London Legacy Development Corporation
Olympic Stadium Transformation Project

PROJECT ENVIRONMENTAL MANAGEMENT PLAN

LC419-STA-STA-ES-PLN-0003 – P03

Issue and Revision Record

Rev	Date	**Originator** (Print) (Signature)	**Checker** (Print) (Signature)	**Approver** (Print) (Signature)	Description
P01	February 2014	[redacted]	[redacted]	[redacted]	FA
P02	March 2014	[redacted]	[redacted]	[redacted]	FA
P03	April 2014	[redacted]	[redacted]	[redacted]	FA

Content

PART 1 – GENERAL ISSUES

Introduction

The **Project Environmental Management Plan (PEMP)** has been developed and will be implemented in accordance with Balfour Beatty's Environmental Management System (EMS), Environmental Policy and contract requirements. In accordance with the above, this PEMP details the arrangements by which Balfour Beatty will manage the environmental and sustainability requirements of the Olympic Stadium Transformation Works. It has been developed to comply with ISO 14001, all relevant environmental legislation, Olympic Stadium Project Information and Code of Construction Practice requirements.

The plan describes the core elements of the EMS that covers all Balfour Beatty activities and sets out the organisation and arrangements by which the company intends to fulfil its duties in accordance with the requirements of all relevant environmental legislation, and contract requirements.

The PEMP provides reference to processes and other relevant project documents that are integral to the operation of the plan. The PEMP is a live document which will be reviewed on a regular basis.

For clarification: LLDC are the employer. The employer's representative is Mace. All communications for the employer is sent to Mace.

This report supersedes the Olympic Roof Transformation EMP and associated documents (**LC403-AQC-ARE-B-PLN-0019)**

1.1Amendment Record

The Project Environmental Manager shall conduct periodic reviews of this document to ensure that the information contained within is suitable and sufficient for the site operations. This will be anticipated to be at least every six months to ensure that the environmental aspects of the transformation activities are covered by this plan. Also the PEMP shall be reviewed to reflect the Balfour Beatty's contractors Environmental Management Plan.

Revision no	Date	Comment	Authorisation	Review Date
P01	18/02/14	Initial Issue		

Controlled copies of the approved PEMP shall be distributed to the relevant people via the Business Collaborator System.

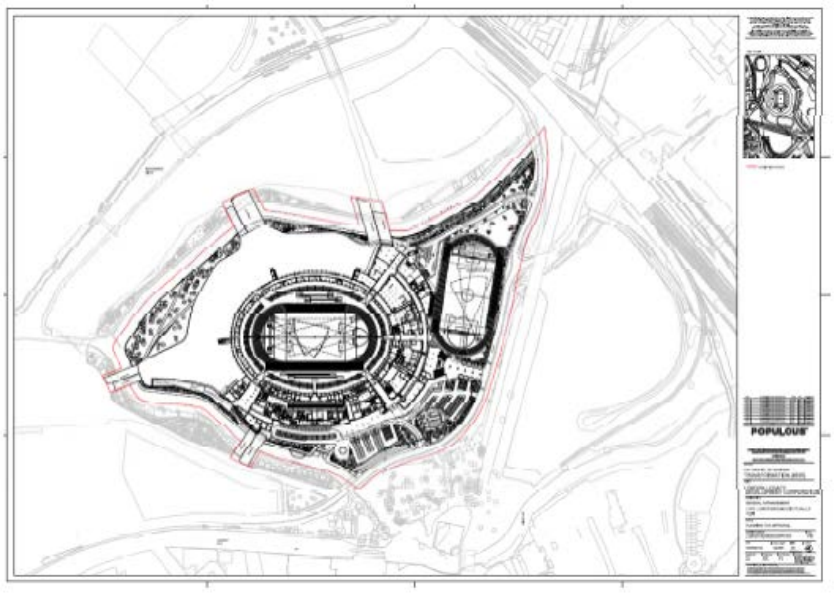
Organisation	Owner	Address
LLDC	[redacted] – Project Manager	**London Legacy Development Corporation** Level 10 1 Stratford Place, Montfichet Road London E20 1EJ
Balfour Beatty	[redacted] – Project Director	**Olympic Stadium** Queen Elizabeth Olympic Park Stratford E20 2ST

1.2 Project Profile and Scope of Works

The scope of work consists of the transformation of the Olympic Stadium.

This venue specific Environmental Management Plan (EMP) has been prepared in conjunction with the Stadium Planning Permission (ref. no. 12/00066/FUM) and is submitted for approval to discharge planning condition OST.48.

Figure 1.1: Stadium Planning Application Boundary Plan



For Information – LCS Planning Application boundary plan

The main elements of the works are listed below. For full details refer to LC001-STA-STA-J-REP-003 Project Information V6, Page 22-50 and Section A105.

- Existing Stadium Structure;
- Substructure And Earthworks;
- Roof/ Steelworks;
- West Stand Works;
- Bowl And Seating Works;
- Podium Accommodation Works;
- General Building Works;
- Fit Out Works;
- Field Of Play Works;
- Building Engineers Services Works;
- Builders Work In Connection;
- Landscaping And External Works;
- Bridges Works;
- Community Athletics Track Works; and
- Other Works

Key Dates

- Start work - 20th January 2014
- Stage E Design Report - 30th March 2014
- Completion of Perimeter Truss and V columns strengthening and associated pile caps and piling – 1st August 2014
- Removal of Cranes from Field of Play to allow follow on trades to commence – 15th February 2015
- Completion of Field of Play lighting, lighting controls 1st & 2nd Fix – 30th March 2015
- Employer Access to catering kitchens and concession spaces for concessionaire fit out works – 1st June 2015
- Employer Access to remaining areas of the stadium for concessionaire tenant area fit out works – 18th January 2016

1.3 Identification of equipment to be used

A list of plant used for the transformation activities is detailed in the Section 61 consent.

1.4 Identification of materials to be used

The materials used on the project are identified in the **BB Sustainability Action Plan**; a requirement before any works commence.

The BB Sustainability Action Plan covers the LLDC Environment and Sustainability Priority Themes and highlights how BB's sustainability strategy and LLDC's approach interlink and support one another.

The project is aiming to procure the key materials from responsible sources. The procurement procedures take into consideration the environmental/sustainability aspects of the project. Balfour Beatty will comply with the LLDC timber, concrete, aggregates and fuel framework agreements (e.g. purchase timber from sustainable sources, use ultra low red sulphur diesel, etc).

Materials being removed from site during the transformation works are to be re-used as much as possible and where this is not the case they shall be recycled as much as possible in an effort to minimise wastage. See **Materials Asset Register and SWMP.**

1.5 Project duration

The Olympic Stadium was completed in 2011 and the Stadium Transformation Works are programmed from 20th January 2014 to Summer 2016. The key project phases/activities are detailed below but a detailed project planning programme for the Stadium Transformation Project is provided to the LLDC Project Manager on a regular basis.

	Key Activities	Start date	Finish date
1	Demolition works	3 March 2014	12 June 2015
2	Substructure works	3 February 2014	19 December 2014
3	Bowl alterations	22 September 2014	6 March 2015
4	Bowl	24 November 2014	10 July 2015
5	Main roof (shell and core)	2 June 2014	8 May 2015
6	MEP (Shell and core)	3 December 2013	3 July 2015
7	MEP (IMTECH)	6 Jan 2014	19 May 2015
8	Video screens	11 August 2014	20 March 2015
9	Podium lower ground floor rooms strip and fit out	17 March 2014	28 April 2016
10	Podium upper level floor rooms strip and fit out	23 June 2014	17 April 2015
11	Podium canopy	10 March 2014	26 June 2015
12	Podium secure line	26 August 2014	22 May 2015
13	West Stand Superstructure	14 July 2014	1 June 2015
14	Field of Play	19 May 2014	22 July 2016
15	External works and landscaping	17 March 2014	28 April 2016
16	External bridge modifications	5 December 2014	2 July 2015
17	Community Athletics Track	10 March 2014	27 May 2016
18	Asset protection management	6 January 2014	22 May 2016

1.6 Environmental condition of site

Stadium Handover documentation has been provided by LLDC which describes the condition of the site.

PART 2 – ENVIRONMENTAL MANAGEMENT

2.1 Policy Statement

In addition to the Balfour Beatty Environmental Policy which outlines our commitments to manage effectively the environmental issues, our project has a project specific Sustainability Policy which reflects the project core values listed below:

- Maintain an Exemplary Heath and Safety Performance;
- Protect and Enhance the Local Environment;
- Excel in our Time, Cost and Delivery Performance;
- Focus upon the needs of stakeholders;
- Support a culture of integrity and respect; and
- Help the Community and Create a Positive Legacy.

The BB Timber Procurement Policy outlines our commitment to purchase timber from sustainable sources only.

Environment Policy

Balfour Beatty

Policy Statement
Environment

Construction Services UK

STATEMENT OF INTENT

Balfour Beatty Construction Services UK (CSUK) respects the natural, built, social and economic environments in all communities in which we operate. When designing, planning, constructing or maintaining built infrastructure, we are committed to conducting our operations in an environmentally and socially responsible manner to achieve environmentally sustainable solutions.

We will therefore work closely with our people, clients, partners, designers and supply chain to:-

- respect our natural resources and contribute positively to local communities
- reduce the amount of waste we generate, - recycle or recover and re-use it
- prevent any type of pollution, reduce our emissions of greenhouse gases, use less water and, partnering with our supply chain, find and use materials and services with a lower impact on the environment and local ecology
- use our influence with our supply chain and in the markets in which we operate to offer sustainable solutions that improve the quality of life for the communities and individuals that we serve
- offer opportunities to improve energy efficiency and carbon emissions
- address life cycle impacts and low carbon technologies and protect and enhance ecologies.

We are committed to engaging with professional, regulatory, institutional, academic and non government organisations to ensure we meet industry standards. We are committed to establishing, implementing, cascading and reviewing corporate objectives to drive continual process improvement so that we:

- comply with all legal and Balfour Beatty Group (our parent company) requirements as an absolute minimum
- reduce the effects of noise, dust, disturbance and inconvenience arising from our activities
- consult those affected by our work and respond promptly to any complaints or incidents and report these in accordance with Balfour Beatty Group requirements
- minimise the environmental impact of our work throughout its life cycle, including disposal of plant equipment and other physical assets
- reduce the fuel consumption in our vehicle fleet
- improve the energy efficiency in the premises we occupy by adopting low carbon solutions.

We will actively involve our people and ensure through training that they are aware of the environmental impacts of their activities and know how to operate responsibly. This Policy seeks to deliver the environmental aspects of our Sustainability 2020 Vision programme and is an integral part of everything we do. For us, environmental limits, profitable markets and healthy communities are not competing interests, they are closely connected. We want to achieve our wider sustainability aspirations through protecting the environment and supporting communities with sound environmental practices and solutions.

RESPONSIBILITIES

Responsibility for this Policy ultimately lies with the Chief Executive Officer, Balfour Beatty Construction Services UK. Day to day implementation of the Policy is the responsibility of operational management and functional heads with the HSE Director responsible for the provision of specialist HSE support. All employees have a responsibility to comply with this Policy and its associated arrangements.

ARRANGEMENTS

Significant environmental aspects will be communicated to interested parties and arrangements for the control of these environmental activities are contained within the Business Management System, which fully satisfies the requirements of ISO 14001. The effectiveness of these arrangements and our performance against Company objectives is routinely monitored and reported to the Company Executive Leadership Team. This Policy aligns with Balfour Beatty Group policies and will be reviewed annually as a minimum. This Policy will be brought to the attention of all employees, supply chain partners and persons working on behalf of the Company. It will also be freely available to the public via the Company website.

AUTHORISATION

[redacted]

Balfour Beatty Construction Services UK
July 2013

[redacted]

Balfour Beatty Construction Services UK
July 2013

Ref No: HSEN-PO-0002	Issue No: 2	UNCONTROLLED WHEN PRINTED OR DOWNLOADED

Sustainability Policy

Sustainability Policy

Balfour Beatty Construction

Balfour Beatty Construction Scottish & Southern is committed to achieving our 2020 Sustainability Vision to:

- Deliver, manage and own sustainable infrastructure that helps communities and individuals live within environmental limits. We will build on our heritage to lead the sector in providing our customers with a combination of innovative solutions and engineering excellence that lasts, all in accordance with our ethical framework.

We aim to be leaders in sustainability creating **profitable markets** and **healthy communities** whilst working within **environmental limits**. This policy is aligned with the **Balfour Beatty 2020 Sustainability Vision and Roadmap**.

To ensure we achieve our 2020 vision we have established the following core aims that we plan to meet by the end of 2012:

Creating Profitable Markets

- Become a sustainable leader and innovator and
- Offer design solutions that will create sustainable buildings throughout their life cycle.

Creating Healthy Communities

- Ensure our people are happy, healthy and engaged;
- Achieve Zero Harm;
- Through supplier relationships we will offer innovative sustainable solutions; and
- Engage with and improve the local communities in which we work.

Working within Environmental Limits

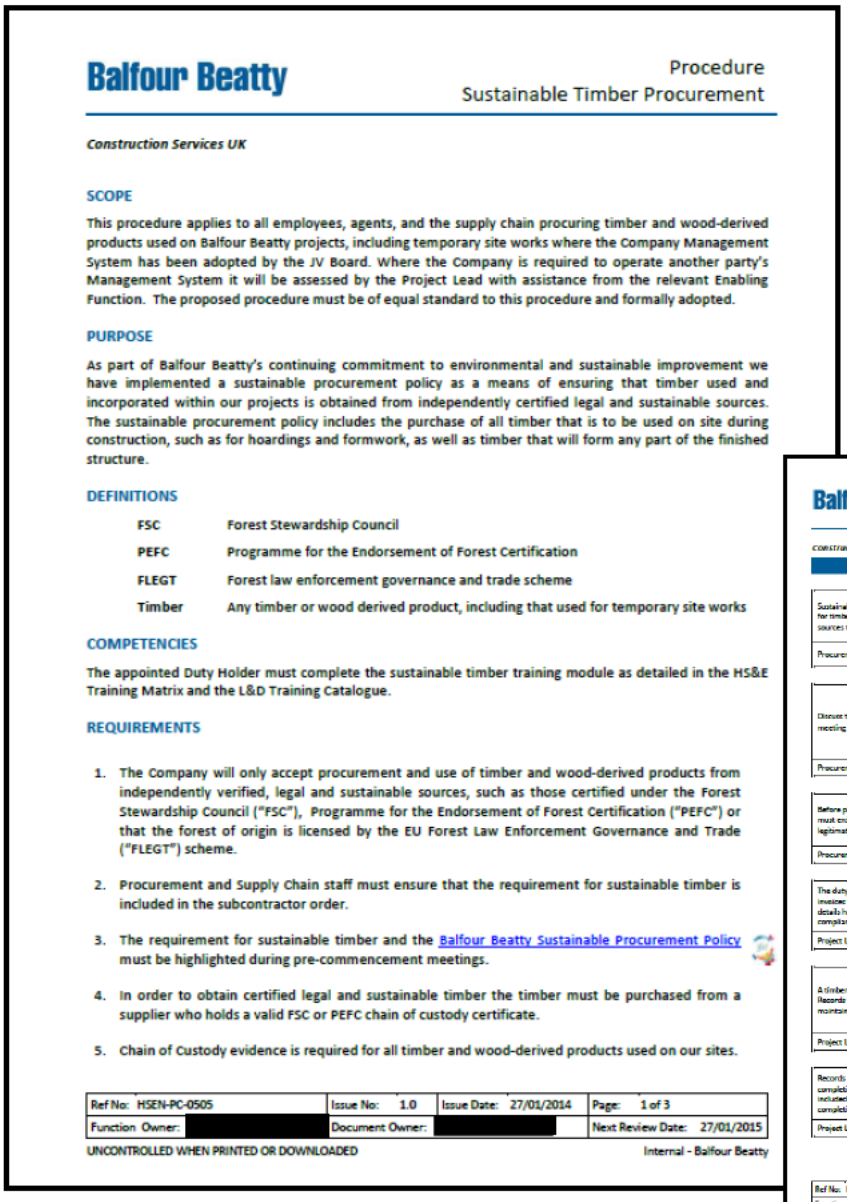
- Achieve a 10% reduction in our carbon & water footprint;
- Achieve an 80% reduction in our waste to landfill;
- Procure 100% of timber from certified legal and responsible sources;
- Procure a minimum of 25% of major materials (by value) from responsible sources; and
- Protect and enhance the local environments in which we work.

This policy is available to our employees via the company Intranet. It will be communicated to customers as part of our bid process, our supply chain as part of our selection process and to other interested parties on request. It will be reviewed annually and updated as necessary.

[redacted]

Balfour Beatty Construction Scottish & Southern Limited
September 2011

Balfour Beatty Timber Procurement Policy



Balfour Beatty

Procedure
Sustainable Timber Procurement

Construction Services UK

SCOPE

This procedure applies to all employees, agents, and the supply chain procuring timber and wood-derived products used on Balfour Beatty projects, including temporary site works where the Company Management System has been adopted by the JV Board. Where the Company is required to operate another party's Management System it will be assessed by the Project Lead with assistance from the relevant Enabling Function. The proposed procedure must be of equal standard to this procedure and formally adopted.

PURPOSE

As part of Balfour Beatty's continuing commitment to environmental and sustainable improvement we have implemented a sustainable procurement policy as a means of ensuring that timber used and incorporated within our projects is obtained from independently certified legal and sustainable sources. The sustainable procurement policy includes the purchase of all timber that is to be used on site during construction, such as for hoardings and formwork, as well as timber that will form any part of the finished structure.

DEFINITIONS

FSC	Forest Stewardship Council
PEFC	Programme for the Endorsement of Forest Certification
FLEGT	Forest law enforcement governance and trade scheme
Timber	Any timber or wood derived product, including that used for temporary site works

COMPETENCIES

The appointed Duty Holder must complete the sustainable timber training module as detailed in the HS&E Training Matrix and the L&D Training Catalogue.

REQUIREMENTS

1. The Company will only accept procurement and use of timber and wood-derived products from independently verified, legal and sustainable sources, such as those certified under the Forest Stewardship Council ("FSC"), Programme for the Endorsement of Forest Certification ("PEFC") or that the forest of origin is licensed by the EU Forest Law Enforcement Governance and Trade ("FLEGT") scheme.
2. Procurement and Supply Chain staff must ensure that the requirement for sustainable timber is included in the subcontractor order.
3. The requirement for sustainable timber and the Balfour Beatty Sustainable Procurement Policy must be highlighted during pre-commencement meetings.
4. In order to obtain certified legal and sustainable timber the timber must be purchased from a supplier who holds a valid FSC or PEFC chain of custody certificate.
5. Chain of Custody evidence is required for all timber and wood-derived products used on our sites.

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Function Owner: [redacted]	Document Owner: [redacted]		Next Review Date: 27/01/2015

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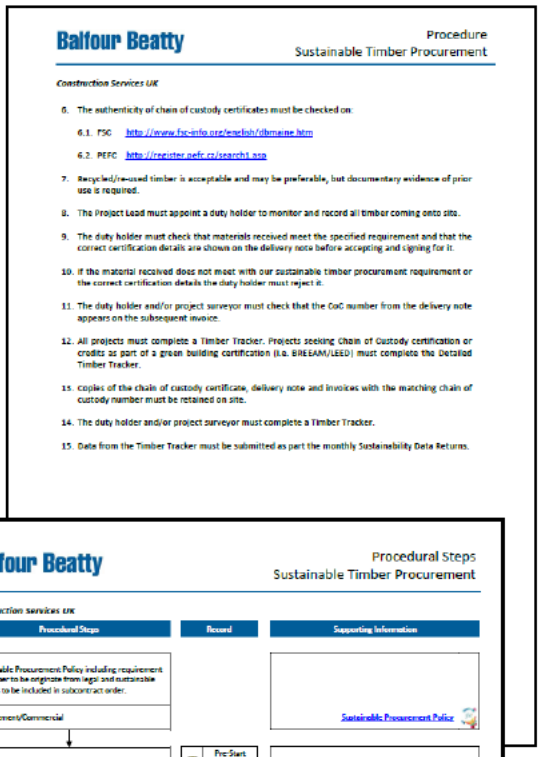
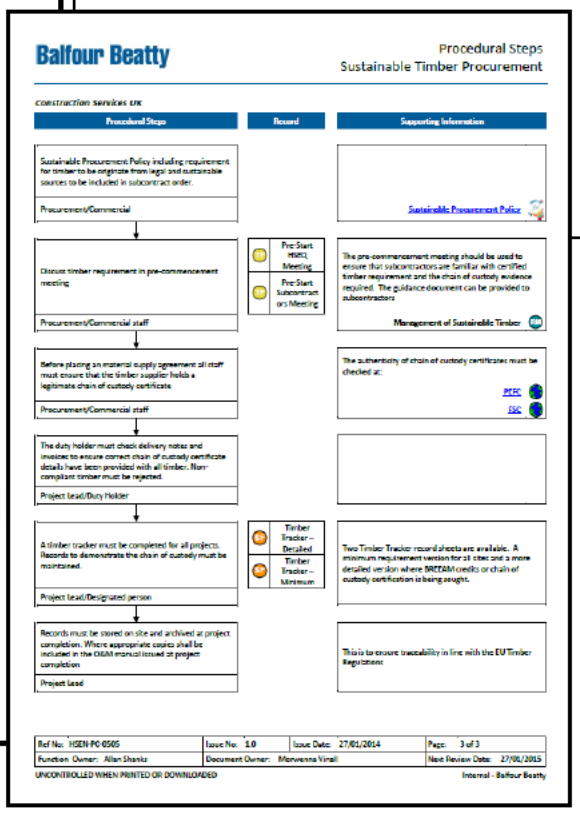


Balfour Beatty

Procedure
Sustainable Timber Procurement

Construction Services UK

6. The authenticity of chain of custody certificates must be checked on:
   - 6.1. FSC http://www.fsc-info.org/english/dbmaine.htm
   - 6.2. PEFC http://register.pefc.cz/search1.asp
7. Recycled/re-used timber is acceptable and may be preferable, but documentary evidence of prior use is required.
8. The Project Lead must appoint a duty holder to monitor and record all timber coming onto site.
9. The duty holder must check that materials received meet the specified requirement and that the correct certification details are shown on the delivery note before accepting and signing for it.
10. If the material received does not meet with our sustainable timber procurement requirement or the correct certification details the duty holder must reject it.
11. The duty holder and/or project surveyor must check that the CoC number from the delivery note appears on the subsequent invoice.
12. All projects must complete a Timber Tracker. Projects seeking Chain of Custody certification or credits as part of a green building certification (i.e. BREEAM/LEED) must complete the Detailed Timber Tracker.
13. copies of the chain of custody certificate, delivery note and invoices with the matching chain of custody number must be retained on site.
14. The duty holder and/or project surveyor must complete a Timber Tracker.
15. Data from the Timber Tracker must be submitted as part the monthly Sustainability Data Returns.



