

Construction Environmental Management Plan

GREEN PARK VILLAGE

BANKSIDE GARDENS

READING COUNCIL

ISSUED FOR THE BANKSIDE GARDENS, PHASE 6 (planning, construction etc.) – 1.11.18



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1. INTRODUCTION

1.1. Purpose of a Construction Environmental Management Plan

St Edward Homes has prepared the Construction Environmental Management Plan (CEMP) to accompany Construction Phase Plan for the residential development at Green Park Village, Bankside Gardens.

The overall aim of the CEMP is to outline measures to minimise and mitigate the construction effects of the Proposed Development. More specifically, the CEMP aims to:

- Outline a series of strategies, standards, best practice techniques and procedures that will be observed through the construction process in order to ensure compliance with environmental legislation, regulation, and Berkeley Group Standards.
- Ensure that construction industry best practice standards are adopted throughout the construction process.

The CEMP demonstrates St Edwards commitment to undertaking construction activities in such a way as to avoid or minimise environmental effects, and provides a mechanism for the implementation of recommended mitigation and monitoring measures throughout construction.

Throughout construction, this plan will remain a live document and will be reviewed periodically during the duration of the project.

1.2 Legal Compliance

All relevant legislation, including requirements for licences, permits and/ or consents shall be identified, and St Edwards will provide details of how compliance is to be achieved, as part of the construction process.

1.3 Structure of CEMP

The CEMP is based on established good management practice and includes:

- **Site Information:** including environmental management structure, roles and responsibilities, location of sensitive receptors such as trees, watercourses, local residents, etc.;
- **Construction Information:** a description of the works, construction programme, proposed working hours, details of haulage routes, equipment to be used etc.;
- **Environmental Management:** details of methods for managing environmental risk, emergency procedures, waste and hazardous materials storage procedures, and specific management plans relating to archaeology, dust, landscape, lighting, noise, and monitoring; and
- **Monitoring & Reporting:** details of monitoring and reporting requirements for the project and how the project will ensure the relevant public engagement is carried out and any feedback / complaints from the public monitored and any reasonably practicable action taken.

2. SITE INFORMATION

2.1 Site Description

The site is located at Kybes Lane, Reading, RG30 3U, in Reading Borough Council. Bankside Gardens, (Phase 6) is approximately 3.25 hectares and is currently in use as a construction site.

Bankside Gardens, (Phase 6), is currently occupied by the main site offices and car park within the north-east and north-west sections whilst the remainders of the phase is used for storage of construction materials or vacant. Some areas have filled up to a formation level for future construction and the area to the south of Phase 6a is to be occupied a new train station. There is also an existing haul road which runs from the main entrance of the site at Kybes Lane, at the south of the lake running up to the north side of the lake and links up the other phases at the other side of the lake.

2.2 Proposed Development

- Block 1 consists of a six floors (ground floor + 5 residential floors above) reinforced concrete frame building with a façade comprised predominately of glazing. There are 40nr residential apartments with plant room, cycle store & bin store at Ground Floor, together with associated infrastructure and external works.
- Block 2 consists of a six floors (ground floor + 5 residential floors above) reinforced concrete frame building with a façade comprised predominately of glazing. There are 40nr residential apartments with plant room, cycle store & bin store at Ground Floor, together with associated infrastructure and external works.
- Block 3 consists of a six floors (ground floor + 5 residential floors above) reinforced concrete frame building with a façade comprised predominately of glazing. There are 40nr residential apartments with plant room, cycle store & bin store at Ground Floor, together with associated infrastructure and external works.
- Block 4 consists of a ten floors (10 residential floors above a podium slab) reinforced concrete frame building with a façade comprised predominately of glazing, cladding & brickwork. There are 76nr residential apartments with plant room, cycle store & bin store at Ground Floor, with underground parking between blocks under a podium slab, together with associated infrastructure and external works
- Block 5 consists of a ten floors (10 residential floors above a podium slab) reinforced concrete frame building with a façade comprised predominately of glazing, cladding & brickwork. There are 112nr residential apartments with plant room, cycle store & bin store at Ground Floor, with underground parking between blocks under a podium slab, together with associated infrastructure and external works.
- Block 6 consists of a nine floors (9 residential floors above a podium slab) reinforced concrete frame building with a façade comprised predominately of glazing, cladding & brickwork. There are 83nr residential apartments with plant room, cycle store & bin store at Ground Floor, with underground parking between blocks under a podium slab, together with associated infrastructure and external works.
- Block 7 consists of a eight floors (ground floor + 8 residential floors above) reinforced concrete frame building with a façade comprised predominately of glazing, cladding & brickwork. There are 68nr residential apartments with plant room, cycle store & bin store at Ground Floor, with underground parking between blocks under a podium slab, together with associated infrastructure and external works.

2.3 Sensitive Receptors

Table 1 below lists a number of receptors which have been identified as being potentially sensitive to the works during the construction of the Proposed Development due to their location in proximity to the Site and access roads:

Table 1: Potential sensitive receptors in the vicinity of the site.

Receptor	Location
Natural made lake	<i>The lake is located on Phase 6</i>
Groundwater	Site wide
Surrounding neighbourhood and existing residents	South of the site
Stream	North of the lake
Local Wildlife Sites	Within 2km of development

2.4 Management Structure

The management structure will be confirmed within a detailed Construction Phase Plan.

In principle, the anticipated roles and responsibilities of the parties involved in the construction works are set out below. However, it should be noted that all members of staff are responsible for ensuring the requirements of the CEMP are met:

Principal Contractor (St Edward)

The details of the strategic responsibilities are contained in the Construction Phase Plan

Project Manager

The St Edwards Project Manager (PM) will be responsible for the delivery of the CEMP. This will include allocating appropriate resource to enable delivery, communication with the Reading Borough Council and other relevant third parties (i.e. Environment Agency). The PM will also arrange for the periodic review and update of the CEMP (with support from the Operating Company Sustainability Advisor / Manager where required). The Project Manager will regularly review the findings of the monitoring programme, and direct the Principal Contractor as necessary.

