

C422 - Tottenham Court Road Station ENVIRONMENT MANAGEMENT PLAN

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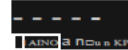


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Introduction

1.1 The C422 Environmental Management Plan

This Environmental Management Plan is a project management tool designed to provide the necessary framework to enable the successful delivery of environmental management issues during the delivery of the Crossrail Tottenham Court Road Station C422 contract.

It details how the strategies, plans, policies and procedures will be delivered to ensure that Laing O'Rourke C422 Contract meet the Crossrail's Environmental Minimal Requirements. The plan is structured to fulfil the requirements of the Laing O'Rourke Environmental Management System and BS EN ISO 14001:2004. The plan will be reviewed and updated in the event of any significant change to the scope of the works, prior to the start of each new stage of the project (see 1.4) or on a quarterly basis as a minimum.

1.2 Crossrail

Crossrail (CRL) is a major new cross-London rail link project that is being developed to serve London and the southeast of England. Crossrail will support and maintain the status of London as a world city by providing a world-class, affordable railway, with high frequency, convenient and accessible services across the capital. The route connects the City of London, Canary Wharf, the West End and Heathrow Airport to commuter areas east and west of London travelling from Maidenhead in Berkshire to Shenfield in Essex and Abbey Wood in the Thames Gateway. Crossrail includes the construction of a twin-bore tunnel on a west-east alignment under central London with associated shafts and portal structures, a further twin bore tunnel crossing the river Thames and the upgrading of the existing National Rail lines to the east and west of central London. Nine new stations will be constructed with interchanges to the existing transport network and existing stations on the national railway network will be upgraded.

1.3 Tottenham Court Road Station C422 Contract Works

The Tottenham Court Road Crossrail Station C422 works will comprise of:

- Structural works, including removal of temporary support works installed by others.
- Building works including architectural fit-out.
- Mechanical, electrical and Public Health (MEP) works.
- Installation & testing of Employer's systemwide communications Plant and Materials.
- Ground movement control & monitoring.
- Installation of OSD substation at WTH.
- Demolition and removal of temporary substations.
- Utility works.
- Protection of GSHP pipework installed by Others at Goslett Yard.
- Design completion, supply, installation, testing and commissioning of escalators.
- Landscaping, Site Restoration and Urban Realm.



1.4 Scope

This document covers environmental issues as covered in Part 21 - Environmental Management of Volume 2B of the Crossrail Works Information as applied to the C422 contract. In addition to programme wide requirements (Part 2B) there are a number of project specific requirements as set out in (Part 2A) of the works information. All of these requirements are incorporated into the C422 EMP, aspects and impacts register and project targets and objectives. The environmental controls identified in this document are designed to fulfil the requirements of Laing O'Rourke Environmental Management System, CRL Environment Requirements and to ensure legal compliance (please also refer to Section 4.3 for further details).

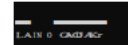
1.5 Interfacing Projects

There are a number of CRL Contracts that directly interface with the C422 Tottenham Court Road Station Contract, including C610 system wide contract and the LUL Station Upg. grade Project. The impact and interfaces with these contracts need careful consideration within the C422 Contracts planning and execution, with particular cumulative construction impacts such as noise and air quality. These cumulative impacts will be addressed in the topic specific management plans as detailed below.

1.6 Key Documents

There are a number of key documents that should be read in conjunction with this document and will be produced in line with dates listed below as agreed with the C422 Crossrail Project Manager. These documents include :

Title of Plan	eB Reference
Project Execution Plan	C422-LAO-Z6-STP-N105 WS089-50001
Environmental Management Plan	C422-LAO-TI-STP-NI 05 WS089-50001
Noise and Vibration Management Plan	C422-LAO-TI -STP-N 105 WS089-50017
Consents Management Plan	C422-LAO-TI -STP-N 105 WS089-50002
Interface Management Plan	C422-LAO-Z-STP-N105 WS089-50001
Temporary Works Design Management Plan	C422-LAO-C-STP-N105 WS089-50003
Air Quality Management Plan	C422-LAO -TI -STP-N 105 WS089-50008
Archaeological Management Plan	C422-LAO-TI -STP-N 105 WS089-50004
Energy Management Plan	C422-LAO-TI-STP-NI05_WS089-50009
Ecology Management Plan	C422 -LAO -TI -STP-N 105 WS089-50010
Land Contamination Management Plan	C422-LAO-T1-STP-N105_WS089-50015
Water Management Plan	C422-LAO-T1-STP-N105_WS089-50016
Sustainable Transport Management Plan	C422-LAO-T3-STP-NI 05 WS089-50001



Heritage Management Plan	C422-LAO-TI-RGN-N105 WS089-50004
Incident Management Plan	C422-LAO-Z7-RGN-N105 WS089-50001
Site Waste Management Plan	C422-LAO-TI -STP-N105 WS089-50013

2 Policy Statements

2.1 Crossrail HSE Policy

CRL is committed to implementing all the provisions in the TfL Health, Safety and Environment Policy (HSE). Our policy approach to health, safety and the environment is set out in the Crossrail Programme Health, Safety and Environment Policy. A copy of the CRL policy can be found in Appendix 1.

2.2 Laing O'Rourke Environmental Policies

Laing O'Rourke is committed to protecting and enhancing the environment, as stated in our Environmental Policy signed by the Chief Executive, Ray O'Rourke. Our Environmental Policy is complemented by a number of other policies which define our approach to managing wider environmental issues. These policies include:

- Biodiversity
- Considerate Contractor
- Sustainable Development
- Responsible Sourcing; and
- Carbon Management

Copies of these policies can be found in Appendix 1.

3 Planning

3.1 Environmental Risk Management

Environmental risks will be identified, mitigated and managed via an Environmental Aspects and Impacts Register (EAIR) maintained by the C422 Environmental Manager (please refer to Appendix 2).

3.1.1 Environmental Aspects

The Project environmental aspects will be incorporated into EAIR, this register will be maintained by the project Environmental Manager and reviewed on a quarterly basis.

3.1.2 Environmental Impacts

The significance of these environmental impacts resulting from these aspects will be assessed based on probability and impact. These will be assessed as low medium or high and scored 1, 2 or 3 respectively. These scores will then be multiplied together and ranked as:

- High - red (7 - 9)

- Medium risk - amber or (4 - 6)
- Low risk - green. (1 - 3)

3.1.3 Environmental Mitigation

Environmental impacts that are high risk will need to be managed using appropriate mitigation measures to reduce them to a low risk. Appropriate mitigation will be identified and listed in the EAIR. The mitigation measures may be taken from the Construction Code, or Laing O'Rourke best practice guidance.

The mitigation required will be referenced in the EAIR and the environmental risk will then be re-assessed. The EAIR will also identify the person responsible for ensuring that the appropriate mitigation is undertaken.

High level environmental risks will be incorporated into the C422 project risk register. Any new environment risks identified, for example during the quarterly review process, will be captured by the project Risk Manager during the C422 monthly project risk meeting. The meeting will comprise risk reviews with discipline leads, management team and CRL. As part of these reviews any new risks that are identified will be updated on the C422 project risk register.

The construction manager, section managers and temporary works managers are responsible for reviewing method statements and ensuring environmental risks are incorporated and appropriate mitigation is identified. These method statements will then be communicated to the workforce through daily activity briefings and toolbox talks. Site Supervisors are responsible for ensuring that all environmental mitigation measure identified in method statements are implemented during works.

3.2 Management of Key Environmental Aspects

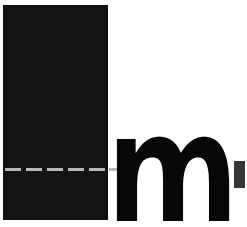
3.2.1, Noise and Vibration

The Environmental Manager will be supported by a suitably qualified Noise and Vibration Specialist to develop a Noise and Vibration Plan, Section 61 Consents, review the design noise assessment and update the (D9) noise assessments as necessary. The project team will produce necessary Section 61 consent applications which will be submitted to CRL for approval prior to submission to Camden and Westminster Environmental Health Departments (as appropriate). These Section 61 agreements will be reviewed and updated by the Noise and Vibration Specialist as required.

3.3.2 Waste Management

The Waste Manager is responsible for the development and implementation of the C422 Site Waste Management Plan (SWMP). The SWMP will detail the Project waste types and quantities including waste management actions and responsibilities for waste disposal. All waste transfer documentation e.g. waste transfer notes or consignment notes will include the appropriate six-digit European Waste Catalogue (EWC) code.

The Site Waste Management Plan waste data will be maintained on the web based SMARTWaste once access has been provided by Crossrail. All waste movements will be recorded on SMARTWaste as well as IMPACT+.



All records of waste movements will also be recorded into 'Waste Tracker' which is Part of IMPACT+ (Laing O'Rourke's environmental reporting system). Access to IMPACT+ can be obtained from the home page of iGATE (Laing O'Rourke's intranet).

A list of waste permits/ consents/ exemptions and licences (e.g. waste carriers, receiving tips, and exemption certificates), will also be maintained in the Site Waste Management Plan.

3.3.3 Air Quality including Dust

The Air Quality Specialist is responsible for managing the C422 air quality issues including the development and implementation of an Air Quality Management Plan, appropriate mitigation and undertaking routine and ad hoc air quality monitoring regimes.

3.3.4 Light Pollution

The Construction Manager will be responsible for ensure that sufficient controls are in place minimise light pollution. This will be monitored as part of the routine environmental inspections undertaken by the Environmental Management Team.

3.3.5 Water Management

The Environment Manager will develop and implement a C422 water management plan. There are no sensitive surface water receptors in the vicinity of the work site therefore the risk of surface or ground water pollution from site activities is not significant. Should a Drainage Consent be required it will be managed through the Consents Management Plan (see section 1.7).

The Water Management Plan will set out how all legal and contractual water requirements shall be managed as specified in this part of the Works Information (WI-2A 21.6 and WI-2B 21.11). The plan shall include the nominated person responsible for each task and shall be produced and updated by the MEP Manager and reviewed by the Environment Manager.