Balfour Beatty

Procedural Steps
Sustainable Timber Procurement

construction services UK

Procedural Steps	Record	Supporting Information
Sustainable Procurement Policy including requirement for timber to be originate from legal and sustainable sources to be included in subcontract order. Procurement/Commercial		Sustainable Procurement Policy
Discuss timber requirement in pre-commencement meeting Procurement/Commercial staff	Pre-Start HSEQ Meeting Pre-Start Subcontractors Meeting	The pre-commencement meeting should be used to ensure that subcontractors are familiar with certified timber requirement and the chain of custody evidence required. The guidance document can be provided to subcontractors Management of Sustainable Timber
Before placing an material supply agreement all staff must ensure that the timber supplier holds a legitimate chain of custody certificate Procurement/Commercial staff		The authenticity of chain of custody certificates must be checked at: PEFC FSC
The duty holder must check delivery notes and invoices to ensure correct chain of custody certificate details have been provided with all timber. Non-compliant timber must be rejected. Project Lead/Duty Holder		
A timber tracker must be completed for all projects. Records to demonstrate the chain of custody must be maintained. Project Lead/Designated person	Timber Tracker – Detailed Timber Tracker – Minimum	Two Timber Tracker record sheets are available. A minimum requirement version for all sites and a more detailed version where BREEAM credits or chain of custody certification is being sought.
Records must be stored on site and archived at project completion. Where appropriate copies shall be included in the O&M manual issued at project completion Project Lead		This is to ensure traceability in line with the EU Timber Regulations

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Function Owner: Allan Shanks	Document Owner: Morwenna Vinall		Next Review Date: 27/01/2015

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2.2 Aspects and Impacts Register

An Aspects and Impacts register has been developed by Balfour Beatty to identify the construction activities which might have a significant impact on the environment. The Environmental Manager will update this register to reflect the activities undertaken as the project progress. – See ***Table 2.2:*** *Aspects and Impacts Register.*

Table 2.2 Aspects and Impacts Register*

Environmental Impact Designation Low….. L, Medium…..M, Significant….. S		Control or Influence	Dust and air quality	Noise, vibration and lighting	Surface and groundwater	Biodiversity, Ecology	Archaeology and heritage	Landscape and Visual Amenity	Contaminated land	Waste management	Waste minimisation	Depletion of natural resources	Fuel and energy consumption	Impact on the public	Risk of environmental incident	Other
Activity																
Ref.	**Description**		**A**	**B**	**C**	**D**	**E**	**F**	**G**	**H**	**I**	**J**	**K**	**L**	**M**	**O**
1	**Design Phase/Sustainability**	**I**	SIGNIFICANT													
2	**Site compound**	**C**	**L**	**M**	**L**	**L**	**L**	**L**	**M**	**M**	**M**	**M**	**M**	**M**	**M**	
2.1	Disposal of sewerage	**C**	**L**	**L**	**L**	**L**	**L**	**L**	**L**	**L**	**L**	**L**	**L**	**L**	**L**	
2.2	Waste disposal	**C**	**L**	**L**	**L**	**L**	**L**	**L**	**L**	**M**	**M**	**L**	**L**	**L**	**L**	
3	**Stadium – substructure & superstructure**															
3.1	Earthworks & drainage	**C**	**M**	**M**	**M**	**M**	**L**	**L**	**L**	**L**	**M**	**M**	**M**	**L**	**L**	
3.2	Concrete pours	**C/I**	**L**	**M**	**M**	**M**	**L**	**L**	**M**	**L**	**M**	**M**	**M**	**M**	**M**	
3.3	Drainage system – Pipes Installation	**C**	**L**	**L**	**L**	**L**	**L**	**L**	**M**	**L**	**L**	**M**	**L**	**L**	**L**	
3.4	Roof/steelworks	**C**	**L**	**M**	**L**	**L**	**L**	**L**	**L**	**L**	**L**	**M**	**M**	**L**	**L**	
3.5	West stand works	**C**	**L**	**L**	**L**	**L**	**L**	**L**	**L**	**L**	**L**	**L**	**L**	**L**	**L**	
3.6	Bowl and seating works (lower & upper tiers)	**C**	**L**	**L**	**L**	**L**	**L**	**L**	**L**	**L**	**L**	**L**	**L**	**L**	**L**	
3.7	Bowl works	**C**	**L**	**L**	**L**	**L**	**L**	**L**	**L**	**L**	**L**	**L**	**L**	**L**	**L**	
3.8	Podium Accommodation works	**C**	**L**	**M**	**L**	**L**	**L**	**L**	**L**	**L**	**L**	**L**	**L**	**L**	**L**	
3.9	Fit out works	**C**	**L**	**L**	**L**	**L**	**L**	**L**	**L**	**L**	**L**	**L**	**L**	**L**	**L**	
3.10	Field of play	**C**	**L**	**L**	**M**	**L**	**L**	**L**	**M**	**M**	**M**	**L**	**L**	**L**	**M**	
3.11	Community Athletics track	**C**	**L**	**L**	**L**	**L**	**L**	**L**	**M**	**M**	**M**	**L**	**L**	**L**	**L**	
4	**Building works**															
4.1	dismantling	**C**	**L**	**L**	**L**	**L**	**L**	**L**	**L**	**L**	**L**	**L**	**L**	**L**	**L**	
4.2	Piling	**C**	**M**	**M**	**M**	**L**	**L**	**L**	**L**	**M**	**M**	**L**	**L**	**L**	**M**	
4.3	Plastering	**C**	**L**	**L**	**L**	**L**	**L**	**L**	**L**	**L**	**L**	**L**	**L**	**L**	**L**	
4.4	Painting and decorating	**C**	**L**	**L**	**L**	**L**	**L**	**L**	**L**	**L**	**L**	**L**	**L**	**L**	**L**	
4.5	Paving	**C/I**	**L**	**L**	**L**	**L**	**L**	**L**	**L**	**L**	**L**	**L**	**M**	**L**	**L**	
4.6	Blockworks	**C/I**	**L**	**L**	**L**	**L**	**L**	**L**	**L**	**L**	**L**	**L**	**L**	**L**	**L**	
4.7	Excavation	**C/I**	**M**	**M**	**M**	**L**	**L**	**L**	**M**	**M**	**L**	**L**	**M**	**L**	**L**	
5	**M&E**															
5.1	Electrical accessories	**C/I**	**L**	**L**	**L**	**L**	**L**	**L**	**L**	**L**	**L**	**L**	**L**	**L**	**L**	
5.2	Plumbing	**C/I**	**L**	**L**	**L**	**L**	**L**	**L**	**L**	**L**	**L**	**L**	**L**	**L**	**L**	
6	**Landscaping**															
6.1	Soft/ Hard Landscaping	**C**	**L**	**L**	**L**	**M**	**L**	**M**	**M**	**L**	**L**	**L**	**L**	**L**	**L**	
6.2	Installation and monitoring of bird boxes	**C/I**	**L**	**L**	**L**	**M**	**L**	**L**	**L**	**L**	**L**	**L**	**L**	**L**	**L**	
7	**Bridges**	**C**	**L**	**L**	**L**	**M**	**L**	**L**	**L**	**M**	**M**	**L**	**L**	**L**	**M**	

Environmental Impact Designation *Low..... L, Medium.....M,* *Significant..... S* **Activity**		Control or Influence	Dust and air quality	Noise, vibration and lighting	Surface and groundwater	Biodiversity, Ecology	Archaeology and heritage	Landscape and Amenity Visual	Contaminated land	Waste management	Waste minimisation	Depletion of natural resources	Fuel and energy consumption	Impact on the public	Risk of environmental incident	Other
Ref.	**Description**		**A**	**B**	**C**	**D**	**E**	**F**	**G**	**H**	**I**	**J**	**K**	**L**	**M**	**O**
8	Traffic Management	C	M	M	L	M	L	L	L	L	L	L	M	M	M	
9	Delivery and storage of materials	C	M	M	M	M	L	L	L	M	M	M	M	M	M	
10	Fuel and chemical storage	C	L	L	M	M	L	L	L	M	M	M	M	M	M	
11	Maintenance and use of plant and equipment	C	L	S	M	M	L	L	L	M	M	L	M	L	M	
12	Washing plant and equipment	C	L	M	M	M	L	L	L	M	M	L	L	L	M	

For full scope of works see Project Information. V6. Page 23

Aspect Code	Description of activity	Proposed mitigation measures	LLDC Procedure	Consent Required (Y/N)	Relevant Legislation/Guidance
1	**Design Phase / Sustainability**	• The design and location of the site compound is extremely important in order to avoid/reduce traffic movements and in order to provide space for materials to be segregated and stored for maximum reuse and recycling • Water and Energy will be measured and reduced where practicable. Offices will be constructed of suitable materials to adequately insulate and heaters will be on timers. • All paper used in Offices to be from recycled sources • Design the works in such way that the Stadium Transformation will meet BREEAM Excellent. • Environmental input to be considered at the stadium transformation design and planning stage of the project e.g. use materials with high recycled content, the light to be positioned in such way that they won't disturb the wildlife, type of trees/vegetation to be planted in order to create the appropriate environment for the existing habitat • Avoid waste through the reuse of the materials coming from deconstruction of the existing stadium. • Ensure all subcontractors involved are aware of the environmentally sensitive receptors such as local residents and the routes to site well in advance of their works commencing on site • Sustainability Action Plans have been developed for the stadium transformation works to identify the sustainability requirements/opportunities from the design stage throughout the construction phase and measure the project performance.	ODA Sustainability Development Strategy/ LLDC sustainability Strategy BRE Green Guide to Building Specification (2007) BREEAM Assessment	-	BREEAM Guidance Building regulations 2006 Part L
A	**Dust and air quality** 4 Building works 8 Traffic Management 9 Delivery and storage of materials	Use 'Best Practicable Means' to control dust generation at source e.g. location of haul routes away from sensitive receptors, damping haul routes, speed limit imposed on haul routes, location of haul routes away from sensitive receptors. The Control of dust and emissions from construction and demolition published by Greater London Authority in Nov 2006 will be followed. http://www.london.gov.uk/mayor/environment/air_quality/docs/construction-dust-bpg.pdf (currently being updated) Interim guidance available at: http://www.IAQM.co.uk Dust and Emission mitigation measures (Institute of air quality management)	LLDC Code of Construction Practice ODA DP Dust Monitoring Scheme	-	ENVIRONMENTAL PROTECTION ACT 1990 POLLUTION PREVENTION AND CONTROL ACT 1999 Environmental Permitting (England and Wales) Regulations 2010

B	**Noise, vibration and lighting** 3 Stadium 8 Traffic Management 11 Maintenance and use of plant and equipment	Balfour Beatty to obtain prior consent for construction works under Section 61 of the Control of Pollution Act 1974. Applications to be submitted to Local Authority Environmental Health Officer a minimum of 28 days before the start of each construction phase. 'Best Practicable Means' adopted to control noise levels during the works. Noise monitoring will be carried out to verify that noise levels correspond with predicted noise levels stated in Section 61 applications. If there are works taking place at night minimum lighting equipment should be used and the lights should be faced away from the sensitive receptors (e.g. residential properties, Waterworks River)	LLDC Code of Construction Practice Noise and Vibration Monitoring Scheme ODA DP Instruction Lighting Management Plan	S61 Consent	ENVIRONMENTAL PROTECTION ACT 1990 CONTROL OF POLLUTION ACT 1974 • Control of Noise (Codes of Practice for Construction and Open Sites) (England) Order SI 2002/461
C	**Surface and groundwater** 2 Site compound 9 Delivery and storage of materials 10 Fuel and chemical storage 11 Maintenance and use of plant and equipment 12 Washing plant and equipment	The necessary arrangements are in place for disposal of water from surface runoff, grey water and sewage effluent from the site offices. Discharge to controlled waters, including groundwater will require consent from the Environment Agency (EA). Discharge to the land must be agreed with the EA and the owner of the land. Sources of pollution must be stored away from watercourses (including floodplain areas), drains e.g. fuel storage, waste skips etc. Establish control measures to hold and treat runoff prior to discharge to controlled waters e.g. attenuation ponds, settlement tanks or oil separators. Designate an area for storing fuels, oils and chemicals away from drainage and Waterworks River banks. Provide emergency spillage clean up kits in strategic locations and train operatives in emergency response procedures. Provide suitable areas for maintenance of plant and equipment, which are located away from drains, watercourses. Train maintenance operatives in pollution prevention measures, emergency response procedures and pollution incident control. Provide suitable areas for vehicle wash down, which are located away from drains and watercourses. (e.g. self contained wheel wash system)	LLDC Code of Construction Practice ODA DP Water Management Plan EA's 'Guidance for Contractors working on the Olympic Park' document.	Consent required for discharging groundwater/surface water from relevant body (EA/Thames Water) Flood Defence Consent required from the EA for works in, over, close to water.	WATER INDUSTRY ACT 1991 WATER RESOURCES ACT 1991 Anti-Pollution Works Notices Regulations 1999 (SI 1999/1006) Water Resources (Abstraction and Impounding) Regulations 2006 (SI 2006/641) Control of Pollution (Oil Storage) (England) Regulations 2001 (SI 2001/2954) LAND DRAINAGE ACT 1981 (as amended by LAND DRAINAGE ACT 1984) Environmental Permitting Regulations 2010 Highways Act 1980 THE WATER ACT 2003

D	**Biodiversity, Ecology** 9 Delivery and storage of materials 10 Fuel and chemical storage 11 Maintenance and use of plant and equipment 12 Washing plant and equipment	Balfour Beatty Ecologist will provide support for the construction team and advice on specific issues through the project. Ecological watching brief to be provided throughout the works. Routine monitoring of invasive species is carried out as part of the regular site inspections.	LLDC Biodiversity Action Plan - ODA DP's Ecological Management Plan - ODA-D0405-PRO-EcoManPlan Rev 13		PROTECTION OF BIRDS ACT 1952 THE WILDLIFE AND COUNTRYSIDE ACT 1981 BADGERS ACT 1996 THE COUNTRYSIDE AND RIGHTS OF WAY ACT 2000 NATURAL ENVIRONMENT AND RURAL COMMUNITIES ACT 2006 Hedgerows Regulations 1997 (SI 1997/1160) The Conservation of Habitats & Species Regulations 2010 WILD MAMMALS ACT 1996 Wildlife and Countryside Act 1981 (England and Wales) (Amendment) Regulations (SI 2004/1487)
F	**Landscape and visual Amenity** 3 Stadium	The legacy design stage has been taken into account the surrounding environment. (e.g. existing habitat and wildlife) and an environmental impact assessment has been carried out and planning permission granted.	LLDC Biodiversity Action Plan		
G	**Contaminated Land** 3 Stadium 4 Building works 6 Landscaping	BB will need to obtain a 'Permit to Proceed' from LLDC when excavation works take place below the orange marker layer prior removal. BB will prepare the relevant Validation Reports for all construction works and obtain approval from LLDC Planning Team.	LLDC Permit to Proceed Protocol	Permit to Proceed to be obtained from LLDC Permit to Proceed Manager prior disposal	ENVIRONMENT PROTECTION ACT 1990 ENVIRONMENT ACT 1995 Contaminated Land (England) Regulations 2000 (SI 2000/227) Contaminated Land (England) (Amendment) Regulations (SI 2001/663) Anti-Pollution Works Regulations 1999 THE WATER ACT 2003

H	**Waste Management** 1 Design Phase/Sustainability 2 Site Compound 3 Stadium 4 Building works 5 M&E 6 Landscaping 7 Bridges 8 Traffic Management 9 Delivery and storage of materials 10 Fuel and chemical storage 11 Maintenance and use of plant and equipment 12 Washing plant and equipment	Waste must be disposed of in accordance with the Environmental Protection Act S34, Duty of Care and comply with the requirements of "Waste Management, The Duty of Care, A Code of Practice" DEFRA. Specific requirements as detailed in the Site Waste Management Plan including requirements for checks of Waste Carrier's Registrations; disposal site's Waste Management Licenses / PPC Authorisation; Waste Transfer Notes and Consignment Notes. The Olympic Park must register its premises with the Environment Agency as a hazardous waste producer. A full assessment of waste streams and disposal options will be carried out in the PEMP prior to start of construction works. Classification of hazardous waste must be in accordance with EA Technical Guidance Note WM2, testing to the Waste Acceptance Criteria (WAC) may be required prior to disposal. Disposal of waste, including sewage effluent, must be carried out in accordance with legal requirements. Safe and legal disposal of waste from site in accordance with 'Duty of Care' as describes by S34 of the Environmental Protection Act 1991 and with the requirements of "Waste Management, The Duty of Care, A Code of Practice" DEFRA. Agree requirements for reuse of spoil from piling activities with Environment Agency and if required notify reuse as an activity exempt from waste management licensing to the EA prior to the start of reuse.	ODA DP Construction Waste Management Plan (CLM-D0701-Rep-CWMP-V1.6) BB Site Waste Management Plan Waste Minimisation Action Plan BB Material Use Plan BB Material Asset Register	EA Hazardous Waste Producer Licence	ENVIRONMENTAL PROTECTION ACT 1990 Environmental Protection (Duty of care) Regulations 1991 (SI 1991/2839) POLLUTION PREVENTION AND CONTROL ACT 1999 Environmental Permitting Regulations 2010 Site Waste Management Plan Regulations 2008 Waste Regulations 2011
I	**Waste Minimisation** 1 Design Phase/Sustainability 2 Site Compound 3 Stadium 4 Building works 5 M&E 6 Landscaping 7 Bridges 8 Traffic Management 9 Delivery and storage of materials 10 Fuel and chemical storage 11 Maintenance and use of plant and equipment 12 Washing plant and equipment	Optimise the reduction of waste at the design stage by looking at the materials available on the market and environmentally friendly materials (High % of recycled material, energy efficient products). BB will work with the supply chain to ensure that pre-manufactured materials are made available to suit design and reduce waste. Also using off site manufactured components (e.g. stairs, timber ceiling, steel frame) would reduce the volume of waste. Review requirements during design of site facilities. Include recycling/reuse of grey water and treatment where possible. Minimise off site disposal of effluent. Use principles of waste minimisation to reduce the amount of waste generated e.g. good storage and handling of materials. Identify recycling, recovery and disposal routes for each waste stream generated during the construction works. Establish facilities for segregation of waste materials. Minimise concrete waste by correct cubing up of concrete pours and reconciliation of estimates against actual amount used. Deliver materials as close as possible to the point and time that they are required to minimise the risk of wastage/damage. Minimise over ordering of materials. Proper material storage to minimise the risk of wastage or damage.	LLDC Code of Construction Practice ODA Sustainable Development Strategy/LLDC Sustainability Strategy BB Site Waste Management Plan Waste minimisation action plan		WRAP/BRE publications, including: • WRAP's NetWaste tool, 'designing out waste' publication etc • BRE's SmartWaste Tool

J	**Depletion of Natural Resources** 2 Site Compound 3 Stadium 5 Delivery and storage of materials 6 Fuel and chemical storage	Review resource requirements and develop proposals for efficient usage in accordance with the LLDC Sustainability Development Strategy. Only use timber from sustainable sources, procured through the LLDC Timer framework agreement. Where possible consider use of non-primary aggregates in concrete batching e.g. for low grade mixes or temporary works. Look for opportunities to purchase materials with a % of recycled content (e.g. glass, bricks, plasterboard, etc.) - Wrap toolkit The project WRAP toolkit is updated on regular basis and the recycled content in concrete and backfill is monitored by the Project Senior Materials Engineer. Also the Sustainability Action Plans are identifying other opportunities to select materials with recycled content and less embodied carbon.	ODA Sustainability Development Strategy/ LLDC Sustainability Strategy **WRAP Report - Construction Procurement – Olympic Park Bridges (**March – May 2007) Waste minimisation action plan Timber Management Plan		WRAP/ BRE publications
K	**Fuel and Energy Consumption** 2 Site compound 3 Stadium 4 Building works 8 Traffic Management 9 Delivery and storage of materials 10 Fuel and chemical storage 11 Maintenance and use of plant and equipment	Use electric lighting equipment where possible All plant will use ultra **low sulphur** diesel to reduce the CO2 emissions and no idling should be allowed if the plant is not in use. The water and electricity consumption in offices will be monitored. The lighting sets are on timer. Consider use of waterways	The Control of dust and emissions from construction and demolition published by Greater London Authority in Nov 2006 ODA Sustainability Development Strategy/ LLDC Sustainability Strategy		Canal and River Trust
L	**Impact on the Public** 8 Traffic Management 9 Delivery and storage of materials 10 Fuel and chemical storage	The project team should take all reasonable measures to minimise the impact on the public. To prevent the any lighting nuisance the following steps will be followed: • position lights carefully to ensure that minimum number of lights are used • dim and switch off lights when they are not required • use baffles, shields and louvres to reduce obtrusive light • use lights that switch off automatically when natural light is available, if possible • use security lights that are activated by movement, if possible To prevent noise: To prevent dust and air pollution: Ensure that the Visitors to the Stadium Site Procedure is followed.			Considerate Constructor Scheme

M	**Risk of environmental incidents** 2 Site compound 3 Stadium 4 Building works 6 Landscaping 8 Traffic Management 9 Delivery and storage of materials 10 Fuel and chemical storage 11 Maintenance and use of plant and equipment 12 Washing plant and equipment	The project should take all reasonable measures during the construction works to avoid the environmental incidents.	See all procedures from Appendix 3.4 of the PEMP		

2.3 Identification & Management of Environmental Requirements and Legislative Constraints

The environmental legislation relevant to this project is identified in the Aspects and Impacts Register (Table 2.2)

The schedule of permits/licence is integrated into the construction programme and reviewed by the Environmental Manager on regular basis.

2.3.1 Ecology constraints

The following ecology constraints have been identified:

	Constraints	Management	Relevant legislation	Reference document
Ecology	**Existing habitat to be safeguard** **Presence of Sites of Borough Importance (SBI)**	**During construction works we will take all reasonable measures to minimise the environmental impact onto the SBIs (Site of Newham Borough Grade 1 along the Waterworks River)**	**Wildlife and Countryside Act (1981)**	**LLDC Biodiversity Action Plan and BAP Annual Monitoring Report 2013** **Ecology Guidance Note – doc no: 6001-AQC-ARE-YE-GUI-0006**
Ecology	**Nesting birds**	**If there are birds nesting on our site we will ensure the area is protected and they are not going to be disturbed during the breeding season. Also the personnel on site are going to be made aware of those constraints via site induction, toolbox talks and warning signs that the area should not be touched.**		

Note: See Aspects and Impacts Register (Part 2 of this PEMP - Section 2.2) for further details on how these will be managed.

2.3.2 Permits/ Consents/ Licences -

These are obtained by Careys as Principal Contractor. BB will obtain a copy for their records.
The permits, consents and licences envisaged to be needed for Stadium transformation project are detailed in the Aspects and Impacts register (Part 2 of this PEMP Table 2.2).
These publications will be available for review on the site environmental notice board and will be consulted by the Project Environmental Manager and construction team for compiling method statements.

Type of activity	Consent required	Management	Relevant legislation	Document Reference no
Stadium transformation works	Section 61	Noise, Vibration and Lighting Plan **LC419-STA-STA-ES-PLN-0003** Control of Noise Guidance Note - doc.	Control of Pollution Act 1974	Noise, Vibration and Lighting Plan doc no: **LC419-STA-STA-ES-PLN-0003**
Site offices/ compound	Discharge of foul water to sewer/controlled water	Obtain discharge consent from the relevant body (Thames Water or EA)	Water Resources Act 1991 Environmental Permitting Regulations 2010	

Type of activity	Consent required	Management	Relevant legislation	Document Reference no
Dewatering/ Abstraction	Discharge to surface/ foul	Obtain discharge consent from the relevant body (Thames Water or EA)	Water Resources Act 1991, Environmental Permitting Regulations 2010	Abstracting water: A guide to getting your licence http://www.environment-agency.gov.uk/business/topics/water/32020.aspx
Working close/over water	Flood Defence Consent	Obtain Flood Defence consent from Environment Agency. Notify the Canal & River Trust when working close/over canal.	Section 109 Water Resources Act 1991, Thames Regional Land Drainage Byelaws 1981, Section 23 Land Drainage Act 1991	Environment Agency Guide to Contractors on the Queen Elizabeth Olympic Park- Guidance on Environmental Permits, licences and consents

2.4 Environmental aims, Key Performance Indicators and Targets

2.4.1 Objectives and targets

Balfour Beatty has environmental objectives and targets set on annual basis. These are disseminated down to a project level for implementation together with local targets that are appropriate to the client's needs and the local environment.

Specific targets to show continuous performance improvement will be set prior to the commencement of the construction works and monitored throughout the project.

Environmental and Sustainability Objectives &Targets 2014		
OBJECTIVES	**MEASURES**	**TARGET**
Bring materials to site by rail or water	KPIs	Wherever practicable, deliver materials to site by rail and/or water to contribute to the employer's planning obligation that **50%** of all materials, by weight, are delivered to and from site by rail or water.
Minimise waste from construction	Smart Waste Reconomy Waste Reports	Recover at least **95%** of waste produced by the construction activities
Minimise the environmental incidents	Monthly reports	***ZERO*** Environmental Incidents
Minimise energy and water consumption during construction	Monthly reports	BBACT will monitor the energy and water consumption during construction phase and will set up a strategy in order to reduce the energy and water consumption
Manage the site in an environmentally and socially considerate and accountable manner Comply with best practice site management principles	Considerate Constructor Scheme	**Score at least 40 (stretch target of 44)**

Identify, source, and use environmentally and socially responsible materials	WRAP toolkit BREEAM	**20%** (by value) recycled content of the key materials used for the transformation works of the stadium **100%** timber from sustainable sources (FSC, PEFC)

2.4.2 Key Performance Indicators

The project Environmental and Sustainability performance report shall be completed monthly by the Senior Environmental Manager as defined by LLDC ('Greenit' Tool).