Site Manager – Sustainability Champion

A suitably qualified Site Manager will be tasked with assisting the Project Manager in the implementation of the CEMP and any environmental monitoring programmes. The Champion will facilitate communication on environmental matters between the project partners and relevant statutory consultees, will undertake site environmental inspections and audits in conjunction with the Operating Company Sustainability Advisor / Manager, and will co-ordinate the environmental monitoring

programme. This role includes ensuring that all relevant legal consents, licences and exemptions are in place in advance of relevant works commencing.

All Project Staff and Subcontractors

All staff and subcontractors have the responsibility to:

- Work to agreed plans, methods and procedures to minimise environmental effects;
- Understand the importance of avoiding pollution on-site, including noise and dust, and how to respond in the event of an incident to avoid or limit environmental effects;
- Report all incidents immediately to their line manager;
- Monitor the work place for potential environmental risks and alert their line manager if any are observed; and
- Co-operate as required during site inspections and audits.

2.5 Contact Information

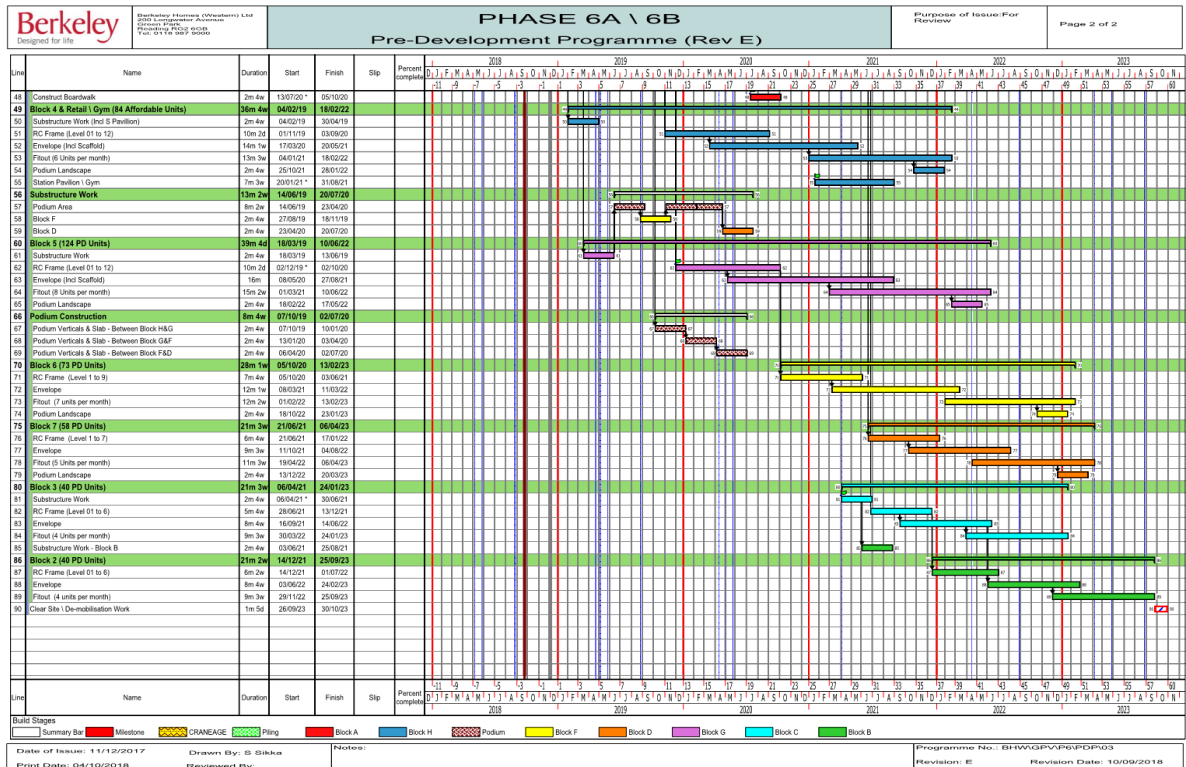
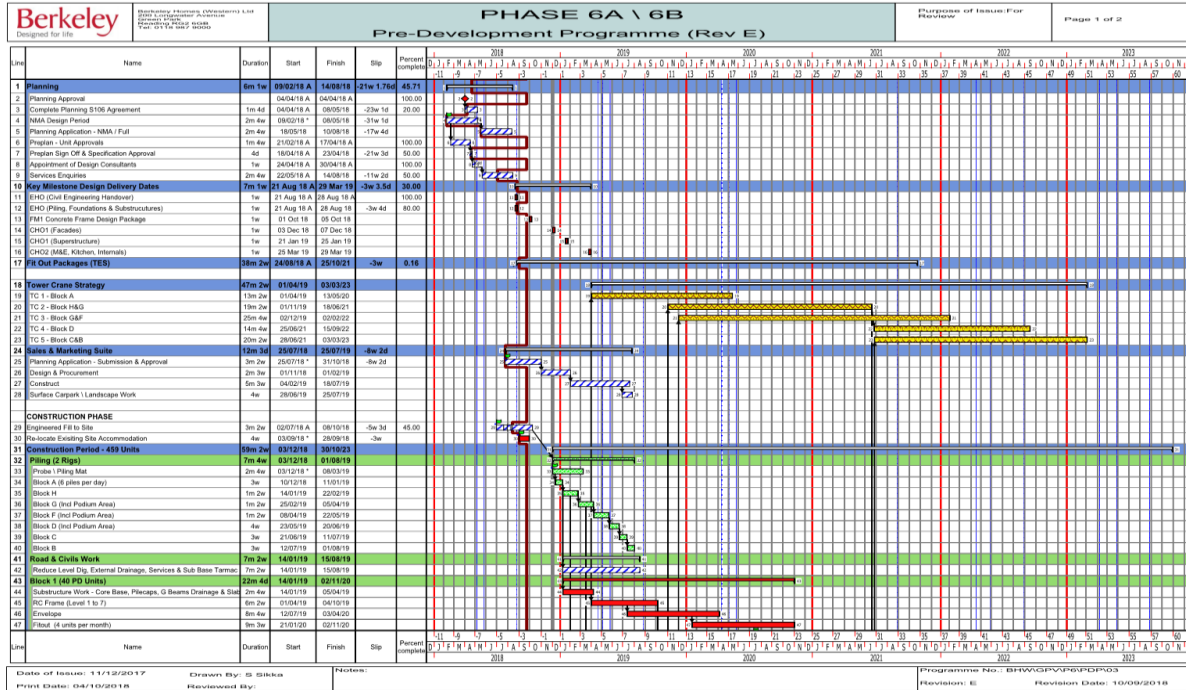
NAME	POSITION	LANDLINE	MOBILE
Anna Harries	Sustainability Adviser	0118 987 9000	07584 447152
MAREK PIENIAK	Project Manager	0118 987 9000	07966 809684
BRAIN HAMMOND	Senior Site Manager	0118 987 9000	07795 252382
RICHARD WALKER	Senior Site Manager	0118 987 9000	07825 174646
SAM WOOD	Build Manager	0118 987 9000	07769 742078
MICHAEL WUZCKE	Site Manager	0118 987 9000	07833 435036
SHANE MURRAY	Project Manager	0118 987 9000	07970 236225
ALEX MARTIN	Trainee Assistant Site Manager	0118 987 9000	07467 442063
GARY BRIDGES	Finishing Manager	0118 987 9000	07748 932209
ALI HESARAKI	Site Manager	0118 987 9000	07785 607846
OSAMA SALIH	Site Manager	0118 987 9000	07966 809484
JAMES MCNIFFE	Assistant Site Manager	0118 987 9000	07767 606851
KARTA DEOORA	Assistant Site Manager	0118 987 9000	07508 449178
DANNY HALSTEAD	Trainee Assistant Site Manager	0118 987 9000	07487 630057
FRAN VICKERY	Site Administrator	0118 987 9000	07342 076773
SIMON BATTEN	Construction Director	0118 987 9000	07825 104502
TIM SALT	Head of Technical	0118 987 9000	07585 992340
Shannon Grimes-Brown	Head of H&S	01753 784400	07979700797
KRIS DOWER	Regional H&S Manager	0118 987 9000	07980 970399