3.3.6 Archaeology

The C422 Environment Manager is responsible for producing an Archaeological Management Plan. All planned archaeological investigations have been completed in advance of the C422 Project. The Project Environment Manager will review works and provide toolbox talks on how to deal with unexpected archaeological remains during the construction phase of the Project. Furthermore, in the event of any unanticipated discoveries, CRL will immediately be informed and work will not recommence at that location until further instruction from CRL has been obtained.

3.3.7 Heritage

The Environment Manager is responsible for the development and implementation of the C422 Heritage Management Plan (HMP). An appropriately qualified heritage specialist has been appointed by the project. The Plan will clearly identify heritage structures and listed buildings in the locale and the HMP will set out the mitigation required to protect these buildings and structures.



3.3.8 Land Contamination

The C422 Environment Manager will be responsible for any Contaminated Land issues arising. It is highly unlikely that the C422 will have any land contamination on site, however we will follow CRL guidance for the testing of any potentially contaminated materials found or produced on the Project and these materials will be disposed of appropriately and reported and documented accordingly .

3.3.9 Ecology

There are no ecological constraints presently associated with the C422 Project. The Environment Manager will be responsible for monitoring the Project work sites and assessing if the local ecology changes and protected species are found on or near to the work sites. The Project Environment Manager will review works and provide toolbox talks on how to deal with ecological issues at the construction phase of the Project.

In the event of any unanticipated discoveries, works will be halted, a qualified ecologist will be contacted and work will not recommence at that location until further instruction from Crossrail has been obtained.

3.3.10 Landscape and Public Amenity

The Environment Manager will work closely with the C422 Designers / Design Manager ensuring Urban Realm, Landscape and Public Amenity issues are incorporated into the final design.

3.3.11 Energy

The Environmental Manager is responsible for the development and implementation of an Energy Management Plan. Activities that need to be mitigated will include static and mobile plant, equipment and site accommodation. Specification for 'green equipment' including site plant, accommodation, fuel storage etc will be implemented on the project using the appropriate Select Plant and Equipment which will align with the Responsible Procurement Plan for the C422 Project.

3.3.12 Sustainable Resources, Equipment and Materials

The Procurement Manager (with support from the Environment Manager) is responsible for ensuring that low hazard materials/equipment and products with high recycled content are specified. The calculation of recycled content within materials, equipment and construction components, will be undertaken using the BREEAM Assessment and/or Waste Resources Action Programme (**WRAP**) NetWaste Tools. The results of which will be submitted to CRL prior to commencement of procurement with quarterly updates hereafter as part of the progress report for environmental objectives and targets.

The Procurement Manager (with support from the Environment Manager) is responsible for ensuring that materials and equipment are procured from sustainable and ethical sources. The **C422**



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Responsible Procurement Plan includes the use of sustainability criteria at tender stage to ensure sustainability considerations are taken account of in the awarding of subcontracts.

All timber procured is to be certified by the Forest Stewardship Council (FSC) or Programme for the Endorsement of Forest Certification (PEFC). Delivery notes will be checked to ensure that appropriate chain of custody details, and assurance audits will be undertaken on key timber suppliers.

Ad hoc audit/reviews will be undertaken by the environment manager to assess the performance of sub contractors. All sub-contractors to Laing O'Rourke Projects are expected to comply fully with all environmental project and contractual requirements. All C422 sub-contractors will be briefed upon the key environmental constraints associated with their work and how they can impact upon environmental performance. Failure to attain these standards and/or comply with the contract requirements will result in corrective action notices being issued to these sub-contractors, and after discussion with senior LOR management, potential expulsion from the C422 Project.

3.3.13 Sustainable Transport Plan

The Traffic Manager (with support from the Environment Manager) is responsible for the development and implementation of a Sustainable Transport Plan to minimise the impacts of transport of goods and personnel to and from the site. C422-LAO-T3-STP-N105_WS089-50001

3.3.14 Temporary Work Sites

Due to the size constraints and nature of work involved for the C422 Project it is highly unlikely that project temporary works will trigger the implementation of the assurance aspects referred to within Works Information 28 Part 22.10. However the Environment Manager will monitor the C422 Temporary Works Register and liaise with CRL Environment Advisor at regular intervals to ensure the project remains compliant.

4 Environmental Requirements

The environmental requirements that apply to the Laing O'Rourke C422 contract are threefold:

1. Laing O'Rourke Environmental Management System
2. CRL contract requirements as set out in the works information and
3. Legal compliance.

4.1 Laing O'Rourke EMS

The Laing O'Rourke environmental management system meets the requirements of ISO 14001, and the Environmental Manual (appendix 3) is structured around the clauses of the standard.



4.2 Legal Requirements

A database of current environmental legislation (ENDS Compliance Register) is held on the Laing O'Rourke iGate intranet system. Legislative requirements associated with specific aspects of the project will be identified in the EAIR. Access to NETREGs is also available through the Laing O'Rourke computer system.

Legal requirements associated with specific activities will be identified through the development and review of project EAIR (Appendix 2). Relevant legislation will be listed in the reference column of the register, and controls necessary to ensure legal compliance will be included in the 'site specific control measures' column.

4.3 CRL Environmental Requirements

CRL Environmental Minimum Requirements, include three annexes comprising: the Construction Code; Planning and Heritage Memorandum; and; an Environmental Memorandum. The Construction Code requires the production of a number of Environmental Plans. These plans will set out how the C422 project will deliver the environmental requirements and how environmental issues that arise are handled to ensure compliance with relevant legislation and regulations and in accordance with Laing O'Rourke environmental policies.

In addition to programme wide requirements (Part 2B) there are a number of project specific requirements as set out in (Part 2A) of the works information. These requirements will be embedded into the C422 environmental aspects and impacts register.

4.4 Laing O'Rourke Environmental Requirements

4.4.1 Considerate Contractors Scheme

All Laing O'Rourke projects are required to sign up to the Considerate Contractors Scheme (CCS). This will also support the CRL requirement to achieve a BREEAM 'very good' rating.

4.4.2 BREEAM

Laing O'Rourke is responsible for maintaining a very good BREEAM rating for the C422 Project, and for submitting a post construction assessment. An instruction from the PM has now required Laing O'Rourke to achieve BREEAM Excellent. ARUP have been appointed the BREEAM specialist and they meet the CRL requirements.

The design manager (with input from the Environment Manager and BREEAM Assessor) is responsible for ensuring that design changes will not impact on the projected BREEAM score of 'Excellent'. This will be assessed during the design change approval process. C422 BREEAM review meetings will be held on a quarterly basis with the:

- LOR BREEAM assessor
- C422 Design Manager

- Detailed Designer's BREEAM assessor
- CRL
- Environment Manager
- C422 Construction Manager

The purpose of the meeting will be to ensure that BREEAM evidence is being collected appropriately, ensuring all design changes that may impact the sREEAM rating are being captured and that all necessary surveys and monitoring is being undertaken. The output of the meeting will feed into the CRL Quarterly reporting requirements.

4.5 Permits, Licences and Consents Register

A register of environmental permits, licences and consents will be developed and maintained during the design and construction phases of the Project. The Register will be reviewed on a quarterly basis and will align with the Project Consents Register maintained by the Consents Coordinator.

5 Objectives and Targets

5.1 Setting Objectives and Targets

The C422 Contract will set specific objectives and targets that are aligned with the CRL objectives and targets. Performance against these targets will be reviewed on a quarterly basis.

Objective	Targets	Responsibility	Delivery
Seek ways to incorporate environmental opportunities in the design	At least 15% of total core material value will derive from reused and recycled content in new construction, and aim to exceed 20%	[Redacted] Completion Date - Ongoing	WRAP recycled content toolkit or equivalent
Seek ways to reduce the carbon footprint of the project including energy use in the contractors site offices	Achieve 15% reduction (or greater) in energy used in construction against that baseline for Scope 1 & 2 Emissions. This includes a 15% reduction in transport emissions	[Redacted] Completion Date - ongoing	Review LOR CO2 Guidance, identify and implement measures. Record performance on IMPACT+.
Reduce the amount of construction waste and excavated material going to landfill with maximised beneficial reuse of the materials.	Achieve 90% (or greater) for construction waste reused or recycled, and aim for 95%	[Redacted] Completion Date - Ongoing	Identification and delivery of reduction measures. LOR Waste Minimisation Guide to be reviewed.
- ...	Achieve 95% (or greater) for excavated material reused or recycled and aim for 100%	[Redacted] Completion Date -Ongoing	Excavation materials to <u>re-use</u> as beneficial - re-use elsewhere

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<p>The project will seek ways to incorporate environmental opportunities within the design</p>	<p>Achieve BREEAM Excellent under an new instruction</p>	<p>Completion Date - Ongoing</p>	<p>Utilise Environmental Design Checklist and BREEAM Assessment.</p>
<p>Ensure that all Subcontractors and suppliers comply with the environmental requirements in the contract</p>	<p>100% of subcontractors receive a copy of the EMP and are inducted and attend environmental TBTs</p>	<p>Completion Date -ongoing</p>	<p>Procurement to ensure EMP is included in Procurement pack prior to subcontract award.</p>
<p>Prevention of nuisance - Considerate contractors</p>	<p>Achieve a CCS score of 40/50 Stretch to achieve 45/50</p>	<p>Completion Date - Ongoing</p>	<p>Environment manager to be actively involved in the CCS process</p>
<p>Reduce the project water consumption Seek ways to recycle water</p>	<p>Water target of 8m3/£190K project turnover</p>	<p>Completion Date -ongoing</p>	<p>Review LOR water Guidance, identify and implement measures. Record performance on IMPACT+ .</p>

These environmental targets will be communicated to the project team through an environmental launch prior to starting on site, through start up meeting with subcontractors and suppliers starting on site and through the environmental induction. Updates on the performance of the **C422** against these targets will be communicated in progress meeting and through site notice boards.

A progress report will be submitted to Crossrail for acceptance (at the end of reporting periods one, four, seven and ten each year).