2.5 Management structure and responsibilities

2.5.1 Responsibilities of the Environmental Team

Members of the Project Team are assigned specific responsibilities for the correct application of this PEMP. Charts showing the names of staff responsible for environmental management, lines of authority and environmental responsibilities are contained in Figure 2.5.1 - Key Environmental Responsibilities.

According to the contractual requirement B 1037 the Project Environmental Manager is responsible for:

- Ensuring environment and sustainability requirements are fully integrated into the construction process;
- Ensuring environment and sustainability requirements are communicated through the project team supply chain;
- Ensuring staff and sub-contractors are competent and resourced to work to the required Environmental standards;
- Enforcing compliance with site wide and local environmental rules;
- Advising and co-ordinating with the Project Manager to deliver environment and sustainability requirements;
- Ensuring exchange of environment and sustainability information between neighbouring and shared areas, project teams, Project Manager and LLDC Environment Manager;
- Liaising with and assisting the LLDC Environment lead to deliver the Project Environment and Sustainability requirements and Programme via SHELT, PLT and SLT;
- Providing appropriate environmental and sustainability advice and support to project team members and contractors;
- Monitoring and reporting performance, including completing the monthly scorecard, report incidents and near misses;
- Acting as the management representative with responsibility and authority for ensuring that the Project EMP and EMS is established, implemented and maintained; and
- Reporting to senior management on the performance of the EMP and EMS during Management Review including recommendations for improvement.

Specialist support is available to provide expert advice and guidance where necessary.

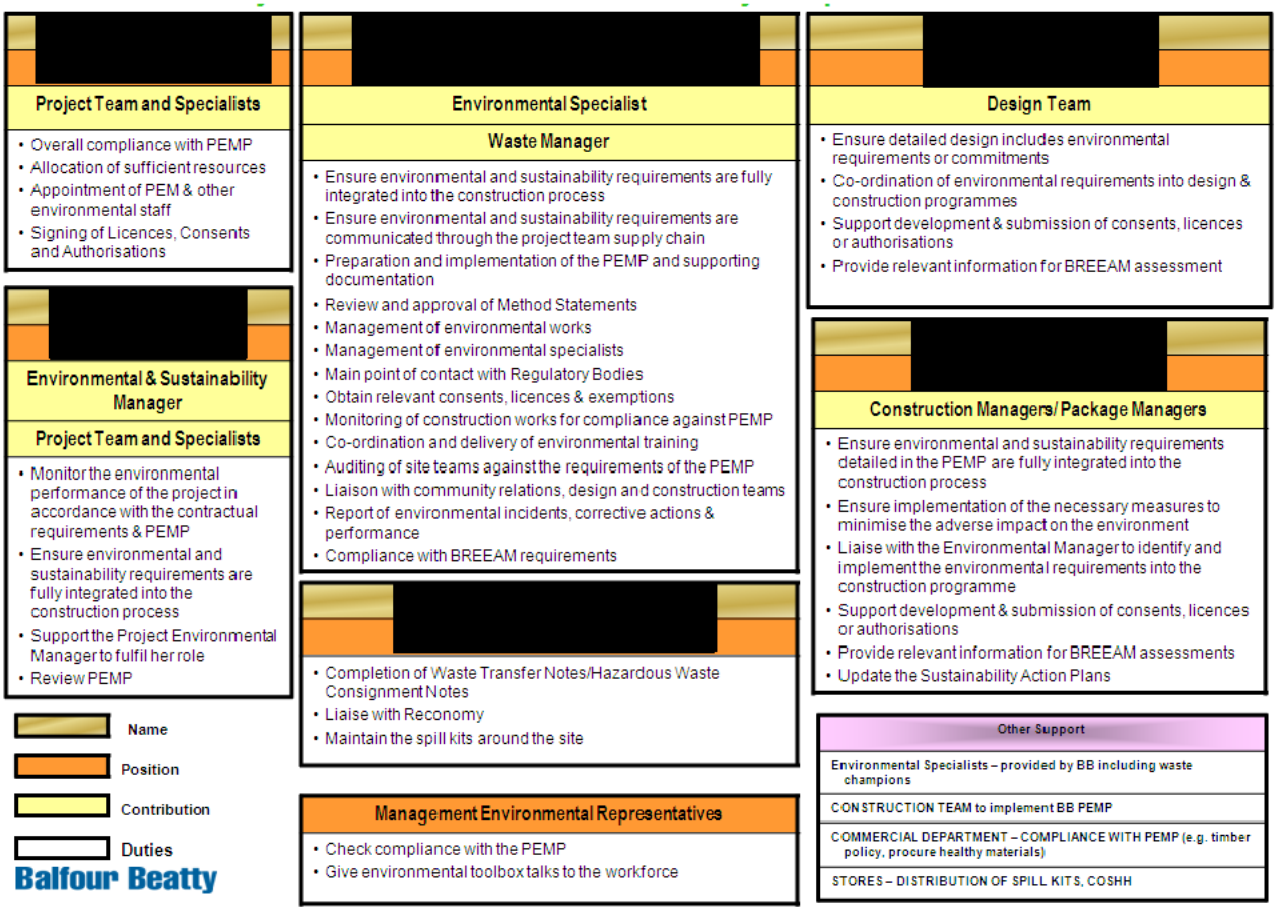

Figure 2.5.1 Key Environmental Responsibilities

2.5.2 General Environmental Responsibilities

All members of the Project Team, including subcontractors are responsible for complying with the Balfour Beatty's Environmental Management procedures. All persons working on site will be informed about this requirement and provided with sufficient training, supervision or instructions to ensure that they are competent to complete tasks in accordance with this requirement.

Below there is an Organogram showing the lines of reporting for the Environmental Manager:

2.6 Induction, Competence and Training

All staff, supervisors, workforce and subcontractors will undergo environmental awareness training, by way of the Balfour Beatty Site Induction process.

This will be supplemented by the following:

2.6.1 Training of the Environmental Team

Balfour Beatty training department will organise appropriate training courses for the workforce.
A project specific training plan that identifies the competency requirements for all personnel allocated with environmental responsibilities will be developed and maintained by the BB HR Manager.

2.6.2 Specific Training and Awareness

Balfour Beatty has a range of internal environmental awareness courses and tool-box talks, which will be used to train staff in specific environmental matters. See TBT folder on shared drive. These courses will be used to ensure that all persons working on site have sufficient practical understanding of the issues, prior to commencing activities.

A register of completed environmental training is to be kept in the HR training file and is reported on monthly basis through the Balfour Beatty Monthly Report.

2.7 Coordination, communication and liaison

2.7.1 Internal Communication

Environmental performance will be a standard agenda item at the weekly internal progress meetings. Decisions and actions from this meeting will be recorded in minutes and disseminated to relevant parties as required.

2.7.2 External Communication

Balfour Beatty and LLDC will establish ways of communications with external interested parties, such as statutory authorities, non-statutory authorities, and environmental specialists in order to obtain the necessary approvals from the relevant bodies and monitor the environmental performance of the project.
The frequency of those meetings will be agreed with the relevant parties. Currently there is a schedule of meetings as follows but this might change from time to time:

Meeting	Date	Purpose of the meeting
LLDC and Tier 1 contractors	every week on Friday	Project performance and environmental issues
LLDC and Local authorities	every 8 weeks	Section 61 consents and discuss environmental incidents
LLDC, Tier 1 contractors, EA, Thames Water, British Waterways	When required	Discharge consents, methods of work, waste issues, etc

2.7.3 Community relations

Balfour Beatty aims to act as a responsible neighbour throughout the site construction works for the Olympic Stadium.
Balfour Beatty has nominated a Communications Representative who is responsible for liaising with the relevant LLDC communications department and supplying information about Balfour Beatty works when requested.
The LLDC will establish a system for dealing with enquiries or complaints from the public and from officers of local authorities or statutory bodies. The system will include an LLDC hotline ([redacted]***10***) staffed 24 hours a day 7 days a week.
The LLDC Director of Communications is responsible for external and internal communications about the delivery of the Legacy works who's responsibility is delegated as follows:

1. to the LLDC Head of Media (HM) for all contact with the media;
2. to the LLDC Head of External Relations for all contact with local residents, schools, interest groups, parish councils, local authorities, London Assembly Members, MPs, MEPs and other stakeholders at local, regional and national level;
3. to the LLDC Comms Manager for all issues to do with marketing and branding; and
4. to the LLDC Project Manager for day to day liaison with *Contractor's*, and the collection and internal dissemination of information regarding activity and any issues on site.

All telephone calls, letters and emails from any external bodies received by Balfour Beatty need to be immediately referred to the LLDC Project Manager who refers these to other members *of LLDC* Communications team as appropriate.
Any media enquiries received by Balfour Beatty should be immediately referred to the LLDC Project Manager who immediately alerts the LLDC Head of Media or their team.

A rota will be produced by the Project Manager identifying the points of communication for out of hour enquiries. The rota will cover a period of 24 hours, 7 days a week.

Name	Position	Contact Number	Email
[redacted]	[redacted]	[redacted]	[redacted]@balfourbeatty.com
[redacted]	[redacted]	[redacted]	[redacted]@balfourbeatty.com
[redacted]	[redacted]	[redacted]	[redacted]@balfourbeatty.com

2.8 Document and record control

The site records will be produced by the construction teams and submitted to the Project Environmental Manager for review. The Project Environmental Manager will forward the completed records to the document controller for archiving onto the Business Collaborator system in accordance to the company document control procedure.

2.8.1 Environmental Records

Environmental records will be maintained in the site environmental files by the HSEQ Team.

Project records are kept both electronically and/or in hard copy at the Project office, in the Site office during construction. Records are managed in accordance with the Quality Management Plan.

The arrangements for managing IT Systems and for secure storage of data and documents is via 'Business Collaborator' – the online system for issuing, sharing and commenting on project documents both within the project team and with external parties with limited rights of access ensuring optimum protection and control of data.

2.9 Operational control

2.9.1 Contractors/Designers selection and appointment

All opportunities, where possible, will be uploaded via an e-tendering portal and a shortlist chosen.

Selected tender will be issued and returned via the web based e-tendering system.

All sub-contractors will, prior to award of sub-contract, complete and return, Subcontractors HSEQ Assessment and attend site meetings to discuss HSEQ aspects, which will be minuted on the Control of Subcontractor Undertaking form.

All sub-contractors appointed by Balfour Beatty will co-operate with the Company's site management team on Health & Safety, environment and quality issues and conform to relevant instructions, specific rules and procedures imposed on site. Spot check audits will be undertaken on all sub-contractors employed on the Stadium on documentation, vehicles and sites.

Sub-contractors will be provided with a copy of Balfour Beatty's PEMP as part of the information package, and will sign the undertaking to confirm they will conform to the procedures therein and all relevant statutory environmental requirements.

All sub-contractors will demonstrate their commitment to the PEMP and will participate in any initiatives designed to improve environmental performance. As part of the subcontract package BB has developed a sustainability questionnaire for its subcontractors.

Senior Managers will review the performance of key subcontractors and suppliers and will, when so selected, provide data for the Key Performance Indicator (KPI) system using the Subcontractor Performance Assessment.

A list of subcontractors appointed on the Stadium transformation project is available in Part 3 of the PEMP – Appendix 3.11 List of subcontractors.

2.9.2 Olympic Stadium Site Rules

All BB contractors will comply with the Queen Elizabeth Olympic Stadium and BB site rules.
BB will:

- Work within core hours: Monday – Friday 08.00 – 18.00, Saturday 08.00 – 13.00 (with 1 hour warm up and warm down period either side of the core hours);
- No noisy works on Sundays/Bank Holidays as stipulated in the S61 consents.
- Take all reasonable steps to minimise the negative impact on the environment during the construction works;
- Be a good neighbour; and

- Keep the construction site tidy.

2.10 Emergency Preparedness and Response

2.10.1 Environmental Incident Recognition/Characterisation

An environmental incident is any event, activity or condition that causes, could have caused, or has the potential to cause harm to people, damage to property or the environment.
The environmental incidents are categorised as:
Environmental Near miss/hazard – an event which would have the potential to have an impact on the environment
Minor environmental incident (Cat 3) - An environmental incident capable of being resolved by immediate action on a localised scale by those present at or near the incident.
Intermediate environmental incident (Cat 2) - An environmental incident requiring the mobilisation of resources from outside the work-site.
Major environmental incident (Cat 1) - An environmental incident involving the assistance of external emergency services and/or regulatory authorities.

Any environmental incident is investigated in the same way as a safety issue, following the same reporting procedure (First Alert / investigation report / lessons learned etc). All environmental incidents are recorded on Yellow Jacket.

2.10.2 Emergency Plan

There is an integrated HSE Emergency Plan which highlights the emergency procedure for dealing with environmental incidents.

2.10.3 Emergency Procedure

See Stadium Transformation Emergency Preparedness and Incident Procedure.

2.10.4 Notification and Reporting

The H&S Manager or Environmental Manager will verbally notify all major environmental incidents to the Project Director within one hour and send out a First Alert. This notification will be followed up within 24 hours by sending a copy of the Non Conformance Report relating to the incident to the Company Environmental Manager with a written explanation of the cause and the proposals to prevent recurrence of the incident.
The Construction Manager will notify LLDC Project Manager immediately of any intermediate or major environmental incidents.
All the incidents will be reported to LLDC using Yellow Jacket.
The Project Environmental Manager will report all environmental incidents, by category, to the HSEQ Team and Company Environmental Manager on monthly basis.

2.10.5 Arrangements to mitigate environmental incidents

The arrangements to mitigate environmental incidents are detailed in the Emergency Preparedness and Response Procedure.

The potential for environmental incidents is assessed during the site inspections and any necessary actions required to mitigate the environmental incidents are put in place. Incidents will be analysed on a monthly basis in order to learn from trends/ repeat issues,

2.11 Environmental Monitoring and Reporting

Routine monitoring to check compliance with PEMP will be undertaken through regular inspections by Project Environmental Manager who will produce a weekly inspection report.

The following forms will be used to record and report the environmental performance of the site:

- *Environmental Inspection Form* (6001-AQC-ARE-YE-FRM-0001)
- *Dust Monitoring Form* (6001-AQC-ARE-YE-FRM -0003)
- *Section 61 Variation Form* (6001-AQC-ARE-YE-FRM -0004)
- *Section 61 Dispensation Form* (6001-AQC-ARE-YE-FRM -0005)
- *Ecology Form* (6001-AQC-ARE-YE-FRM -0006)
- *Noise Monitoring Proforma* (6001-AQC-ARE-YE-FRM -0007)

2.12 Performance Monitoring and Reporting

2.12.1 Monthly reports

A monthly environmental report detailing performance for the period will be provided to the Project Director and will include a summary of environmental incidents, waste volume and disposal costs, etc.
The environmental performance will also be provided to LLDC in the prescribed format (i.e. 'Greenit').

2.12.2 Considerate Constructor Scheme

The site is registered with the Considerate Constructor Scheme and it is monitored by an experienced industry professional to assess the project performance against the new 2013 five point Code of Considerate Practice which includes the following categories: Enhancing the Appearance, Respecting the Community, Protecting the Environment, Securing everyone's Safety and Caring for the Workforce.
The project should take all reasonable measures to reduce any negative effects on the environment while carrying out the works in an environmentally conscious, sustainable manner.

2.12.3 BREEAM Assessment

Building Research Establishment Environmental Assessment Method measures the environmental performance of new and existing buildings. The Stadium transformation will be assessed under the BREEAM Scheme aiming to achieve a score of Excellent on the Transformation Mode.
As a measuring tool the project developed a Sustainability Action Plan to measure the project performance and identify opportunities of improving the sustainability performance of the project.

2.13 Inspection and audits

2.13.1 Responsibilities

The Project Environmental Manager is responsible for ensuring that the construction works are carried out in accordance with the PEMP and that the project is compliant with its contract requirements.

2.13.2 Schedule, Frequency and Planning

The Project has an HSEQ audit schedule for the site and the supply chain. This will ensure that the actions highlighted in the PEMP are being implemented and that the project is compliant with its Contract requirements.
Site inspections will be carried out as required by the ongoing works.

2.13.3 HSE Leadership Tours

The Construction Manager and deputy Project Director will carry out a formal environmental tour weekly with the HSEQ Manager or the Project Environmental Manager.

2.13.4 Procedures in the event of failure to comply with this plan

In the event of failure to comply with this PEMP a non conformance report will be raised as detailed in the Non-conformance Management Plan.

2.13.5 Review and close out reports

Any remedial actions raised during the audit are recorded in the audit report and reviewed and closed out in accordance with the Balfour Beatty Auditing Procedure.

2.13.6 Management Review

The HSE Manager, Environmental Manager and senior management will review the project environmental management system, once a year, to ensure its continuing suitability, adequacy and effectiveness.
Reviews will include:

- Assessing opportunities for improvement and the need for changes to the environmental management system, including the environmental policy and environmental objectives and targets.
- Project environmental performance against the objectives and targets and legal/contractual requirements

The outputs from management reviews will be recorded and include any decisions and actions related to possible changes to environmental policy, objectives, targets and other elements of the environmental management system, consistent with the commitment to continual improvement.

PART 3 – APPENDIX

Appendix 3 - Project Specific Control Plans

- Noise and Vibration Control Plan
- Water Management Plan
- Ecology Management Plan
- Emergency and Preparedness Response Procedure
- Site Waste Management Plan

London Legacy Development Corporation
Stadium Transformation Project

LC419-STA-STA-J-PLN-0012 –P03

Noise, Vibration and Lighting Control Plan

Issue and Revision Record

Rev	**Date**	**Originator** (Print) (Signature)	**Checker** (Print) (Signature)	**Approver** (Print) (Signature)	**Description**
P01	18/02/14	[redacted]	[redacted]	[redacted]	FA
P02	17/03/14	[redacted]	[redacted]	[redacted]	FA
P03	31/03/14	[redacted]	[redacted]	[redacted]	FA

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1 Project Overview

This document has been developed to monitor the impact of the Stadium Transformation works on noise, vibration and lighting issues and implement measures to minimise any adverse impact onto the environment and the public.

This venue specific Noise and Vibration Management Plan has been prepared in conjunction with the Stadium Planning Permission (ref. no. 12/00066/FUM) and is submitted for approval to discharge planning condition OST.58-63.

This document is to be read in conjunction with the LLDC Noise & Vibration Strategy and Dust Monitoring Strategy.

In the vicinity of the Stadium Transformation zone there are few sensitive receptors which might be affected by the transformation works (e.g. Stratford Regional Station, Westfield centre and a block of residential properties including houses in Carpenters road and Lott Road).
The Employer's Requirements stipulate that Balfour Beatty's construction operations will be subject to Section 61 agreements with LLDC and the relevant local authority under the Control of Pollution Act 1974.
"Section 61" refers to Section 61 of the Control of Pollution Act (1974) (CoPA) which in effect allows a contractor to agree methods of working with the relevant Local Authority to control noise and vibration emissions during construction works.
Non-compliance with a Section 61 Consent is an offence which could lead to action being taken against BB by the Environmental Health Office of the local council under the Control of Pollution Act (1974). This could in turn lead to restrictions in construction activities on site.
The Olympic Stadium lies within London of Borough of Newham (LBN) and has obtained Section 61 for the transformation activities.

2 Relevant legislation and guidance

2.1 Legislation

Control of Pollution Act 1974 (CoPA) and the **Environmental Protection Act 1990** (EPA) are the main statutory instruments which provide local authorities with the powers to control noise, vibration and lighting nuisance on construction sites.

Clean Neighbourhoods and Environment Act 2005 - Introduces additional noise, litter and waste controls including site waste management plans, and classifies artificial lighting and insects as statutory nuisances.

2.2 Guidance

- LLDC Code of Construction Practice;
- Employer's Requirements– Working Hours;
- Olympic Park Noise and Vibration Monitoring Scheme;
- Stadium Planning Permission (ref. no. 12/00066/FUM) -planning condition OST.58-63; and
- Guidance Notes for the Reduction of Light Pollution – issued by Institution of Lighting Engineers.

2.3 Contractual information

LLDC has developed a Noise and Vibration Monitoring Scheme which is designated to be used by BB as guidance in the undertaking monitoring of noise and vibration levels during construction works.

The locations for noise monitoring are frequently under review and LLDC will inform its contractors when these changes will occur.

3 Planning and Implementation

3.1 Obtaining Section 61 Consents

Section 61 applications will be prepared to control the transformation works of the Stadium in accordance with the LLDC guidance for submitting a Section 61.

The following information shall be included in any consent application:

1. plans which illustrate the location of the transformation works and the location of the lighting sets (if working at night) ;
2. a full description of the transformation works including details of their duration and proposed hours of work;
3. a robust rationale for the works which need to be undertaken outside core working hours;
4. type of plant and specification of equipment to be used;
5. details of the noise and/or vibration mitigation to be employed;
6. noise and vibration sensitive locations (including, for example, residential properties, schools and other teaching facilities, hospitals and residential nursing homes, and/or other buildings which house vibration sensitive equipment) and anticipated noise monitoring points; and
7. a set of predicted noise or vibration levels, if necessary.

Section 61 Consent application should be submitted to the London Borough of Newham at least 28 days prior to commencement of main construction works.

The contact details are listed below:

Local authority	Contact details
London Borough of Newham	[redacted] [redacted] Stratford Old Town Hall 29 The Broadway Stratford E15 4BQ DDI: [redacted] e-mail: [redacted]@newham.gov.uk

3.2 Working hours

Under the Employers Requirements– Working Hours the LLDC and the local authorities have agreed the following working hours:

Monday to Friday: 0800 – 1800
Saturday: 0800 - 1300

With a warm up period from 0700 – 0800 and warm down period between 1800-1900 Monday to Friday, and from 0700- 0800 and 1300-1400 on Saturday.

No work will be permitted on Sundays. Work may be permitted on Bank Holidays/Public Holidays with the acceptance of the LLDC Project Manager in which case these days are treated as Saturdays for the purposes of determining the allowable hours of work. Construction activities that elevate noise levels, measured as LAeq (1hr) by more than 1dB above the ambient level at the façade of any noise sensitive premises, may only take place outside normal hours of work where these construction activities have been approved by the Local Authority under Section 61 of the Control of Pollution Act 1974.

Except in accordance with an approval by the Local Authority, under Section 61 of the Control of Pollution Act 1974, start up and shut down periods are allowed between the hours of 0700 to 0800 and 1800 to 1900 respectively on Monday to Friday and 0700 to 0800 and 1300 to 1400 on Saturdays. The following activities shall be permitted during start up and shut down periods: movement of construction personnel to and from Site, movement of plant to and from Site, unloading and maintenance of plant and equipment.
Construction operations may be undertaken at any time during the day or night, including weekends and public holidays with the approval of LLDC, BB Project Manager, and London Borough of Newham.

Construction operations will be subject to Section 61 agreements under the Control of Pollution Act 1974 as set out in the LLDC Code of Construction Practice.

3.3 Section 61 Implementation Prior to Starting Works

Prior to works commencement each activity will be assessed during the preparation of the Method Statements to ensure compliance with the appropriate Consent. If the Method Statement raises a non-compliance with the Consent the work package has to be reviewed by relevant construction team and the H&S Manager. The plant listing must then be altered or the proposed works modified in order that the requirements of the consent can be complied with.

3.4 Planned works outside the consented hours

On occasions where it is not practicable to work within Consented hours any changes or deviations from the Section 61 consent must be notified to LLDC and London Borough of Newham through a Section 61 Dispensation Form.

