in accordance with approved RAMS.

2.5. Programme of Works

- 2.5.1. The proposed programme for the Construction works runs for a period of about 40 months commencing Q3 2023.
- 2.5.2. Construction will commence from the front of the site with block A followed by Block B with a separation of approx. 4 months. Works will then progress through the site in the order of Blocks H, E, F, G, finishing with D & C.
- 2.5.3. The above sequence allows for occupation of the apartment blocks sequentially, while still providing safe and presentable access to the apartments with the relevant number of allocated parking spaces complete and suitable access to amenities.

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2.6. Plant & Equipment Requirements

2.6.1. The principal plant & equipment used during the works will be:

2.6.2. GROUND WORKS /INFRASTRUCTURE STAGE:

- i. 360° excavators,
- ii. dumpers,
- iii. 'muck away' lorries,
- iv. Ready-mixed concrete delivery lorries,
- v. general delivery vehicles

2.6.3. FRAME & ENVELOPE STAGE:

- i. Ready-mixed concrete delivery lorries,
- ii. general delivery vehicles,
- iii. standing scaffolding,
- iv. 360° rotating forklift

2.6.4. FITTING OUT STAGE:

- i. General delivery vehicles,
- ii. standing scaffolding,
- iii. 360° rotating forklift

2.6.5. EXTERNAL WORKS STAGE:

- i. Mini-excavators / powered barrows,
- ii. general delivery vehicles

3. ROLES AND RESPONSIBILITIES

3.1. Introduction

- 3.1.1. The line of responsibility for management during the Construction works phase covered by this CEMP is shown below.

3.2. Project Manager

- 3.2.1. The project manager is as follows:

Leon Taylor
Bellway Homes Limited (North London)
Bellway House
Bury Street
Ruislip
Middlesex
HA4 7SD

- 3.2.2. The Project Manager holds responsibility for managing the Project within the agreed environmental constraints in conjunction with all other necessary management processes.

3.3. Site Environmental Manager

- 3.3.1. The Site Environmental Manger is:

Leon Taylor
Bellway Homes Limited (North London)
Bellway House
Bury Street
Ruislip
Middlesex
HA4 7SD

- 3.3.2. The Site Environmental Manager will be responsible for monitoring the performance of the project against statutory requirements and the agreed environmental standards.

Duties of the Environmental Manager will include:

- i. Review the CEMP and specialist procedures and identify any areas for improvement;
- ii. Identify the environmental competence of all contractors working on the Project and advise the Project Manager as to their suitability;
- iii. Review method statements for environmental aspects and advise of any suggested improvements prior to work starting;

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- iv. Monitor construction activities to ensure that identified and appropriate control measures are effective and in compliance with the CEMP. Advise subcontractors and individual staff of non-compliances and have the power to sanction for repeated non-compliance;
- v. Act as a main point of contact between the Trade Contractors and the Project Team on environmental issues;
- vi. Provision of advice and liaison with the construction teams to ensure that environmental risks are identified, and appropriate controls are developed and included within method statements and risk assessments;
- vii. Assistance in the development and delivery of environmental training for site personnel and sub-contractors;
- viii. Management of the environmental monitoring programme, including noise and dust and review the routine reports; and,
- ix. Environmental audit of subcontractors and suppliers.

4. ENVIRONMENTAL MANAGEMENT PLAN

4.1. Introduction

4.1.1. The potential hazards, environmental compliance criteria and assessment procedures to be adopted through the construction phases are presented in the sections below.

4.2. Register of Environmental Impacts

4.2.1. This section outlines the various risks which may arise as identified from previous site assessments and investigations and should be regularly updated to reflect any additional risks resulting from Bellway's and their sub-contractors selected methods of working and changing site conditions

4.2.2. The Construction works phase will comprise works in relation to:

- Infrastructure (Utilities, drainage, SUDS, roads)
- Residential development
- External works

4.2.3. Noise and Vibration

- i. A NOISE ASSESSMENT (Reference 2007511-09) has been prepared by Ardent Consulting Engineers. The assessment identifies that
- ii. *"5.1. The Construction and construction phase of the site will include various noise generating processes and plant. The most significant processes in terms of noise generation would be site clearance/excavation operations, piling and concreting operations.*
5.3. Measurements taken in the area indicate that the ambient level is within Category A of Table E.1 (BS 5228). Therefore, the"... "ambient noise levels" of >65 dBL_{AQ} "resulting from construction activities will be deemed to have a significant effect."

4.2.4. Air Quality

- i. An AIR QUALITY ASSESSMENT (Reference 2007511-03) has been prepared by Ardent Consulting Engineers. The assessment identifies that
- ii. *"7.1 The potential air quality impacts associated with the proposed residential development at the Campus East Site, in WHBC have been assessed.*
7.2 There is the potential for dust and PM₁₀ impacts during the Construction and construction phase. However, with the proposed mitigation measures in place, the overall residual effect will be 'not significant'.
7.3 Taking into consideration anticipated volumes of Construction and construction traffic, the maximum duration of the Construction and construction phase and the anticipated implementation of a CEMP, it is judged that the overall effects of

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emissions from development-generated Construction and construction traffic on existing sensitive human and ecological receptors are likely to be 'not significant'.

7.4 The impacts of operational traffic generation associated with the proposed development have been considered and are anticipated to fall below the relevant screening criteria. As such, the overall effect of development-generated traffic on existing sensitive human and ecological receptors will be 'not significant'.

7.5 The impact of pollutant concentrations within the Site on future residents of the proposed development has been qualitatively assessed. Taking into consideration the proximity of the development Site to nearby emission sources, the proposed development layout and baseline air quality conditions within the Site and in the local area, it is anticipated that pollutant concentrations at sensitive locations within the proposed development will be well below the relevant objectives. As such, it is judged that new residents of the proposed development will experience good air quality and the Site is, therefore, suitable for its proposed end-use.

7.6 Overall, it is concluded that there are no air quality constraints to the proposed development which is in accordance with local, regional and national policy and guidance. "

4.2.5. Mitigation Procedures

- i. Bellway will implement procedures to minimise the environmental impact of the project as set out in Section 8 and within the various reports and technical notes prepared to support the planning application.

4.3. Risk Assessments

4.3.1. Activities undertaken on site will be subject to an environmental risk assessment. Risk assessments will be undertaken by specialist staff following an approved procedure which will:

- i. Identify the significant environmental impacts that can be anticipated;
- ii. Assess the risks from these impacts;
- iii. Identify the control measures to be taken and re-calculate the risk; and,
- iv. Report where an inappropriate level of residual risk is identified so that action can be taken through design changes, re-scheduling of work or alternative methods of working in order to reduce the risk to an acceptable level.

4.3.2. The results of risk assessments, and their residual risks are only considered acceptable if:

- i. The severity of the outcome is reduced to the lowest practical level;
- ii. The number of risk exposures are minimised; and,

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- iii. All reasonably practical mitigating measures have been taken and the residual risk rating is reduced to a minimum.
- 4.3.3. The findings of the risk assessment and, in particular, the necessary controls would be explained to all operatives before the commencement of the relevant tasks using an agreed instruction format.

4.4. Method Statements

- 4.4.1. Method statements will be completed by or on behalf of Sub-Contractors by trained or experienced personnel, in consultation with Bellway and, where necessary, environmental specialists. Their production will include a review of the environmental risks and commitments, as identified by the risk assessment, so that appropriate control measures are developed and included within all relevant construction processes.
- 4.4.2. Method statements will be reviewed by the Site Environmental Manager, and, where necessary, by an appropriate environmental specialist. If required all method statements will be submitted to the enforcement agencies (Environment Agency, Environmental Health Officer, HSE etc.) as appropriate. Method statements will contain as a minimum:
 - i. Location of the activity and access/egress arrangements;
 - ii. Work to be undertaken and methods of construction;
 - iii. Plant and materials to be used;
 - iv. Labour and supervision requirements;
 - v. Health, safety and environmental considerations; and,
 - vi. Any permit or consent requirements.