5.2 Programme of Achieving Objectives

The project will develop a programme for achieving environmental targets which will be reviewed on a quarterly basis. Progress on environmental objectives will be assessed during the Project Management Reviews.

6 Roles and Responsibilities

Everybody on the C422 contract has a responsibility to adhere to the Laing O'Rourke Environmental Policy of protecting and enhancing the environment. However some roles have clearly defined accountability, and ultimately culpability. Some of the key environmental responsibilities identified in the Laing O'Rourke Safety Management System (SMS).

6.1 Project Director

Ensure environmental matters are part of the senior leadership agenda. Undertake Health Safety and Environmental tours that address environmental issues appropriately.

6.2 Project Manager

Provide leadership for and promote enthusiasm for high standards of environmental performance on their project. Ensuring their management team has the necessary environmental competencies and support.

6.3 Health and Safety Manager

The Health and Safety Manager supports the environmental function particularly where there are synergies with Safety and Environmental issues.

6.4 Environment Manager

The Environment Manager will take the lead on environmental issues for the C422 contract, including contact with environmental regulators, and meet the requirements set out in Works Information Vol. 2B Section 21.2.3.

6.5 Design Manager

The design manager is responsible for ensuring that the design team supports the requirement to achieve a BREEAM Excellent rating and specifies low hazard low environmentally responsible products and materials. He is also responsible for ensuring design changes do not adversely impact on the BREEAM rating.

6.6 Procurement Manager

The procurement manager is responsible for ensuring subcontractors, equipment and suppliers are assessed on their environmental credentials. They are also responsible for implementation of the Responsible Procurement Plan and implementing the requirements of Works Information Vol. 2B Section 21.6.

6.7 Environmental Coordinator

Environmental Coordinators are responsible for implementing aspects of the Laing O'Rourke Environmental Management Plan, including monthly KPI reporting, training and carrying out environmental inspections. Until an environmental coordinator is formally appointed the Environmental Manager will assume the role and associated responsibilities.

6.8 Office Manager

The Office Manager is responsible for coordinating effective waste management, waste data entry and supporting the environmental function through realising opportunities to re-use materials. They are also responsible for ensuring that all equipment and materials ordered in for the C422 project,

comply with CRL environmental requirements (e.g. white noise reversing alarms and Euro 36 compliant non road mechanical machinery).

6.9 Consents Coordinator

The Consents Coordinator will be the principal point of contact for consents both internally within the C422 team, and externally with CRL and the Consent Granting Bodies. In addition to being the author of the Consents Management Plan, he will oversee the implementation of all the processes and procedures contained within it (see section 3 of the Consents Management Plan).

6.10 Temporary Works Manager

The temporary works manager is responsible for ensuring that all temporary works are assessed for their environmental risks as set out in the Temporary Works Management Plan (eB ref: C422-LAO - Z-STP-C101_WS102-50004), and that these risks are incorporated into the Aspects and Impacts register.

6.11 Construction Manager

The Construction Manager is responsible for supporting the environmental function in ensuring that the project environmental requirements are implemented across the project and adopted by all suppliers and subcontractors.

6.12 Energy Champion

The Role of the Energy Champion is carried out by the Environmental Manager. In this role they will gather data to show energy consumption over the duration of the project. This data will be reported in the monthly KPI's. Consumption trends will be identified and communicated to the workforce in order to target areas for efficiency improvement.

6.13 Project Specific Roles

Project specific responsibilities for managing the environmental impacts of the scheme are maintained on the Aspects and Impacts Register (appendix 2). A number of key roles identified in section 21.1.1 of Volume 2A are summarised below :

	Role	Name	Employer	Full time/ part time	Duration on contract
1	Environment Manager	[REDACTED]	Laing O'Rourke	PT	Until completion
2	Waste Manager	[REDACTED]	Laing O'Rourke	PT	Until completion
3	Contaminated	[REDACTED]	Laing	PT	As required



	Land Specialist		O'Rourke		
4	Heritage Specialist	██████████	CJ Associates	PT	As required
5	BREEAM Assessor	██████████	ARUP	PT	As required
6	Ecologist	██████████	Laing O'Rourke	PT	As required
7	Noise & Vibration Specialist	██████████	AECOM	PT	Until completion
8	Air Quality Specialist	██████████	AECOM	PT	Until completion
9	Consents Coordinator	██████████ CJ Associates	Laing O'Rourke	PT	Until completion
10	SHE Coordinator	██████████	Laing O'Rourke	PT	Until completion
11	Community Liaison Manager	██████████	Laing O'Rourke	PT	Until completion
12	Env. Design Specialist	TBC	TBC	PT	As required
13	Env. Systems Auditor	██████████ ██████████	Laing O'Rourke	PT	As required

Due to the very limited likelihood the C422 Project will have any impact on ecology and contaminated land, it is not anticipated that a specialist ecologist/contaminated land expert will be required other than for the BREEAM requirements. However, if during the Project does require the support of qualified specialists, a suitably qualified and competent professional shall be appointed.

7 Training and Awareness

A programme of project specific environmental training will be developed and implemented across the C422 project to ensure an understanding of the core environmental and sustainability issues for all staff and contractors. More bespoke training will also be provided (e.g. BREEAM awareness, Carbon Accounting, etc.) as and when required.

Environmental training will be rolled out to the whole C422 project including subcontractors and suppliers, and the CRL project team.

The C422 site induction will include environmental issues that are likely to be encountered on the project and the environmental behaviours that are expected of the Laing O'Rourke employees, suppliers and subcontractors. The induction will be given by suitably competent member of the project team, who has a good understanding of construction related environmental issues.



Environmental awareness campaigns will be used to target specific environmental messages, that may be current (e.g. dust suppression during dry periods), or may related to project specific objectives. The campaigns will use a variety of media to communicate environmental messages to the workforce including using toolbox talks, daily activity briefings and posters, covering topics including: waste management, noise and vibration, archaeology and air quality.

Opportunities for operatives, managers, senior management, suppliers and subcontractors to engage with the environmental initiatives through the regular meetings will be actively promoted by the HSE leadership on the project. See project training Appendix 4

The training will include:

- Environmental Sustainability
- Supervisor Environmental Awareness
- Environmental Emergency Preparedness and Response
- Ad hoc training on specific environmental issues, e.g. noise and vibration, archaeology and waste

8 Consultation and Communication

The C422 Community Liaison Manager will coordinate all consultation and correspondence with key stakeholders (e.g. Westminster and Camden Council, local business and residents). This is to ensure a consistent approach that is aligned with the CRL Environmental Requirements .

The C422 Project will be represented by the Community Liaison Manager at all appropriate meetings with the key project stakeholders to ensure that all compliance issues are being managed appropriately. Forums with other stakeholders will be established as required to ensure the timely exchange of information . Consultation and communication will be managed in conjunction with the CRL Environmental Team.

Environmental issues will be included as an item on the agenda during weekly progress meetings to ensure due consideration of the environmental aspects of the C422 project.

9 Documentation

All the C422 project documentation will be managed by a project based Information Manager using an electronic document control system, (ASite). Submission of documents to CRL will be managed through the CRL eB system.

9.1 Control of Documents

The Environmental Plans and other key documents will be maintained by the Environmental Manager in an Environmental File on the project electronic document control system (ASite). Where hard copies of documents are issued it will be the readers' responsibility to ensure that they have the current version.

10 Operational Control

The operational control of the environmental management will be maintained by the effective implementation of the Laing O'Rourke Environmental Management System . This will be assessed through a programme of internal and external inspections and audits.



Environmental audits will be undertaken on a quarterly basis by a competent person using the Laing O'Rourke internal audit checklist. This checklist covers the whole scope of the Laing O'Rourke Environmental Management System. The complete scope of the EMS as applied on the C422 contract will be covered on an annual basis.

11 Emergency Preparedness and Response

The C422 Emergency Response Plan will document the key individuals responsible for managing environmental incidents and emergencies.

All site staff will have emergency response training to ensure they know how to respond in the event of an environmental incident. Key staff will be identified as part of an emergency response team. These are likely to include site security, personnel responsible for refuelling and any other high risk activities, and personnel located at remote or highly sensitive locations.

12 Performance Measurement and Monitoring

12.1 Levels of Measurement and Monitoring

There will be several levels of environmental measurement and monitoring of the Environmental Plan to ensure compliance with the CRL requirements. These will include but not be limited to:

- Weekly Construction Site Inspections (carried out by Construction Supervisors and Environment management team)
- Fortnightly Project Environment Progress meetings.
- Period reporting of Environmental KPIs and Internal Audits.
- Laing O'Rourke compliance audits undertaken by a suitably qualified auditor
- 6 monthly Management Reviews
- External Audits for ISO 14001 certification by a UKAS accredited certification body (BSI).

The Environment Manager is responsible for ensuring that any monitoring requirements to demonstrate legal compliance are met. This monitoring may be contracted out to appropriately qualified environmental specialists, e.g. acoustic and air quality consultants, etc.

12.2 Monitoring of Objectives and Targets

Environmental Objectives and Targets will be monitored through monthly KPI reporting, quarterly reviews and external environmental audits. KPIs will be recorded using the CRL Rivo system covering all the relevant reporting requirements listed in WI 2B 4.3.2.

12.3 Proactive Performance Measures

A number of tools will be used to drive the improvements in environmental performance and continuous improvement. These tools include the Considerate Constructors Scheme, BREEAM, the

CRL Green Line Recognition Scheme. These schemes will assess environmental performance and identify areas for improvement.

12.4 Reactive Performance Measures

Reactive performance measures will include findings from weekly inspections, audits, and environmental near miss and incident reports. The corrective actions will set out how the issues will be rectified.

13 Environmental Incidents and Corrective Actions

13.1 Reporting Incidents

All environmental incidents must be reported to the Environment Manager as soon as practically possible. The use of near miss cards for reporting environmental issues will be actively encouraged, monitored and assessed to determine the level of engagement with the environmental agenda. The C422 Emergency Preparedness Plan will detail how all safety and environmental incidents and near misses will be managed. All incidents are to be reported on LOR's IMPACT system and also the clients RIVO reporting system.