Such situations may include:

- major construction works using plant listed in the consent application that are likely to give rise to noise and/or vibration nuisance to sensitive receptors;
- where noise limits set by the Section 61 Consents will be exceeded, even using best practicable means during construction; and
- during extended working hours due to emergency or unplanned over-runs during construction.

If the change to consented working method is likely to give rise to an increase in noise or vibration levels, then the Project Environmental Manager must be informed and a modification to the relevant Section 61 Consent must be obtained from the Local Authority prior to works commencing. The Project Environmental Manager will maintain a schedule of all such modifications.

The amendment must be submitted to the Local Authority and LLDC Project Manager at least ten working days before the planned works are due to commence. Where the planned works will take place outside of consented hours, then the LLDC Community Relations Team must be contacted at least 7 days prior to the works commencing to be able to notify the local residents.
The Project Environmental Manager will maintain schedules of all amendments/dispensations and supply a copy to the relevant construction team.
If the planned works are foreseen and no mitigating actions are undertaken, then non-compliance must be reported in accordance with the procedures detailed in the Emergency Preparedness and Response Procedure.

3.5 Unplanned works outside the consented hours

If, due to extraordinary circumstances work has to take place outside consented hours and there is a change in consented items of plant/equipment then the relevant local authority must be notified through a Section 61 Variation form.

When completed Balfour Beatty will issue it by email to LBN and LLDC for dissemination to the LLDC Construction Hotline by the Engineer responsible for the works and **the form would be received by the relevant authorities on the night/afternoon of the over-run.** The Project Environmental Manager, Community Relations Team and Security must also be informed of the reason(s) for the overrun and the likely time at which works will finish.
The Project Environmental Manager will maintain a schedule of all out-of-hours notifications.
Provided that the local authority is informed, then working outside of consented conditions is not classified as an incident and does not require reporting as such.

Any work carried out at night will need to take into consideration the location and position of the lighting sets. In order to prevent the any lighting nuisance the following steps will need to be followed:

- position lights carefully to ensure that minimum number of lights are used;
- dim and switch off lights when they are not required;
- use baffles, shields and louvres to reduce obtrusive light;
- use lights that switch off automatically when natural light is available, if possible; and
- use security lights that are activated by movement, if possible.

3.6 Implementation of Best Practicable Means

Best Practicable Means (as defined in Section 72 of CoPA 1974 and in the Code of Construction Practice for the Olympic Park Project) will be employed at all times and in all areas to minimise noise and vibration emissions from the works. The relevant recommendations for the control of noise and vibration on construction and open sites in the approved Code of Practice BS 5228 will be adopted.

The following general measures will be taken:

• All plant will be shut down or throttled back to idling speed in between periods of use;

• All relevant plant will comply with the permissible noise levels set out in the appropriate European Directives;

• Plant and equipment will be maintained in good working order, with particular attention being paid to the condition of silencers and acoustic panels;

• Static plant will be located so as to optimise screening and / or distance attenuation in relation to occupied premises;

• Off site traffic will use approved routes. As far as possible, movements of plant and materials will be kept within the site boundary apart from initial mobilisation and subsequent de-mobilisation;

• Where practicable, access routes and working areas will be arranged to minimise the necessity for reversing vehicles. When it is necessary to use audible reversing signals, the volumes will be adjusted and where appropriate “white noise” reversing devices will be fitted to plant;

• All personnel on site are subject to a continuing programme of environmental training, including noise and vibration control, under the supervision of the Project Environmental Manager; and

• The work areas will be surrounded by secure close boarded hoardings or solid panel fencing in order to enhance noise screening.

4 Roles and Responsibilities

The Project Environmental Manager will be responsible for ensuring that lines of communication are established between LLDC, the local authority and BB project team. This will take place in the form of regular meetings/forums with all interested parties.
Under the terms of CoPA, any sub-contractors must be given notice of the requirements of any Consents and the conditions that it imposes on the works. It is the responsibility of BB project team to communicate this information to the sub-contractors and to ensure the sub-contractors’ compliance. This will be done at the subcontractors HSEQ Assessment meeting.
All staff and operatives attending the site induction will be advised of the existence of the Section 61 Consents and the implications of non-compliance with these consents.
The BB Construction Team will be responsible for ensuring that construction works are undertaken in accordance with the Section 61 Consents.
The BB Construction Manager will formally notify other senior members of staff of their responsibility and authority in respect of the Section 61 Consent procedures.

4.1 Signatories to Section 61 Consents and Related Documents

The level of authority for signature and approval of Section 61 Consents and related documents is as follows:

- Section 61 applications - Project Manager or Construction Director *only*
- Section 61 Dispensations – Project Manager
- Section 61 Variations – Construction Manager, Engineer responsible for the works

5 Monitoring regime

5.1 Noise and Vibration monitoring

The noise and vibration monitoring will be undertaken by Testal, a Balfour Beatty Company.
The monitoring regime for each section of the works will be agreed with LBN. The information will be recorded on the Noise Monitoring Proforma.

5.2 Lighting Pollution monitoring

The Footpath and Walkways Supervisor is responsible for ensuring that the lighting sets are switched off at the end of the day shift and any lighting requirements will not be facing the residential properties or the Waterworks River.

If there are works carried out at night the Night Supervisor will need to make sure that the mobile lighting sets are not facing the residential properties and that they are switched off once the works are completed.
The checks are recorded on the daily site diary by the relevant supervisor.

London Legacy Development Corporation
Olympic Stadium Transformation Project

WATER MANAGEMENT PLAN

LC419-STA-STA-J-PLN-0013-P03

Issue and Revision Record

Rev	Date	**Originator** (Print) (Signature)	**Checker** (Print) (Signature)	**Approver** (Print) (Signature)	Description
P01	18/02/14	[redacted]	[redacted]	[redacted]	FA
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P03	31/03/14	[redacted]	[redacted]	[redacted]	FA

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1 Project overview

The Olympic Park Site falls entirely within the catchment area south of Lea Bridge Road within the Lower Lea and is considered to be influenced by both tidal and fluvial flows. The Lower Lea, which has a catchment area of approximately 370 km^2, flows for 34 km in a southerly direction through North East London, entering the River Thames south of Canning Town, just upstream of the Thames Barrier.

This Plan describes the overall system to be adopted for controlling the environmental aspects which relate to the protection of surface and groundwater resources from pollution and other adverse impacts during our stadium transformation works.

The stadium transformation works pose a low risk to the water environment as long as fuel storage, refuelling procedures etc are followed. This is particularly pertinent as the project is on an island.

2 Legal Frameworks

2.1 Relevant legislation

The Water Resources Act 1991 and the Land Drainage Act 1991 remains the primary legislative framework for surface water quality.

The Water Resources Act 1991 sets out the responsibilities of the Environment Agency and many of the regulatory measures associated with the water environment, such as consents for discharges and abstractions.
The Water Act 2003 updates existing legislation with respect to abstraction, amends the regulation of the water industry and amends legislation relating to the requisition of sewers and drains.

The Environment Act 1995 can be utilised to prosecute for any discharges that contravene relevant water quality standards (UK Environmental Quality Standards - EQS), and these include those related to remediation and/or construction activities.

Environmental Permitting Regulations 2010 provides a consolidated system for environmental permits and exemptions for water discharge activities and groundwater activities.

Water Industry Act 1991 is consolidating previous enactments relating to the water supply and the provision of wastewater services. Effluent may not be discharged to public sewer without a discharge consent (Section 118) or discharge agreement (Section 129) which is issued by the local Sewage Undertaker operating sewage works in the area where the construction is taking place in.

2.2 Guidelines

A file containing the following guidelines has been consulted with regards to the protection of surface and ground waters during the stadium transformation works:
Environment Agency Pollution Prevention Guidance:
• PPG 1 – General Guide to the Prevention of Pollution
• PPG 2 – Above Ground Storage Tanks
• PPG 3 – Use and Design of Oil Separators in Surface Water Drainage Systems
• PPG 4 - Treatment and disposal of sewage where no foul sewer is available
• PPG 5 – Works in, Near or Liable to Affect Watercourses
• PPG 6 – Working at Construction and Demolition Sites
• PPG 13 – High Pressure Washers and Stream Cleaners
• PPG 18 – Managing Fire Water and Major Spillages
• PPG 21 – Pollution Incident Response Planning
• PPG 22 – Dealing with Spillages on Highways
• PPG23 – Maintenance of structures over water

CIRIA Industry guidance
• CIRIA C650 – Environmental Good Practice on Site (2nd Edition), 2005
• CIRIA C532 – Control of Water Pollution from Construction Sites, 2000
• CIRIA C648 – Control of water pollution from linear construction projects, 2006

3 Roles and responsibilities

The Project Environmental Manager is responsible for:

- Preparing, reviewing and implementation of the Project Water Management Plan;
- Reviewing the method statements to ensure that the works are carried out in accordance with the legal and contractual requirement; and
- Raising awareness of the need to protect water (e.g. environmental training, toolbox talks).

The Site Supervisors are responsible for coordinating the implementation and the enforcement of the Project Water Management Plan to ensure that the methods of work are complying with prescribed protocols for protecting the water environment.

4 Potential Impacts related to construction activities

Activities which may cause pollution to watercourses leading to potential damage include: waste water discharged to sewer, working near or in Waterworks River; storage of materials near watercourses; storage and deliveries of fuels and chemicals; refuelling of vehicles and plant; spillage and leakage of fuel and chemicals and runoff from the washing of vehicles and cement mixers.
All stadium transformation activities will be risk assessed and the pollution prevention measures will be detailed in the method statements.

5 Measures to protect against pollution of surface water features during construction activities

It is important to take all necessary steps to minimise the risk of pollution to surface waters as a result of the stadium transformation activities.
LLDC has developed a strategy on how to manage the movement of surface water on site using source control and treatment facilities prior to discharge to an appropriate receiving environment.
The protection measures during the stadium transformation works are detailed in Appendix A – Water protection measures.

5.1 Management of surface water

BB will follow and implement the appropriate control measures described in the LLDC Water Management Plan which shows how the surface water runoff will be managed within the site through the process of erosion and sediment control, treatment and disposal to watercourse, sewer or re-use as part of a non potable supply.

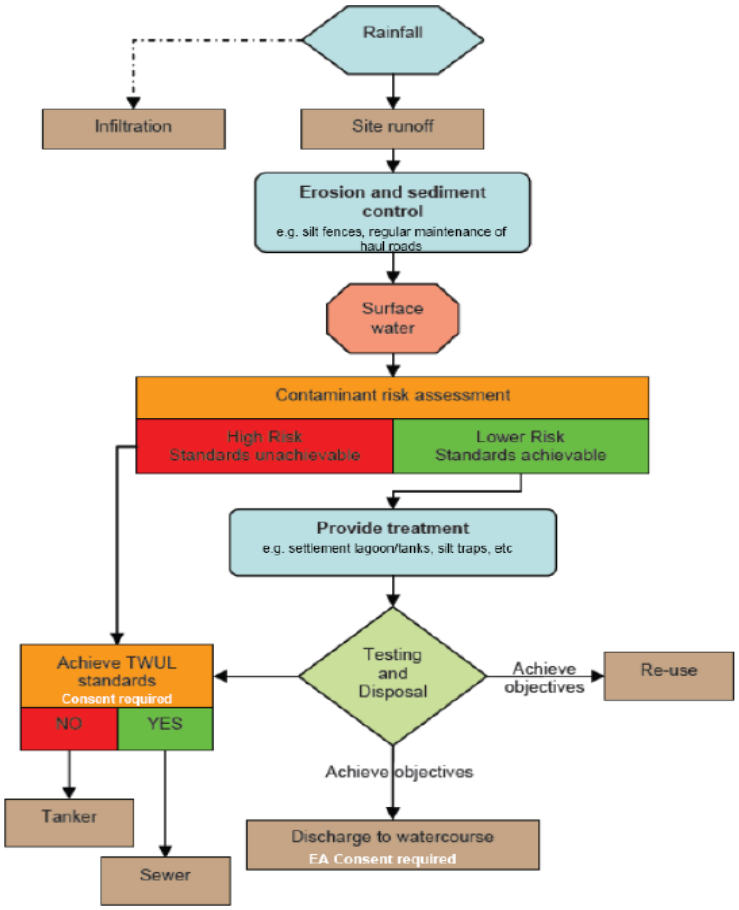

Figure 5.1 Flow diagram showing options for disposal of surface water

5.3 Flood risk

The Olympic Park has developed a Flood Risk Compliance Procedure (CLM-D0701-PRO-FRCP Rev 2.0) which requests information about the construction/transformation activities within the areas with risk of flooding on a quarterly basis.

The information provided by BB will be included in the LLDC Flood Risk Model which is prepared by Buro Happold (on behalf of LLDC) and presented to the Environment Agency for approval.

LLDC and the Environment Agency are responsible for reviewing and informing the designers and contractors on site-wide flood risk management issues.

The project is receiving email alerts from the Environment Agency and it is liaising with Canal & River Trust on regular basis when works are taking place in the areas with high risk of flooding.

All equipment will be removed from the areas with potential flooding at the end of the shift unless agreed with EA/ Canal & River Trust.

6 Consents and licences

Under the Water Resources Act 1991 (consent to discharge to surface/groundwater) no discharge to watercourses is permitted without consent from the Environment Agency and consents from the EA and Canal & River Trust should be obtained for the construction works within 16 metres of a main watercourse and flood defence.

The Stadium Transformation Project is not within 16 metres of the any watercourse and therefore does not require consent.

6.1 Making an application for a consent

If applicable, the Project Environmental Manager will gather information for the application of consents. Applications and adequate supporting information will be given to the Project Director allowing for discussions with the Environment Agency/Canal & River Trust before work starts on site.

6.2 Licence to discharge to sewer

Thames Water Utility Company owns the local sewer systems. The Stadium Transformation Project does not forecast the need to discharge to sewer.

6.3 Abstraction Licence of surface water/groundwater

Water of suitable quality shall be recycled on site where possible for use in the works and for dust suppression.
Water will not be abstracted from any surface water or groundwater without the appropriate written authorisation from the EA, which will be applied for by the Project Environmental Manager. It is not envisaged that there is a need to abstract surface or ground water for the transformation works.

6.4 Sewage Effluent

All sewage will be disposed of to foul sewer with consent from the Thames Water Utility Company or will be disposed off site at an approved disposal site. LLDC has confirmed that the exiting discharge for foul waste from the project offices and welfare is live.

7 Monitoring Programme

The Project Environmental Manager and the construction teams will carry out visual inspections of the watercourses and record on the weekly Watercourse Inspection Form.

APPENDIX A: Water protection measures

GENERAL MEASURES

The following measures shall be used in order to protect water in and around the site:

- Do not use equipment or vehicles near watercourse without written agreement from the Environmental Manager and/or the Environment Agency. BB will submit detailed method statements for approval for the works which require EA/Canal & River Trust consent;
- Use appropriate drip trays under static plant;
- Provide, manage and clearly mark with signs all areas designated for storage of potentially polluting substances, products and materials, including the generic name(s) of substances/products/materials stored;
- Provide, manage and clearly mark with signs all waste management receptacles and designated waste areas;
- Keep all signs and notices clear and legible and maintain free access to facilities on site;
- Ensure that equipment and materials which would be liable to float away (in flood conditions) and potentially polluting substances, products and materials (including soils, sand and aggregates) are not stored within areas at risk from foreseeable flooding nor within 10m horizontally distance from any surface watercourse or drain;
- Ensure all facilities or equipment in which potentially polluting substances are stored or used are located as far away as reasonably practicable from any watercourse or drain;
- Minimise disturbance to aquatic dependent environments (including surface waters, wetlands/marshes and groundwater protection zones) and biota (including fisheries)'
- Maintain construction site free from spills of potentially polluting liquids including oils, water soluble substances and non-soluble fine particulate materials (i.e. empty and leaking oil drums, bunds, refuelling areas, containers and used spill kits);
- Ensure that the appropriate spill kit is available in each construction area; and
- Any light material which could be blown into the watercourse will be secured.

MEASURES RELATING TO STRUCTURES

The Construction Team (with advice from the H&S Manager) will be responsible for:

- Installing and maintaining adequate and appropriate protection measures for preventing pollution of any watercourse (e.g. installation of settlement tanks prior to discharge)

HANDLING, STORAGE AND USE OF POTENTIALLY POLLUTING SUBSTANCES, PRODUCTS AND MATERIALS

The Construction Team (with advice from the Environmental Department) will be responsible for:

- Keeping the use of substances, products and materials which have, either directly or indirectly, the potential to pollute water, to the minimum necessary for the operations;
- Not storing fuel or oil within areas classified under the Environment Agency's Groundwater Protection Policy as Zone I or those classified as Zone II unless otherwise agreed with the Project Manager and the Environment Agency; We are not expecting to work in these protective zones.
- Unless otherwise agreed with the Project Manager and the Environment Agency, not undertaking refuelling operations within areas classified as Zone I under the Environment Agency's Groundwater Protection Policy;
- Undertaking refuelling and servicing of equipment remote from any watercourse or drain;

- Ensuring that fuel delivery systems fitted to mobile fuel bowsers and static fuel tanks have automatic shut-off 'pistol grip' type nozzles and lockable flow controls which shall be locked when not in use;

- Ensuring that mobile fuel bowsers are located away from watercourses and drains (at least 50 metres);

- Securing fuel bowsers and stores against vandalism when not in use;

- Ensuring that bulk stores (including static tanks and drum stores) of potentially polluting liquids (including fuel, oils and chemicals such as concrete accelerator and other curing agents, organic solvents, water proofing and sealing agents), and associated pipework and valves are sited on an impervious base surrounded by an impervious bund capable of holding 110% of the largest container or 25% of the total capacity of all tanks whichever is the greater;

- Ensuring tanks that cover pipework, valves and bunds are designed, constructed and maintained in accordance with relevant published best practice guidance and standards. All bunds shall be tested to ensure adequate holding capacity and structural integrity, bunds failing this initial test shall not be used. The Project Environmental Manager shall maintain an up to date record of all bunds (not including drip trays) to indicate design, construction, and test results – see EA guidance PPG 2 - Above Ground Oil Storage Tanks

- Ensuring that all drums and containers of potential polluting liquids taken from bulk stores for use on site are stored within impervious bunds and are not at risk from moving plant and vehicles;

- Ensuring that all storage tanks, drums and associated pipework and valves are as far as practicable secured from vandalism when unattended;

- Providing adequate drip trays for all unbunded static combustion engine plants;

- Maintaining a written inventory of all potentially polluting liquids and water soluble materials stored and used on site. This inventory shall include, but shall not necessarily be limited to,

- Substances which come under COSHH. Where such substances, products and materials are used careful stock control shall be applied;

- Inspecting all areas where potentially polluting liquids and water soluble materials are stored in mobile fuel bowsers. Maintenance to maintain integrity and capacities of bunds and drip trays shall be carried out;

- Maintaining all plant in good condition, checking on delivery to site and inspected on regular basis to prevent oil leaks;

- Disposing of all waste water collected from bunded areas and drip trays in the proper manner in accordance with legislative requirements and relevant best practice guidance;

- Immediately removing from the site and disposing of in the proper manner, leaking or empty fuel or oil drums or chemical containers in accordance with legislative requirements and relevant best practice guidance and

- Maintaining clearly marked spill clearance kits with adequate quantities or appropriate absorbent materials (including booms, granules and matting) at each location where potentially polluting liquids are stored and handled

DRAINAGE AND DISCHARGE/DISPOSAL OF WATER

The Construction Team (with advice from the HSEQ Department and Logistics Team) will:

Hard Paved Areas

- Design, provide and maintain adequate drainage for all hardstanding areas so that any runoff collected cannot flow onto adjacent unpaved areas or directly to surface watercourse or drain;

- Provide and maintain impermeable hardstanding and drainage for: unbunded areas on which static bunded fuel and oil storage tanks are located (including designated apron areas for mobile plant fuelling and tank refilling operations); designated car parking areas; areas incorporating bulk drum (fuels, oils and chemicals) storage areas designated batching and mixing areas and all areas used for vehicle/plant/equipment maintenance and washing;

- Ensure that all water collected by drainage systems provided for hard standing areas is treated. Discharge Consent/Licence needed where draining to controlled waters or sewage infrastructure;

- Ensure that drainage from any impervious area used for refuelling is passed, following suspended solids removal, through a settlement tank prior to discharge under Discharge Consent/Licence;

- Ensure that all oil separators are designed, constructed, installed and maintained in accordance with published best practice guidance and standards

Unpaved areas

- Follow all published best practice guidance for drainage and prevention of silt pollution
- Provide an adequate temporary drainage system for runoff from unpaved Site areas;
- Design and provide prior to any top soil stripping, and maintain as the works progress adequate measures to prevent pollution of surface watercourses and drains by suspended solids.

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London Legacy Development Corporation
Olympic Stadium Transformation Project

EMERGENCY PREPAREDNESS AND RESPONSE PROCEDURE

LC419-STA-STA-J-PLN-0015-P03

Issue and Revision Record

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P01	18/02/14	[redacted]	[redacted]	[redacted]	FA
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P03	31/03/14	[redacted]	[redacted]	[redacted]	FA

Balfour Beatty

CONTENT

Balfour Beatty

1 Introduction

This procedure has the intention to describe the requirements to deal with any unexpected environmental incidents that occur over the duration of the project in such a way that the risk of pollution is minimised and that the necessary measures are implemented quickly, efficiently, effectively and in accordance with the relevant legislation.
Also this procedure will describe the lines of reporting an environmental incident and investigation procedures in order to prevent recurrence.

2 Abbreviations

PICT	Pollution Incident Control Team
EM	Environmental Manager
BB	Balfour Beatty
LLDC	London Legacy Development Corporation
SHE Team	Balfour Beatty Health, Safety and Environment Team

3 Definitions

Pollution -harmful impact on the local atmospheric, aquatic or land environment caused by release of hazardous or nuisance - causing substances; excessive noise & vibration

Accidental pollution - where an accident results in sudden pollution Environmental incident any event, activity or condition that causes, could have caused, or has the potential to cause harm to people, damage to the environment

Consent infringement - where the limits (of potential pollution) set as conditions of consents or licences are exceeded or where methods of operation are not in accordance with procedures or conditions set by the regulatory authority

Non compliance - any event, activity or condition that does not comply with the Project Environmental Management Plan

4 Classification of an environmental incident

The incident severity is categorised as:

- **Environmental near miss** - no incident has occurred, but a failing in the management system has caused a near-miss event, or a condition that if left unattended could lead to an incident
- **Minor environmental incident (category 3) -** An environmental incident capable of being resolved by immediate action on a localised scale by those present at or near the incident.
- **Intermediate environmental incident (category 2) -** An environmental incident requiring the mobilisation of resources from outside the work-site.
- **Major environmental incident (category 1) -** An environmental incident involving the assistance of external emergency services and/or regulatory authorities.

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Examples of environmental incidents:

Pollution of the atmosphere:

- exhaust emissions, fumes and/or dust released by static or mobile plant or vehicles;
- dust created by the movement of traffic on haul roads, access roads, hardstandings or public highways; and
- windblown dust from the works or from mud deposited on highways and footways.

Pollution of surface and groundwater

- Oil spillage or escape of poisonous, noxious or potentially polluting liquids, solids and gasses that could enter controlled waters (Waterworks River and groundwater) directly or via surface water drainage systems.

Pollution of Thames Water sewers

- discharge of poisonous, noxious or potentially polluting liquids or solids, for which consent has not been granted, into the sewerage undertaker's sewers.

Pollution of the ground

- spillage or escape of poisonous, noxious or potentially polluting liquids or solids directly or indirectly onto the ground anywhere on the site, adjacent land, haul roads, access roads, hardstandings or public highways.

Noise pollution

- breach of the conditions of a Section 61 consent granted by London Borough of Newham in respect of noise levels, methods of working or working hours; and
- If work is undertaken without consent under Air Pollution Act 1974 (Section 61 Consent) from the local authority prior commencement of the construction activities this may result in noise pollution. This incident might be a Consent Infringement (see paragraph 2. Definitions).

The effect of any of the incidents mentioned above could result in pollution of the natural environment and the non-compliance may result in breaches of environmental legislation.