5. TRAINING, AWARENESS AND COMPETENCE

5.1. Introduction

- 5.1.1. The raising of environmental awareness is viewed as a crucial element in the appreciation and implementation of the CEMP. Consequently, all staff will undergo environmental awareness training, initially by way of an induction process. A project-specific training plan that identifies the competency requirements for all personnel allocated with environmental responsibilities will be produced and will be contained within a site file maintained by Bellway and complementary to the CEMP.
- 5.1.2. Training for all personnel identified in the training plan will be completed before commencement of specific tasks. Line managers and supervisors will ensure that all personnel engaged in activities that may have an impact on the environment are competent to carry out their duties or, where necessary, arrange for suitable training to be undertaken.

5.2. Supervision

- 5.2.1. All activities, including those carried out by subcontractors and suppliers will be supervised (and/or regularly checked through the completion of site inspections by the Site Environmental Manager), to ensure that requirements identified in risk assessments or method statements have been implemented. The frequency and extent of this supervision will vary according to the degree of competence displayed by the workforce and the level of risk to the environment.

5.3. Inspection and Other Operational Impacts

- 5.3.1. Appointed environmental representatives will carry out weekly inspections of their respective areas, to verify that housekeeping or supporting controls are being implemented effectively. These inspections will utilise the site environmental standards as the minimum standards that should be achieved, with necessary actions being recorded and raised at regular progress meetings. Subsequent inspections will commence with a review of all outstanding actions from previous reports to verify that they have been completed. Inspections of deliverables required by the CEMP will be subject to regular independent inspections by either the Environmental Manager or the relevant environmental specialists. These inspections will be used to confirm that:
- i. Works are progressing in accordance with the agreed method statement;
 - ii. Agreed protection or mitigation measures are in place, prior to, and during, the implementation of activities;
 - iii. No fugitive emissions to air, land and water occur during the works; and,

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- iv. works have been completed in accordance with the design and commitments made during the statutory process.

6. MANAGEMENT OF CONSTRUCTION TRAFFIC & SITE ACCESS

6.1. Construction Traffic Management Plan

6.1.1. A DETAILED CONSTRUCTION TRAFFIC MANAGEMENT PLAN (reference 2007511-10) has been prepared by Ardent Consulting Engineers.

6.1.2. The CTMP prepared by Ardent identifies:

6.1.2.1. Proposed programme

6.1.2.2. Working hours

6.1.2.3. Estimated vehicle movements

6.1.2.4. Vehicle routing

6.1.2.5. Vehicle access

6.1.2.6. Strategies to reduce impacts

6.1.2.7. Security

6.2. Routing of Construction Traffic

6.2.1. The CTMP prepared by Ardent identifies proposed routes for accessing the development site from the local highway network

6.3. Vehicles Size & Emissions

6.3.1. No vehicles or plant will be used on the public highway that are heavier than allowed by law. There should therefore be no risk of causing damage to buried pipes, cables or services within the highway.

6.3.2. Where any crossover of the existing verge is proposed, boiler plates or reinforced concrete “spreader-plates” will be provided to reduce the point loads applied to buried services.

6.3.3. In general Bellway will insist that rigid heavy goods vehicles make the majority of deliveries to site. However, it is likely that materials such as reinforcing bars and any piling rigs will be delivered on articulated vehicles.

6.3.4. Where possible, Bellway will instruct suppliers and contractors to use the smallest delivery vehicles possible to ensure that they do not cause obstructions on local roads.

6.3.5. All vehicles used will be licensed for use on the public highway and will be subject to routine and periodic inspection to ensure that emissions comply with regulations.

6.4. Routes Within the Site

6.4.1. Temporary haul routes across site will be kept free of obstructions and will be maintained and inspected regularly as outlined in Section 9.

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6.5. Parking

- 6.5.1. Areas for the parking of construction vehicles and the vehicles of site operatives, staff and visitors will be provided in the site compound area.
- 6.5.2. No vehicles will be permitted to park on public highways.
- 6.5.3. No long stay, day time or overnight parking of vehicles off-site will be permitted anywhere near the site or anywhere not designated for such use.

6.6. Wheel Washing Arrangements

- 6.6.1. Wheel wash areas will be provided prior to exits from the site as identified in the CTMP prepared by Ardent.
- 6.6.2. The wheel wash areas will include a hardstanding laid to falls and draining into a sump or gulley leading to (or pumped to) a settlement tank to filter water from settled mud/debris. The discharge water will pass through a petrol-interceptor whilst the settled silt will remain in the tank until it is removed. The facility will be provided with hosepipes, brushes, an adequate water supply and pressure washers together with dedicated labour to carry out the cleaning operations.
- 6.6.3. A traffic marshal & the vehicle driver will carry out a visual inspection of the vehicle wheels, the underside of vehicles, mud flaps and wheel arches. If necessary, they will then use the pressure washer and hoses to clean the vehicle to ensure that prior to leaving site, the wheels, chassis & external bodywork are washed free of earth, mud, clay, gravel, stones or any other similar substance. Roadways will be swept regularly with a mechanical road sweeper provided by our specialist contractor who will be retained on stand-by in case additional visits are required.
- 6.6.4. Attendant labour will sweep / pressure wash the hardstanding as and when necessary to keep it clean and to prevent vehicles becoming re-contaminated with mud.
- 6.6.5. Site management will routinely inspect the wheel was area and public highway at least daily and more frequently during periods of wet or inclement weather and when ground works are being carried out to identify:
 - Whether the settlement tank needs emptying of silt, or
 - Whether the mechanical road sweeper needs to be called to site.
- 6.6.6. Following settlement, the discharged water will pass through a petrol interceptor before being discharged under licence into existing surface water drains. As and when required, the settlement tank will be emptied of silt.

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6.6.7. In the event of a break-down of the wheel washing facility, Bellway will have a stand-by pressure washer unit available on site. We will also have a suitable stand-by portable generator available on site in case of a power failure.

6.7. Prevention of Surface Water Discharges Onto the Highway

6.7.1. In order to prevent water & slurry being carried outside the boundary and in particular onto the highway. The following will be adopted:

- i. Hoardings & boundary fencing will be provided with polythene “skirts” and ballast to prevent sediment run off from the site where necessary.
- ii. Where necessary, boundaries, incising gateways, may be provided with silt traps and barriers and with water collection / settlement facilities to collect any silt before discharging the water into the surface water drainage system.
- iii. Where connections are permitted to existing sewers, traps & interceptors will be provided to settle out sediment, chemicals and fuel that may collect in the water being discharged. Any discharge of water from site will only be allowed in accordance with discharge licenses obtained from the relevant statutory undertakers.
- iv. Bellway’s Project Execution Plans and Task Specific method statements will contain specific Pollution Event Control & Response Plans. These will be regularly reviewed and amended to suit the works phasing and will be communicated to all relevant personnel and statutory authorities.

6.8. Travel Plan

6.8.1. Where possible, in order to reduce congestion in the vicinity of the site, operatives will be encouraged to make use of local public transport or to use vehicle sharing / crew-buses in order to reduce the number of additional car and van journeys required to service the site and to encourage more sustainable transport choices.

6.8.2. Local employment will also be encouraged where possible, again to minimise the amount of additional traffic travelling into and out of the local area.

6.9. Directional Signage

6.9.1. In agreement with WHBC & HCC, Bellway will arrange for signage to be erected on local routes.

6.9.2. Signage may also be provided if required prohibiting development traffic (other than local traffic) from using certain roads.