13.2 Recording Incidents

Environmental Incidents will be recorded using the Laing O'Rourke Environmental Incident Tracker and CRL Rivo reporting tools. Incidents must be recorded if there is:

- any detrimental impact on the environment
- risk of a significant impact on the environment
- use of any spill kit products

Incidents will be categorised according to the respective system requirements, (as detailed in the systems themselves).

13.3 Corrective Actions

Environmental non-conformances will be raised using the CRL PTR and Laing O'Rourke processes. It is noted that CRL will incentivise contractors to raise non-conformances against themselves.

Where corrective and preventative actions lead to a change to a document procedure, this will be documented and the procedure owner notified. The document will be updated in line with document control requirements. The Register of Non-Conformances and Recommendations is maintained by the Quality Manager.

14 Records

All key environmental documents will be kept up to date in an environmental management file, in electronic and hard copy maintained by the C422 Environment Manager. Records will include, but not be limited to:

- Key Environmental Documents
- Environmental Training
- Environmental Incidents
- Environmental Non conformances
- Environmental Inspections and Audits
- Permits, licences and consents

15 Management Review

A management review will be undertaken on a 6 monthly basis to assess the environmental performance of the C422 Contract and to identify opportunities for improvement. The Review will include the C422 Project Director , Project Managers and leads from the procurements and commercial functions . The CRL Project Manager will be invited to attend.

Any minutes/reports for the Review will be issued to attendees in advance of the Meeting and the structure of the management review include a review/discussion of the following topics:

1. Results of internal audits including evaluations of compliance with legal requirements and other applicable requirements.
2. Communication from interested parties including complaints.
3. Environmental performance.
4. The extent to which objectives and targets have been met.
5. Non-conformance, corrective and preventive actions.
6. Results of the previous management review.
7. Changing circumstances (which includes developments in legal and other requirements related to environmental aspects).
8. Key actions for improvement including timescales for implementation.
9. Adequacy of environmental staffing.
10. . Summary assessment of environmental training undertaken and planned .

The output of the management review will include a summary report/action improvement list including named individuals with specified timescales to complete . The Environment Manager will be responsible for collating this for the Project Director and he will submit to the Crossrail Project Manager for review.



Appendices

Appendix 1 - Environmental Policies

Appendix 2 - Laing O'Rourke C422 Environmental Aspects & Impacts Registers

Appendix 3 - Laing O'Rourke EMS

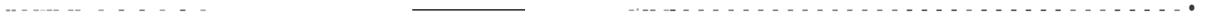
Appendix 4 - C422 Environmental Training Plan

Appendix 5 - C422 Audit Schedule

Appendix 6 - Legal Register

APPENDIX 1

CORPORATE POLICIES



ENVIRONMENTAL

Laing O'Rourke is committed to the protection and enhancement of the environment. High environmental performance is an ongoing priority and is achieved by our actions in line with this policy. This policy sits alongside our Sustainability policy and Supply Chain policy as part of our global policy framework, underpinned by our Global Code of Conduct.

Our goal is to minimise the negative impacts of our operations and maximise the quality of the built environment for future generations. Through innovation and application of leading practice, we aim to steer the industry to design a sustainable and high-quality built environment with as little environmental impact as possible through the whole asset lifecycle.

Our goal will be realised by:

- Demonstrated leadership of our environmental agenda by senior leaders
- Complying with relevant legislation and other requirements specific to the context of our business and regularly evaluating and reporting compliance
- Preventing polluting emissions or discharges to the environment
- Proactively minimising environmental impacts, including being industry leading in minimising direct and embodied carbon emissions, and providing energy efficient / low carbon assets for our clients
- Continual improvement of the environmental performance of our activities, products and services through clear objectives, targets and programmes
- Exploring opportunities in the sourcing and lifecycle aspects of our products, services and supply chain to reduce carbon emissions and demonstrate positive environmental outcomes
- Exploring opportunities for innovative technologies, products and processes that drive improved environmental outcomes/ environmental benefits throughout the delivery and operation of the assets we build
- Communicating and addressing the risks and opportunities associated with the impacts of our activities, products and services
- Improving resource efficiency by reducing the use of natural resources and reducing waste, maximising resource recovery and diverting the waste we do produce away from landfill sites
- Reducing our water consumption and improving water efficiency in all of our operations
- Engaging our supply chain partners to improve their environmental performance and responsible sourcing of their materials, products and services
- Proactively protecting, preserving and enhancing biodiversity and land quality
- Enhancing employee understanding of environmental sustainability through stimulating cultural change and providing clear direction
- Maintaining ISO 14001 certification for our principal businesses and progressing further certifications for our products and services

Our policies are reviewed and updated annually to evolve with the world around us to make Laing O'Rourke the company of first choice for all our stakeholders while challenging and changing the image of construction worldwide.

The Board of Directors of Laing O'Rourke fully endorses this policy.

I personally commit Laing O'Rourke to this policy.


Chairman and Chief Executive

APPENDIX 2

LAING O'ROURKE C422 ENVIRONMENTAL IMPACTS & ASPECT REGISTERS

Environment Impacts Aspects Control Register

Revision (corresponds to Version Control) **v9.0**
 Date of Last Review: 01/06/2017

Project / Location: **Tottenham Court Road C422**
 Prepared by: **Ashley Webb**
 Approved by: **Simon Russel**
 Position: **Environment Manager**
 Position: **Project Leader**

Phase	Issue	Aspects <small>Consider HOU fees, waste, etc. + main to us to our, waste, etc.</small>	Impact(s) <small>Consider the effect of the impact on the environment</small>	1 E	2 & a e	3 8 n n in	Site Specific Control Measures <small>Include Monitoring Arrangements</small>	References <small>Legislation / LOR Documents / AIM1ory etc.</small>	Responsible Person
Design	Design does not adequately assess Sustainability/Environment	Environmental Performance of building, with respect to operations and materials used/procured	Less sustainable building / carbon footprint over its life time. More expensive running/operating costs. Failure to achieve Client's Targets	4	2		Clear target credits, and Design Information to achieve credits (with appropriate margin of safety -4-5 points)	BREEAM assessments with A up to NISP Design Team and CRL	\\ISP BREEAM Assessor / LOR Design Manager and LOR Env Manager
							Well-controlled interface between Design and Procurement, and Procurement and Construction		
							Collection of necessary evidence to achieve BREEAM credits		
							Regular reporting/ interface with client		
							Liaison with WSP Design BREEAM Assessor who will secure accreditation at both D&P and PCR stage		
All	Interface with Stakeholders (incl Client)	Communication with 3rd Parties	Lack of knowledge / understanding and appreciation of other parties need to know causing conflict/disturbance and building negative situations.	3	1		Regular meetings with CRL to ensure interface and appreciation of issues/risks are being managed appropriately	Crossrail Works Information	Environment Manager / Heritage Specialist / Community Relations Rep / Interface Manager
							Regular dialogue with local stakeholders and interested parties through U&V Commitments		
Construction	Air Quality	Dust generation	Nuisance to Site personnel. Local residents, business and members of the public	3	2		Dust Monitoring equipment shall be in place to monitor and flag up any non-exceedances. Daily Dust log record forms to be completed at the WTH & GYB	Air Quality Management Plan	Environment Manager / Coordinator
							Various site techniques will be employed to prevent dust release. This will include dampening down, screening, minimising drop heights, bins and skips will be covered, particle filters and Euro standard 4 plant and equipment will	Toolbox Talks	Construction Liaison
Construction	ARCHAEOLOGY	Disturbance of archaeological remains	Loss of historical objects/remains	3	1		TCR Site has been fully checked for AArch remains, therefore risk is extremely low. However, staff will receive induction and toolbox talks for how to deal with unexpected finds.	Toolbox Talks	Env/Construction Liaison

Environmental Impacts Aspects Control Register

Phase-	Issue	Aspects Consider our core values, water, and emissions, air, water, and land	Impact(s) Consider normal and emergency conditions	Site Specific Control Measures Include Monitoring Arrangements	References Legislation / LOR Documents / Advisory Bodies	Action Owner
Construction	Ecology	Disturbance of protected species/ habitats	potential legal contravention. Death / injury / stress to protected special.	TCR Site has been fully checked for Protected Species/ Ecology and there are no species present at the time of the surveys. The risk is very low but LOR will train staff in their induction and toolbox talks for how to deal with unexpected finds.	Toolbox Talks, Site inspections by Env Manager/ Ecologists.	Environment Manager
All Phases	Energy	Global Warming, CO2 emissions, costs, climate change, and localised and energy wastage; air pollution. Increased energy bills and reduction in profits for LOR&CRL.	CO2 emissions leading to climate change, and localised and energy wastage; air pollution. Increased energy bills and reduction in profits for LOR&CRL.	Project will inherit site office energy initiatives. For Construction Phase, LOR will Monitor energy use across the project. Seek ways to reduce energy and fuel use and report CO2 emissions to Crossrail Via Impact, RIVO and CRL quarter reporting. Use the new Sustainability Champions to implement Energy reduction campaigns for the Engineering Sustainable Futures to achieve 30% CO2 LOR target based on 2008/09 baseline by 2020	Engineering Sustainable Futures.	Environment Manager
				Ensure Grid connection for any site cab in s/w/ef as soon as possible to minimise diesel generators, etc. Aim to improve behaviours with appropriate signage.	Climate Change Levy, LOR good practice guidance liaising with power company to secure	Environment / MEP Managers
				Temporary electricians contract spec. to include energy efficient features and ensure bespoke switching controls to avoid high temperature areas unnecessarily	Temporary electricians standard scope of works	Procurement Mgr
				Ensure emergency lights and back-up power are on separate circuits from other lighting	Lairing O'Rourke Reducing Operational CO2 Emissions Guidance Document	Construction Manager
				Install meter to specifically monitor site energy use when using Client's electricity supply (i.e. if dependant on bills from Client to calculate energy use)		Construction Manager
				Install sub-metering (where possible) to capture energy use for different areas/processes		Project leader
				Monitor CO2 emissions based on meter readings and diesel consumption, (BREEAM v3 and KPIs requirement) and display material high in profile location to reinforce good practice in reducing emissions; Record data on Impact Plus		Environment Co-ordinator
				Specify electrical equipment in lieu of diesel wherever possible	Lairing O'Rourke Reducing Operational CO2 Emissions Guidance Document	Procurement Mgr
Use of fuel sheets to record fuel usage and plant efficiency		Supervisors				
All Phases	Sustainable Transport	Vehicle Use - staff / CO2 emissions leading to visitor transport to and from site	climate change	Sustainable Transport Pion	Climate Change Levy; C-422 Sustainable Transport Pion	Environmental Manager & Logistics Manager
				Use of teleconferencing (see iGATE) and videoconferencing to reduce the need for journeys to meetings off site		All Staff
				Directions to site to be via public transport		Office Manager
				Limited or no staff work in a car share scheme		Construction Manager
				Provide Cycle racks / cycle store		Environment Manager