5 Roles and responsibilities

5.1 General

In all cases, responsibility for immediate action shall lie with the person discovering the incident, the Incident Reporter.
Minor Incidents shall be dealt with by the Incident Reporter and Supervisor. The Supervisor of the works shall report details of the Incident to the EM for recording on Yellow Jacket.
Serious incidents shall be dealt with by the Pollution Control Team as appropriate in accordance with this procedure.
The SHE Team shall report the environmental incident via Yellow Jacket.

All incidents shall be entered into Yellow Jacket.

5.2 Pollution Incident Control Team

In the event of a pollution incident occurring on site, a member of the Pollution Incident Control Team (PICT) will be called upon to implement immediate remediation works.
Each Construction Team should have a representative in the PICT and his/her details (name, job title, tel no) should be included in all relevant documents and site posters.
The PICT will report the incidents to the Project Environmental Manager for entry into Yellow Jacket.
A register of the Pollution Incident Control Team will be developed by the SHE Team and displayed on the site notice board.

The register will contain:

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- details of the names and roles of the PICT members and their contact telephone numbers;
- names and contact telephone numbers of external parties; and
- details of the locations of spill kit equipment will also be included.

The main incident document controller is:

- [redacted]
- [redacted]

There are two deputy incident controllers:

- [redacted]
- [redacted]

6 Management of pollution incident

6.1 How to respond to an environmental incident

The Environmental Manager will put in place local procedures for dealing with all environmental incidents. The project will have a Pollution Incident Control Team which can be contacted in the event of an environmental incident.

In Appendix 1 (Pollution Incident Control Sheets) there is simple guidance on the immediate action to be taken in the event of pollution resulting from a pollution incident.
According to the severity and type of the incident there are some instructions on how, those involved in the management and supervision of construction activities, to respond to the environmental incident.
Correct and prompt action will reduce the impact of an incident but the best defence is to prevent the incident occurring in the first place.
In any emergency situation the safety of the public, third parties, and persons working on the Project is of prime importance and first consideration must be given to their safety. Unnecessary personal risks should not be taken.
For effective response contact details of the Pollution Incident Control Team and relevant emergency/regulatory bodies will be included in the Pollution Incident Control Sheets and displayed on the site notice boards.

6.2 Notification of environmental incidents

The project team will verbally notify all environmental incidents to the Project Environmental Manager immediately.
The Project Manager/Deputy Project Director will notify other interested parties as required in the contract and in accordance with the company procedures via a First Alert, followed up with an investigation via the Balfour Beatty Incident Reporting form.

The Environmental Manager shall report the environmental incident via Yellow Jacket.

6.3 Arrangements for statutory notification

The Project Manager will, following consultation with the HSEQ Team and Environmental Manager, notify the appropriate regulatory authority of environmental incidents where this is required by legislation and/or the Contract.
The Project Manager will make suitable and adequate arrangements for notification of pollution incidents to the Environmental Agency during and out of working hours. All communications with the regulatory authorities relating to the environmental incidents will be recorded.

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Emergency Services	Number
Park wide emergency services	0300 2012222
Environment Agency	0800 80 70 60
Rob Harding – Olympic Development Project Officer Mike Poole – Asset System Management Officer	[redacted]
Canal & River Trust Steven Ellis (steven.ellis@canalrivertrust.org.uk)	[redacted]

6.4 Provision and use of emergency spill kits

Taking account of the Environmental Aspects and Impacts Register, the Environmental Manager will determine the location (static and mobile), quantity and type of emergency kits. As a minimum, emergency kits of oil absorbent granules or pads will be kept at or be readily accessible at the following relevant static or mobile locations and facilities:

- stores and workshops;
- manned security cabins;
- worksites at or adjacent to watercourses;
- static or mobile fuelling facilities; and
- plant maintenance facilities (including mobile units).

Oil booms will be provided at worksites adjacent to watercourses and in mobile units likely to be in the proximity of such locations.
The Environmental Manager will ensure that environmental emergency equipment is appropriately located and maintained. The EM will prepare a minimum stock list and operate a stores procedure to control the issue of equipment and consumables and, track the proper disposal of contaminated material used in clean up operations.
All staff have a responsibility to identify and, wherever possible control and limit the adverse effect of environmental incidents utilising the emergency equipment provided. Where emergency equipment is provided the workforce will be trained in the appropriate use of environmental emergency equipment such as booms and spill kits.
The Environmental Manager will agree with subcontractors, responsibility for the provision of emergency equipment and spill kits and disposal of waste.
The Environmental Manager will ensure that all used spill kits and any residual contaminated ground is legally and safely disposed.
The project team will undertake spill drills as a training exercise to ensure they are dealt with correctly. This will be undertaken by an external specialist.

6.5 Out of hours

The Project Manager will make appropriate arrangements for callout personnel to investigate and take control of out of hours environmental incidents.
Callout personnel will be provided with details of duty staff, including subcontractors' staff, and who to contact, including emergency services, in the event of an environmental incident.

6.6 Flood and severe weather warnings

The BB transformation zone is in an area of low flood risk. The LLDC has developed a Flood Risk Compliance Procedure for the Olympic Park which is updated quarterly.

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In the event of flood warnings BB will take appropriate actions such as removing plant and potentially polluting materials from the working areas adjacent to Waterworks River.

The Environment Agency Floodline is 0845 988 1188

7 Training

Training in how to respond in the event of an environmental incident will be given to the relevant site personnel (e.g. Health & Safety Manager, Environmental Manager, Pollution Incident Control Team, Supervisors, Contractors).

This will include:

- familiarisation with the sensitive areas of the site (e.g. location of drains, Waterworks River);
- procedures to be followed in the event of a spillage;
- specialist training on the use of spillage control materials will be provided for the pollution incident control team(s) by the equipment manufacturers;
- training on the disposal of spent spill-kit products, in accordance with the Site Waste Management Plan; and
- procedures for the notification of pollution incidents.

Instructions will be given to security staff on how to identify potential pollution hazards and how to effectively and speedily deal with environmental incidents.
The SHE Team will ensure that appropriate environmental toolbox talks on dealing with pollution incidents are regularly delivered to the directly employed and subcontract workforce.

8 Planned Testing of Emergency Procedures

Emergency procedures must be planned and tested periodically but a real incident will be counted as a test of the procedure and recorded.

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Appendix 1 Pollution Incident Control Sheet

Pollution of ground (including adjacent to watercourses)

Pollutant	Action Incident		
	Minor	**Intermediate**	**Major**
Fuel oil, petrol, etc 	Isolate source. Contain spill. Use absorbent material. Take fire precautions. Prevent from entering drains and watercourses. Remove all contamination as soon as possible. Report to the **Environment Team**.	Isolate source. Contain spill. Use absorbent material. Take fire precautions. Prevent from entering drains and watercourses. Call for assistance from **POLLUTION INCIDENT CONTROL TEAM** Remove all contamination as soon as possible. Report to **SHE Team**	Isolate source & contain spill. Use absorbent material and/or create bund. Take fire precautions. Prevent from entering drains and watercourses. Call for assistance from **POLLUTION INCIDENT CONTROL TEAM** Alert the Park Wide emergency services. Report to **SHE Team** immediately. Remove all contamination as soon as possible. The **SHE Team** to notify the Ecologist, Company Environmental Manager and EA if serious threat to watercourses and sewerage/drainage company.
Concrete & cementitious materials. 	Prevent from entering drains and watercourses. Remove when hardened. Report to the **Environment Team**.	Prevent from entering drains and watercourses. Call for assistance from **POLLUTION INCIDENT CONTROL TEAM** Report to **SHE Team** Remove when hardened.	Only likely to be a Major Incident if material enters drains or watercourse. Call for assistance from **POLLUTION INCIDENT CONTROL TEAM** Remove or contain spill if practical. Report to **SHE Team** immediately. **SHE Team** to notify the Ecologist, Company Environmental Manager and EA if serious threat to watercourses and sewerage/drainage company if serious threat to drains. Remove when hardened.
Cement & powders. 	Isolate source. Contain spill. Prevent from entering drains and watercourses. Remove all contamination as soon as possible. Report to the **Environment Team**.	Isolate source. Contain spill. Prevent from entering drains and watercourses. Dampen down cement if danger of windblown pollution. For other powders follow COSHH data recommendations. Call for assistance from **POLLUTION INCIDENT CONTROL TEAM** Report to **SHE Team** Remove all contamination as soon as possible.	Isolate source and contain spill. Prevent from entering drains and watercourses. Dampen down cement if danger of windblown pollution. For other powders follow COSHH recommendations. Call for assistance from **POLLUTION INCIDENT CONTROL TEAM** Report to **SHE Team** immediately. **SHE Team** to notify the Ecologist, Company Environmental Manager and EA if serious threat to watercourses or sewerage/drainage company if serious threat to drains. Notify Park Wide emergency services if hazardous. Remove all contamination as soon as possible.
Paint, primers, solvents and other chemicals. 	Isolate source. Contain spill. Prevent from entering drains and watercourses. Remove all contamination as soon as possible. Report to the **Environment Team**.	Isolate source. Contain spill. Prevent from entering drains and watercourses. Follow COSHH recommendations. Call for assistance from **POLLUTION INCIDENT CONTROL TEAM** Report to **SHE Team**. Remove all contamination as soon as possible.	Isolate source and contain spill. Prevent from entering drains and watercourses. Follow COSHH recommendations. Call for assistance from **POLLUTION INCIDENT CONTROL TEAM** Report to **SHE Team** immediately. **SHE Team** to the Ecologist, Company Environmental Manager and EA if serious threat to watercourses or sewerage/drainage company if serious threat to drains. Notify Park Wide emergency services. Remove all contamination as soon as possible.

EMERGENCY CONTACTS	
Normal working hours: H&S Manager – [redacted] Environmental Manager – [redacted]	**Outside working hours** Park wide Emergency no: 0300 2012222

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Accidental Discharge to Surface Water Drain

Pollutant	Action Incident		
	Minor	**Intermediate**	**Major**
Fuel oil, petrol, other oils and fluids including water contaminated with chemicals, oils and suspended solids. 	Stop discharge or if not possible, divert to a safe temporary storage area (sump or bunded lagoon). Locate point of discharge of drain to river or stream and deploy boom and/or sediment mats if necessary. Report to immediately supervisor. Do not recommence discharge until authorised by the **SHE Team**.	Stop discharge or if not possible, divert to a safe temporary storage area (sump or bunded lagoon). Call for assistance from **POLLUTION INCIDENT CONTROL TEAM** Isolate manhole or length of pipe if practical. Locate point of discharge of drain to river or stream and deploy boom and/or sediment mats if necessary. Report to **SHE Team** immediately. **SHE Team** to alert EA & drainage company if necessary. Do not recommence discharge until authorised by the **SHE Team** Clean up any temporary containment areas.	Stop discharge or if not possible, divert to a safe temporary storage area (sump or bunded lagoon). Take fire precautions. Call for assistance from **POLLUTION INCIDENT CONTROL TEAM** Isolate manhole or length of pipe. Locate point of discharge of drain to river or stream and deploy boom and/or sediment mats if necessary. Report to **SHE Team** immediately. **SHE Team** to alert and co-ordinate actions with EA & drainage company and. if necessary, the police and the Ecologist. Do not recommence discharge until authorised by the **SHE Team** Clean up any temporary containment areas.
Water with suspended solids only (i.e. no chemical contamination). 	Stop discharge or if not possible, divert to a safe temporary settling area. Locate point of discharge of drain to river or stream and deploy sediment mats or similar. Report to immediate supervisor. Do not recommence discharge until authorised by the **SHE Team**.	Stop discharge or if not possible, divert to a safe temporary settling area. Call for assistance from **POLLUTION INCIDENT CONTROL TEAM** Locate point of discharge of drain to river or stream and deploy sediment mats or similar. Report to **SHE Team** immediately. **SHE Team** to alert EA & drainage company if necessary. Do not recommence discharge until authorised by the **SHE Team** Clean up any temporary settling areas.	Stop discharge or if not possible, divert to a safe temporary settling area. Call for assistance from **POLLUTION INCIDENT CONTROL TEAM** Locate point of discharge of drain to river or stream and deploy sediment mats or similar. Report to **SHE Team** immediately. **SHE Team** to alert and co-ordinate actions with EA & drainage company and if necessary, the Ecologist. Do not recommence discharge until authorised by the **SHE Team** Clean up any temp settling areas.

EMERGENCY CONTACTS	
Normal working hours: H&S Manager – [redacted] Environmental Manager – [redacted]	**Outside working hours** Park wide Emergency no: 0300 2012222

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Accidental Discharge to Foul Water Sewer

Pollutant	Action		
	Incident		
	Minor	Intermediate	Major
Water with suspended solids only (i.e. no chemical contamination). 	Stop discharge or if not possible, divert to a safe temporary settling area. Report to immediate supervisor. Do not recommence discharge until authorised by the **SHE Team**.	Stop discharge or if not possible, divert to a safe temporary settling area. Call for assistance from **POLLUTION INCIDENT CONTROL TEAM** Report to **SHE Team** immediately. **SHE Team** to alert sewerage company. Do not recommence discharge until authorised by the **SHE Team**. Clean up any temporary settling areas.	Stop discharge or if not possible, divert to a safe temporary settling area. Call for assistance from **POLLUTION INCIDENT CONTROL TEAM** Report to **SHE Team** immediately. **SHE Team** to alert and co-ordinate actions with sewerage company. Do not recommence discharge until authorised by the **SHE Team** Clean up any temporary settling areas.
Fuel oil, petrol, other oils and fluids including water contaminated with chemicals, oils and suspended solids. 	Stop discharge or if not possible, divert to a safe temporary storage area (sump or bunded lagoon). Report to immediate supervisor. Do not recommence discharge until authorised by the **SHE Team**.	Stop discharge or if not possible, divert to a safe temporary storage area (sump or bunded lagoon). Call for assistance from **POLLUTION INCIDENT CONTROL TEAM** Isolate manhole or length of pipe if practical. Report to **SHE Team** immediately. **SHE Team** to alert sewerage company. Do not recommence discharge until authorised by the **SHE Team**. Clean up any temporary containment areas.	Stop discharge or if not possible, divert to a safe temporary storage area (sump or bunded lagoon). Take fire precautions. Call for assistance from **POLLUTION INCIDENT CONTROL TEAM** Isolate manhole or length of pipe if practical. Report to **SHE Team** immediately. **SHE Team** to alert and co-ordinate actions with sewerage company. Do not recommence discharge until authorised by the **SHE Team** Clean up any temporary containment areas.

EMERGENCY CONTACTS	
Normal working hours: H&S Manager – [redacted] Environmental Manager – [redacted]	**Outside working hours** Park wide Emergency no: 0300 2012222

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Pollution of watercourses (accidental spill or discharge)

Pollutant	Action Incident Minor	Intermediate	Major
Fuel oil, petrol, other oils, liquid chemicals and fluids. 	Isolate source and divert spill away from water. Deploy boom to contain floating pollutants. Use granules sand or pads if spill on adjacent ground. Take fire precautions. Follow COSHH recommendations. Notify immediate supervisor. Remove all contamination from area adjacent to the watercourse as soon as possible. Report to **POLLUTION INCIDENT CONTROL TEAM**	Isolate source and divert spill away from water. Deploy boom to contain floating pollutants. Use granules sand or pads if spill on adjacent ground. Take fire precautions. Follow COSHH recommendations. Call for assistance from **POLLUTION INCIDENT CONTROL TEAM** Report to **SHE Team**. **Environmental Manager** to notify EA and if necessary, the Ecologist. Remove all contamination from area adjacent to river as soon as possible.	Isolate source and divert spill away from water. Deploy boom to contain floating pollutants. Use granules sand or pads if spill on adjacent ground. Take fire precautions. Follow COSHH recommendations. Call for assistance from **POLLUTION INCIDENT CONTROL TEAM** Alert police (if hazardous). Report to **SHE Team** immediately. **SHE Team** to notify EA, Ecologist. & Co. Env Manager. Remove all contamination from area adjacent to river as soon as possible.
Solid contaminants including contaminated soils. 	Isolate source. Deploy boom to contain floating pollutants. Remove solid pollutants if possible. Report to and **POLLUTION INCIDENT CONTROL TEAM** Report to immediate supervisor. Follow COSHH recommendations. Remove all contamination from area adjacent to river as soon as possible.	Isolate source. Deploy boom to contain floating pollutants. Remove solid pollutants if possible. Follow COSHH recommendations. Call for assistance from **POLLUTION INCIDENT CONTROL TEAM** Report to **SHE Team**. Remove all contamination from area adjacent to river as soon as possible.	Isolate source. Use boom to contain floating pollutant and straw bales or similar to contain solids. Remove solid pollutants if possible. Follow COSHH recommendations. Call for assistance from: **POLLUTION INCIDENT CONTROL TEAM** Alert police (if hazardous). Report to **SHE Team** immediately. **SHE Team** to notify EA, Ecologist & Co. Env Manager. Remove all contamination from area adjacent to river as soon as possible.
Concrete cement or other cementitious material.	Isolate source. Remove solid pollutants if possible without spreading cement. Report to **POLLUTION INCIDENT CONTROL TEAM** Report to immediate supervisor. Remove all contamination from area adjacent to river when hardened.	Isolate source. Remove solid pollutants if possible without spreading cement or use straw bales or similar to contain solids. Call for assistance from: **POLLUTION INCIDENT CONTROL TEAM** Report to **SHE Team**. **SHE Team** to notify EA, and Ecologist. Remove all contamination from area adjacent to river when hardened.	Isolate source. Remove solid pollutants if possible without spreading cement or use straw bales or similar to contain solids. Call for assistance from **POLLUTION INCIDENT CONTROL TEAM** Report to **SHE Team** immediately. **SHE Team** to notify EA, Ecologist and Co. Env Manager. Remove all contamination from area adjacent to river when hardened.
Chemical powders (other than cement).	Isolate source. Remove solid pollutants if possible without spreading chemical. Follow COSHH recommendations. Report to **POLLUTION INCIDENT CONTROL TEAM** Report to immediate supervisor. Remove all contamination from area adjacent to river.	Isolate source. Remove solid pollutants if possible without spreading chemical, or use straw bales or similar to contain solids. Call for assistance from **POLLUTION INCIDENT CONTROL TEAM** Report to **SHE Team** immediately. **SHE Team** to notify EA, and Ecologist. Remove all contamination from area adjacent to river.	Isolate source. Remove solid pollutants if possible without spreading chemical, or use straw bales or similar to contain solids. Call for assistance from **POLLUTION INCIDENT CONTROL TEAM** Alert police (if hazardous). Report to **SHE Team** immediately. **SHE Team** to notify EA, Ecologist and Co. Env Manager. Remove all contamination from area adjacent to river.

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Suspended solids (in runoff from construction activities). 	Divert source to a settling or filtering area (vegetation or gravel) if possible. Intercept flow or create a dam with sandbags, straw bales or sediment mats. Deploy boom to contain floating pollutants if mixed with runoff. Report to **POLLUTION INCIDENT CONTROL TEAM** Report to immediate supervisor. Remove sediment retained by dam as soon as possible.	Divert source to a settling or filtering area if possible. Intercept flow or create a dam with sandbags, straw bales or sediment mats. Deploy boom to contain floating pollutants if mixed with runoff. Call for assistance from **POLLUTION INCIDENT CONTROL TEAM** Report to **SHE Team** immediately. Remove sediment retained by dam as soon as possible. Treat retained water by settlement or flocculent and discharge clean water as soon as possible.	Divert source to a settling or filtering area if possible. Intercept flow or create a dam with sandbags, straw bales or sediment mats. Deploy boom to contain floating pollutants if mixed with runoff. Call for assistance from **POLLUTION INCIDENT CONTROL TEAM** Report to **SHE Team** immediately. **SHE Team** to notify EA, Ecologist and Co. Env Manager. Remove sediment retained by dam as soon as possible. Treat retained water by settlement or flocculent and discharge clean water as soon as possible.

EMERGENCY CONTACTS	
Normal working hours: H&S Manager – [redacted] Environmental Manager – [redacted]	**Outside working hours** Park wide Emergency no: 0300 2012222

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Appendix B Environmental Incident Form

ENVIRONMENTAL INCIDENT FORM

PROJECT:	**CONTRACT No.**
COMPLETED BY:	**DATE:**

TYPE OF INCIDENT				
SPILL	DISCHARGE	EMISSION	WASTE EVENT	DISTURBANCE

DETAILS OF INCIDENT			
LOCATION:			
DATE:		TIME:	
DESCRIPTION (include details of activity before incident & resultant effects)			

ACTION TAKEN (include immediate, remedial & any disposal measures)

PREVENTATIVE MEASURES		
PROPOSED ACTION	ACTION BY	DATE ACTIONED

ENVIRONMENTAL MANAGER / ADVISOR APPRAISAL (for all significant & major incidents)	
COMMENTS:	
ADDITIONAL ACTIONS:	
SIGNED:	DATE ACCEPTED:

London Legacy Development Corporation
Olympic Transformation Project

ECOLOGY MANAGEMENT PLAN

LC419-STA-STA-J-PLN-0014-P03

Issue and Revision Record

Rev	Date	**Originator** (Print) (Signature)	**Checker** (Print) (Signature)	**Approver** (Print) (Signature)	**Description**
P01	18/02/14	[redacted]	[redacted]	[redacted]	FD
P02	17/03/14	[redacted]	[redacted]	[redacted]	FD
P03	31/03/14	[redacted]	[redacted]	[redacted]	FD

CONTENT

Introduction

This document is the Ecology Management Plan for Olympic Transformation Project, which Balfour Beatty has developed to monitor the impact of the construction works on ecological matters and will implement as part of its project management system and contract requirements.
It details the requirements to maintain and implement environmental control procedures for the protection of ecological resources in line with all relevant legal requirements and in accordance with the:

- LLDC Environment Statement (ES) for the Olympic Park Legacy Transformation;
- LLDC Biodiversity Action Plan (BAP);
- LLDC Sustainable Development Strategy;
- Code of Construction Practice (CoCP);
- Design and Construction Health, Safety and Environment Standard; and
- LLDC Ecology Management Plan.

1 Project Overview

The construction phase Stadium Team put protection measures in place to protect the natural resources in the Stadium worksite PDZ3. These areas will be checked to ensure they are clearly demarcated in the field before the transformation construction activities are permitted to commence. The demarcation will comprise of twin post rail fencing with appropriate signage for habitat retention which will be maintained by Balfour Beatty.

BB will take all reasonable measures to mitigate the environmental impact generated by the construction works onto the natural resources.
The access and egress routes for the project will be agreed with LLDC to make sure that the haul routes are as far as practicable away from the protected areas minimising the impact on the existing habitat.

These routes are detailed in the Project's Construction Traffic Management Plan.

2 Potential Impacts related to transformation construction activities

The stadium transformation construction activities that have the potential to affect the existing natural resources which should be retained and managed during the project are listed below.

Table 2: Potential Impacts related to transformation construction activities

Activity	**Types of machinery**	**Potential Effects on Natural Resources**
Delivery vehicles	Lorries	Disturbance of species, habitat loss Contaminants migrating into the river
Storage and Control of Substances Hazardous to Health (COSHH)	N/A	Habitat loss
Storage of Construction Materials	N/A	Covering of habitat, species displacement and disturbance
Works Near to a Watercourse	As above	Sediment transport, sediment runoff; disturbance to bats.

3 Protection and mitigation measures

3.1 General Provisions and Requirements

There are no protected habitats and species identified within the stadium construction zones.

Prior to starting any works on site, all safeguarded habitats, vegetation, protected trees, and invasive species were identified and demarcated by Careys (Letter ref: 133230/JDT dated 2 September 2013. Report LC417-STA-STA-ES-REP-0001).

During stadium transformation construction works watching briefs will be carried out to ensure that all stadium transformation activities follow explicit guidelines to avoid impacts to the listed species and designated habitats that were identified during the site walk over.