AMANDA BARTLETT	H&S Coordinator	01753 784400	N/A
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3. CONSTRUCTION INFORMATION

3.1 Programme of works

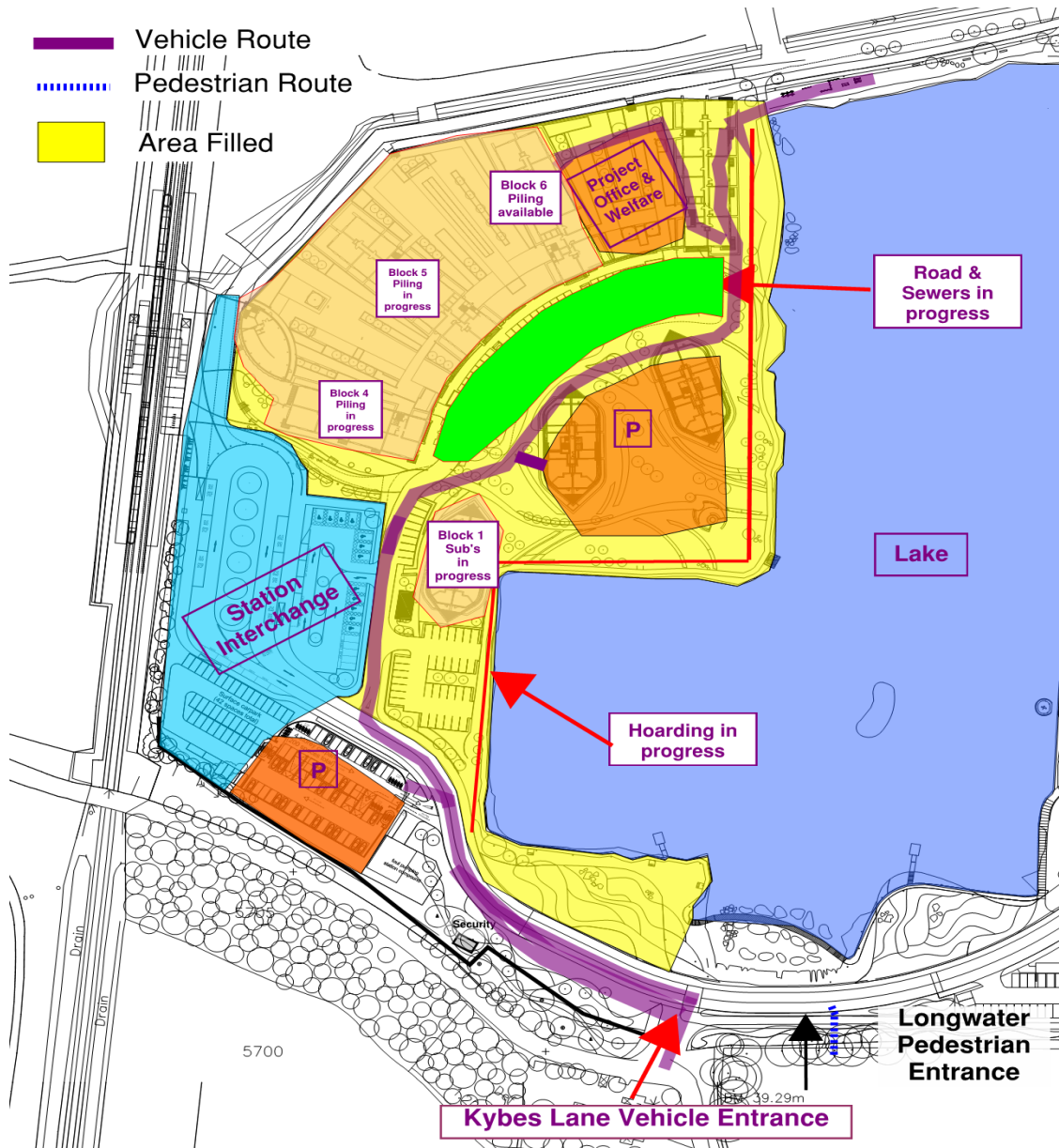
Table 2 below outlines the basic programme of works for the development. An indicative work programme is as below.