Environmental Impacts Aspects Control Register

Phase	Issue	Aspects <small>Consider residential, water contamination, air, noise, road</small>	Impact(s) <small>Consider normal and emergency conditions</small>	Priority	Severity	Control Measures	References <small>Location / LOR Occurrence / Frequency/Day</small>	Action OWNER
Construction	CONSTRUCTION TRAFFIC (CO2, Noise, AIR POLLUTION)	Vehicle use - deliveries	CO2 emissions leading to climate change, local traffic congestion	2	3	Implement Traffic Management Plan identifying routes / times / restrictions - based on local circumstances (e.g. schools, and advice from local authority and emergency services)	Imperial Chemical Industries New Roach and Street works Act 1991 (if involved in work on public highway)	Construction Manager & Traffic Manager
						Communicate traffic management plan to suppliers and sub-contractors		Procurement Manager
						Vehicles to have full loads		Logistics Manager/ Construction Mgr
						Consolidate orders to ensure fewer deliveries;		Logistics Manager/ Construction Mgr
						Accurate forecasting of load size and choice of appropriate delivery vehicles to be required		Commercial Mgr/Project Engineers
						Engines switched off whilst waiting/unloading - reinforced by Goleman/appropriate signage		Goleman
						Logistics strategy, scheduling of deliveries to avoid queuing		Construction Manager
						Use of Juggler system (large sites) to record mileage and		Logistics Manager/ Construction Mgr
Construction	WATER	Water Foul Water and Sewage discharges	Contamination of existing land, possible contamination of existing watercourses through surface water drains. Contamination of rivers.	1	1	Ensure proper connection of site accommodation to foul water system; Trade Effluent Consent with Thames Water	Water Industry Act 1991 SMS envogu42 - Protection of Natural Water Resources; envogu2S - TBT Water Discharges PrG4 - Disposal of sewage where no foul drains	Construction/ Env Manager
Construction	V/ATU	Storage and fuelling	Risks of spillage, ground contamination and run-off into water systems	2	2	Storage to be in marked containers, in good condition, bunded and/or on drip trays/plant nappies, well away from drains (10m+). All fill pipes, draw pipes and sight gauges to be enclosed within the bund. Tank Vent pipes should be directed down into the bund. Bunds should be 110% of volume of single drums or 25% of total volume of multiple drums.	Water Resources Act 1991 Control of Pollution (Oil Storage) (England) Regulations 2001 SMS Appendix 178 - Fire & Emergency Planning - envogu06 - Env. Incident Central - envogu07 - Pollution Prevention - envogu41 - Oil Storage - envogu16 - TBT Spill - Prevention & Response envogu17 - TBT Oil storage envogu9-TBT Using Drip Trays and external guidance F7G G. J. & PPG1, PPG2, r PGS, PPG7, PPG 8 and PPG 13. Also see ORIA Guidance documents CS32 (Water Pollution) and C649 (Control of Water), BREEAM Credit Issue Man3 Construction Site Impacts	Construction Manager
						Drip trays or plant nappies to be used when transferring		Construction Manager
						Bunds/bowlers site to be checked regularly to avoid spillage - (preferably on impermeable surface).		Environment Manager
						Spill kits available at appropriate locations - signage, directions plan to indicate locations		Environment Manager
						Bunded hazardous waste bin for spill kits from spillages and for drum contents		Environment Manager
						Staff trained in correct procedures (Toolbox talks/induction and supervisor reinforcement)		Environment Manager
						Emergency response plan covering spillages, communicated to relevant staff.		Environment Manager
						Interceptors on drains		Construction Manager
								Environment Manager
								Environment Manager

Environmental Impacts Aspects Control Register

Phase	Issue	Aspects Consider resources, water, and emissions to air, water and land	Impact(s) Consider normal and emergency condition.	Significant	Control Measures	Site Specific Control Measures Include Monitoring Requirements	References Legislation / LOR Documents / Advisory Bodies	Action Owner
Construction	WATER	Water demand	Pressure on existing supply, low flow - depletion of water resources			Water efficient specification for site accommodation, including the following features • water flow restrictors if background water pressure is above 2 bar. • push taps, spray taps, • cisterns 6l maximum size. Consider sanitary waterless urinals or presence sensors on urinals to avoid unnecessary flushing Project KPI Bm3/£100k turnover	Gaing O'Rourke Site accommodation specification 2008 BREEAM Credit Issue Mon3 Construction Site Impacts; CRL Specification for Site Accommodation	Procurement Manager
								Construction Manager
								Project Leader
AU Phases	WASTE	Waste production, minimisation	Environmental (and cost) impacts of waste management landfill, transport, recycling processes and their impacts			Through the use of NEI Waste and BREEAM to design out waste in the first place. At construction phase, LOR will use a professional waste contractor to attain the highest levels recycling possible with fully transparent and auditable records held within the Project Site Waste Management Plan (SWMP) Engineering Sustainable Futures to achieve LOR target 50% reduction from 2009/10 baseline by 2020	Environmental Protection 1990 Part II - Site Waste Management Plan Regulations 2008 - Environmental Protection (Duty of Care) Regulations 1991 Controlled Waste (Registration of Carriers & Seizure of Vehicles) Regulations 1991 Environmental Permitting (England and Wales) Regulations 2007 • List of Waste (England) Regulations 2005, SMS SWMPGU00 Site Waste Management Plan • Guidance Notes for Completion; envogu08 - List of Waste Codes; envogu10 - limiting criteria for disposal of waste to landfill sites; envogu23 - TBT Managing Waste on site; envogu24- TBT Waste disposal and duty of care; BREEAM credit issue Wst3; DIMA KPI Monitoring	Environment Manager/Coordinator

Environmental Impacts Aspects Control Register

Phase	Issue	Aspects Considered (ev, ch, waste, demolition, air, water, noise, vibration)	Impod(s) Considered (normal operating conditions)	Stage	Frequency	11 8 11 11 11	Site Specific Control Measures Identify, Monitor, Manage, Mitigate	References Legislation / LOR Documents / Authority Bodies	Action Owner
Construction	WASTE	Hazardous Waste Storage and disposal	Increased landfill requirements and loss of landfill space; contamination of land and water				Identify potential hazardous waste products - re-specify as non-hazardous product where possible	Environmental Protection Act 1990 Part 11- Site Waste Management Plan Regulations 2008 Environmental Protection (Duty of Care) Regulations 1991 Controlled Waste (Registration of Carriers & Seizure of Vehicles) Regulation 1991 - Environmental Permitting (England and Wales) Regulations 2007 • List of Wastes (England) • Regulations 2005 • Hazardous Waste (England and Wales) Regulations 2005 • SMS: envogu8 - List of Wastes - envogu9 - Hazardous Waste Threshold Concentration Limits - envogu10 - Limiting criteria for disposal of waste to landfill sites • envogu23- TBT - Managing Wastes on site • envogu24 - TBT Waste disposal and duty of care, BREEM audit issue Ws.13	Environmental Manager
							Use suitably licensed Waste contractor to remove and dispose of hazardous waste and obtain licence and documentation for them and disposal sites as appropriate.		Procurement Manager
Construction	CONTAMINATED LAND	Potential disturbance of existing contaminated land.	Variety of possible health and ecological impacts from spread of contamination				Both TCR Sites will be virtually free from potential contaminated land/ spoil when LOR take over. We will ensure any land/ spoil found or produced is suitably tested and treated/disposed of.	Environment Act 1995, Contaminated Land Regulations 2006, Control of Pesticide Regulations 1986, Hazardous Waste Regulations 2005 SMS Envoc 00 - dealing with brownfield sites and contaminated land; envogu26 - TBT Contaminated Land	Environmental Manager
All Phases	NOISE	Noise-producing activities	Disturbance of public (and particular / nearby neighbours) leading to statutory nuisance.				Design out noise as much as possible from construction and operational phases and avoid percussive techniques if alternatives are available. i.e. Wire Saw to replace breaking activities. Use RPM such as acoustic screens to shield noisy works. Noise monitors installed across site at sensitive receptors, real time monitoring in place with trigger alerts set with email alert messages sent	Environmental Protection Act 1990 Part III - Control of Pollution Act Sections 60/61 • SMS envogu44- Noise & Vibration • envogu21 TBT Noise and Vibration Control Scheme	Design Manager / Environment Manager / Construction Manager

Environmental Impacts Aspects Control Register

Phase	Issue	Aspects Consider source, workload and emissions to air, water, and land	Impod(s) Consider normal and abnormal conditions	Severity	Probability	Significance	Site Specific Control Measures Include Monitoring Arcin119mnb	References Legislation / LOR Oocum nb / Ach-isoryBeiddu	Action Owner
							Use tight fitting, sealed acoustic enclosures on noisy equipment when possible (e.g. hoods and doors on generators - sockets on pneumatic drills)		Construction Manager
							Liaise/communicate with local residents and businesses to keep them informed of particular/ any out of the ordinary noise generating activities - record any positive communications or complaints on Impact Plus or as per Business Unit requirement as appropriate		Community Liaison Manager
							Arrange electricity supply as soon as possible to avoid generator use		Construction Manager
							Maximise efficiency of deliveries by arranging full loads		Logistics Manager
							Co-ordinate deliveries to minimise waiting times		Logistics Manager
							Instruct that engines to be turned off while waiting		Supervisors
							Good maintenance of plant and vehicles		Construction Manager
							Monitor noise levels and discontinue works and correct problems if set thresholds exceeded		Environment Manager