Appropriate ***Best Practicable Means (BPMs)*** will be applied in all construction areas to include:

• All site traffic will be restricted to established roads, construction areas, and other designated areas and will observe the appropriate speed limit for the area (between 10 and 20 mph);
• All employees handling fuels and other hazardous materials will be properly trained to minimise the environmental incidents;
• All equipment will be in good operating order and inspected on a regular basis by the construction team in line with standard procedures;
• Fuel trucks transporting fuel to on-site equipment will travel only on approved access roads and appropriate spill kit should be carried at all times;
• All equipment will be parked overnight and/or fuelled at least 30 metres from a water body or other designated protected habitat;
• Hazardous materials, including chemicals, fuels, and lubricating oils, will not be stored within 30 metres of a wetland or water body (Waterworks River);
• Erosion protection measures will be used to preclude runoff water carrying sediments into nearby streams. These measures may include temporary lagoons, tanks, bunds, and silt fences or silt screens. Specific measures will be detailed in the construction Method Statements;
• Dust control measures will be used during stadium transformation works to minimize impacts to sensitive receptors and the environment in line with Dust and Air Pollution Guidance (doc no. 6001-AQC-ARE-YE-GUI-0001). These will include measures in the Best Practice Guidance "The Control of Dust and Emissions from Construction and Demolition" published by the GLA and London Councils in November 2006;
• Refuelling and storage areas shall be contained within a bunded compound;
• Drip trays shall be put in place where there is the possibility that chemicals, fuels, and lubricating oils could escape from plant equipment and vehicles. They shall be adequate in size and inspected regularly;
• The *Pollution Incident Control Plan* shall reference and identify the actions required if the pollution incident could affect a site of nature conservation interest; and
• Appropriate spill kits should be placed at each construction site to make sure that each construction team has to hand sufficient supplies of absorbent and barrier materials to allow the rapid containment and recovery of spilled materials. Teams will be briefed on the procedure for dealing with and reporting spills. Specific measures will be detailed in the construction Method Statement.

3.2 Watching Brief

Watching briefs should be undertaken during all activities that have potential to have negative impacts on ecological areas, habitats, or species of importance, activities in or around watercourses that might result in direct or indirect releases of sediments or wastes into surface waters.
The Project Environmental Manager is responsible for planning and coordinating these during the project and may seek advice from the BB Ecologist if necessary.
During the watching brief the BB Ecologist may provide advice and contingency measures for new and unexpected ecological issues as they arise. The BB Ecologist may also stop work if there are discoveries that are observed, such as an active nest or other habitat or species that should not be

disturbed by the construction activities and seek additional advice if necessary on methods to mitigate the discovery of feasible. The work can not start without the approval of the ecologist or the Project Environmental Manager.

3.3 Discovery of Protected Species

In the event of the discovery of protected species the work must be stopped immediately in the vicinity of the discovery and the Construction Teams, the Project Environmental Manager, LLDC Ecologist and the BB Ecologist are to be informed immediately. As advised by the BB Ecologist, adequate control measures will be implemented. Work will only recommence with the authority of the ecologist and on receipt of any necessary licences.

3.4 Specific mitigation measures for invasive species

Within our construction area there are no patches of Japanese Knotweed, Giant Hogweed and Himalayan balsam.
In the event of discovering such species the contaminated area should be fenced off to prevent further spreading. The exclusion zone should be a minimum of 7 metres from the edge of the Japanese knotweed and warning signs should be displayed.
A method statement has been produced by Atkins to manage the invasive species for the Olympic Park which forms part of the **LLDC Ecology Management Plan (document no: ODA-D0405-PRO-EcoManPlan).**
Tool-box talks shall be given to all site personnel to highlight the importance of avoiding these areas.
Construction works will be planned to allow relevant access to third parties in these areas for inspection and treatment.

4 Specific Protection measures

4.1 Safeguard habitats and vegetation

The safeguard of any habitats and areas of vegetation identified for retention, protection or translocation will be marked on drawings. These areas will be clearly demarcated in the field by the BB before activity is permitted to commence in that area. The demarcation will comprise chestnut pale fencing with appropriate signage. The line of the demarcation, relative to the edge of the outer part of the habitat or vegetation, shall be defined by a suitably qualified Ecologist. The locations of such areas shall be communicated to all site personnel undertaking activities in the vicinity through appropriate means, i.e. zone induction, daily activity briefing, method statement briefing, and tool-box talk. The demarcated area shall be highlighted on the Project environmental constraints map, which shall be reviewed and updated at regular intervals, and shall be displayed on the Site notice boards.

4.2 Trees

Approximately 113no. trees are to be relocated within the stadium transformation construction zone. A further 263no. trees are to be planted. Approximately 49,350no. bulbs and 54,324no. shrubs are to be planted.

4.3 Rivers, Channels and Standing water

The Olympic stadium transformation works will not require a formal Flood Defence Consent (formerly known as Land Drainage Consents) from the Environment Agency/British Waterways as the works are not within sixteen metres of Waterworks River.

All discharges will require formal discharge consents from the Environment Agency and/or permission from the British Waterways as the landowner. Compliance with the discharge consent conditions will be necessary, including any management plans and monitoring to be implemented, to ensure that there is no detrimental impact on aquatic flora and fauna.

Specific protection measures in respect of the control of pollution of rivers, canals and standing water are described in the **Project Water Management Plan.**

4.4 Protection of nesting or breeding birds

At present there is no vegetation present on site but due to close proximity to Waterworks River the birds might be encouraged to nest in our stadium transformation area.
The breeding season typically runs between March and August. Any nesting birds identified within our stadium transformation construction site should be protected appropriately.
If it is confirmed that the nest is in use, the nest shall be protected from any potential disturbance until the young birds have flown the nest. Under no circumstances shall a nest be moved or relocated until appropriate permission from Natural England has been received or unless the BB Ecologist confirms the nest is no longer in use.
If any Schedule 1 bird (e.g. kingfisher, black redstart) is found to be nesting, no activity within 50 metres of the nest will be permitted. Advice on specific mitigation measures will be sought from a relevant and suitably qualified ecologist and no work should start without the ecologist's approval.
Tool-box talks should be provided to site personnel to communicate an appropriate level of awareness relating to the protection of birds and nests. Other training and awareness material (e.g. posters) shall be used accordingly.

5 Roles and Responsibilities

BB has overall accountability and responsibility for ensuring compliance with environmental legislation and LLDC requirements and objectives. BB will ensure that the ecological constraints and procedures are suitably documented and followed by the Project Team.

The Project Environmental Manager is responsible for the implementation of relevant elements of the LLDC EMP and the Project Ecological Management Plan. The Project Environmental Manager will also review Method Statements to ensure that the works are undertaken in a manner which is consistent with the Project Ecological Management Plan.

6 Monitoring, auditing and reporting

BB will produce an Environmental Constraints map which will show the environmental sensitive areas and the location of spill kits.

6.1 Site Ecological Inspections

The Project Environmental Manager and the BB Ecologist will undertake regular site ecological inspections that shall form part of the overall site environmental inspections. All observations and actions will be recorded and the information disseminated to the relevant personnel, including the Project Director. The actions will be tracked to ensure timely and satisfactory closure. The inspection will include an examination of all demarcated areas for safeguarded habitats, protected vegetation, and invasive species to ensure the fencing and signage remains in good condition, appropriate and 'fit for purpose'. GPS referenced photo documentation will be provided to LLDC for incidents that occur, especially where corrective action is required and issued to appropriate managers for implementation and follow-on monitoring.

6.2 Ecological Monitoring Surveys

The Project Environmental Manager will develop a monitoring programme for the project. This will include the following monitoring checks in line with our environmental inspection form (doc no: 6001-AQC-ARE-YE-FRM-001):

• Effectiveness of measures to protect retained areas;
• Setbacks of construction activities from water courses as prescribed by the appropriate guidance documents;
• Storage of hazardous materials appropriate to avoid incidental release into watercourses or retained areas;
• The Invasive species are securely fenced off and not disturbed by the construction works
• Created habitats protected as appropriate from on-site works;
• TPO trees adequately protected from construction activities including permitted width of fencing and protection of root base near tree; and
• Water courses have no indication of being modified by sediment runoff or other releases of contaminants into these surface waters.

6.3 Environmental Incident Reporting and Investigation

In the event of an incident which may affect important species or habitats, procedures outlined in the LLDC Pollution Incident Control Plan should be followed. The Environment Constraints Map should be consulted immediately in the event of an incident to determine its potential impact on ecology.
The Environment Constraints Map will also indicate where spill kits are located.

The unforeseen discovery or disturbance of an important or protected species or habitat shall be treated as a near-miss or an environmental incident, accordingly and entered into Yellow Jacket. An incident entry shall be completed on Yellow Jacket for all near misses and incidents. All incidents will require a Yellow Jacket investigation report to be completed, as detailed in the **Emergency Preparedness and Response Procedure**. This shall include details of the cause of the incident and measures to be implemented to prevent a reoccurrence. All environmental incidents, including those affecting ecological habitats or species, are reported to the LLDC and appropriate regulating agencies if there is a regulatory obligation to do so, or if the LLDC has made such a commitment.

6.4 Auditing

LLDC will audit the overall inspection and monitoring programme at least annually to confirm that protocols are being followed. Modifications in procedures will be included in the auditing reports as appropriate to enhance the performance of measures used to protect retained areas and enhance success of species protection and habitat enhancements.

7 Training

All site personnel are to be made aware of the need to protect any wildlife, flora and fauna encountered. This awareness is achieved through site induction, toolbox talks, environmental notices (posters) and briefings prior to the start of any new activity or work in new area.

Olympic Stadium Transformation Project

March 2014

LC419-STA-STA-J-REP-0027 – P03

Site Waste Management Plan

London Legacy Development Corporation

Balfour Beatty

Site Waste Management Plan

Olympic Stadium Transformation Project

Report Title	:	**Site Waste Management Plan – Olympic Stadium Transformation Project**
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Balfour Beatty

CONTENTS

1 INTRODUCTION

This Site Waste Management Plan (SWMP) has been produced in accordance with relevant environmental legislation/regulation listed below. whilst meeting the requirements of Condition 2 of the Application No. 13/00594 – a further detailed Construction Waste Management / Demolition and Site Waste Management Plan providing further detailed site specific information in respect of the Stadium Transformation works.

The SWMP is an addendum to the 'Olympic Stadium Transformation – Construction Waste Management Plan & Demolition and Site Waste Management Strategy' originally submitted to identify the demolition and construction waste management issues that need to be considered throughout the project, whilst providing a high level outline as to how these issues should be managed.

The purpose of the SWMP and the associated SMARTWaste Tool is to define the procedure by which waste will be managed by the Client/Employer- London Legacy Development Corporation (LLDC) and Principal Contractor- Balfour Beatty Group Ltd (BB) during the lifetime of the project, with all relevant information relating to waste (by definition) going off site via an authorised waste contractor.

All material being reused on site or donated to local community projects and any design changes ('designing out waste') that have had a significant impact on excavated material quantities are to be captured via the associated Material Asset Register & Material Management Plan and Innovation tracker respectively.

This SWMP has been written in conjunction with the following documentation:

• Construction Waste Management Plan & Demolition and Site Waste Management Strategy (LC001-STA-STA-ES-STR-0001);
• Stadium Transformation Project Material Use Plan;
• Site Waste Management Regulations 2008;
• Waste & Resources Action Programme (WRAP) Construction guidance (www.wrap.org.uk/construction);
• Waste Hierarchy;
• LLDC Stadium Environmental Policy;
• LLDC Stadium Contractual Requirements;
• Stadium Transformation and park-wide Code of Construction Practice (CoCP);
• The Waste Regulations 2011;
• Health, Safety and Environment Standard for Olympic Park Transformation;
• The European Waste Catalogue (EWC); and
• Other relevant legislation.

The SWMP will evolve during the course of the project as and when information becomes available, and as a result of periodic reviews to ensure continual improvement, legal compliance and the best cost effective solutions are in place.

The SWMP will also act as a guide to all persons involved with the project proposals on how to manage all types of waste, in accordance with statutory and best practice. This is summarised in the table below that highlights the 15 Steps of required of a SWMP.

This document is to be read in conjunction with the associated BRE SMARTWaste web tool. www.smartwaste.co.uk and the LLDC Construction Waste Management Plan & Demolition and Site Waste Management Strategy (LC001-STA-STA-ES-STR-0001).

Table 1.1 The 15 Steps of the SWMP

Step	Worksheet	Standard Practice (Legal Compliance)	Best Practice
1	Administration & Planning	✓	
2	Action Log		✓
3	KPIs and targets		✓
4	Design measures and cost savings from design	✓	
5	Responsibility for waste management	✓	
6	Communication, training and distribution of the SWMP	✓	
7	Forecasting key waste production and planning reuse and recycling	✓	
8	Waste storage and disposal	✓	
9	Register of licences, permits and movements	✓	
10	Monitoring and Measurement	✓	
11	Summary of actual and estimated waste quantities and the costing of site waste management	✓[1]	
12	Project Completion	✓	
13	Overall recycled content		✓
14	Implementation	✓	
15	Final project declarations	✓[1]	

This SWMP has been developed in line with the requirements of the SWMP (England) Regulations 2008.

The key benefits of having a SWMP for the Client and Principal Contractor(s) include:

- Providing a structured and forward thinking approach to waste management and sustainability onsite;
- Collates all Duty of Care information, waste data etc from the whole supply chain;
- Identifying savings through improved design, resource efficiency, ordering, material storage and handling to eliminate waste at source;
- Assisting with compliance of internal Environment Management Systems (EMS), objectives and targets, and associated Key Performance Indicators (KPIs);
- Greater control of regulatory risks relating to virgin materials, waste storage, handling and disposal at site level;
- Saves resources and money;
- Greater transparency with interested parties including BREEAM, Local Authorities (LA), and the Environment Agency (EA); and
- Enhance waste storage and segregation practices to facilitate higher recycling and recovery onsite.

To aid greater understanding anything highlighted in yellow is an instruction to amend text as it requires site specific input. Anything in **BOLD** highlights a specific role. Anything highlighted in red text demonstrates something that is classed as a key compliance issue and must be adhered to. In addition:

SIGN OFF: where you see text highlighted within a box, this requires review, input and confirmation that you have understood the mandatory instruction.	☐

The BRE SMARTWaste web tool will be updated on a monthly basis when Reconomy- the waste broker provides monthly waste data.

1.1 Project Overview

The SWMP covers the proposed works at Olympic Stadium transformation site.

This Stadium Transformation SWMP sits within the context of the LLDC Stadium Transformation Construction Waste Management / Demolition and Site Waste Management Plan (LC001-STA-STA-ES-STR-0001), and provides the "further detailed site specific information" as requested by PPDT. It has been written to discharge condition 2 of 13/00594.

This SWMP has also been written to comply with the Olympic Stadium planning application (application no. 12/00066/FUM) and associated planning conditions (OST.50, OST.51, OST.52, OST.64 & OST.65).

The main elements of the works are listed below. For full details refer to LC001-STA-STA-J-REP-003 Project Information V6, Page 22-50 and Section A105.

- Existing Stadium Structure;
- Substructure And Earthworks;
- Roof/ Steelworks;
- West Stand Works;
- Bowl And Seating Works;
- Podium Accommodation Works;
- General Building Works;
- Fit Out Works;
- Field Of Play Works;
- Building Engineers Services Works;
- Builders Work In Connection;
- Landscaping And External Works;
- Bridges Works;
- Community Athletics Track Works; and
- Other Works.

Key Dates

- Start work - 20th January 2014
- Stage E Design Report - 30th March 2014
- Completion of Perimeter Truss and V columns strengthening and associated pile caps and piling – 1st August 2014
- Removal of Cranes from Field of Play to allow follow on trades to commence – 15th February 2015
- Completion of Field of Play lighting, lighting controls 1st & 2nd Fix – 30th March 2015
- Employer Access to catering kitchens and concession spaces for concessionaire fit out works – 1st June 2015
- Employer Access to remaining areas of the stadium for concessionaire tenant area fit out works – 18th January 2016

1.1.1 Geology

CLM report reference

1.1.2 Contamination

CLM report reference

2 STEPS

Section 2 details the 15 steps of the SWMP.

2.1 STEP 1: Administration and Planning

Step 1 identifies basic information about the project and key individuals. This includes both the **Client** and the **Principal Contractor(s)**; both of whom are required to sign up to their key requirements under the SWMP Regulations.

2.2 STEP 2: Action Log

The Action Log provides a framework for recording the outcome of project meetings on waste management. An Action Log will help maintain a record of those actions agreed throughout the project, and therefore will inform waste forecasts, thus assist compliance[1].

Table 2.2.1 Action Log.

Date	Organiser	Attendance record (name and company)	Notes taken by	List of Actions
20/01/14	[redacted]	Imtech	[redacted]	Waste strategy meeting
20/01/14	[redacted]	Careys	[redacted]	Waste strategy meeting
05/02/14	[redacted]	Reconomy	[redacted]	Waste management

[1] *"6 – (3) It must record any decisions taken before the SWMP was drafted on the nature of the project, its design, construction method or materials employed in order to minimise the quantity of waste produced on site."*

2.3 STEP 3: Key Performance Indicators and Targets

Step 3 provides a means to report progress against a series of Key Performance Indicators (KPIs).

The project has a diversion from landfill target of 95%, with an aspirational target of 100%. A reuse and recycle target of at least 90% of project construction waste, and aim to exceed 95% has been set. Operators will be asked at tender stage to outline how they will achieve these targets.

The waste contractor will be asked to report monthly on the following KPIs:

KPI
Amount of excavated material produced
Amount of excavated material recycled
Amount of excavated material sent to landfill
Amount of construction waste produced
Amount of construction waste recycled
Amount of construction waste sent to landfill
Total amount of waste produced
Total amount of waste recycled
Total amount of waste sent to landfill
Amount of waste classified as hazardous, including proportion resulting from contaminated soils
Amount of contaminated soil cleaned

Halving Waste to Landfill

Balfour Beatty has signed up to WRAP's Halving waste to landfill commitment.

In addition to the above- the project has client Priority Theme targets (WIv6). These are shown below:

Condition(planning)	Topic area	WIv6 Obligations
OST.85/86 (70%)	BREEAM	Excellent 75%(BREEAM 2011)
OST.104	Bio-diversity & Ecology	Not less than 3.44ha of BAP habitat to be provided in PDZ3.
OST.88	Energy	15% reduction in predicted regulated energy demand above 2006 Building Regulations.
OST.89	Carbon	Achieve carbon emissions for the built environment of 50% by 2013 (against Building Regulations standards)
OST.92/93	water	40% reduction in potable consumption (by comparison to baselines calculated in accordance with 2006 Building Regulation specification)
	waste	Zero waste to landfill
OST.65	waste	90% of all deconstruction materials and arising (by weight) excluding general fill are reused or recycled
OST.64 (70%)	waste	95% of construction, demolition and excavated waste is diverted from landfill
	waste	Wasted generated not greater than $13m^3$ per $100m^2$

	waste	At least 50% of all deconstruction materials excluding general fill is reused
OST.13	materials	20% secondary materials by value in permanent venues and associated infrastructure
OST.14	materials	25% recycled aggregate by weight
	materials	100% FSC/PEFC
OST.60	noise	Not exceed 75dB LAeq (10 hour) measured at 1m from the façade of the nearest occupied property (0800-18.00) Mon-Fri. Not exceed 75dB LAeq (5 hour) measured at 1m from the façade of the nearest occupied property (0800-13.00) Sat. Except with approval under s61.
OST.61	noise	Noise from construction no higher than 65dB LAeq (1 hour) and 70dB LAeq (1 min) at any educational premise measured at 1m from the façade of the building during school hours. Except with approval under s61.
OST.62	Vibration	No impact piling. Except with approval under s61.
OST.87	Carbon	9% reduction in regulated CO2 emissions through use of Olympic park energy generation resources
OST.91	Sustainability	Monitoring of electricity, gas, water consumption, water, on-site renewable energy generation
OST.90	energy	Smart meters for gas, water, electricity
Schedule 5, para.3.1 of the S.106 Agreement.	Sustainable transport	50%

2.4 STEP 4: Design Measures and Cost Savings from Design

This step is to enable the recording of all waste reduction opportunities adopted during design[2].

On projects over £500,000 the **Principal Contractor(s)** must provide an estimate of the cost savings that have been achieved by completing and implementing the plan (Regulation 8 (4) (d)) must be provided and the cost savings from implementing waste reduction measures in design. Step 4, in combination with Step 10 satisfy this requirement.

See: Stadium Innovation Tracker (details design changes that have reduced waste generation and cost.)

2.5 STEP 5: Responsibilities for Waste Management

Step 5 documents the waste management responsibilities. It is vital for the SWMP to be successfully implemented, that key roles and responsibilities for waste management are clearly defined, documented and communicated.

[2] *"6- (3) It must record any decision taken before the SWMP was drafted on the nature of the project, its design, construction method or materials employed in order to minimise the quantity of waste produced on site."*

The **Client** is responsible for the production of the project SWMP via instruction to the **Project Manager**, with the **Principal Contractor(s)** responsible for maintaining the project SWMP and for making available the necessary resources to ensure that the SWMP is fully implemented. A series of key roles have been identified including:

2.5.1 Client (LLDC/Mace)

The **Client** understands his responsibility to prepare a SWMP for the project, and that it is passed down to the **Design Team(s)** and **Principal Contractor(s)** using the SWMP template and standards. The resulting SWMP will then form part of the contract between the Client and the relevant personnel/organisations involved in the project.

The **Client** is responsible for:

- Ensuring the SWMP is prepared prior to the start of the works;
- Ensure that the initial SWMP is prepared and relevant data collected;
- Work with Designers to accurately forecast waste data, and minimise waste production through design;
- The appointment of the **Principal Contractor(s)** for the project;
- The review and approval of targets suggested by the **Principal Contractor(s)**, as appropriate;
- Review, revise and refine the SWMP as necessary;
- Communicate changes in roles and responsibilities;
- Ensure site security measures are in place to prevent illegal disposal;
- The sign off of the project once completed in conjunction with the **Principal Contractor(s)**; and
- The **Client** must be available to all persons involved with the project proposal/contractors to give reasonable direction in complying with the SWMP Regulations.

2.5.2 Project Manager (BB)

The **Project Manager** is responsible for:

- Coordinating the estimation of total volumes of waste expected to be generated by the project with the **Principal Contractor(s)**, and the relay and review of targets with the **Client**;
- Identifying key SWMP related issues to tenderers at Tender stage, including information required to complete the site waste matrix; and
- The effective relay of the SWMP to the **Principal Contractor(s)** to enable successful implementation of the SWMP on site.

2.5.3 Principal Contractor(s) (BB)

The **Principal Contractor(s)** is responsible for:

- Estimating the total volumes of waste expected to be generated by the project with the **Client**, and the setting of targets relating to reuse, recycling, and disposal of wastes on and off site prior to approval by the **BB Environmental Manager(s)**;

- Ensuring suitable resources are made available during the demolition/construction phase in relation to working towards the requirements of the SWMP;

- For the implementation and ongoing monitoring of the SWMP;

- Ensuring, so far as is reasonably practicable, that waste produced during construction is reused, recycled or other form of recovery[3];

- The production and issue of the site waste matrix and implementation of the Site Waste Policy;

- Signing Waste Transfer Notes (WTN) and assigning responsibility for this to nominated persons on site in his absence;

- The identification and support of a suitable waste champion who will deal with the ongoing monitoring and enforcement of the SWMP at an operational level;

- For the collation of data relating to waste management and the input of data into the nominated monitoring tool; and

- The sign off of the project once completed with the **Client**.

Additional duties on the **Principal Contractor(s)** include:

- So far as is reasonably practicable, ensure coordination of the work and cooperation amongst all contractors at work during the demolition/construction phase[4];

- Must ensure so far as is reasonably practicable that every worker carrying out the demolition/construction work is provided with-

    - Suitable site induction; and

    - Any further information and training needed for the particular work to be carried out within the terms of the SWMP[5]

- Must make and maintain arrangements that will enable the **Principal Contractor(s)** and the workers engaged in the demolition/construction work to cooperate effectively in promoting and developing measures to ensure that any waste arising on site is managed within the terms of the SWMP and in checking the effectiveness of such measures[6].

2.5.4 CDM Coordinator (Atkins)

The **CDM Coordinator** is to liaise directly with the **Client** and **Principal Contractor(s)** regarding Health & Safety related issues and the SWMP.