6.10. Hours of Working

6.10.1. As identified in the CTMP prepared by Ardent.

6.11. Pedestrian Access Past the Site

- 6.11.1. Bellway's proposed logistics arrangements do not require the temporary closure of any footway near the site.
- 6.11.2. To safeguard pedestrians and other road users, we will erect warning signage both east and west of the site entrance advising pedestrians of the likelihood that construction traffic will be entering & leaving site.
- 6.11.3. WHBC & HCC will be consulted in advance and agreement reached before commencing construction, which will involve interference with a carriage way or footway.

6.12. Safety of Road Users

- 6.12.1. It is not believed that anything contained in the proposed works will affect the normal operation of the roads around the site therefore existing pedestrian and cycle operations should be no worse affected than by any other use of the public highways.

6.13. Rights of Way

- 6.13.1. The Highways Act 1980 sets out requirements relating to construction work on or near the Highway and also makes it an offence to obstruct a Highway. The New Roads and Street Works Act 1991 contains updated provisions for carrying out works to Highways and construction of new roads. The Town and Country Planning Act 1990 requires that a public right of way may not be obstructed or diverted without an Order permitting it.
- 6.13.2. There are not believed to be any PROW crossing the site.
- 6.13.3. A Network Rail depot is located at the south-eastern corner of the site and it is understood to have rights of access through the site on to College Way via the internal car park layout. The development will ensure that the access to the Network Rail depot is maintained and does not become restricted as a result of Construction/construction, or by the completed development itself such as by parked vehicles.

6.14. Deliveries

- 6.14.1. All deliveries to site will take place within the permitted site hours set out in section 6.9 herein. Generally, deliveries to site will be scheduled to arrive before 16:00 to allow time for loading.
- 6.14.2. HGV Vehicle movements entering site, will be controlled by the site logistics manager using a system of pre booked time slots. Suppliers and contractors delivering to site will need to book a delivery slot with a minimum of 24 hours notice

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in advance to ensure a controlled and efficient flow of traffic through the site. Construction traffic will not be permitted to park on local roads or travel through nearby town centres to access the site.

6.14.3. In the event that a delivery is likely to miss its pre-booked 'slot', the driver will make contact with site to verify whether a later delivery time can be accommodated or whether they need to abort the delivery and re-schedule a new delivery time.

6.14.4. A temporary holding area will be provided in the site compound to allow deliveries to arrive at the site within their allocated time slot and wait on site to be called for off-loading whilst still allowing the free-flow of traffic through the site. Vehicles found not to be complying with the booking system or found to be waiting on surrounding roads will be warned and sent away. Persistent offenders will be banned from site

6.14.5. All vehicles will be marshalled into and out of the site by a suitably trained traffic marshal. A system of communication by radio will be set up and utilised to enable communication between the two gates, traffic marshals and site security.

6.14.6. A Traffic Management Plan will be incorporated in all contractors' and suppliers' orders setting out procedures for booking delivery slots and procedures to be followed by drivers.

6.15. Loading and Unloading of Plant & Materials

6.15.1. Materials and equipment will be handled in accordance with manual handling regulations and heavy loads lifted with approved appliances.

6.15.2. No plant, equipment or materials will be loaded or unloaded on the public highway except with pre-authorisation from the Local Authority and then only in exception circumstances.

6.15.3. No such materials, plant or equipment will be left unattended at any time and adequate protective materials will be provided to safeguard the highway

6.15.4. Materials will be distributed about the site by forklift or other mechanical means.

6.15.5. Detailed method statements and risk assessments will be carried out prior to works commencing.

6.16. Highway Reinstatement

6.16.1. Prior to the commencement of works a photographic survey will be undertaken with the local highways officers (WHBC/HCC) to agree the condition of the highway around the site.

6.16.2. The survey will be recorded and issued to the LPA/Highways Authority.

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- 6.16.3. The survey records will form the benchmark for the reinstatement of any excess wear and tear that the highway suffers as a consequence of the Construction works or subsequent residential development.
- 6.16.4. Works traffic using the Public Highway must take necessary precautions to prevent damage to the roads and footpaths. This is to include damage caused by activities to roads, kerbs or footpaths in the vicinity of the site. Bellway will carry out the temporary or permanent reinstatement of such roads, kerbs or footpaths in a manner approved by the local Highways Authority.
- 6.16.5. Periodically throughout the development works (typically quarterly), further inspections will be carried out with the Highways Officers to identify any urgent remedial actions required to the highways.

7. SITE FACILITIES & SECURITY

7.1. Site Compounds

- 7.1.1. Temporary site compounds will be provided on site to provide: site accommodation; messing & welfare facilities; parking for operatives, staff and visitors; and for plant and materials storage.

7.2. Storage of Plant & Materials

- 7.2.1. When not in use, all plant, equipment & materials will be stored on site in designated areas on site.
- 7.2.2. Plant & machinery will be left immobile and inoperable to prevent unauthorised use.
- 7.2.3. Only small quantities of fuel will be stored on site and these will be stored in bunded, licensed containers and stored to prevent unauthorised access and vandalism.

7.3. Temporary Accommodation

- 7.3.1. Temporary accommodation and welfare facilities will be provided in 32x10ft container unit accommodation.
- 7.3.2. Materials storage and subcontractor accommodation will be provided in single stacked 21x8ft containers.
- 7.3.3. Temporary accommodation will include toilet and wash facilities connected either into permanent foul water drains or into an effluent tank that will be emptied by a specialist contractor as and when required.
- 7.3.4. Accommodation units will be provided with lighting, heating and power.

7.4. Lighting

- 7.4.1. It is expected that external lighting will be required to external areas, compound and storage areas during the winter months when work is being carried out.
- 7.4.2. External site lighting to compound and site areas will be set up to ensure that it does not point directly at neighbouring residences nor the public highway. Timer controls will be used to ensure that flood lighting is not used outside of working hours so that it does not become a nuisance to neighbours.
- 7.4.3. Security lighting, incorporating PIR detectors will be set up to keep illumination periods to a minimum and to avoid triggering by small animals and birds and to prevent disturbance to other protected species.

7.5. Temporary Hoardings & Fencing

- 7.5.1. The site perimeter will be fully enclosed to protect the general public and deter unauthorised entry.

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- 7.5.2. Hoardings will be constructed of plywood faced on a timber frame with an approximate minimum mass of 7kg/m². A hoarding will be a minimum of 2.4 metres high above pavement level and will be sited on the road facing site boundary generally.
- 7.5.3. Bellway's Project Manager will meet the Local Authority on site to discuss hoarding locations and traffic management and a licence for the erection of the hoardings will be applied for in accordance with section 172 of the Highways Act 1980 where appropriate.
- 7.5.4. The hoarding will be provided with a copy of the licence as well as contact details for site management for use in the event of an emergency.
- 7.5.5. Other site boundaries will be fenced with 'heras' type fencing to prevent unauthorised access where existing fencing is inadequate.
- 7.5.6. All boundaries will be regularly inspected by the Site Manager and any deficiencies or damage repaired immediately.

7.6. Storage of Fuels, Oils & Lubricants

- 7.6.1. Fuel, oils & chemicals storage will only be permitted in designate areas and these will be provided with proprietary bunds to capture & trap spilled materials.
- 7.6.2. In accordance with good practice. The bunds will have a capacity larger than the amount of fuel being stored.

8. ENVIRONMENTAL CONTROL MEASURES

8.1. Introduction

8.1.1. The following control measures have been developed to best reflect the actual methods of working and programming of activities. Site teams will also use the control measures as guidance whilst completing risk assessments and method statements which will in turn provide the appropriate mechanism for implementation on site.

8.2. Flood Risk Assessment

8.2.1. Ardent Consulting Engineers have prepared a "Flood Risk Assessment and Drainage Strategy" (Reference 2007511-07).

8.2.2. The Flood Risk Assessment & Drainage Strategy identifies the measures that will be taken to control waste water and run off from the developed site

8.2.3. During the Construction phase Bellway will implement procedures to prevent run off from the site into nearby drains including the 'ordinary watercourse' that runs along the inside edge of the northern boundary of the site.