3.2 Enabling Works

Enabling works include: -

- Construction of a temporary haul road
- Construction of a car park for Trade Contractors
- Filling ground to bring it up to the formation level for construction
- Construction of perimeter hoarding



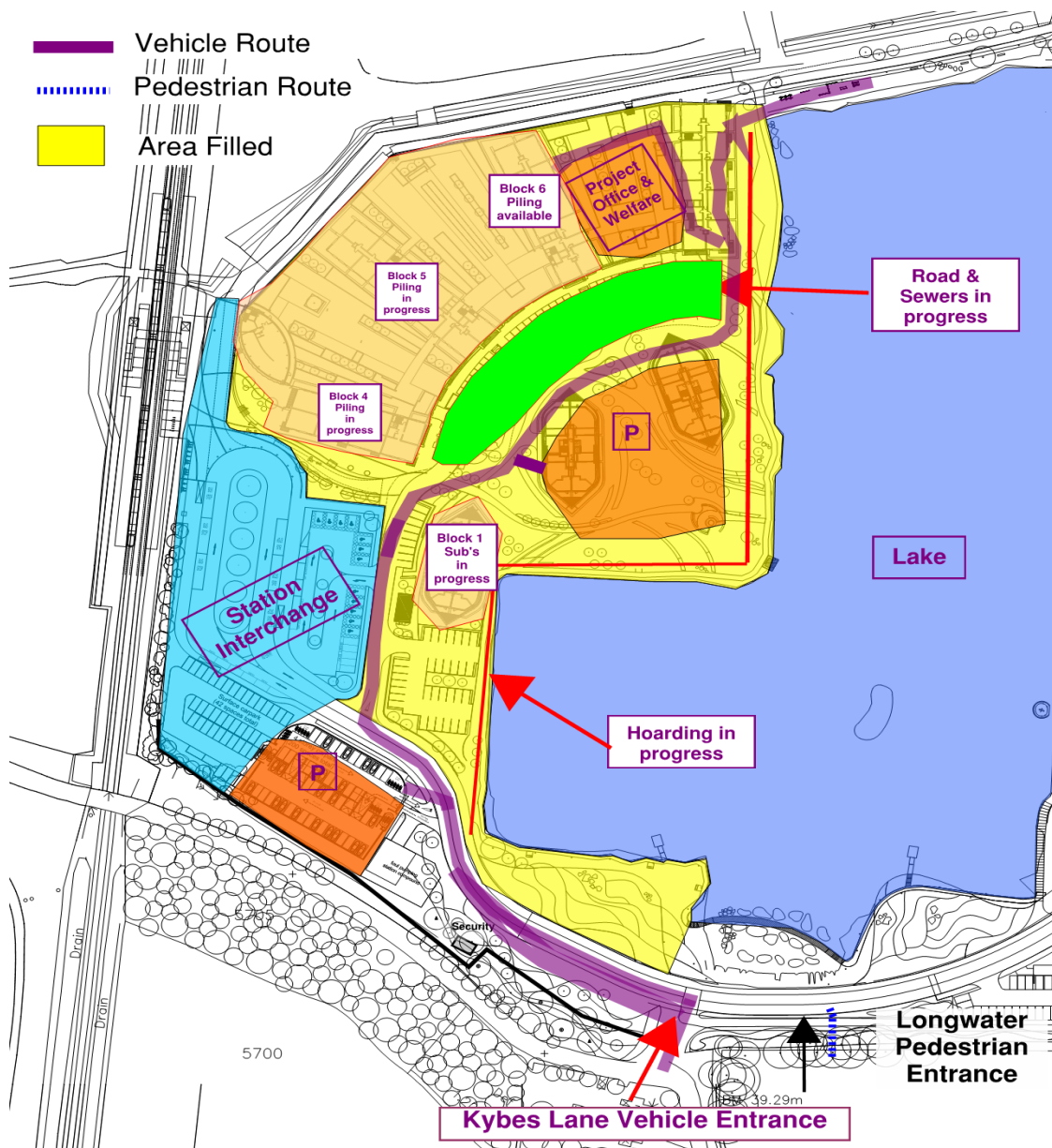
3.3 Construction Works

- **Block 1** consists of a six floors (ground floor + 5 residential floors above) reinforced concrete frame building with a façade comprised predominately of glazing. There are 40nr residential apartments with plant room, cycle store & bin store at Ground Floor, together with associated infrastructure and external works.
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3.4 Site Offices, Welfare Facilities and General Site Access

Welfare facilities consist of the following: -

- 3 male toilets
- 2 female toilets
- 1 disabled toilet
- 1 shower
- Canteen to cater for 60 people sitting down
- Drying room with 65 pegs and 45 locker



3.5 Hours of Work

Working hours will be set within the planning consent, however are expected to be as follows:

- 8am – 6pm Monday to Friday
- 8am to 1pm Saturdays
- No work on Sundays or public holidays

3.6 Screening and Hoarding

The visual intrusion of the construction site on nearby residents and users of local facilities will be reduced as far as reasonably practicable by installing hoardings. The detailed arrangements for this hoarding will be subject to further discussion with Reading Council. The hoarding will be increased in height and altered in form to enhance acoustic performance for specific locations if required. The site perimeter will be delineated and will be provided with warning signs to inform of the dangers of construction sites and advise against unauthorised access.

Specification as follows: -

To supply and install 2400mm high fencing set in concrete foundations. 150x75mm timber posts to be set in 400x400x800mm concrete foundation at 2400mm centres. Post to have 4no. 100x75mm rails secured to face using 100mm galvanised nails. 150x22mm timber gravel boards to be secured between bases of posts using galvanised nails. Rails to be clad with 2250mm long featheredge. Back of fencing to have 150x75mm diagonal back brace secured to post. Brace to return back to 100x100mm timber set in 800x400x400mm concrete foundations Brace secured at each end using M12 through bolts secured with square plate washers. All timber to be FSC certified. All fixings to be galvanised.