Environmental Impacts Aspects Control Register



Phase	Issue	Aspects Considered: Air, Water, Noise, Land, etc.	Impact(s) Considered: Land, Air, Noise, etc.	Severity	Frequency	Control Measures	References	Action Owner
All Phases	VIBRATION	All vibration-producing activities	Health impacts, risks to existing structures	2	2	Design out potential nuisance from vibration as much as possible from construction and operational phases and avoid percussive techniques if alternatives are available. Vibration monitors installed across site at sensitive receptors, real time monitoring in place with triggers set with email alert messages	Environmental Protection Act 1990 Part II - Control of Pollution Ad Sections 60/61 - SMS envogu 44 - Noise & Vibration - envogu 21 TBT Noise and Vibration - Crossrail Works Information	Project Leader / Construction Manager
						If risks significant, commission a specialist study to examine risk and make recommendations to be followed.		Project leader
						Design-out vibration as much as possible, and fit anti-vibration mounts/dampers if needed		Construction Manager
						Use non-percussive techniques where possible		Construction Manager
						Training and management emphasis on good workmanship with piling to minimise trimming/braking		Construction Manager
						Review Noise & Vibration Monitoring Data to detect any activities that cause vibration		Construction Manager
Construction	LIGHTING	Light emitting from temporary site lighting systems.	Disturbance of public and wildlife. Stress and loss of sleep.	2	1	Minimise lighting to that required for security and safety, and maximise other aspects of security to minimise need for lighting	Environmental Protection Act 1990 Part III - Control of Pollution Ad Sections 60/61 Temporary Electricity Standard Scope of Works	Project leader
						Consider location / fitting shields if needed		Construction Manager
						Lighting to be focused downwards/inwards to minimise impact on residents		Procurement Mgr / Construction Manager
All Phases	Visual Impact / Amenity	Ensure design complies with Heritage and Urban Realm considerations	Stakeholders not satisfied, potential redesign/judicial review	3	2	Ensure regular dialogue with interested parties and WSP Designers to ensure the project does not negatively impact Heritage and Urban Realm considerations	C422 U&A's	WSP Design Team / LOR Design Manager / Env Manager
All Phases	MATERIAL RESPONSIBLE SOURCING	Office Resources - paper/toner/all stationary	Energy intensity of production (and water consumption)	1	2	Use paper which is 100% recycled or 70%+ recycled and remainder from sustainably managed forests and stationary and other products that contain highest percentage of recycled material	Responsible Sourcing Policy	Office Manager & Procurement Manager
						Order recycled stationary products where financially equal to standard products		Office Manager
Construction	MATERIAL RESPONSIBLE SOURCING	General site materials	Energy intensity of production (and water consumption); using up of natural resources; release/spills/leaching can cause imbalance in water/ground PH	2	1	100% recycled DPM (e.g. visqueen Eco membrane) to be used wherever possible;	BREEAM Requirements, Responsible Sourcing Policy	Construction Manager, Office Manager & Procurement Manager
						Water based release agents for formwork		Construction Manager
						Monie ice melt in winter instead of Rock Salt		Construction Manager
						Sustainable concrete use		Construction Manager
						FSC / PEFC / CSN SFI with CoC or re-used/recycled certified		Procurement Manager / Office

APPENDIX 3

LAING O'ROURKE ENVIRONMENTAL MANUAL



ENVIRONMENTAL MANUAL

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6.1 INTRODUCTION (ISO 14001 Clause 4.1)

This Environmental Manual describes the Laing O'Rourke Environmental Management System, and how it fulfils the requirements of ISO 14001 standard. The Environmental Management System is part of the Laing O'Rourke Safety Management System, and is integrated with the Core and Enabling Group governance processes.

Environmental Management within Laing O'Rourke is a Business wide issue and is part of the Group's Corporate Responsibility Strategy - it does not start and stop at the gates of a construction site or office. It affects all our employees and crosses all departmental boundaries at all locations.

The Environmental Management performance of the Business is therefore not simply a function of the site management teams. Influencing factors are the actions of Directors and senior management, procurement processes, HR policies, estimating decisions, planning and resourcing decisions amongst others.

The environmental philosophy adopted by Laing O'Rourke is to ensure that the environmental impacts resulting from its operations are effectively controlled and minimised, to ensure compliance with all relevant environmental legislation and other requirements and to continually improve its environmental performance and processes.

This manual applies to the European Business of the Laing O'Rourke Group and will also be applied to control the use of environmental performance of all trade contractors and subcontractors working on Laing O'Rourke sites.

6.2 ENVIRONMENTAL POLICIES (4.2)

The Environmental Policies relevant to the Laing O'Rourke European Business and are signed by the Chairman. Policies are held on the policy section of the Laing O'Rourke intranet system (iGATE). These documents set out the commitment and scope of the Environmental Management System. The policies shall be communicated to staff and to those organisations working on behalf of Laing O'Rourke, and will be made available to the public on request.

6.3 PLANNING (Clause 4.3)

On all Laing O'Rourke projects an Environmental Management Plan will developed, implemented and maintained during:

1. pre-construction
2. construction, and
3. post construction

Guidance on how to develop, implement and maintain an Environmental Management Plan can be found at:

ENVIRONMENTAL MANAGEMENT PLAN PROCESS

6.3.1 Environmental Aspects (4.3.1)

The environmental aspects of our activities shall initially be identified during design and bid stages. Once a project or facility becomes live these aspects will be reviewed every three months and updated as necessary.

The significance of environmental aspects shall be assessed with consideration of probability and severity of impact, and will be scored accordingly. This process will align with the risk assessment process detailed in Section 7 of the Safety Management System and will be recorded on an environmental Aspects and Impacts Register. Aspects with high levels of significance will be communicated with project management for inclusion in the project risk register.

6.3.2 Legal and other Requirements (4.3.2)

At preconstruction phase of projects, during the development of the Aspects and Impacts Register all legal and contractual (client) requirements will be identified using the Initial Project Assessment Process and appropriate controls detailed. Permits, licences and consents that may be required during construction will be identified and applied for accordingly, ensuring that sufficient time is allowed for.

Laing O'Rourke will maintain an Environmental Legislation Register with current environmental legislation relevant to its activities. Any significant changes that may impact on the organisations operations will be communicated internally, through the HSE Bulletin, Environmental Information Notes and updates to the Environmental Legislation Register.

6.3.3 Objectives and Targets (4.3.3)

Laing O'Rourke's environmental objectives and targets will be defined and communicated on an annual basis, through the Corporate Responsibility Challenge. These objectives and targets will include measures to prevent pollution, align with longer term corporate goals and strive for continuous improvement. The targets will be SMART: specific; measurable; achievable and; time-bound.

Business Units shall develop their own environmental targets to support the business in achieving corporate targets, but with consideration of what is relevant within scope of their activities.

Projects shall develop site specific environmental objectives following the EMS process. Any co-p.o.r.a.i.e and b.u.s.i.e.s.s unit targets and objectives that are no relevant may be discounted.

6.4 IMPLEMENTATION AND OPERATION (4.4)

6.4.1 Roles and Responsibilities (4.4.1)

The Director Responsible for Health, Safety & Environment is responsible for initiating Group Environmental policies and ensuring that each Business in the Laing O'Rourke Group uses the services of the Environmental support team and operates within the Group Environmental Policies.

The HS&E Director also will ensure an effective HS&E service is provided, staffed by competent personnel and ensure that each Business operates within the Group Policies. The Director will report to the executive board.

The Head of Sustainability and Carbon Management is responsible for the development of strategic Sustainability programmes for business. Maintenance and development of the EMS to meet stakeholder pressures, regulatory changes, ISO 14001 certification and industry best practice requirements is the responsibility of the Senior Environmentalist in the Shared Services team.

The Each Business Unit will appoint an Environmental Leader to implement the EMS within that Business. Further details of the Environmental roles can be found in Section 2. of the Safety Management Plan.

6.4.2 Competency (4.4.2)

Staff will be appointed to roles with responsibilities for managing environmental issues based on their knowledge, training and experience of the relevant topic area.

Environmental training courses will be offered to the staff as required to complete their roles. The primary objectives of training are to ensure that:

- a) personnel are fully aware of the Laing O'Rourke Environmental Policy and their respective roles and responsibilities;
- b) personnel are fully aware of the potential environmental impact of their work and associated environmental issues;
- c) individually and collectively, personnel are committed to the provision of a sound environmental performance;
- d) activities of personnel do not expose Laing O'Rourke to criticism or legal/financial liability;
- e) effective communication in respect of environmental issues exists within the corporate body;
- f) the potential consequences of not complying with the EMS and legal requirements.

Whilst the training pattern adopted is holistic in application, i.e. from managers to operatives, to be effective in ensuring environmental performance improvements it

must be targeted, i.e. relevant and appropriate to the receiving individual/group, in form, depth and content. Each Business Unit will determine the environmental training requirements of all personnel working for on behalf of Laing O'Rourke and ensure that those needs are met.

The environmental training needs for Laing O'Rourke employees are identified in the Safety Management System Appendix 3-A Skills and Competence Training.

6.4.3 Communication (4.4.3)

a) Internal

The Environmental Management System is communicated throughout Laing O'Rourke via the intranet system iGATE. Each Business Unit shall put in place the appropriate mechanisms to ensure that internal communication between the various levels and departments takes place regarding but not limited to:

- Significant Aspects and Impacts
- Environmental hazards, near misses, incidents and complaints
- Changes to the Environmental Management System
- Audit Results and Trends
- Results of Management Review
- Object and Target Results
- Receiving, distributing and responding to communications from interested parties

b) External Communication

Laing O'Rourke will engage with all relevant stakeholders to ensure effective communication with regards its operations. For example local residents that may be affected by construction works may be notified by letter drops, newsletters or through a project specific website.