8.3. Control of Waste Water & Run Off

8.3.1. Disposal of waste waters (other than clean rainwater run off) will be undertaken under an appropriate consent.

8.3.2. The FRA includes a drainage strategy to identify drainage control measures and the use of settling tanks, oil interceptors and bunds to prevent pollution into surface water system and to prevent surface water flooding.

8.3.3. In order to prevent water & slurry being carried outside the boundary and in particular onto the highway. The following will be adopted:

- i. Hoardings & boundary fencing will be provided with polythene "skirts" and ballast to prevent sediment run off from the site where necessary.
- ii. Where necessary, boundaries may be provided with silt traps and barriers and with water collection / settlement facilities to collect any silt before discharging the water into the surface water drainage system.
- iii. Where connections are permitted to new and existing sewers, traps & interceptors will be provided to settle out sediment, chemicals and fuel that may collect in the water being discharged. Any discharge of water from site will only be allowed in accordance with discharge licenses obtained from the relevant statutory undertakers.
- iv. Bellway's Project Execution Plans and Task Specific method statements will contain specific Pollution Event Control & Response Plans. These will be regularly reviewed

and amended to suit the works phasing and will be communicated to all relevant personnel and statutory authorities.

8.4. Surface Water Drainage and Water Quality

8.4.1. The Water Resources Act 1991 establishes that it is an offence to knowingly discharge any poisonous, noxious or polluting matter or solid waste matter to any controlled waters, without a discharge consent issued by the Environment Agency. In addition, general good site management practice is essential to protect controlled waters from accidental contamination.

8.4.2. A series of Guidance for Pollution Prevention (GPP), formerly known as Pollution Prevention Guidelines (PPG) which were withdrawn in 2015, is available. Although from a regulatory perspective these new guidelines do not apply to England, they provide environmental good practice guidance relevant to the whole UK. Remedial operations will pay due heed to relevant guidance contained within the following documents:

- i. GPP4: treatment and disposal of waste water where there is no connection to the public foul sewer;.
- ii. GPP5: Works and maintenance in or near water;
- iii. GPP13: Vehicle washing and cleaning; and
- iv. GPP21: Pollution incident response planning.

8.4.3. Specific COSHH assessments and / or Method Statements addressing storage and security for all potential liquid pollutants used during remediation and construction should be provided. The COSHH assessments / method statements will be monitored by the Site Environmental Manager and updated as necessary by the appointed contractors.

8.4.4. Drainage

- i. Any work undertaken which has the potential to disrupt water supply or drainage connections will be clearly identified before work starts and appropriate consents and measures put in place to ensure careful management of external water / infrastructure supplies.
- ii. All contractors will be briefed prior to commencing work on site regarding the potential for pollution and the location of services, including water supply to avoid inadvertent impacts.

8.4.5. Preventative measures

- i. The potential for impacts to occur as a result of storage of materials will be minimised by the following measures:

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- storage compounds (for the storage of construction materials or temporary stockpiling of excavated soils) will be located away from surface watercourses and drains;
 - drums and barrels will be stored in a designated bunded safe / quarantine area within the compound;
 - all drums and barrels will be fitted with flow control taps; and,
 - all drums and barrels will be properly labelled.
- ii. The potential for impacts to occur as a result of disturbance of silt will be minimised by the following measures:
- all roads and hardstanding will be kept clean and tidy to prevent the build-up of oil and dirt that may be washed into a drain during heavy rainfall;
 - bunding of stockpiles as appropriate;
 - where appropriate, drainage runs and embankments will be bunded to prevent contamination from surface water runoff; and,
 - the use of water sprays to reduce dust or wash down construction areas will be carefully regulated to avoid washing substantial quantities of silt etc, into surface water drains. Where large quantities of gravel, mud or other such material require cleaning, the area will be swept clean prior to any subsequent hosing down.
- iii. The potential for impacts to occur as a result of contamination of water will be minimised by the following measures:
- storage compounds for fuels, oils or other liquid chemicals will be sited away from surface water drains. They will have an impermeable base and bund/ secondary containment with a capacity of 110% and will not drain directly into surface water drains;
 - small plant such as pumps will be equipped with drip trays;
 - drums and barrels will be stored in a designated bunded safe area within the site compound;
 - all drums and barrels will be fitted with flow control taps; and,
 - all drums and barrels will be properly labelled.
- iv. The potential for impacts to occur as a result of contamination from accidental spillages will be minimised by the following measures:
- An emergency response plan will be established to deal with instances of leakages or spillages of potentially contaminating substances;

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- spill kits will be located on site within the works compounds; and,
- staff will be trained in the use of the spill kits.

8.4.6. For discharge into the foul sewer, a trade effluent consent will be obtained from the statutory undertaker.

8.5. Soil Management

8.5.1. A soil resource survey and plan will be prepared as part of the Construction works risk assessment and method statement process to identify the areas and types of topsoil and subsoil to be stripped, haul routes to be used, methods of removal and details of the location, type and management of on site soil stockpiles and exclusion zones.

8.5.2. The soil resource plan will include identification of areas of the site that do not need to be stripped and that can be protected with fencing to prevent incursion by machinery and operatives to protect the condition of the existing soils.

8.5.3. Areas of soil to be protected from construction activities (e.g. retained trees, protected habitats, archaeology, invasive weeds) will be clearly marked out by barrier tape and exclusion signs. Haul routes will be no wider than necessary to accommodate two passing vehicles and will be stripped of soil down to a firm base. Indiscriminate vehicle movements across soil will be avoided.

8.5.4. In general, the following good practise will be followed in order to protect and conserve soils:

- When stripping, stockpiling or placing soil, do so in the driest condition possible and use tracked equipment where possible to reduce compaction,
- Confine traffic movement to designated routes,
- Keep soil storage periods as short as possible,
- Clearly define stockpiles of different soil materials
- Cover stockpiles to prevent dust spread and only uncover to use materials when the risk of wind borne dust spread is low.

8.5.5. The methodology for stripping topsoil and subsoil in general will be as follows:

- Remove surface vegetation by blading off, by scarification and raking, or kill off by application of a suitable non-residual herbicide applied not less than two weeks before stripping commences.
- Stripping should be undertaken by the excavator standing on the surface of the topsoil, digging the topsoil to its maximum depth and loading into site or off-site transport vehicles.

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- Subsoil will then be stripped by the excavator standing on the surface of the subsoil in a similar manner to that identified for topsoil.
- The transport vehicle will be running on the basal layer under subsoil as subsoil is also to be stripped. If only topsoil is to be stripped, the vehicle would run on the subsoil layer.
- An archaeological watching brief might have to be accommodated during topsoil stripping.
- If sustained heavy rainfall (e.g. >10mm in 24 hours) occurs during soil stripping operations, work must be suspended and not restarted until the ground has had at least a full dry day or agreed moisture criteria (such as a specified soil moisture content) can be met.
- The stripping operations will be adequately supervised and follow a detailed stripping plan showing soil units to be stripped, haul routes and the phasing of vehicle movements. The soil units will be defined on the site with information to distinguish types and layers, and ranges of thickness.

8.5.6. In order to enable its reuse on site at a later stage, soil needs to be stored in temporary stockpiles to minimise the surface area occupied, and to prevent damage from the weather and other construction activities.

8.5.7. The main aim when temporarily storing soil in stockpiles is to maintain soil quality and minimise damage to the soil's physical (structural) condition so that it can be easily reinstated once re-spread. In addition, stockpiling soil should not cause soil erosion, pollution to watercourses or increase flooding risk to the surrounding area.