Where necessary to ensure safety, individual locations within the site where hazardous activities are being carried out will be secured with the installation of heras fence panels.

3.7 Waste Strategy

Prior to any works beginning on site, Project Waste Management Plan has been drafted. The plan includes details on waste minimisation strategies incorporated in design and procurement stages. It also includes information on how waste will be managed during the construction phase along with predictions for various waste streams.

3.7.1 Segregation

Waste segregation strategies will be developed and implemented in line with the overall logistics plan for the site. As a minimum, general, COSHH, gypsum / plasterboard and liquid waste will be segregated.

3.7.3 Monitoring of Waste Production

The Berkeley Group Waste Data Tool (WDT) will be used to monitor the volume and type of waste produced on site. Details of the waste produced on site will be analysed periodically. It is proposed that periodic due diligence checks will also be carried at the end disposal facilities accepting waste from the project.

Hazardous Substances / Pollution Control

St Edwards will manage fuels, hazardous materials and wastes to minimise the risk of pollution and contamination by locating all fuel and liquid COSHH storage and refuelling areas:

- At least 10m away from watercourses, open drains, gullies, unsurfaced areas or porous surfaces (at least 50m from wells, springs or boreholes)
- On hardstanding
- Away from areas at risk from flooding and site boundaries
- Away from areas of high vehicle movement, and protected from vehicle collision

The appropriate number of drip trays/spill mats and spill kits will be located by each fuel and COSHH item, and will be regularly checked by the site team and Sustainability Advisor.

Any spillage of hazardous substances on site will be reported to the Project Manager, and Sustainability Advisor immediately and the Berkeley Group SMS procedure on 'Preventing Managing and Reporting Pollution Incidents' followed. The site will have a regularly reviewed and update Site Pollution Incident Response Plan detailing how pollution incidents should be reported.

Ecology

The Production Team will maintain an ongoing relationship with the ecologist.

All staff must be notified via the site induction, and provided with regular Toolbox talks explaining and detailing measures that must be taken to protect species and trees.

3.7.4 Materials

Where possible, materials will be delivered just in time to reduce the likelihood of over ordering and the impact on local traffic in the area. In addition, the use of pre manufactured items will be considered where possible, cutting down the number of deliveries to, and waste collections from, the site.

3.7.5 Storage and Housekeeping

Materials will be stored on site in a way to prevent the likelihood of damage and wastage. Construction waste on the project will be stored in suitable containers and appropriately maintained.

3.8 Considerate Constructors Scheme & Public Liaison

The project will be registered with the Considerate Constructors Scheme before work commences and the requirements of the scheme explained to site operatives and staff during the site induction and reinforced with periodic tool box talks. The Berkeley Group benchmark score for each CCS visit is set at 40 out of 50.

This will enable the construction process to be monitored with the aim of maintaining the highest possible standards of the site within the construction industry.

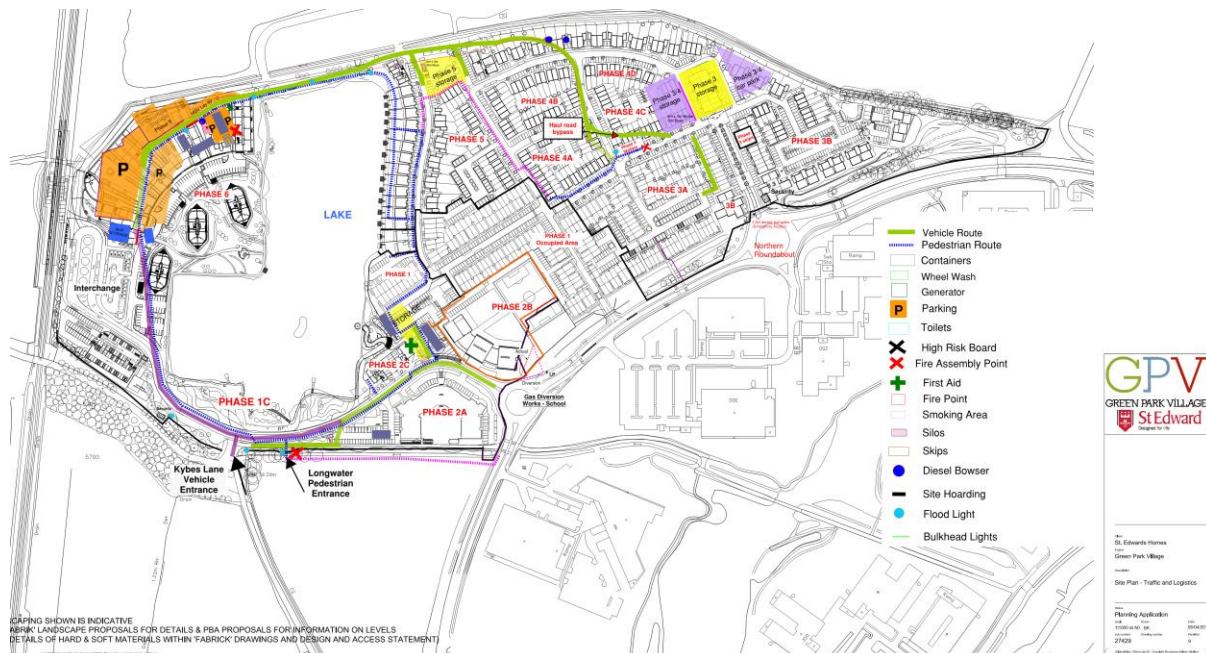
Procedures will be implemented to ensure effective liaison with the neighbouring properties, adjacent residents and local community through the utilisation of such means:

Circulated newsletters will be located outside of the site entrance, along with letter drops to nearby residents when construction activities are likely to affect the local residents.