[3] SWMP Regulations 2008 Additional duties on the Principal Contractor. 1-(4)
[4] SWMP Regulations 2008. Additional duties on the Principal Contractor. 1-(1)
[5] SWMP Regulations 2008 Additional duties on the Principal Contractor. 1- (2)(a), (b)
[6] SWMP Regulations 2008 Additional duties on the Principal Contractor. 1-(3)

2.5.5 Waste Champion(s) (BB and assigned sub-contractors)

It is good practice to appoint a suitable Waste Champion on site. Depending on the size of the project this may be the site agent or site foreman, site engineer or environmental manager.

The Project has an Environment Stewardship programme to help make all the project team aware of environmental issues and assist in identifying and addressing them.

The **Waste Champion(s)** is responsible for:

- The effective communication of the SWMP to his operatives and ensures enforcement of the SWMP at an operational level e.g. identifying areas for improvement where segregation is not being followed; and
- For the delivery of relevant toolbox talks where necessary.

Section 2.5 SIGN OFF:	
Please confirm you have read and understood your duties in this section by checking the boxes opposite	
Client	☐
Designer(s)	☐
Project Manager(s)	☐
Principal Contractor(s)	☐
CDM Coordinator	☐
Waste Champion(s)	☐

The above list of personnel forms the 'distribution list'.

Table 2.5.1 below is needed because the majority of projects are delivered by a range of sub contractors, each of which will need to manage their waste in line with the project SWMP. The table below allocates responsibility to individuals/ organisations for different elements of the work.

Table 2.5.1 Assignment of waste management responsibility by site Activity/ sub contractor.

Site Activity/ Sub contractor workplace	Primary waste stream	EWC Code	Waste Management responsibility	Relevant Specification/ Contract Clause for Waste Management
Demolition	Bricks	170102	BB	100% diversion from landfill/ 95% reuse/recycle/ 50% reuse
Site clearance	Asphalt	170302	BB	100% diversion from landfill/ 95% reuse/recycle/ 50% reuse
Earthworks	Soils	170504	BB	100% diversion from landfill/ 95% reuse/recycle/ 50% reuse
Foundations	Concrete	170101	BB	100% diversion from landfill/ 95% reuse/recycle/ 50% reuse
Structure	Metal Glass	170407 200102	BB/Pfeifer BB	100% diversion from landfill/ 95% reuse/recycle/ 50% reuse
Dryliners	Insulation	170604	BB	100% diversion from landfill/ 95% reuse/recycle/ 50% reuse
Building Envelope/Cladding	Plasterboard	170802	BB	100% diversion from landfill/ 95% reuse/recycle/ 50% reuse
Mechanical and Electrical			Imtech	100% diversion from landfill/ 95% reuse/recycle/ 50% reuse
Trades (Joinery, painting, Plastering, Rendering, Plumbing, Heating etc.)	Ceiling tiles	170904	BB	100% diversion from landfill/ 95% reuse/recycle/ 50% reuse
Landscaping & habitat creating/ restoration			HED	100% diversion from landfill/ 95% reuse/recycle/ 50% reuse
Removal of site offices, temporary works & final clear away	Timber General waste	170201 170904	BB BB	100% diversion from landfill/ 95% reuse/recycle/ 50% reuse
Roof fabric	PVC	070213	BB	100% diversion from landfill/ 95% reuse/recycle/

				50% reuse

2.6 STEP 6: Forecasting Waste Production & Planning Reuse & Recycling

Step 6 forecasts the waste streams, sub divided by project activity and material type. Waste forecasting is an essential part of the SWMP, and a minimum requirement. Forecasting waste allows a clear strategy to be established to effectively manage the waste.

The Client and Design Team have investigated all likely waste streams to be generated from this project, approximate volumes of material and assigned relevant targets. Forecast waste quantities have been collected from the BB project team and supply chain/other Tier 1 contractors. Targets have been set by the Principal Contractor(s) (with final approval by the Waste Champion(s)) to maximise reuse and recycling of material both on and offsite, and opportunities for both financial savings and environmental sustainability.

The **Forecast Waste** tab identifies the type and quantity of each material, and where this waste is to be sent (landfill or some form of recycling/reuse).

Where practicable demolition material and excavated material will be reused on site as engineering fill, landscaping, aggregate, or taken offsite for beneficial reuse . The Environment Agency accept the principle that contaminated soils not requiring treatment could be considered suitable for use, provided there is no risk of pollution.

The design team has ensured the principles of the Waste Hierarchy - http://www.defra.gov.uk/environment/waste/topics/documents/waste-hierarchy.pdf (prevent, minimise, reuse, recycle, recovery, disposal) have been applied to this SWMP to enable best practice onsite to improve the overall sustainability/improve green credentials of the project. It is intended that this SWMP should evolve during the course of the project. Regular monitoring and reviews will be undertaken (Section 3.10) to ensure continual improvement, legal compliance and that cost effective solutions are in place.

The project has a **Materials Asset Register** (equivalent to demolition Audit/reuse schedule) which documents all surplus materials arising from both the deconstruction and transformation phases of the works. It documents material type, likely quantities, generation date, primary re-use or recycling option and secondary disposal option. This register has formed the basis of our Stadium Re-use Opportunities Strategy.

All deconstruction activities will be undertaken in accordance with the ICE Demolition Protocol and the GLA/London Council's guidance on 'The Control of Dust and Emissions for Construction and Demolition 2006.

A LLDC Priority Themes target of 50% re-use has been carried over from the original ODA Environmental Obligations targets. The project, in collaboration with LLDC are seeking community projects in the vicinity of the Olympic Park to donate materials to.

See **Stadium Transformation Material Use Plan.**

2.6.1 Recycling & Reuse Initiative

As part of the development of the SWMP the following initiatives have been reviewed and agreed upon, aiming to reduce the amount of waste produced in the first instance, and assisting in the recycling and reuse of waste as an alternative to offsite disposal. This is in addition to the Materials

Asset Register outlined above. The below initiatives have been discussed and arranged with our waste broker – Reconomy.

Table 3.6.1 Recycling & Reuse Initiatives

Material	Legislation/ Notes
Take Back	
'Contractor take back' as part of contractual requirement. Requirement to submit waste strategy as part of tender stage.	
Recycling Offsite	
Plastic packaging	
Paper & Cardboard	
Plasterboard e.g. via British Gypsum/ Knauf	
Concrete and demolition wastes (processed)	EA/ WRAP Quality Protocol
Steelwork	
Recycling Onsite	
Concrete and demolition waste (processed) Concrete will have to be crushed for use as an engineering fill or as aggregate for fresh concrete. Crushing of material may have to take place off site due to site space constraints. An alternative option is to bring to site recycled material from an approved supplier.	New Waste Exemption System 2010 Environmental Permit Regulations 2010. Schedule 3. Chapter 2*. i.e.: -Use waste under exemption U8; -Treat waste to make it suitable for use in construction under exemption T5; -Treat bricks, tiles, concrete by crushing T7. * if not in this chapter will require permit.
Reuse Onsite	
Arisings, uncontaminated[7]	Environmental Permit Regulations 2010
Demolition waste (without processing)	It is unlikely that this will require an exemption as long as the material has not been processed further e.g. has not been crushed, and is simply reused in its demolition state, otherwise this must be subject to a suitable Environmental Permit Regulations 2010 Exemption.
Wood	
Excavated material	Cut and fill/ stockpiling for use on later phases of

[7] If the excavated material does not prove to be contaminated in accordance with the WAC testing and Soil Guideline Values (SGVs), then there are a number of reuse and recycling opportunities that exist.

	project
Deconstruction materials/surplus materials	stockpiling for use on later phases of project

2.7 STEP 7: Communication, Training and Distribution of the SWMP

Copies of the SWMP will be made available to all Tier 1 contractors and sub-contractors at the outset. The SWMP will also assist in defining terms and conditions through the implementation and monitoring of this plan relating to waste management on site during the project lifetime. In addition to these key project partners, the **Principal Contractor(s)** will have full access to the SWMP in order for comments to be made with regard to any additional Health & Safety requirements envisaged as part of the development of this project.

Waste will be an agenda item at the project kick off meeting (see distribution list for key attendees) to enable the formulation of a waste management strategy to optimise best practice waste management through the lifetime of the project.

Date Waste Planning Meeting set	___/___/___
Date Waste Planning Meeting held	___/___/___

A copy of the latest version of the SWMP will be displayed in a prominent location on site[8] including the site office.

Training and communication of the SWMP will be made by the following means:

- Within the Principal Contractor's site induction(s);
- Further information and training needed for the particular work shall be carried out within the terms of the SWMP;
- Formal training course on waste management (where appropriate); or
- The delivery of Toolbox talks by Principal/ Sub Contractor or Waste Champion(s).

Training and communication shall be provided to all personnel working on the project. This shall be implemented in order to highlight the importance of the SWMP and individual responsibility in ensuring effective waste minimisation and management on site.

The Principal Contractor(s) is responsible for the distribution of the latest version of the SWMP to all parties on the distribution list. Each party will be responsible for distributing updated versions and removing superseded copies (hard and electronic format) in their particular work field. The Principal Contractor(s) must ensure that every contractor knows where [the SWMP] is kept, and must make it available to any contractor carrying out work described in the SWMP[9]

Section 2.7 SIGN OFF:

[8] *"9-(1) The Principal Contractor(s) must ensure that the SWMP is kept- (a) at the site office, or (b) if there is no site office, at the site."*
[9] SWMP Regulations 2008 9-(2)

Please confirm you have read and understood your duties in this section (including the provision of SWMP issues in induction, training and awareness programmes for site staff, distribution of SWMP) in this section by checking the box opposite.	
Principal Contractor	☐

2.8 STEP 8: Waste Storage and Disposal Options

Suitable waste storage facilities/arrangements must be made onsite to ensure effective segregation of wastes onsite to aid higher rates of recovery (e.g. through recycling or reuse initiatives. See Section 2.6).

The placing of waste management contracts will, where possible, consider the implications of long distance travel in terms of health, safety and environmental risks, commercial terms and increased emissions from vehicles. The project team will consider using local waste contractors as far as possible.

It is essential that the demolition and construction work is carried out closely with the waste management contractors, in order to determine the best techniques for managing waste and ensure a high level of recovery of materials for recycling.

A specific area shall be laid out and labelled to facilitate the separation of materials for potential recycling, salvage, reuse and return. Recycling and waste bins are to be clearly labelled in order to avoid contamination of materials.
All wastes are classified according to current legislative provisions. Balfour Beatty's waste Broker-Reconomy provides monthly waste spreadsheets breaking down all wastes removed from site. These are further classified through the BRE SWMP tool.

Skips for segregation of waste identified currently are:

- Metal (e.g. copper and steel);
- Inert (e.g. inert plastics, brick, concrete and rubble);
- Hazardous (e.g. asbestos, used spill materials, waste oil);
- Mixed non-hazardous;
- Waste Electrical & Electronic Equipment (WEEE);
- Wood;
- Packaging;
- Gypsum; and
- Glass.

The project has obtained a Hazardous Waste Producer Licence. Registration No. ODQ870 which started on 13 January 2014 and lasts for one year from this date.

All waste management contracts (carriers and facilities) are listed within the **BRE SmartWaste tool.** This is to be updated regularly with any additional service providers, changes in destination sites or additional waste streams being generated. The responsibility for ensuring the tab is completed and kept up to date is with the **Principal Contractor(s).**

Both the Client and Principal Contractor shall take reasonable steps to ensure that site security measures are in place to prevent illegal disposal of waste at the site.

These include:

Physical Improvements
• Prevent access by installing gates and barriers. These can be in keeping with the natural environment, e.g. in the form of boulders and bunds.
• Make sure gates are closed when not in use.
• Improve visibility so that fly-tippers are not hidden from view - limited clearing of areas or small-scale re-landscaping can reduce hidden corners.
• Install or improve lighting.

Site management
• Keep areas tidy – untidy areas attract fly-tippers.
• Remove fly-tipped waste quickly before others think they've found a good place to dump their waste as well.
• Supervise any activities on your land involving large deliveries. Unscrupulous operators may deliver something you weren't expecting.

Deterrence
• Prosecution – encourage the authorities to take action and help them to do so by collecting evidence. Successful prosecutions are a strong deterrent to potential fly-tippers.
• Consider installing CCTV.
• Consider employing professional security patrols.
• Signage – put up signs to deter potential fly-tippers e.g. 'CCTV cameras in operation'

Section 3.8 SIGN OFF:	
Please confirm that you have read and understood your duties in this section (e.g. have identified waste storage solutions on site, correct signage, completed the Waste Carrier and Destination Register and identified all relevant Duty of Care requirements for waste carriers and disposal sites) by checking the box opposite.	
Principal Contractor(s)	☐

2.9 STEP 9: Register of Licences, Permits and Movements

This step documents the tracking of waste carriers and waste destinations. Both of which are mandatory to comply with the SWMP Regulations 2008 and the Environmental Protection Act 1990.

The Environmental Permitting (England and Wales) Regulations 2010 require that disposal sites are classified into one of three categories dependent on the chemical composition of the material; these are hazardous, non-hazardous and inert. Prior to disposal, if material is deemed hazardous it must be pre-treated to meet the Waste Acceptance Criteria. Further stipulations within the Environmental Permitting Regulations 2010 are as follows:

- Hazardous liquids, flammable, corrosive, explosive, oxidising and infectious wastes have been banned from landfill since July 2002;
- Non hazardous liquids have been banned since 2007;

- Co- disposal has been banned since 16 July 2004;
- Whole tyres were banned from 2003, and shredded tyres have been banned since 2006;
- Waste will be required to be "pre-treated" prior to landfilling; and
- Waste operators must demonstrate that they and their staff are both technically and environmentally competent to manage the site, and have made adequate provision to cover the maintenance, aftercare and sustainability requirements.

2.10 STEP 10: Monitoring & Measurement

Step 10 satisfies the SWMP Regulations 2008 requirement to ensure projects are being monitored and going to plan.

The effectiveness of the SWMP will depend upon the enforcement of its requirements on site and include monitoring to be made by the **Waste Champion(s)** and **Site Manager(s)** on site. Responsibility for the formal recording of all waste movements shall be with the **Site Manager** and is to be recorded on a bi-weekly basis using the approved excel spreadsheet (**stadium.xls**). It is the responsibility of the **Principal Contractor(s)** to ensure the data is collated and that this is inputted into the nominated monitoring tool, and that all waste transfer notes/ Hazardous waste consignment notes are forwarded to the **Waste Champion**(s) weekly.

A 'spot check' will be made by the **Site Manager(s)** in relation to the completeness of the weekly monitoring sheet, any waste transfer note and any hazardous waste consignment note against the Waste Carrier and Destination.This will ensure both the accuracy of data entered in to the monitoring tool and legal compliance issues are suitably identified.

The skips shall be monitored to ensure that cross-contamination of segregated skips does not occur. This will be covered in the toolbox talks – reviewing how the onsite waste management system is working and point out the extra costs associated with contamination. The **Principal Contractor(s)** shall continually review the type of surplus materials being produced and change the site set up to maximise on reuse or recycling and the use of landfill will be the last option.

If any problems are identified during the lifetime of the project in relation to exceeding the expected SWMP waste stream volumes, failure to meet stated targets or issues relating to cost effective and legal transfer of waste materials, then they are to be reported to the **Project Manager** for further discussion on the best solution. This may trigger a review of the SWMP in relation to adjustment of targets, however, any change would need to be documented and justified.

The Stadium Transformation project seeks to reduce site was by 5% against the SWMP forecast quantities.

This SWMP shall be reviewed at least every six months (but monthly is recommended) during the lifetime of the project by the **Client** and the **Principal Contractor(s)** to ensure that estimated targets are being achieved and that realistic solutions are provided for unplanned events or abnormal wastes.

Section 2.10 SIGN OFF:
Please confirm you have read and understood your duties in this section (i.e. review of the SWMP at least every 6 months, regular review of WTNs/ Hazardous waste consignment notes and that copies of all tickets will be forwarded to the waste champion on a weekly basis, input of all waste related transfer note into the nominated tool) by checking the box opposite.

Principal Contractor(s)	☐
Please confirm you have read and understood your duties in this section (i.e. review of the SWMP with the Principal Contractor at least every six months) by checking the box opposite.	
Project Manager	☐

2.11 STEP 11: Actual Waste Arisings

This step provides a framework for recording the actual waste arisings from the project, allowing a comparison with earlier estimates.

The Environmental Permitting Regulations 2010 also require that waste is described by European Waste Catalogue (EWC) codes on Transfer Notes required under the Duty of Care Regulations. The EWC categorises wastes into 20 main groups and approximately 900 codes. The EWC also identifies Hazardous Wastes, many of which are currently Special Waste and dealt with by the Special Waste Regulations, but some of which are not, such as fluorescent tubes, certain batteries and cathode ray tubes.

2.12 STEP 12: Project Completion

Within one month of practical completion of the project, the **Client** and **Principal Contractor(s)** will review the SWMP and ensure that it is updated to reflect the following legal compliance requirements:

*"8-(4) within 3 months of the work being completed the **Principal Contractor(s)** must add to the plan-*

(a) confirmation that the plan has been monitored on a regular basis to ensure that work is progressing according to the plan and that the plan was updated in accordance with this regulation;

(b) a comparison of the estimated quantities of each waste type against the actual quantities of each waste type;

(c) an explanation of any deviation from the plan;"

(d) an estimate of the cost savings that have been achieved by completing and implementing the plan;"

(e) a description of any lessons learnt from any differences in circumstances between the first draft of the plan, and any subsequent updates and actual final performance (including detailed explanation as to why targets have not been met). Information to be provided as to how any associated corrective actions will be incorporated into future projects/ management systems; and

"10-(1) The Principal Contractor(s) must keep the SWMP for two years after the completion of the project at the Principal Contractor's principal place of business or at the site of the project."

2.13 STEP 13: Overall Recycled Content

Step 13 is not a requirement of the SWMP Regulations 2008, although it demonstrates the project is meeting requirements for recycled content. This is a BREEAM, planning condition and client requirement on this project. 25% of aggregate by weight used in the permanent works forming part of

the development shall be from a recycled source (OST.14). In addition, 20% of construction materials by value, used in the development shall be from a re-used, re cycled or certified/accredited sustainable source (OST.13).

The **NetWaste tool** in conjunction with information from BB Senior Materials Engineer will be used to calculate the recycled content (by weight and by value). The Project aims to select at least 8 of the 10 quick wins to further increase the baseline RC.

2.14 STEP 14: Implementation

Step 14 provides a check list to ensure that the necessary arrangements have been made to ensure effective SWMP implementation on site. This includes additional duties outlined in the SWMP Regulations 2008 to ensure the effective operation, monitoring and reporting of the SWMP.

Prior to implementation the SWMP, the **Site Manager(s)** or **Principal Contractor(s)** must complete all necessary checks as outlined in the worksheet below. The check list covers duties necessary for legislative compliance and other recommended actions to move towards best practice.

The checklist should be signed off by the **Client** and **Principal Contractor(s)** every time the SWMP is updated.

Table 2.14.1 SWMP Checklist

	Yes	No	Section
Client Checks			
The Client must give reasonable directions to any contractor so far is as necessary to enable the Principal Contractor(s) to comply with the Regulations.[10]			Section 2.4
Principal Contractor(s) Checks			
The Principal Contractor(s) must ensure that so far as reasonably practical coordination of the work and cooperation among contractors at work during the construction phase.[11]			Section 2.4
The Principal Contractor(s) must ensure that so far as reasonably practical every worker carrying out construction work is provided with a suitable site induction.[12]			Section 2.6

[10] SWMP Regulations 2008. Additional Duties on the Client 2-(1)
[11] SWMP Regulations 2008. Additional Duties on the Principal Contractor 1-(1)
[12] SWMP Regulations 2008. Additional Duties on the Principal Contractor 1-(2) (a)

The Principal Contractor(s) must ensure that so far as reasonably practical every worker carrying out construction work is provided with any further information and training needed for the particular work to be carried out within the terms of the SWMP.[13]			Section 2.6
The Principal Contractor(s) must make and maintain arrangements which will enable the principal Contractor and workers to engage in construction work to cooperate effectively in promoting and developing measures to ensure any waste arising on site is managed within the terms of the SWMP and in checking the effectiveness of such measures.[14]			Section 2.4 2.6 2.7 2.8
The Principal Contractor(s) must ensure so far as reasonably practical that waste produced during demolition/construction is reused, recycled or recovered.[15]			Section 2.7
Have terms and commercial rates been agreed with waste management contractors?			Section 2.8
Have data reporting procedures been agreed with waste management contractors?			Section 2.10
For offsite waste management or disposal- Are all the waste destination details verified?			Section 2.7
Has a waste segregation/ collection area been prepared?			Section 2.8
Has the waste management area been adequately sign posted?			Section 2.8
Has a waste management planning meeting been set?			Section 2.6
Has the waste management document control/ filing system been set up?			Section 2.6
Have all necessary staff and contractors read and signed the SWMP?			Section 2.5
Have the waste management targets/ KPIs been set?			Section 2.3
Has the SWMP been approved by the Project Manager?			Section 2.1
Client & Principal Contractor(s) Checks			

[13] SWMP Regulations 2008. Additional Duties on the Principal Contractor 1-(2) (b)
[14] SWMP Regulations 2008. Additional Duties on the Principal Contractor 1-(3)
[15] SWMP Regulations 2008. Additional Duties on the Principal Contractor 1-(4)

Have the Client and Principal Contractor(s) reviewed, revised and refined the SWMP as necessary, and ensured that any changes in respective roles and responsibilities are clearly communicated to those affected? [16]			Section 1.0 2.6
Have the Client and Principal Contractor(s) taken reasonable steps to ensure sufficient site security measures are in place to prevent the illegal disposal of waste?[17]			Section 2.8

Section 2.14 SIGN OFF:	
Please confirm you have read and understood your duties in this section (i.e. completed all the necessary checks) by checking the box opposite.	
Principal Contractor(s)	☐
Client	☐

2.15 STEP 15: Document Declaration

Section 2.15 FINAL SIGN OFF:		
By signing this box I confirm that the Project has met all the requirements of the SWMP Regulations 2008 as outlined in this document and the accompanying BRE SMARTWaste tool		
Principal Contractor(s)	_____/____/____	
Client	____/____/____	

[16] SWMP Regulations 2008. Additional Duties on both the Client and the Principal Contractor. 3-(1)
[17] SWMP Regulations 2008. Additional Duties on both the Client and the Principal Contractor. 3-(2)

3 SITE WASTE MANAGEMENT GUIDANCE

The following section acts to serve as guidance to all persons involved in the waste management of the project proposals.

3.1 Classification of Waste

The overarching requirement of classifying waste is to ensure that it is adequately described such that it is disposed of at the appropriate disposal facilities. The responsibility for classification of waste resides with the producer of the waste, this could be classed as the Client or the Principal Contractor(s), and will depend upon the specific circumstance.

Waste Transfer Notes (WTN) and Hazardous Waste Consignment Notes must contain a written description of the waste and also a specific six figure code from the European Waste Catalogue (EWC) (implemented in the UK by the List of Wastes (England) Regulations 2005 (SI 2005No. 895) amended by SI 2005/1673). The EWC is a list of wastes divided into 20 chapters. Chapter 17 is the most relevant section for classifying waste produced on construction sites.

3.1.1 Inert Waste
(http://publications.environment-agency.gov.uk/pdf/GEHO0509BPWJ-e-e.pdf)

Inert Waste is waste that does not:

- Undergo any significant physical, chemical or biological transformations;
- Dissolve burn or otherwise physically or chemically react;
- Biodegrade or adversely affect other matter with which it comes into contact; and
- its leachability is insignificant[18].

Examples include: Glass, steel, concrete, bricks, tiles, and arisings excluding peat and topsoil)

3.1.2 Non Hazardous Waste

Non hazardous waste is simply defined as “waste that is not hazardous waste”.

Non hazardous waste is waste which does not feature on the list of hazardous waste in the EWC.

Examples include general mixed construction waste (EWC 17 09 04)

3.1.3 Hazardous Waste

What is a Hazardous waste?