Communication with environmental regulators shall be formally recorded in the Environmental Management File. All enforcement visits or letters shall be logged on the IMPACT+ database.

Good' and best environmental practice shall be captured and communicated as a driver for continu

ous improvement. Projects are required to submit examples and case studies of best practice to: environ

mental
@laingo
rouke.c
om.
Submis
sions
will be
evaluat
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publish
ed and
commu
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accordi
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Laing
O'Rourk
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taken
the
decision
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commun
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externall
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regardin
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environ
mental
asp
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**6.4.4 Documenta
tion (4.4.4)**

The
Environment
al
Management
System
consists of
three main
elements:

**Laing O'Rourke Pie
Environmental Manual (SMS)**

- **Level 1**
Environmental Policies - sets the policy and general principles for managing environmental matters across the business.
- **Level 2**
Environmental Management System Manual (this document) - details the Scope of the EMS, Objectives and Targets, Specific Processes, Standards and Templates. This may be enhanced at a Business Unit level to reflect local requirements.
- **Level 3**
Environmental Management Plans, Site Waste Management Plans and Environmental Management Files for every project and office establishment - setting out the specific details for each place of work.

In addition, various controls may be referenced, e.g. the Laing O'Rourke Health and Safety Management System and various technical information available within the environment pages on iGATE.

6.4.5 Control of Documents (4.4.5)

Documents that comprise the Environmental Management System will be controlled by the Environmental Shared Services Team, through the Laing O'Rourke intranet system iGATE. The EMS is held in Section 6 of the Safety Management System and records will be filed, reviewed and achieved as set out in Section 20.

Final approval of EMS Documents will be undertaken by the Head of Sustainability and Carbon Management. Changes required to the EMS will be proposed and documented during monthly Environmental Forums.

Current documents will have a date of issue and where appropriate a summary of the document history. The EMS will undergo periodic review to ensure that documents are current, consistent and fit for purpose.

6.4.6 Operational Control (4.4.6)

Laing O'Rourke senior management will ensure that appropriate environmental controls are fully implemented. In particular, senior management will:

- a) Ensure projects are designed, where possible, with a view to having minimum effect on the environment during construction and after completion of project;
- b) Ensure that environmental requirements are controlled through appropriate method statements and work instructions including those of organisations working on behalf of Laing O'Rourke;
- c) Ensure that procured material minimises harm to the environment and ensures safe movement;
- d) Ensure that material(s) is/are stored to prevent pollution;

- e) Encourage staff (Laing O'Rourke, consultants and sub-contractors) to recycle material, to conserve energy and water, to reduce waste and to protect/ enhance biodiversity.

In accordance with Group reporting mechanisms (usually monthly) the business unit environmental system representative will formally report to the Business Unit Managing Director, covering as a minimum:

- a) Compliance with the EMS;
- b) Audit results (external and internal);
- c) Incidents;
- d) Prosecutions or pending prosecutions;
- e) Future actions.

Monthly Environment Forums will be held bringing together Environmental Leaders from Business U nits. Key agenda items will include:

- a) Risks and Opportunities
- b) Key incidents
- c) Audit findings with learning to be shared
- d) Key new developments and challenges

Significant issues will be included in the HSE Section of the European and Group board reports.

6.4.7 Emergency Preparedness and response (4.4.7)

For every project and facility location, potential emergency situations or accidents shall be identified and the appropriate action plans put in place to respond to them. The action plan shall be communicated and periodically tested, reviewed and modified as appropriate.

A plan shall be prepared, maintained and implemented as required. In the event that there is a significant impact on the environment the appropriate environmental regulator will be contacted.

Due to the varying nature of the Business , each establishment will develop its own processes for dealing with any emergencies. These arrangements will be detailed in the Fire and Emergency Plan or project specific Emergency Response Plan.

Contact by the Media

- - - - - In the event of any contact being made any member of the media [e.g. press, radio or television], immediate reference should be made to:

The Madano Partnership
4th Floor South
Harling House

47-51 Great Suffolk Street
London SE1 OBS

Tel: +44 (0) 20 7593 4000

6.5 CHECKING (4.5)

6.5.1 Monitoring & Measurement (4.5.1)

The EMP shall identify how the applicable environmental aspects of the project / location will be monitored (e.g . visual inspection, tests or reports) and the frequency that such monitoring will be undertaken.

All operations and activities having a significant impact on the environment shall be regularly monitored and measured. Supervisors will inspect the site on at least a weekly basis, HS&E Advisors will conduct a project review on at least a monthly basis and Directors and Contract Managers will conduct a project review on at least a quarterly basis.

Any equipment used to monitor or measure shall be checked and calibrated to ensure results are reliable. Records of maintenance and calibration shall be retained.

Environmental Guidance Note 40 - Guidelines for Inspection, Monitoring and Auditing

6.5.2 Evaluation of Compliance with Legislation (4.5.2)

In order to determine whether a project / location / Business Unit is compliant with legal and other applicable requirements an evaluation must be undertaken regularly. This will be carried out by the following processes:

- Regular inspections and tours as defined above.
- Audits, in accordance with the SMS Group Audit Process as defined below.
- Management Review in accordance with the EMS Review Process.

All records of evaluation will be maintained, controlled and disposed of in accordance with SMS requirements.

The validity of environmental licences and permits within England and Wales can be verified from the Public Register which can be accessed from the Environment Agency's website:

<http://www2.environment-agency.gov.uk/epr/>

6.5.3 Non-conformance Corrective & Preventive Action (4.5:3)

All environmental non-conformances raised during an Internal EMS and Good Practice Audit will be closed out through the Action Close Out sheet. Failure to comply with the timescales for closing out actions should be notified shall be communicated to the Business Unit HSE Leader.

Non-conformances and issues raised during other audits shall be recorded on an Audit Non Compliance and Observation sheet and actioned accordingly. Failure to implement the specified corrective action will be communicated to the Business Unit HSE Leader.

Environmental hazards, near misses and incidents shall all be recorded on the IMPACT+ database. The categorisation of environmental incidents is detailed in Environmental Management Guidance Note 6. All Category 1 & 2 incidents shall be communicated to HSE Leaders and will be investigated.

In the event of a significant pollution incident, it is essential that the Project Manager be informed immediately, so that they can contact the relevant regulator if required.

All projects and facilities are required to implement pollution prevention measures, to minimise the risk of their activities impacting on the environment. Guidance on project Pollution Prevention can be found in Environmental Guidance Note 6 and EA Pollution Prevention Guidance Note 6.

6.5.4 Control of Records (4.5.4)

All records related to this Environmental Process will be identified, maintained, controlled and disposed in accordance with the processes within the EMS & SMS requirements. These records will include but not be limited to:

- Information on applicable environmental legislation or other requirements
- Complaints
- Training
- Process Information
- Product Information
- Inspection and Test Reports
- Inspection, Measuring and Test Equipment Maintenance and Calibration
- Pertinent Contractor and Supplier Information
- Incident Reports
- Information on Emergency Preparedness and Response
- Information on significant environmental aspects
- Audit Results
- Management Review
- Environmental Management Plan and File including assessments and documentation
- Waste Management records
- Energy Management records
- Environmental consents and permits

For site records, the standard contents for the Environmental Management File is identified in SMS Section 20.6 - Site Safety and Environment Filing Systems.

6.5.5 Internal Audit (4.5.5)

Audits of the EMS will take place at two levels:

Audits of the system at Business Unit level and Audits of the system at project level. Each business unit shall prepare an environmental audit schedule which will identify the project / location to be audited together with the planned date. All environmental audits will be carried out in accordance with the EMS group audit process. The standard environmental audit checklist, which sets out the audit criteria, should be used to carry out the audit.

Environmental Audit Report & Check List

6.6 MANAGEMENT REVIEW (4.6)

It is the responsibility of the Business Unit Environmental Leaders to ensure that environmental management system is reviewed at least annually so that it continues to reflect accurately the organisation and environmental practices as applied to Laing O'Rourke businesses.

The items listed below as a minimum will be considered in the review:

1. Results of internal audits including evaluations of compliance with legal requirements and other applicable requirements
2. Communication from interest parties including complaints
3. Environmental performance
4. The extent to which objectives and targets have been met
5. Non-conformance, corrective and preventive actions
6. Results of the previous management review
7. Changing circumstances (which includes developments in legal and other requirements related to environmental aspects)
8. Recommendations for improvement

Once these reviews have been agreed and signed off by the Business Unit Leader they will be submitted to the HSE Director to approve any proposed changes to the Environmental Policies, Objectives and Targets and other elements of the Environmental Management System.

REVISION SCHEDULE

Date	Section	Page Nos.	Issue No.	Amendment Made	Comment
28/09/09	6	Page 8 S. 6.4.10	1	Hyperlinks to new HS&E Monitoring Program Sheet 28 in Excel. Minor textual amends	New SMS Issue
05/07/10	6	Page 23 S. 6.6.5 Page 10 S. 6.5.2		Laing O'Rourke Geotechnical & Technical Environmental Support Contact No. Changed Link to sample H&S Plan removed as this was the old format of the Plan.	Also new LOR logo added
12/10/10	6	Page 10 S. 6.5.2	2	Evaluation process for significant aspects and impacts	
		Page 21 S. 6.5.18	3	Management review to include review of aspects and impacts	
06/06/11	6	Pages 1 - 26	4	Revision of EMS to align with ISO 14001 clause	New issue of EMS

APPENDIX 4

LAING O'ROURKE
ENVIRONMENTAL TRAINING PLAN

APPENDIX 5

**LAING O'ROURKE
ENVIRONMENTAL AUDIT SCHEDULE**

APPENDIX 6
LAING O'ROURKE
LEGAL REGISTER

ELUS legal Compliance Register - Laing O'Ro.urke Holdings Pie

Legal Registerfor:

Project / Depot/ Pl.