Information boards mounted at the site entrance will provide project manager contact details, key performance indicators and project updates

3.9 Traffic Management

A Traffic Management Plan (TMP) has been developed for the project. This TMP will be used to manage traffic to and from the site during all phases of the project. Both the Main Contractor and all subcontractors will be required to ensure that construction traffic is managed in accordance with the TMP.



Construction staff and visitors to the site will be encouraged to use public transport arrangements where possible. This will be encouraged by providing information to staff which details local public transport opportunities.

4. ENVIRONMENTAL RISKS & CONTROLS

4.1 Significant Environmental Issue

A schedule of key potential environmental effects relating to construction activities is provided below, alongside the relevant procedure(s) from the Berkeley Group Sustainability Management System (SMS).

The procedures outline how St Edwards shall prevent and manage these key environmental risks. Responsibility for the implementation for each procedure rests with site based Project Manager and site Sustainability Champion, with specialist assistance from the wider project where necessary.

The final column details the site specific management of these risks.

Table 4: Potential Environmental Impacts during Construction Works and relevant procedures

Environmental Aspect	Potential Risk or Effects of Construction activities	Relevant Berkeley Group Procedure Or Guidance	Site Specific Mitigation Measures / Local Authority Requirements
Transport	• Increase in congestion on the local road network due to increased vehicle movements • Increased risk of accidents on the local road network due to increased vehicle movements • Transfer of mud, materials and pollutants by vehicles onto the public highway.	• Road Sweeping and Wheel Washing	• Banksmen and Security Guards on patrol and managing vehicles and pedestrians • Traffic Management Plans in place • Road sweeper once a day
Noise and Vibration	• Noise arising from the construction works • Increase in noise levels generated by the increase in road traffic as a result of the construction vehicles; and • Increase in vibration levels due to construction works	• Managing Noise & Vibration	• Noise and vibration monitoring will be done if it is required in a risk assessment • Any works which will effect local neighbours will occur after local residents are informed.
Local Air Quality (including Dust)	• Increase in dust deposition may affect nearby sensitive receptors during certain construction activities; and • Exhaust fumes from construction vehicle movements and on site plant may impact local air quality	• Managing Dust	• Dust monitoring will be done if it is required in a risk assessment • Local damping down as required • Mobile Air quality monitor to be used as required • Mobile plant machinery to be no older than 3 years to reduce emissions. • Ad blue used in mobile plant machinery where possible to reduce NOx emissions.

Water Quality & Drainage	- Degradation in groundwater quality as a result of potential spills, soil destabilisation, silt runoff or containment issues for hazardous substances - Potential risk of contamination of surface water and foul drainage	- Contaminated Land - Fuel and Hazardous Material Storage and Refuelling - Managing Concrete Washout - Managing Silt - Preventing Managing and Reporting Pollution Incidents - Road Sweeping and Wheel Washing - Water Authorisations	- Spill kits at specific locations and in all forklift trucks - Diesel bowzers are double-protected and bunded and at least 10 m away from water course - Any concrete washing will be controlled and disposed of as per the Company policies - Construction of hoarding and silt fencing around the lake and stream
Hazardous Substances / Pollution Control	- Risk of spillage of hazardous substances; and - Potential exposure of site workers to hazardous material.	- Contaminated Land - Fuel and Hazardous Material Storage and Refuelling - Preventing Managing and Reporting Pollution Incidents - Managing Silt - Managing Concrete Washout - Road Sweeping and Wheel Washing	- The site will have a regularly updated Site Pollution Incident Response Plan detailing how pollution risk will be managed and outlining the procedure during a spill event - Appropriate hazardous waste control measures in place and removal service for contaminated waste
Waste Management	- Direct impacts – additional emissions from the processing and transport of waste - Indirect impacts – energy and raw material consumption in production and recycling of packing and excess / waste material - Potential waste stream contamination or impact on recycling rates from ineffective segregation of waste	- Hazardous Waste Management - Processing Waste - Use of Waste in Construction - Waste Management - Waste Paperwork - Waste Reduction and Reuse	- The site will have a Waste Management Plan. The plan includes details on waste minimisation strategies incorporated in design and procurement stages. It also includes information on how waste will be managed during the construction phase along with predictions for various waste streams - Waste movements will be logged on the Waste Data Tool - All waste paperwork will be stored electronically, for 2 years and 3 years for consignment notes.
Ecology, Protected Species and Habitats	- Risk to local habitat and species from construction works - Risk to protected species and protected trees - Risk of spread of invasive species that may be present on site	- Consulting an Ecologist - Invasive Species - Protected Species - Tree Protection	- No Invasive Species on site. - Working with the Ecologist on any arising issues such as invertebrates. - Induction and toolbox talks to all operatives to be cautious of birds especially during nesting bird season

Energy & Water Consumption	• increased carbon emissions from fuel and electricity consumption as part of construction works • Potential inefficient use of energy due to lack of control measures or inefficient equipment • Increased water consumption	• Energy Efficiency • Water Efficiency	• Energy and water consumption will be monitored and reported on a monthly basis. • Welfare facilities to follow minimum standards to ensure consumption is kept to a minimum • Plant machinery will be no older than 3 years.
Materials	• Potential waste arising from ineffective storage, movement and ordering of materials	• Waste Reduction and Reuse • Use of Waste in Construction	• The site will follow the waste hierarchy, reusing materials where possible • Just in time deliveries and sufficient storage space to avoid damages
Archaeology	• Potential damage to valuable or irreplaceable archaeological resource	• Archaeology (TBT)	• Not applicable

5. MONITORING AND REPORTING

5.1 Monitoring Requirements

The Project Manager, supported by the site Sustainability Champion, will be responsible for any monitoring that will be required for the project. This will also include monitoring compliance with this CEMP on a regular basis.

As part of the Berkeley Group's Sustainability Management System (SMS) the Project Manager, supported by the site Sustainability Champion, will ensure the site monitors the management of the following key areas:

- Waste Management
- Ground and Water Pollution Prevention
- Fuel / COSHH Storage and Handling
- Materials Storage and Housekeeping
- Energy and Water Efficiency
- Dust and Noise
- Ecology
- Transport Management
- Considerate Constructors Scheme (CCS) compliance and Community engagement

These areas will also be periodically assessed by the operating companies Sustainability Advisor / Manager and finding communicated to the Project Manager and Sustainability Champion so any reasonably practicable actions can be taken.