8.5.8. When soil is stored for longer than a few weeks, the soil in the core of the stockpile becomes anaerobic and certain temporary chemical and biological changes take place. These changes are usually reversed when the soil is respread to normal depths. However, the time it takes for these changes to occur very much depends on the physical condition of the soil.

8.5.9. Handling soil to create stockpiles invariably damages the physical condition of the soil to a greater or lesser extent. If stockpiling is done incorrectly the physical condition of the soil can be damaged irreversibly, resulting in a loss of a valuable resource and potentially significant costs to the project. The Soil Resource Survey and Soil Resource Plan should set out any limitations that the soil may possess, with respect to handling, stripping and stockpiling.

8.5.10. The size and height of the stockpile will depend on several factors, including the amount of space available, the nature and composition of the soil, the prevailing

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weather conditions at the time of stripping and any planning conditions associated with the development. Stockpile heights of 3-4m are commonly used for topsoil that can be stripped and stockpiled in a dry state but heights may need to be greater where storage space is limited.

8.5.11. There are two principal methods for forming soil stockpiles, based on their soil moisture and consistency.

8.5.12. Method 1 should be applied to soil that is in a dry and non-plastic state. The aim is to create a large core of dry soil, and to restrict the amount of water that can get into the stockpile during the storage period. Dry soil that is stored in this manner can remain so for a period of years and it is reuseable within days of re-spreading.

8.5.13. Method 2 should be applied if the construction programme or prevailing weather conditions result in soil having to be stockpiled when wet and/or plastic in consistency. This method minimises the amount of compaction, while at the same time maximising the surface area of the stockpile to enable the soil to dry out further. It also allows the soil to be heaped up into a 'Method 1' type stockpile, once it has dried out.

8.5.14. Method 1 – Dry non-plastic soils

- The soil is loose-tipped in heaps from a dump truck, starting at the furthest point in the storage area and working back toward the access point. When the entire storage area has been filled with heaps, a tracked machine (excavator or dozer) levels them and firms the surface in order for a second layer of heaps to be tipped. This sequence is repeated until the stockpile reaches its planned height. To help shed rainwater and prevent ponding and infiltration a tracked machine compacts and re-grades the sides and top of the stockpile to form a smooth gradient.

8.5.15. Method 2 – Wet plastic soils

- The soil is tipped in a line of heaps to form a 'windrow', starting at the furthest point in the storage area and working back toward the access point. Any additional windrows are spaced sufficiently apart to allow tracked plant to gain access between them so that the soil can be heaped up to a maximum height of 2m.
- To avoid compaction, no machinery, even tracked plant, traverses the windrow.
- Once the soil has dried out and is non-plastic in consistency (this usually requires several weeks of dry and windy or warm weather), the windrows are combined to form larger stockpiles, using a tracked excavator. The surface of the stockpile is then regraded and compacted by a tracked machine (dozer or excavator) to reduce rainwater infiltration.

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- 8.5.16. Stockpiles will not be positioned within the root or crown spread of trees or hedges, or adjacent to ditches, watercourses or existing or future excavations. Soil will have a natural angle of repose of up to 40° depending on texture and moisture content but, if stable stockpiles are to be formed, slope angles will normally need to be less than that. For stockpiles that are to be grass seeded and maintained, a maximum side slope of 1 in 2 (25°) is appropriate.
- 8.5.17. Once the stockpile has been completed the area will be cordoned off with secure fencing to prevent any disturbance or contamination by other construction activities. As it is likely the soil is to be stockpiled for more than six months, the surface of the stockpiles will be seeded with a grass/clover mix to minimise soil erosion and to help reduce infestation by nuisance weeds that might spread seed onto adjacent land.
- 8.5.18. Management of weeds that do appear will be undertaken during the summer months, either by spraying to kill them or by mowing or strimming to prevent their seeds being shed.
- 8.5.19. Once external works are underway, stockpiled subsoil and topsoil will be taken from the stockpiles and used to reconstruct landscaped areas. In areas where the existing substrate has become compacted, the measures in 8.5 below will be followed to relieve that compaction.
- 8.5.20. Topsoil placement thickness will depend on the anticipated rooting depth of the plants to be established and the quality of the underlying subsoil. Trees and shrubs require a much greater rooting depth than grasses, though this does not have to be made up entirely of topsoil. Depths of topsoil and subsoil being replaced will be in accordance with specifications issued by the Landscape Architect.
- 8.5.21. After re-spreading topsoil, any large, compacted lumps will be broken down by appropriate cultivation to produce a fine tilth suitable for planting (<50mm maximum aggregate size), turfing and seeding (<10mm maximum aggregate size).
- 8.5.22. Topsoil that has been stored in a stockpile is often compacted and anaerobic. It will therefore be cultivated to its full depth using appropriate tillage equipment to de-compact and fully re-aerate. Only when the topsoil has been fully re-aerated will it be satisfactory for planting, turfing or seeding. More than one cultivation may be required to re-aerate the entire thickness of topsoil. Undesirable material (e.g. stones, fill materials and vegetation larger than 50mm in any dimension) brought to the surface during cultivation will be removed by picking or raking.

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8.5.23. If sustained heavy rainfall (e.g. >10mm in 24 hours) occurs during soil handling operations, work will be suspended and not restarted until the ground has had at least a full dry day or agreed moisture criteria (such as 'drier than the plastic limit') can be met in accordance with the Landscape Architect's specifications.

8.6. Relief of Soil Compaction

8.6.1. It is likely that the existing substrate will have become compacted by vehicles, foot traffic and material storage.

8.6.2. Prior to spreading soil the substrate will be properly de-compacted to break up any panning, to reduce flood risk, and to promote deeper root growth.

8.6.3. A small (1-5 tonne) to medium sized (13 tonne) tracked excavator, fitted with a single rigid tine is effective in restricted areas, such as in planting beds and road verges. In more open areas, a tractor-drawn subsoiler is capable of loosening soil that is not too heavily or deeply compacted. In some instances, compressed air injection can be used to decompact the soil profile. The most appropriate method will be determined prior to commencement of external works to gardens and public open spaces.

8.6.4. Deep compaction can only be effectively relieved using heavy duty ripper equipment. For loosening to be most effective, it should be carried out when the soil is sufficiently dry to the full depth of working, otherwise the tine merely cuts and smears the subsoil rather than lifting, fracturing and loosening it. A toothed excavator bucket is not an appropriate tool for ripping soil.

8.7. Measures To Protect Trees, Hedgerows & Water Features

8.7.1. An "Ecological Appraisal" has been prepared by Aspect Ecology (Reference 6146 EcoAp dv4 /EG/SS/LN). This identifies that:

"The site comprises hardstanding and a building with small areas of amenity grassland and amenity planting, as well as hedgerows, trees and a wooded belt. The hedgerows are important ecological features of local level value and are to be largely retained under the proposals and will be protected during construction. The hedgerow at the centre of the site and part of the hedgerow at the north-west of the site will be removed to facilitate the development. This will be compensated by new, native species-rich planting. The remaining habitats within the site are not considered to form important ecological features and their loss to the proposals is of negligible significance."

8.7.2. Damage arising from construction activities can affect trees and shrubs both above and below the ground, therefore measures will be taken to protect trees and hedges that are to be retained.