Each movement of hazardous waste has to be accompanied by a Hazardous Waste Consignment note. These must be uniquely referenced but otherwise contain the same information as a standard WTN.

There are two types of waste listed in the EWC, referred to as “entries” they are termed “**absolute**” and “**mirror**” entries.

“Absolute entries” are always hazardous waste e.g. asbestos or fuel/oils.

[18] Regulation 7 (4) of the Landfill Regulation 2002

"Mirror entries" are where the waste may or may not be hazardous. It will be hazardous if it contains hazardous properties (determined by the relevant hazardous (H) Code 1 -14) or chemical concentrations exceeding a set "threshold". For example some contaminated soils may be considered non hazardous, but where those soil exceed the threshold for a particular contaminant it will be hazardous.

Example: Arisings excavated from site containing asbestos.

Asbestos is classed as a substance known to be carcinogenic of category 1 or 2. If the % concentration of asbestos within the overall stockpile of arisings exceeds or is equal to a concentration 0.1% then the entire stockpile will be classed as hazardous waste.

If, however, the concentration of asbestos within the stockpile is less than 0.1% then the entire stockpile will be classed non hazardous.

Guidance on determining whether material is hazardous is provided in Technical Guidance WM2: Hazardous waste – Interpretation of the definition and classification of hazardous waste". It outlines the methodology for assessing wastes based on the EWC 2002, determination of dangerous substances within waste and provides a hazardous waste assessment methodology. See http://www.environment-agency.gov.uk/business/topics/waste/32200.aspx

In England and Wales, any [construction] site that produces hazardous waste must notify the Environment Agency (EA) of the premise where that waste is produced or is to be removed from, irrespective of the amount. The Principal Contractor is expected to register the construction site as 'Hazardous Waste Producer' with the EA prior to any removal of hazardous waste. This can be done quickly and cost effectively (prices at July 2011: £18 online, £23 by phone) by logging onto the EA's website at: http://www.environment-agency.gov.uk/business/topics/waste/32198.aspx

Or alternatively by calling the EA using the following number: 08708 502 858.

3.2 Waste Acceptance Criteria (WAC)

Before contaminated or inert wastes can be accepted by a landfill the operator must be able to show that it can be accepted in accordance with its Waste Acceptance Criteria (WAC). Under this regime, it is the waste producer that has the responsibility for basic characterisation which uses a standard suite of leachate testing to ascertain the potential for the wastes to cause water pollution. There are published maximum leachate criteria for the following categories of waste, and are available from the landfill site you intend to use.

- Hazardous waste (numerical limits for leachable substances and organic content, along with standards for physical stability);
- Non-reactive hazardous waste;
- Non hazardous waste (no numerical limits for non-hazardous waste); and
- Inert waste.

Certain materials meet the definition of inert waste without the need for further analysis or need for testing to show they meet the WAC for inert landfill sites. These are as follows:

Table 4.2.1 Materials deemed inert without WAC testing.

Description	Exclusions	EWC code
Waste glass		10 11 12
Waste glass based fibrous materials	Only without organic binders	10 11 03
Glass packaging		15 11 07
Concrete		17 01 01
Bricks		17 01 02
Tiles and ceramics		17 01 03
Glass		17 02 02 20 01 02
Soil and stones	Excluding topsoil and peat	20 02 02
Soil and stones including naturally occurring sand and clay	Excluding topsoil and peat	17 05 04

All other waste needs to meet the total chemical concentration and leachability levels of the WAC and therefore will need to be tested. It should be noted that individual landfill sites may have additional acceptance criteria to the standard WAC and consequently operators should be consulted before finalising the decision on disposal site.

3.3 Disposal and movement of waste offsite

3.3.1 Transfer of Waste

When removing waste from site, a Waste Transfer Note (WTN) (or Consignment Note for hazardous wastes) must be completed prior or at the point of removal from any site. WTNs must be used for all shipments of inert and non hazardous wastes. These documents are completed in three parts and include details for the following three parties: waste producer; waste carrier; and receiving site. The following details must be included on all WTNs:

- Producer site address;
- Written description of waste and EWC code;
- The quantity of waste and how it is contained (e.g. 8 yard skip);
- Waste carrier details and licence number; and
- Receiving site address and licence number.

Provided the nature of the waste does not vary and it goes to the same site via the same registered waste carrier, for a period of no longer than 12 months, it is possible to use one WTN to cover a complete consignment of waste irrespective of the number of loads, know as a season ticket or Annual Waste Transfer Note.

However, if the waste composition changes (e.g. degree of contamination, or different type of waste), or it is to be sent to a different site, or moved by a different carrier, then a new WTN has to be completed.

3.3.2 Pre-treatment

If the material is non hazardous and it is destined for disposal directly to landfill, pre-treatment must have been applied and a declaration detailing the treatment applied attached to the WTN.

All hazardous and non hazardous wastes will be pre-treated prior to disposal to landfill. The methods of pre-treatment will enable the waste to meet the *'three-point test'* as follows:

- It must be a physical, thermal, chemical or biological process (including sorting);
- It must change the characteristic of the waste;
- It must do so in order to:
    - Reduce its volume; or
    - Reduce its hazardous nature; or
    - Facilitate its handling, or
    - Enhance its recovery.

Source segregation is seen as a pre-treatment option. This can be applied to waste generation on site, including general waste and arisings.

A declaration stating the pre-treatment method applied to the waste must be attached to any WTN for non hazardous waste being disposed of to a landfill, the **Principal Contractor's Site Manager(s)** will ensure this accompanies the WTN.
An example pre-treatment confirmation form (declaration) can be found in Annex1 (page 35) of the EA's 'Treatment of non-hazardous wastes for landfill' 2007 publication. See: http://publications.environment-agency.gov.uk/pdf/GEHO0207BLWJ-e-e.pdf?lang=_e

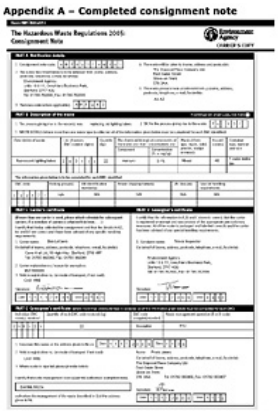
3.3.3 Waste Transfer

By signing the WTN you are confirming that all the details are correct and that the material is to be sent by a licenced waste carrier to a suitably licenced receiving site, permitted to receive that type of waste. Your signature is binding of this fact and completes the WTN as a legal document, which must be retained for a minimum of two years (three years if it is hazardous waste).

It is the responsibility of the **Waste Champion(s)** or **Site Manager(s)** to ensure all WTN/Consignment Note information is inputted into the Register prior to review by the Principal Contractor(s).

WTN

3.3.4 Hazardous Waste Consignment Notes



Consignment note

Hazardous Waste Consignment Notes must contain all the information identified above in section 3.3.3 for standard WTNs, however, they must also contain the following elements:

- Hazardous Waste Producer Premise Code;
- Details of what makes the Consignment Note hazardous;
- % concentration of contaminant; and
- The relevant hazard code (H1-H14).

A season ticket can not be used for hazardous waste; single Consignment Notes must accompany each waste load removed from site.

3.4 Environmental Permit Exemptions

Environmental permit exemptions (detailed in Schedule 3 of the Environmental Permitting (England and Wales) Regulations 2010) have been developed to provide a lighter regulatory touch in order to promote the recovery of waste, as opposed to waste being disposed of directly to landfill. These exemptions take up to 25 working days to be approved. The relevant forms need to be completely by the Principal Contractor(s) to the EA. The forms can be found at:

http://www.environment-agency.gov.uk/business/topics/permitting/default.aspx

“Waste” is defined as any object or substance that either the holder discards; intends to discard; or is required to discard (Waste Framework Directive & EA guidance)

3.5 Landfill Tax

The tax relates to two bands, one for “inert/inactive” waste and the other for “active” waste. From 1 April 2010 the Landfill Tax rate for active waste increased to £48 per tonne. The rate for inactive waste is £2.50 per tonne (April 2010).

The Coalition Government Emergency Budget 2010 stated that the standard rate of landfill tax will increase by £8 per tonne each year from 1 April 2011 until at least 2014. There will be a floor under the standard rate at £80 per tonne, so that the rate will not fall below £80 per tonne from April 2014 until at least 2020.

The government has introduced a new qualifying criteria for lower rated wastes, which was legislated in the Financial Bill introduced in the autumn 2010, and came into effect on 1 April 2011.

SMARTWastePlan

Site Waste Management Plan for: Stadium Transformation

Date: 15 March 2014

Version number (if appropriate):

1. SWMP Progress

Site Waste Management Plan Progress		
Step		**Completed**
1.	Responsibilities	✓
2.	Waste minimisation	
3.	Forecast	✓
4.	Waste management options	✓
5.	Duty of care	✓
6.	Training / Communication	✓
7.	Actual versus Forecast waste	✓
8.	Ongoing review of implementation	
9.	Completion review	

2. Project Details

Project reference	Stadium Transformation
Project name	Stadium Transformation
Project address	London E20 2ST
Project use class	Outdoor sports / stadiums (Leisure)
Actual start date	1/1/2014
End date	1/6/2016
Project cost (estimated)	£ 153,000,000.00
Floor area	22500.0 m^2
Description of site location	Stadium Transformation
Client	LLDC - [redacted]
Principal Contractor(responsible for SWMP implementation)	BB - [redacted]

3: Responsibilities

	Name	Company	Company Type	Contact details

Who is responsible for drafting the SWMP?	[redacted]	BB	Principal contractor	
Who is responsible for implementing the SWMP?	[redacted]	BB	Principal contractor	
Who is the waste champion?	[redacted]	BB	Principal contractor	
Who is the person in charge of the project?	[redacted]	BB	Principal contractor	
Client	[redacted]	LLDC	Client	
Where will this SWMP will be kept? (a copy should be kept onsite)				
1) Electronic document		R Drive		
2) Paper based document				

Declaration statement: The Client and Principal contractor will take reasonable steps to ensure waste duty of care is complied with, materials are handled efficiently and waste is managed appropriately.

☑ Tick box to agree.

Client signature:	**Print name:**	**Date:**
Contractor signature:	**Print name:**	**Date:**

4: Waste minimisation decisions

Type	Waste minimisation decision taken	By whom	Intended results
Design	landscape design change	Design Team	reduced generation of excavated waste/ reduced costs
Construction methods	project team	project team	bottom driven piling method
Materials	cut and fill	project team	reduce amount of surplus material taken off site/ imported in
Materials	development of a Materials Asset Register	Environmental Manager	identify opportunities to reuse materials onsite/ offsite on community projects
Materials	sustainability sourced	procurement/ commercial	local/sustainable materials as standard
Materials	correct storage	EM/ project team	reduce damage

Materials	correct ordering	procurement/EM	avoid over ordering
Design	offsite fabrication	design team	reduced wastage/ lean methods
Materials	just in time ordering	procurement	reduced damage potential/ moving materials around site
Materials	material delivery and disposal at same time (where possible)	procurement/EM	reduced CO2/ empty lorry movements
Design	ongoing design review meetings	Design team/ Project team/ EM	identify further opportunties for designing out waste
Materials	Ecosheet as subsitute for Plywood	procurement/EM	more durable/ reusable/ buy back option

5: Forecast of waste types and amounts

Work Package	Subcontractor	Type of waste	Estimate amount (tonnes)
Superstructure	Not specified	Concrete (17 01 01)	891.0
Superstructure	Not specified	Bricks (17 01 02)	399.0
Superstructure	Not specified	Asphalt and tar (17 03 02)	299.0
Superstructure	Not specified	Soils (17 05 04)	445.0
Superstructure	Not specified	Metals (17 04 07)	33.0
Superstructure	Not specified	Gypsum (17 08 02)	23.0
Superstructure	Not specified	Insulation (17 06 04)	37.0
Superstructure	Not specified	Glass (20 01 02)	17.0
Superstructure	Not specified	Mixed (17 09 04)	5.0
Superstructure	Not specified	Plastics (17 02 03)	20.0
Superstructure	Not specified	Metals (17 04 07)	588.0
Total			**2757.0**

6: Waste management options

Waste type		Reduce (%)	Reuse (%)	Recycle (%)	Recover (%)	Dispose (%)	Container type	Waste Management contractor	Exemption
Bricks (17 01 02)	onsite	0 %	50 %	0 %	0 %	0 %			
	offsite	0 %	50 %	0 %	0 %	0 %			
Concrete (17 01 01)	onsite	0 %	0 %	50 %	0 %	0 %			
	offsite	0 %	0 %	50 %	0 %	0 %			
	onsite	0 %	0 %	50 %	0 %	0 %			

Insulation (17 06 04)	offsite	0 %	0 %	100 %	0 %	0 %			
Metals (17 04 07)	onsite	0 %	0 %	30 %	0 %	0 %			
	offsite	0 %	0 %	70 %	0 %	0 %			
Gypsum (17 08 02)	onsite	0 %	0 %	0 %	0 %	0 %			
	offsite	0 %	0 %	100 %	0 %	0 %			
Plastics (17 02 03)	onsite	0 %	0 %	0 %	0 %	0 %			
	offsite	0 %	0 %	100 %	0 %	0 %			
Soils (17 05 04)	onsite	0 %	0 %	50 %	0 %	0 %			
	offsite	0 %	0 %	50 %	0 %	0 %			
Asphalt and tar (17 03 02)	onsite	0 %	0 %	0 %	0 %	0 %			
	offsite	0 %	0 %	100 %	0 %	0 %			
Mixed (17 09 04)	onsite	0 %	0 %	0 %	0 %	0 %			
	offsite	0 %	0 %	0 %	100 %	0 %			
Glass (20 01 02)	onsite	0 %	0 %	0 %	0 %	0 %			
	offsite	0 %	0 %	100 %	0 %	0 %			
Overall target		37 %	50 %	50 %	100 %	0 %			

7: Duty of care

Waste Management Contractor Name	Waste carrier license number	Issue date	Expiry date	Waste Transfer notes storage location
GBN	CB/WE5059FF	20/4/2013	19/4/2016	electronic
Waste site name			**Recycling rates added**	
			generic	**product specific**
Leyton	80363	30/11/1998	✓	✗

Have you registered with the Evironment Agency as a hazardous waste producer? ☑
Hazardous waste registration number: OJG809
Date of issue: 13/1/2014 Date of expiry: 12/1/2015

8: Training / Communication

Training

Everyone on site should receive relevant training which should include:

- The SWMP
- Roles and responsibilities
- Waste procedures on site
- Hazardous waste
- Duty of care / responsibilities
- Materials storage.

The following types of training are being undertaken:

- [x] Induction
- [x] Tool box talks
- [x] Workshops
- [x] Other

The training log is kept at:

This table can also be used as a training log

Name	Company	Date	Who trained by	Type of training	Date next training due

Communication

The plan is being communicated by:

- [x] Meetings
- [x] Posters
- [x] Feedback from staff
- [ ] other, please state

9: Waste Data

If you have entered any waste data then it will be summarised below.

Tonnage		
Total tonnage of waste generated to date		7.4 tonnes
Tonnes of waste per 100m^2 of floor area (tonnes/100m^2)		0.0
Tonnes of waste per £100K of project cost (tonnes/£100K)		0.0
Reused on site		0.0 tonnes
Reused off site		0.0 tonnes
Total reused	0.0 tonnes	0 %
Recycled on site		0.0 tonnes
Recycled off site		1.6 tonnes
Total recycled	1.6 tonnes	22 %

Recovered on site		0.0 tonnes
Sent for recovery offs ite at licensed facilities		5.8 tonnes
Total recovered off site at licensed facilities		5.8 tonnes
Total recovered	5.8 tonnes	78 %
Disposed off site		0.0 tonnes
Disposed from licensed facilities		0.0 tonnes
Total disposed	0.0 tonnes	0 %
Total waste diverted from landfill	7.4 tonnes	100 %

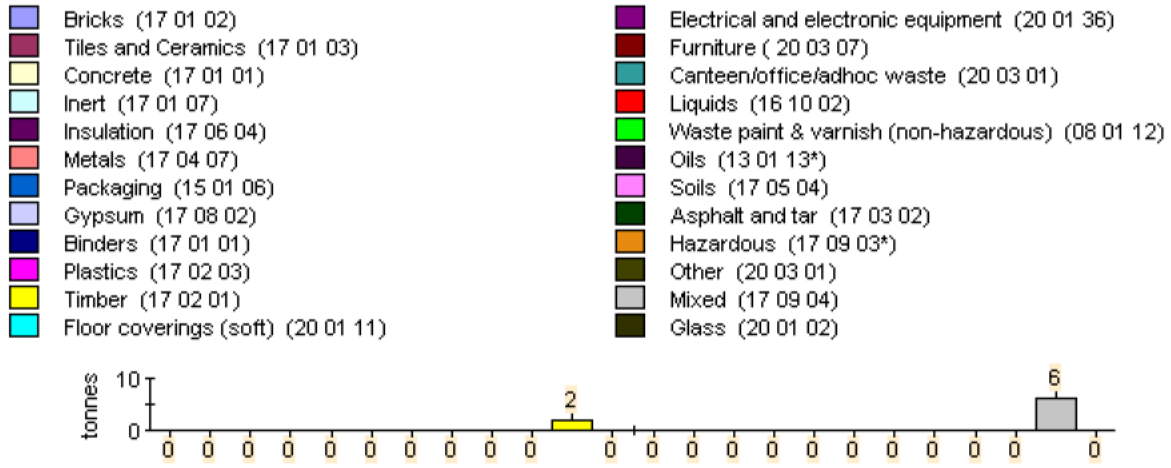
Detailed information

	Tonnage (tonnes)	Mixed (%)	Seg (%)	Waste management routes (%) Reuse	Recycle	Recover	Disposal		tonnes/100m^2	to £
Bricks (17 01 02)	0.0	0	100	-	-	-	-		0.00	
Tiles and Ceramics (17 01 03)	0.0	0	100	-	-	-	-		0.00	
Concrete (17 01 01)	0.0	0	100	-	-	-	-		0.00	
Inert (17 01 07)	0.0	0	100	-	-	-	-		0.00	
Insulation (17 06 04)	0.0	0	100	-	-	-	-		0.00	
Metals (17 04 07)	0.0	0	100	-	-	-	-		0.00	
Packaging (15 01 06)	0.0	0	100	-	-	-	-		0.00	
Gypsum (17 08 02)	0.0	0	100	-	-	-	-		0.00	
Binders (17 01 01)	0.0	0	100	-	-	-	-		0.00	
Plastics (17 02 03)	0.0	0	100	-	-	-	-		0.00	
Timber (17 02 01)	1.6	0	100	0	100	0	0		0.01	
Floor coverings (soft) (20 01 11)	0.0	0	100	-	-	-	-		0.00	
Electrical and electronic equipment (20 01 36)	0.0	0	100	-	-	-	-		0.00	
Furniture (20 03 07)	0.0	0	100	-	-	-	-		0.00	
Canteen/office/adhoc waste (20 03 01)	0.0	0	100	-	-	-	-		0.00	
Liquids (16 10 02)	0.0	0	100	-	-	-	-		0.00	
Waste paint & varnish (non-hazardous) (08 01 12)	0.0	0	100	-	-	-	-		0.00	
Oils (13 01 13*)	0.0	0	100	-	-	-	-		0.00	
Soils (17 05 04)	0.0	0	100	-	-	-	-		0.00	

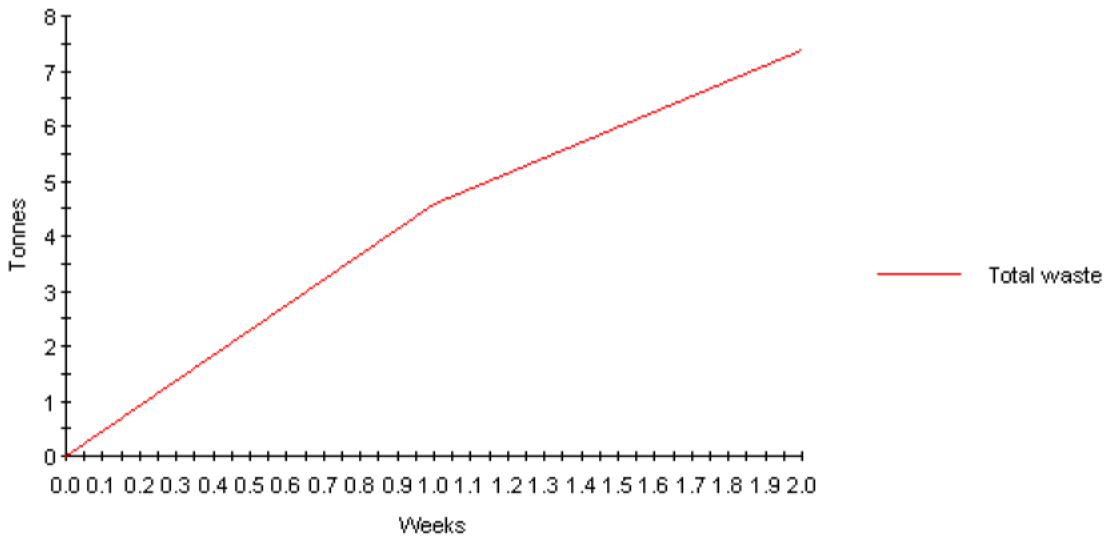
Asphalt and tar (17 03 02)	0.0	0	100	-	-	-	-		0.00
Hazardous (17 09 03*)	0.0	0	100	-	-	-	-		0.00
Other (20 03 01)	0.0	0	100	-	-	-	-		0.00
Mixed (17 09 04)	5.8	100	0	0	0	100	0		0.03
Glass (20 01 02)	0.0	0	100	-	-	-	-		0.00

Summary charts

Actual tonnage of waste to date by product group



Actual tonnage of waste over time



NB: Week 0 is the first week data was entered for.
First data entry was on 21/2/2014

Current actual waste quantities versus forecasted quantities

Waste type	Forecast quantity (tonnes)	Actual (tonnes)
Asphalt and tar (17 03 02)	299.0	0.0
Bricks (17 01 02)	399.0	0.0
Concrete (17 01 01)	891.0	0.0
Glass (20 01 02)	17.0	0.0
Gypsum (17 08 02)	23.0	0.0
Insulation (17 06 04)	37.0	0.0
Metals (17 04 07)	621.0	0.0
Mixed (17 09 04)	5.0	5.8
Plastics (17 02 03)	20.0	0.0
Soils (17 05 04)	445.0	0.0

10: Ongoing review of implementation

This table logs any changes that may have been made to the SWMP.

Date	Name	Summary/ Actions carried out

11: Completion review

This section must be filled in within 3 months of the work being completed on this project (i.e. project finish) :

We confirm that the plan has been monitored on a regular basis to ensure that work was progressing to the plan and the plan was updated ☐

Signature

Print name

Date

This stage is designed to help you evaluate the success of your SWMP, and to identify key 'lessons learnt' to use on your future project, it is helping you strive for continual improvement.

Please review how successful you believe the implementation of the SWMP was:

Please explain any deviation from the original plan:

Estimate of cost savings achieved: £0

Action planned for next project:

Please provide a comparison of the estimated quantities of each waste type against the actual quantities.
If you have used SMARTWaste for measuring waste on this project, the data supplied in step 9 will help with this)

Confirmation (within 3 months) ☐

Signature

Print name

Date

This plan should be kept at either the principal contractorâ€™s place of business or at the site of the project for 2 years

Appendix 1

Cost data is summarised below

Summary information

Total cost of waste removal	£0.00
Waste cost/£100K	£0.00
Waste cost/100m^2	£0.00
Waste cost as % of project cost	0.0 %
Waste cost/tonne	£0.00

Detailed information

Cost of non-hazardous waste / tonne	£0.00
Cost of inert waste / tonne	£0.00
Cost of hazardous waste / tonne	£0.00

Hazardous waste removal cost as a % of total waste removal cost	0 %
Segregated waste removal cost as a % of total waste removal cost	0 %

Mixed waste removal cost as a % of total waste removal cost	0 %
Inert waste removal cost as a % of total waste removal cost	0 %
Active waste removal cost as a % of total waste removal cost	0 %

Appendix 2

Subcontractors

Appendix 3

Users