5.2 Reporting

As part of the SMS the site will report on the following Sustainability KPI's:

- Waste
- Energy & Water Consumption
- Co2 Emissions
- Timber Usage

This is to identify whether the site is meeting its performance targets for:

- Waste Reduction and Recycling
- Carbon Emission Reduction
- Water Consumption Reduction
- Sustainable timber consumption

Any spillage of hazardous substances on site will be reported to the Project Manager, Sustainability Champion and Sustainability Advisor / Manager immediately and the Berkeley Group SMS procedure on 'Preventing Managing and Reporting Pollution Incidents' followed. The site will have a regularly reviewed and update Site Pollution Incident Response Plan detailing how pollution incidents should be reported.

5.3 Complaints procedure

All complaints will be recorded by the project team to ensure that any patterns are identified and that any reasonably practicable actions to address these concerns are considered.

Include details of the complaints process to be put in place during the development. Including how this information will be collected, categorised and reviewed. As a minimum the CCS Compliments / Comments / Complaints Record template should be used. <https://ccsbestpractice.org.uk/wp-content/uploads/2016/07/Compliments-Comments-Complaints-Record-Word.doc>

6. CONCLUSION

This document summarises the approach to environmental management on site in order to minimise and mitigate the construction effects of the development. To ensure its continued relevance the document will be used as an on-site reference document during all phases of this development, monitoring will take place to determine compliance with the CEMP and it will be regularly reviewed and updated where necessary.

7. APPENDICES

Appendix A

This section should include a copy of any relevant supporting documentation e.g. Project Waste Management Plan, Site Phasing Plan, Indicative Work Programme, Traffic Management Plan etc.

Project Waste Management Plan

v5 - December 2015

Introduction	
The Berkeley Group and its subsidiary companies are committed to using a Project Waste Management Plan (PWMP) on each development site, regardless of value or locality. This is deemed good practice following Government's decision to revoke the legislative requirement for Site Waste Management Plans in December 2013. This site-specific PWMP outlines our procedures and commitments to: - Minimise waste production through our technical, procurement and construction decision-making processes - Manage waste efficiently on site, including the segregation of waste streams where possible - Divert waste from landfill, through either re-use or recycling We will take all reasonable steps to ensure that all waste from the site is dealt with in accordance with the waste duty of care in section 34 of the Environmental Protection Act 1990 and the Environmental Protection (Duty of Care) Regulations 1999. All waste leaving the development site will be recorded in a separate 'Waste Data Tool'. The Waste Data Tool records the identity of the waste carrier and their registration number, a written description of the waste, the name of the disposal site and a record of the permit/exemption for the disposal site. Updates to the Waste Data Tool will occur at least monthly to ensure the regular monitoring, measuring and reporting of non-hazardous and hazardous wastes leaving site. The Waste Data Tool forms part of this Project Waste Management Plan and should be reviewed in conjunction with this document.	

Project Details	
Name of Project	Green Park Village (Phase 6)
Project Address	Smallmead Gate, Reading, RG30 3UR
Project Description	Copy from Project Execution Plan
Project Build Value (£)	TBC
Project Start Date (<i>live on site</i>)	01/11/2018
Project Waste Management Plan Drafted By (<i>name</i>)	Osama Salih / Anna Harries
Project Waste Management Plan Drafted On (<i>date</i>)	01/11/2018

Project Breakdown		
BRE Project Type	Mixed Use	
Building Type	Internal Floor Area (<i>square metres</i>)	Predominant Build Type
Houses		
Apartments	28,227	RC Frame
Commercial	330	RC Frame
Student Accommodation		
Extra Care Accommodation		
Other		
Total Internal Floor Area of Structure(s) (<i>square metres</i>)	28,557	

Project Team	
Project Manager	Shane Murray
Technical Manager	Harry Jest
Commercial Manager	Chris Phillips
Document Controller/Secretary (<i>if applicable</i>)	Fran Vickery
Person Responsible for Implementing the Project Waste Management Plan (<i>name</i>)	Shane Murray

Person Responsible for Implementing the Project Waste Management Plan (<i>job title</i>)	Project Manager
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Revision Record	
Date of Revision	Purpose of Revision
01/11/2018	First Issue

Waste Minimisation and Management	
If there are existing buildings and/or structures to be demolished on the site, has a pre-demolition audit been undertaken?	N/A - no existing buildings and/or structures on the development site
Please provide brief details of the outcomes of the pre-demolition audit	
Please outline details of the measures taken during the planning, design, procurement and construction stages to minimise and manage the production of <u>non-hazardous</u> wastes on this project	Necessary steps have been taken at planning and design stage to reduce waste to acceptable levels. Planning and Design: 1) Excavated soil retained and used on site where possible 2) On site crusher for existing building to be reused as inert waste - e.g brick/blocks for temp roads/car park. Procurement: 1) Material schedules are in place to show clearly the details and data of materials being ordered for the site, this provides the site team with the information they require to call-off materials. 2) Ready mix mortar silo's to be used. 3) Any surplus materials to be taken off site by original supplier. 4) Just-in time deliveries are procured to give consideration to the movement of materials to site and once on site. 5) Number of skips to account for segregation of waste streams. 6) Collaborating with suppliers to reduce packaging waste (especially plastic) Construction: 1) Recycling waste management is adopted and implemented in the method of separate Timber, Plasterboard, Inert Hardcore, mixed and packaging skips. To ensure that the waste management contractor can provide a cost effective recycling service. Identify and focus on those material streams that offer quick wins such as: 1) Produced in sufficient quantities to make the operating costs of recovery economically attractive. 2) Easily segregated on site. 3) Add significantly value by segregation compared to mixed waste. 4) Use local reprocessing facilities wherever possible. By utilising the largest available skips (40 yd skips) and compactor skips, we will reduce the environmental impact with regard to: 1) CO2 emissions. 2) Traffic congestion for the local community. 3) Reducing movements on site. Where practicable, redundant concrete foundations, paving etc.
Specify three waste groups which will be / have been minimised at the design stage	Outline waste minimisation actions taken at the design stage for the selected waste group
Concrete (blocks, rubble, paving slabs, pipes etc)	Designing the top layer of fill material to be sufficient for acting as a Temporary Working platform
Bricks	Building has been designed to brick dimensions
Ceramics and Tiles	Bathrooms have been designed as close to full tile dimensions as possible to minimise offcuts.
Please outline details of the measures taken during the planning, design, procurement and construction stages to minimise and manage the production of <u>hazardous</u> wastes on this project	Non-Hazardous paint to be used