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- 8.7.3. Any trees that are in close proximity to areas of working will be protected with a Tree Protection Barrier (TPB) to prevent damage to the existing trees / hedging and their roots.
- 8.7.4. Where areas of work lie outside of the Root Protection Area(RPA), the TPB will be vertical and will comprise steel, mesh panels 2.4m in height ('Heras' type) and will be mounted on a scaffolding frame (shown in Fig 2 of BS5837:2012 (Fig. 8.1 below)).
- 8.7.5. In areas where works about a tree's RPA, or where they fall within the RPA, the TPB will be horizontal. These horizontal TPBs fall into two categories:
- Those allowing access to carry out construction at the edge of the RPA but for which vehicles can be prohibited.
 - Those to protect buried roots in the location of the existing hard surfacing.
- 8.7.6. In these areas it is recommended that "No-Dig" surfacing be employed in accordance with BS5837:2012 and 'The Principles of Arboricultural Practice: Note 12, Through the Trees to Development [APN12]'.
- 8.7.7. The TPB for hardstandings will be formed of a "protective sandwich" comprising: Traffic plate or boards or proprietary system such as "Ground-guards"; 150mm layer of woodchip; Traffic plate or boards or proprietary system such as "Ground-guards"; Geotextile material. This "sandwich" will be constrained on all sides to prevent horizontal movement and spreading of the protective layers. A vertical barrier as Fig 2 of BS5837:2012 will be provided at the edge of the "protective sandwich" material to prevent access to the unprotected TPA.
- 8.7.8. The TPB for the areas adjacent to construction that extends up to the edge of the RPA will not be required to take construction traffic and will comprise timber boarding on a layer of wood chippings, laying on geotextile material. Again, a vertical barrier will be provided as above.
- 8.7.9. The sketches above (Figures 8.1 & 8.2) indicate various Tree Protection Barriers / Zone types.
- 8.7.10. Similar barriers will be used to protect and isolate water features on the site. However, in order to prevent material being washed or carried into the water features, the protective fences will include polythene skirts and silt traps as well as debris netting or monarflex type sheeting.
- 8.7.11. Protective barriers will be inspected at least weekly and more regularly in windy weather by the site manager to ensure that they are intact and that they are

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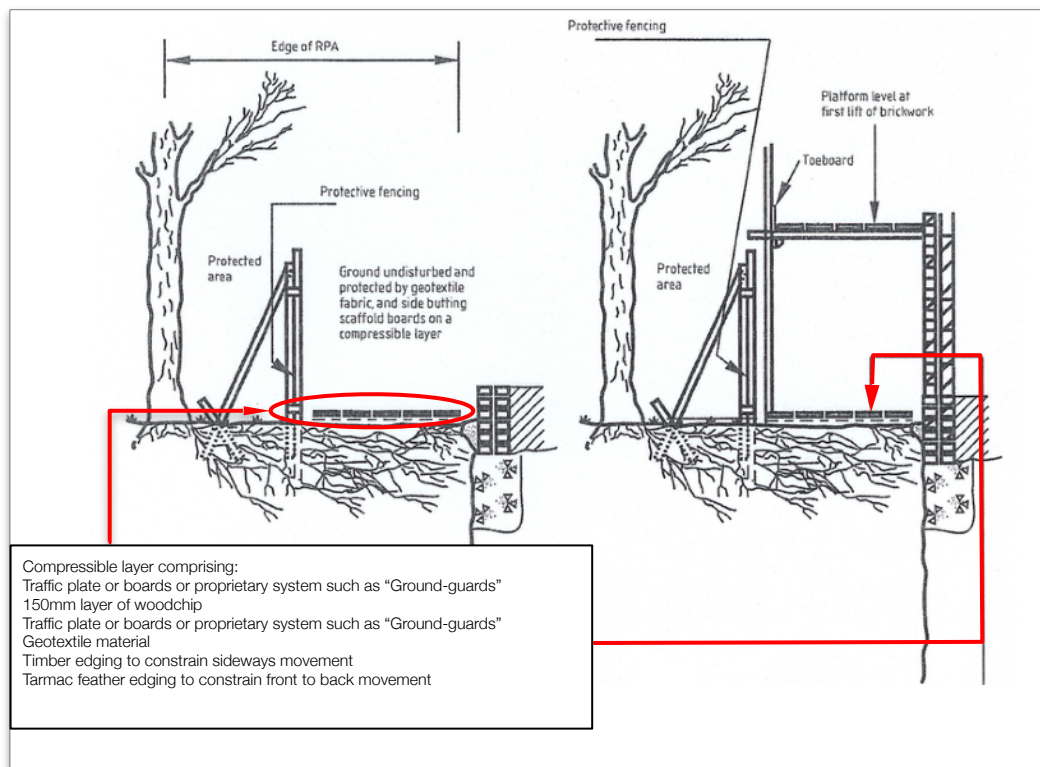


Fig 8.1 Horizontal Root Protection zone for both access / egress & vehicle exclusion zone

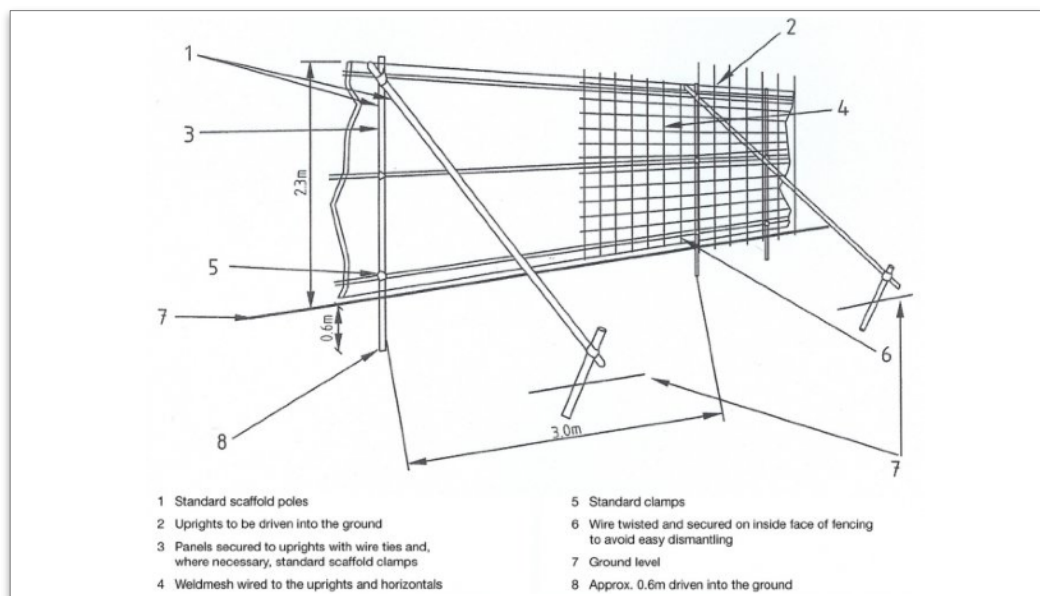


Fig 8.2 Typical Vertical Tree Protection Barrier

performing the task for which they have been erected. Any repairs that are necessary will be put in hand immediately.

8.8. Ecology

8.8.1. Bellway will appoint a suitably qualified Project Ecologist to assist with the project.

8.8.2. The Project Ecologist will be responsible for all necessary ecological surveys and approvals as well as to ensure that the necessary mitigation measures are in place.

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All Contractors must ensure that they have the latest information prior to commencing works and adopt the necessary working methodology.

8.8.3. INVASIVE SPECIES

- i. In the event that any invasive species are discovered on site, a process for their management & eradication will be developed and agreed with WHBC.
- ii. Bellway's site manager will undertake daily inspections of the site and during these will watch out for growth of invasive species. Any such growth will be reported to the Site Environmental Manager and will be dealt with in accordance with the plans agreed with WHBC.
- iii. Site personnel will be warned during inductions and toolbox talks about the risks and dangers of invasive species and will be instructed to raise any concerns with supervisors.