Waste Stream Predictions and Management						
Waste Stream	BRE Waste Stream Benchmarks (m3) (indicative figures only)	Berkeley Group Waste Stream Benchmarks (m3) (indicative figures only)	Predicted Amount of Waste Generated (m3)	Facilities Required	Projected End Destination	Cost of Waste Removal and Recovery / Disposal (£/m3)
EXAMPLE: Plasterboard	70	45	50	Skip: 7 cubic yard	Recycling Facility	£36
Construction						
Asphalt and Tar	5.7114	69	69		MRF (Materials Recovery Facility)	
Bricks	479.7576	172	172		MRF (Materials Recovery Facility)	
Canteen / Welfare / Office Waste	142.785	45	45		MRF (Materials Recovery Facility)	
Cardboard and Paper Packaging	265.5801	170	170	Skip: 30cu yd (23cu metre)	Recycling facility	
Ceramics and Tiles	34.2684	42	42			
Concrete (blocks, rubble, paving slabs, pipes etc)	482.6133	567	567		MRF (Materials Recovery Facility)	
Electrical and Electronic Equipment	48.5469	1	1			
Floor Coverings (carpets, vinyl etc)	39.9798	33	33		MRF (Materials Recovery Facility)	
Furniture	8.5671	3	3		MRF (Materials Recovery Facility)	
Glass	No Benchmark	6	10		MRF (Materials Recovery Facility)	
Hazardous Materials (mastic tubes, spray cans, used spill kit materials etc)	No Benchmark	292	292	Bag: 1cu metre	Hazardous waste treatment facility	Hazibags now used
Insulation	208.4661	274	274		MRF (Materials Recovery Facility)	kingspan likely to produce more waste than rockwool.
Liquids (non hazardous only, e.g. canteen oils)	No Benchmark	1	1			road sweeper. Canteen Oil collected by Brooker Waste
Metals	202.7547	254	254		MRF (Materials Recovery Facility)	
Miscellaneous	No Benchmark	895	895			
Oils (fuels and oily waters only)	No Benchmark	0	1		Hazardous waste treatment facility	Hazibags
Other Plaster and Gypsum-Based Material	No Benchmark	35	35		MRF (Materials Recovery Facility)	
Other Plastics (corex etc)	No Benchmark	177	177			TBC
Paint Tins / Containers	No Benchmark	1	3		MRF (Materials Recovery Facility)	
Paper	No Benchmark	101	101		Recycling facility	
Plasterboard	311.2713	661	661	Skip: 40cu yd (30.5cu metre)	MRF (Materials Recovery Facility)	
Plastic Packaging	265.5801	373	373		MRF (Materials Recovery Facility)	
Soils (Contaminated)	No Benchmark	9			Landfill (Hazardous)	Dependant on demo survey on later phases
Soils (Uncontaminated)	No Benchmark	2235	2235		Reuse on-site	
Timber	819.5859	1001	1001	Skip: 40cu yd (30.5cu metre)	MRF (Materials Recovery Facility)	
Toilet Wastes (e.g. sewage effluent tank and chemical toilet wastes etc)	No Benchmark	No Benchmark		Other (details provided in notes column)	Sewage treatment works	existing buildings use septic tanks (3 one site) new toilets from welfare will use temp septic tanks also, as no drainage on site - so number is high.
Demolition						

Excavation						
Predicted total waste volume			7415	Predicted overall reuse/recycling rate (%)	78.64	Predicted overall cost (£)
Predicted waste volume (excluding demolition and excavation waste)			7415	Predicted reuse/recycling rate (%) (excluding demolition and excavation waste)	78.64	Predicted cost (£) (excluding demolition and excavation waste)

Waste Targets		
Target Name	Target	Explanation
Berkeley Group Waste Target	Reuse or recycle over 90% of waste	The Berkeley Group target is to divert at least 90% of construction, demolition and through reuse or recycling.
BRE Waste Benchmark (m3/100m2) for the project type <i>Based on December 2015 data</i>	No BRE Benchmark for Mixed Use Projects	BRE Waste Benchmarks are derived from completed projects that use the BRE : based on completed <i>new build</i> construction projects. The benchmarks are based include demolition, excavation or groundworks waste.
	No BRE Benchmark for Mixed Use Projects	
BRE Waste Benchmark (m3/100m2) for the residential elements of the mixed use project <i>Based on December 2015 data</i>	Average Volume of Waste (excluding demolition and excavation waste) per 100m2 of floor area: 18.55 m3	The BRE Waste Benchmarks are the average m3 of waste produced per 100m2 Total Project Waste Volume is calculated by multiplying the BRE Waste Benchmark Structure(s).
	Total Project Waste Volume (excluding demolition and excavation waste): 5236.1085 m3	
BREEAM Target Credits	One credit targeted - Amount of Waste Generated per 100m2 of Internal Floor Area: 13.3 m3	To achieve BREEAM credits under section 'Wst 01', non-hazardous construction waste) generated by the construction of the building covered by BREEAM should

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id excavation waste (by volume) from landfill
SMARTWaste Plan. The benchmarks are based on construction waste only and do not floor area under construction. The Target is based on the Total Internal Floor Area of
Construction waste (excluding demolition and excavation waste) shall not be greater than the value outlined.

Revision Register

Date	Section	Description	Version
Month Year	All	Description of the amendments	Draft 001