8.8.4. REPTILES, BIRDS AND OTHER SPECIES

- i. Any vegetation clearance works will be carried out outside of the bird breeding season (March to August inclusive) unless clearance of species has previously been certified by a qualified person, compliant with the Wildlife and Countryside Act 1981.
- ii. Prior to any activity taking place on the site, detailed task specific 'Risk Assessment/Method Statements' (RAMS) will be prepared to:
- iii. Consider the impact that activities will have (including upon breeding birds and reptiles and any other protected species on site)
- iv. Set out the way in which operations will take place. The Method Statements will outline the hazards involved and detail a step by step guide on how to do the job safely, they will also detail which "control measures" are to be introduced to ensure:
 - the safety of everyone who is affected by the task or work process, and
 - protection of the local environment & biodiversity.
- v. Close boarded fencing will be provided with gaps to allow the free movement of hedgehogs and other species.
- vi. Excavations will be left covered overnight to prevent animals falling into them. In addition, a simple crawl board (e.g scaffold plank) will be left in any trenches to allow any animal that does fall in to climb out.
- vii. Security lighting, incorporating PIR detectors will be set up to keep illumination periods to a minimum and to avoid triggering by small animals and birds and to prevent disturbance to other protected species.

8.9. Control of Air Quality, Dust & Emissions

- 8.9.1. Ardent's Air Quality Assessment includes Mitigation Measures that Bellway will adopt on site.

8.10. Control of Noise & Vibration

- 8.10.1. The works will adhere to the legislative requirements on noise and vibration contained within the Control of Pollution Act 1974 and the statutory nuisance provisions contained within the Environmental Protection Act 1990 (s79-82). In this context compliance with BS 5228:1 2009 + A1 2014, Code of Practice on Construction and Open Sites will be required.

- 8.10.2. Measures will also be taken to limit vibration due to site activities, to protect residents, users of buildings close-by and passers-by from nuisance or harm. As required, additional measures will be undertaken (in accordance with BS:5228:2009 Part 2) to protect structures from physical damage.

- 8.10.3. Noise prevention measures and procedures will be implemented on site to minimise noise generation created by the construction works, including:

- i. Cutting operations or other noisy tasks will be minimised through off-site fabrication wherever practicable. Where there may be a risk of excessive sound levels localised shielding/shrouding will be employed in accordance with BS:5228 2009;
- ii. Normal working hours for both site works and deliveries are set out at 6.10 above.
- iii. Any additional or alternative working hours for operational reasons will be subject to LBR consent. Any additional or alternative working hours needed for emergency or health and safety reasons will be advised to LBR as soon as is reasonably practicable;
- iv. Use of radios or other sound systems or tannoy will not be permitted anywhere on the site; and
- v. For earth-moving plant such as bulldozers, compactors, dump trucks, dumpers, excavators, graders, loaders and scrapers the source of noise is normally the engine. Sound reduction equipment will be used. Manufacturers' enclosure panels will be kept closed to cover engines when they are in use or idling.

- 8.10.4. Strict controls on the sequencing of works and providing noise protection will be developed on an activity-by-activity basis. These will include:

- i. Static plant will be positioned away from properties;
- ii. Use of modern, well-maintained plant and machinery;
- iii. Machines in intermittent use will be throttled down to a minimum;

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- iv. Materials will not be dropped from excessive heights or, alternatively, dropping zones will be screened; and
 - v. Mobile plant will be turned off when not in use.
- 8.10.5. Obligations will also be fulfilled under the relevant Noise and Vibration at Work Regulations in order to protect on-site personnel.
- 8.10.6. Regular qualitative monitoring of noise and vibration will be undertaken on site, by the site manager and, when necessary, Environmental Manager and new methods of working will be implemented should an issue be detected.
- 8.10.7. In accordance with Section 72 of the Control of Pollution Act 1974, Bellway will use the best practicable means to minimise noise generated on site. For example:
- i. All plant & equipment will be selected having regard for its published sound power level
 - ii. Alternative methods will be investigated to avoid the use of inherently noisy activities
 - iii. Effective silencers and acoustic covers will be provided and maintained in good working order
 - iv. Plant and equipment will be located having regard to sensitive receptors (e.g. residential property).
 - v. Fixed items of plant will be electrically powered rather than diesel or petrol driven
 - vi. Large concrete pours will be allowed sufficient periods of time to be completed within normal working hours. Where an over-run is expected due to unforeseen circumstances the Council's Environmental Protection Team will be advised as early as possible.
 - vii. Anti-social behaviour involving shouting, swearing and loud radios will be prohibited on site
 - viii. The use of temporary screens will be used where appropriate to increase the length of the sound path from a noise source.
- 8.10.8. Bellway's Site Manager or nominated deputy will carry out site walkover inspections (during active works) to monitor noise. Inspections will also note weather (including prevailing wind direction) and site activities.
- 8.10.9. In response to any noise complaints, off-site roving attended noise monitoring at the identified sensitive receptors will also be carried out by appropriately trained staff using a minimum specification Type 2 Integrating Sound Level Meter. Noise

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monitoring will be carried out in accordance with the BS 7445 Description and Measurement of Environmental Noise.

8.10.10.NOISE

- i. The table at Figure 8.4 shows levels of noise generated by typical construction activities, taken as the 'worst case' scenario, considering the heaviest tonnage equipment listed on BS-5228 (Noise level database).

Plant/Works	dB(A) at 10m	dB(A) at 25m*
360° excavators (71 tonne)	77	69 [59]
Dumpers (29 tonne)	87	79 [69]
Roller (18 tonne)	79	71 [61]
Muck Away Lorries (39 tonne)	80	72 [39]
Concrete Delivery Lorries	80	72 [62]
Tracked Piling Rigs (CFA Piling) (33 tonne)	80	72 [62]
Powered Barrows	unavailable	-
Paving Machine (12 tonne)	84	76 [66]
Angle Grinders (grinding steel)	80	72 [62] {58} [48]}
Concrete Breaker (handheld pneumatic breaking concrete)	95	87 [77] {73} [63]}
Concrete Cutters (petrol circ saw 9kg)	91	83 [73] {69} [59]}

* Minimum distance to wetland/mudflat within adjacent LWS

** Minimum distance to European Designation from site boundary

*** Minimum distance to European Designation from proposed residential construction within the site

-Figures in square brackets refer to dB(A) with the use of acoustic screening at the relevant site boundaries as a mitigation technique throughout works (reduction of 10dB(A))

-Figures in braces refer to dB(A) with the use of temporary mobile acoustic sheds orientated for maximum noise reduction towards the designated areas (reduction of 14dB(A))

-Figures in both braces and brackets refer to dB(A) with the combined usage of acoustic sheds and acoustic screening

Fig. 8.4 Anticipated noise levels resulting from construction activities (Source: Aspect Ecology)

- ii. It should be noted that the attenuation provided by acoustic screening and sheds is calculated as the 'standard' figures referred to in BS-5228; this is well below the level of noise reduction possible from screening as some companies can offer acoustic screening that is up to 3x more effective than the levels referred to in BS-5228.
- iii. BS5228:2009 gives several examples of acceptable limits for construction or Construction noise. The most simplistic being based upon the exceeding of fixed noise limits. Paragraph E.2 says: "Noise from construction and Construction sites should not exceed the level at which conversation in the nearest building would be difficult with the windows shut." and "Noise levels, between say 07.00 and 19.00 hours, outside the nearest window of the occupied room closest to the site boundary should not exceed:
 - 70 decibels (dBA) in rural, suburban areas away from main road traffic and industrial noise;
 - 75 decibels (dBA) in urban areas near main roads in heavy industrial areas.
- iv. These limits are for daytime working outside living rooms and offices."



Fig. 8.5: Q1/1 - SOUNDEX® Contractor Acoustic Quilt



Fig. 8.6: C2/3 - SOUNDEX® Professional Acoustic Curtain

- v. Bellway have used materials such as “Q1/1 - SOUNDEX® Contractor Acoustic Quilt” (Fig. 8.5) or “C2/3 - SOUNDEX® Professional Acoustic Curtain” (Fig. 8.6) affixed to fencing panels to achieve noise reductions of up to 28.2dB and 35.6dB respectively on particularly sensitive sites.
- vi. Further measures to reduce the impact of noise upon sensitive receptors include prohibiting certain types of activity (such as use of pneumatic breakers), or adopting agreed periods when such noisy works can take place (such as 30 minutes on / 90 minutes off). The measures to be adopted on the site will be established and included within any Section 61 approval agreed with the LPA.

8.11. Protecting Buried Services

- 8.11.1. Any buried services & existing drainage infrastructure that exists on the site and that are to be maintained ‘live’ will be surveyed and clearly marked on site.
- 8.11.2. Measures will be taken to protect these services from vehicle traffic passing over them and from activities such as loading or excavation that may affect them.
- 8.11.3. For any such activities, suitable protection will be provided in accordance with task specific ‘Risk Assessments & Method Statements’, formulated and agreed before works commence.

8.12. Management of Hazardous Waste

- 8.12.1. The site includes a former landfill site. The proposed strategy for dealing with this is to introduce a layer of clean material and to surcharge this and the historical landfill below to make the ground stable and safe for future users. Any hazardous waste materials will become encapsulated.
- 8.12.2. All work will be carried out in accordance with RLT’s Summary of Works Statement and proposed sequencing.

8.13. Recycling & Disposal of Non-Hazardous Waste

8.13.1. Section 34 of the Environmental Protection Act 1990 imposes a Duty of Care on any person, who produces, imports, carries, keeps, treats or disposes of controlled waste. The identification and clean-up of contaminated land is governed by the Environmental Protection Act 1990 Part IIA which was enacted by Section 57 of the Environment Act 1995. The Pollution Prevention and Control Regulations 2000 are designed to prevent, reduce, and eliminate pollution at source through the efficient use of natural resources.

8.13.2. A Site Waste Management Plan [SWMP] will be developed and will be used on this project.

9. MAINTAINING GOOD PUBLIC RELATIONS

9.1. Local Communication

- 9.1.1. It will be vital that good communication is established between the neighbouring land users and Bellway so that matters that may potentially cause concern are addressed immediately. To facilitate this, Bellway have designated a specific staff member that will be responsible for co-ordinating liaison with neighbours.
- 9.1.2. The Site Manager will be provided with a mobile telephone and will be contactable in emergency 24 hours a day whilst the Works are being carried out. Details of the contact number will be provided to the local authority, local residents and to the Police. Details will also be provided on the site hoardings.

9.2. Co-Ordination & Newsletter / Briefings

- 9.2.1. Bellway seek to ensure that an appropriate level of liaison is achieved with our site's neighbours from an early stage, to inform them about activities on site and to keep them informed.
- 9.2.2. An introductory letter will be issued to all existing dwellings, schools and businesses near to the site as well as to ward councillors for WHBC. This will be issued prior to works commencement. It will detail our early works activities and provide site contact details for our Manager. It will also include details of the normal working/ delivery times.
- 9.2.3. Further update letters will be issued before major project events such as large plant arriving on site or to warn of any works/ deliveries taking place outside the normal working hours.
- 9.2.4. Once the Construction works commence, Bellway will engage with any other large construction projects ongoing in the vicinity of the site to try, where feasible, to co-ordinate activities, such as delivery of large items of plant or equipment, to prevent congestion in the local area.
- 9.2.5. At this stage, Bellway do not not know what schemes by other constructors will be running concurrently with this development.

9.3. Local Authority Liaison

- 9.3.1. Bellway's site manager and design manager will maintain dialogue with WHBC & HCC to review and discuss any matters that arise during the construction of the development. This will include a regular review of the CEMP to ensure compliance and address issues that have arisen. WHBC Ward Councillors will be included in the community liaison.

9.4. Complaint Management

- 9.4.1. Details of Bellway's aftercare team will be provided in the letter identified in 9.2.2 above and any complaints received will be logged, recorded and investigated with the site team, and relevant trade contractors or suppliers and the complainant if appropriate.
- 9.4.2. A record of complaints received will be available to WHBC & HCC and matters arising will be discussed as part of the regular Local Authority Liaison. Any agreement for changes to working procedures will also be recorded and actions monitored by the Bellway Project Manager identified in 3.2 above.

9.5. Considerate Construction

- 9.5.1. At Bellway we take pride in our developments, from the management of the construction site and the care we give to our customers, through to the relationships built with those affected by our work practices and the finished homes we build.
- 9.5.2. To co-ordinate these efforts this site will be enrolled in the CONSIDERATE CONSTRUCTORS SCHEME & the site will be run in accordance with the CODE OF CONSIDERATE PRACTICE. This includes providing contact details for the Site Manager on the Considerate Constructors Scheme poster provided on the site hoarding.
- 9.5.3. A pioneer of considerate construction, Bellway Homes led the way as one of the first house-builders to register with the Scheme, in 1998. Since then, Bellway Homes has won several Considerate Constructors Scheme National Site Awards.
- 9.5.4. The Considerate Constructors Scheme's independent assessment system awards points over five categories relevant to construction sites:
- 9.5.5. Enhancing the appearance
- 9.5.6. Respecting the community
- 9.5.7. Protecting the environment
- 9.5.8. Securing everyone's safety
- 9.5.9. Caring for the workforce
- 9.5.10. Each category can be awarded a maximum of 10 points and good practice, consistency, evidence of good communication and innovation are rewarded with high scores.

10. AUDIT AND REVIEW OF PERFORMANCE

- 10.1. Bellway will implement an appropriate method of auditing the CEMP process via an internal auditing procedure overseen by the Production Director. Provision of evidence that the agreed auditing procedure has taken place will be provided to WHBC & HCC at review meetings with both councils.
- 10.2. Reports detailing the findings of all environmental monitoring and validation of works will be provided on request.

11. TRAINING

- 11.1. Information identifying the requirements of the CEMP that affect daily work on site will be communicated to operatives as part of their induction process.
- 11.2. A copy of the CEMP will be available for inspection on site at all times.
- 11.3. All operatives on site are required by law to undergo a site-specific induction. The names and details of attendees at such inductions are recorded and logged as part of the Bellway management procedures for the purposes of health and safety monitoring.
- 11.4. Site management will continuously monitor operations on site to ensure that the requirements of the CEMP are being adhered to.
- 11.5. The Construction (Design and Management) Regulations 2007 Approved Code of Practice is specific about the obligations of the Principal Contractor in respect of site induction, as shown in the following abstract:

"INDUCTIONS - Inductions are a way of providing workers with specific information about the particular risks associated with the site and the arrangements that have been made

for their control. Induction is not intended to provide general health and safety training, but it should include a site-specific explanation of the following:

- (a) senior management commitment to health and safety;*
- (b) the outline of the project;*
- (c) the individual's immediate line manager and any other key personnel;*
- (d) any site-specific health and safety risks, for example in relation to access, transport, site contamination, hazardous substances and manual handling;*
- (e) control measures on the site, including:*
 - (i) any site rules,*
 - (ii) any permit-to-work systems,*
 - (iii) traffic routes,*
 - (iv) security arrangements,*
 - (v) hearing protection zones,*
 - (vi) arrangements for personal protective equipment, including what is needed, where to find it and how to use it,*
 - (vii) arrangements for housekeeping and materials storage,*
 - (viii) facilities available, including welfare facilities,*
 - (ix) emergency procedures, including fire precautions, the action to take in the event of a fire, escape routes, assembly points, responsible people and the safe use of any fire-fighting equipment;*
 - (f) arrangements for first aid;*
 - (g) arrangements for reporting accidents and other incidents;*
 - (h) details of any planned training, such as 'toolbox' talks;*
 - (i) arrangements for consulting and involving workers in health and safety, including the identity and role of any:*
 - (ii) representatives of employee safety,*
 - (iii) safety committees;*
 - (j) information about the individual's responsibilities for health and safety."*

Construction Environmental Management Plan
Campus Park East

Revision History

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