Review Date:

March 2017

Category	ELUS Ref	Title	Location Notes - If required (any relevant permits/licences or ERA/ AIR actions)
Air	AQ1	The Environment Act 1995 Part IV National Air Quality Strategy	
Air	AQ2	The Air Quality (England) Regulations 2000 (SI 2000/928) as amended SI 2002/3043	
Air	AQ4	The Air Quality Standards Regulations 2010 (SI 2010/1001)	
Air	AQS	The Road Traffic (Vehicle Emissions) (Fixed Penalty) (England) Regulations 2002 (SI 2002/1808)	
Air	AQ6	The Road Vehicles (Construction and Use) Regulations 1986 (SI 1986/1078) as amended SI 1988/1524, SI 1990/1131, SI 1991/1526, SI 1992/2137, SI 1993/2199, SI 1994/2192, SI 1998/1563, SI 2000/1434, SI 2001/1825, SI 2000/3197, SI 2002/227, SI 2002/1474, SI 2006/2656, SI 2007/3132, SI 2009/2196, SI 2009/3221, SI 2010/312, SI 2010/964, SI 2011/427, SI 2012/1404, SI 2014/264, SI 2014/1862, SI 2015/142, SI 2016/248	
Air	AQ8	The Sulphur Content of Liquid Fuels (England and Wales) Regulations 2007 (SI 2007/79) as amended SI 2014/1975	
Air	ATM11	Regulation (EC) No 1005/2009 of the European Parliament and of the Council on substances that deplete the ozone layer as amended	
Air	ATM12	The Ozone-Depleting Substances Regulations 2015 (SI 2015/168)	
Air	ATM20	The Climate Change Levy (Fuel Use and Recycling Processes) Regulations 2005 (SI 2005/1715) as amended SI 2014/844	
Air	ATM35	Regulation (EU) No 517/2014 on fluorinated greenhouse gases and repealing Regulation (EC) No 842/2006	
Air	ATM4	The Clean Air Act 1993 as amended SI 2014/3318, 2015/C 20	
Air	ATM40	The Fluorinated Greenhouse Gases Regulations 2015 (SI 2015/310)	
Air	ATM44	EU Regulations EC 2008/303, EC 2008/304, EC 2008/305, EC 2008/306, EC 2008/307 on training and certification requirements for personnel working with certain fluorinated greenhouse gases	
Air	ATM6	The Clean Air (Emission of Dark Smoke) (Exemption) Regulations - 1969 (SI 1969/1263)	
Air	ATM66	Directive 1999/13/EC on the limitation of emissions of volatile organic compounds due to the use of organic solvents in certain activities and installations as amended	
Air	ATM70	Cleaner Road Transport Vehicles Regulations 2011 {SI 2011/1631}	
Energy & Climate Change	EA2013	Energy Act 2013 (c.32) with commencement Order and SI 2014/468, SI 2014/469, SI 2014/1709 and associated Regulations	

ELUS Legal Compliance Register - Laing O'Rourke Holdings Pie

Legal Register for :

Project / Depot/ Pl.

Review Date:

March 2017

Category	ELUS Ref	Title	Location Notes - if required (any relevant permits /licences or ERA/ AIR actions)
Energy & Climate	EED2012	Directive 2012/27/EU on energy efficiency	
Energy & Climate Change	FA 2008-ATM45	Finance Act 2008 Part 1 Environmental taxes and duties (from Finance Bill 2008)	
Energy & Climate	FA 2015	Finance Act 2015 Part 2 Excise duties and other taxes (SI 2015/11)	
Energy & Climate Change	HECA1995	Home Energy Conservation Act 1995 (c 10)	
Energy & Climate Change	IPC24	The Heat Network (Metering and Billing) Regulations 2014 (SI 2014/31201 as amended s1 2015/8ss	
Energy & Climate Change	PLA17	Energy Performance of Buildings Directive 2002/91/EC	
Energy & Climate Change	PLA4	The Energy Performance of Buildings (England and Wales) Regulations 2012 (SI 2012/3118) as amended as amended SI 2013/10, SI 2013/603, SI 2014/ 880 , SI 2015/609, SI 2015/ 1681 , SI 2016/ 284	
Energy & Climate Change	SI 2001/2541	The Capital Allowances (Energy-saving Plant and Machinery) Order 2001 (SI 2001/2541) as amended	
Energy & Climate Change	SI 2001/838 - ATM14	The Climate Change Levy (General) Regulations 2001 (SI 2001/838) as amended s1 2001/2903, s12010/643, s1 2011/684, s1 2012/943, s1 2012/3049, s1 2013/713, s1 2013/1716, s1 2015/947	
Energy & Climate Change	SI 2006 /1848 - ATM27	The Climate Change Agreements (Miscellaneous Amendments) Regulations 2006	
Energy & Climate Change	SI 2012 /3030	The Motor Fuel (Road Vehicle and Mobile Machinery) Greenhouse Gas Emissions Reporting Regulations 2012 (SI 2012/3030)	
Energy & Climate Change	SI 2013 /3220	The Energy Efficiency (Eligible Buildings) Regulations 2013 (SI 2013/3220) -	
Energy & Climate Change	SI2014 /1643	The Energy Savings Opportunity Scheme Regulations 2014 (SI 2014/1643) as amended by s1 2015/1731	
Energy & Climate Change	SI 2014 /928	The Domestic Renewable Heat Incentive Scheme Regulations 2014 (SI 2014/928) as amended s1 2015/143, s1 2015/145, s1 2015/1459, SI2016/257	

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Legal Register for:

Project/ Depot/ Pl

Review Date:

March 2017

Category	ELUS Ref	Title	Location Notes - if required (any relevant permits/licences or ERA/ AIRactions)
Energy & Climate Change	SI 2015/1947	The Renewables Obligation Order 2015 (SI 2015/1947)	
Energy & Climate Change	SI 2015/933	The Emissions Performance Standard Regulations 2015 (SI 2015/933) as amended SI 2015/1388 (W 137)	
Hazards	HAZ1	Dangerous Substances (Notification and Marking of Sites) Regulations 1990 (SI 1990/304) as amended SI 2013/4 48	
Hazards	HAZ16	The Health and Safety at Work etc Act 1974 (Application to Environmentally Hazardous Substances) Regulations 2002 1s1 2002/282) as amended SI 2007/1332, SI 2009/318	
Hazards	HAZ2	The Control of Substances Hazardous to Health (COSHH) Regulations 2002 (SI 2002/2677) as amended s1 2003/978, s1 2004/ 3386, SI 2015/1637	
Hazards	HAZ23	The Dangerous Substances and Explosive Atmospheres Regulations 2002 (SI 2002/2776)	
Hazards	HAZ25	Registration, Evaluation, Authorisation and Restriction of Chemicals (REACH) Regulations (EC 1907/2006) as amended EU 453 / 2010, EU 143/2011, EU 252/2011, EU 253/2011, EU 3 6 6/ 2011, EU 49 4 /2011 , EU	
Hazards	HAZ32	Control of Asbestos Regulations 2012 (SI 2012/632)	
Hazards	HAZ34	The REACH Enforcement Regulations 2008 (2008/2852) as amended SI 2013/2919, SI 2014/2882	
Hazards	HAZ35	The Carriage of Dangerous Goods and Use of Transportable Pressure Equipment Regulations 2009 (SI 2009/1348) as amended SI 2011/1885	
Hazards	HAZ48	Planning (Hazardous Substances) Act 1990 (c 10) as amended SI2014/2773,SI2014/2777	
Hazards	HAZ5	Radioactive Substances Act 1993 as amended SSI 2011/147, SSI 2011/207, SR 2011/289, SR 2011/290	
Hazards	HAZ6	The Environmental Protection (Disposal of Polychlorinated Biphenyls and other Dangerous Substances) (England and Wales) Regulations 2000 (SI 2000/1043)	
Hazards	HAZ5	The Volatile Organic Compounds in Paints, Varnishes and Vehicle Refinishing Products Regulations 2012 (SI 2012/1715)	

EbUS Legal Compliance Register - Laing O'Rourke Holdings Pie ""

Legal Register for :

Project / Depot/ Pl.

Review Date:

March 2017

Category	ELUS Ref	Title	Location Notes • if required (any relevant permits /licences or ERA/ AIR actions)
Land	LAN1	Environmental Protection Act 1990 Part IIA	
Land	LAN2	The Contaminated Land (England) Regulations 2006 (SI 2006/1380) as amended SI 2012/263	
Nuisance	CA 2008	Crossrail Act 2008	
Nuisance	NUi1	Environmental Protection Act 1990 Part III	
Nuisance	NUi10	The Environmental Noise (England) Regulations 2006 (SI 2006/2238) as amended SI 2008/375, SI 2009/1610, SI 2010/340	
Nuisance	NUi2	Control of Pollution Act (COPA) 1974 Part III as amended by the Environmental Protection Act 1990, Water Resources Act 1991, Water Industry Act 1991, Noise and Statutory Nuisance Act 1993, 2015/C.20	
Nuisance	NUi3	Noise and Statutory Nuisance Act 1993	
Nuisance	NUi4	Environmental Protection Act 1990 Part III Statutory Nuisance and Clean Air	
Nuisance	NUi5	The Statutory Nuisance (Appeals) Regulations 1995 (SI 1995/2644) as amended SI 2006/77,1	
Nuisance	NUi6	Public Health Act 1936 (c 49)	
Nuisance	NUi7	The Noise Emission in the Environment by Equipment for Use Outdoors Regulations 2001 (SI 2001/1701), as amended s1 2001/3958, SI 2008/3525, SI 2015/98	
Nuisance	NUi8	The Clean Neighbourhoods and Environment Act 2005	
Planning/ Wildlife	PLA1	Town and Country Planning Act 1990 (C 8) as amended by the Planning and Compensation Act 1991, s1 2014/1no (w 182), s1	
Planning/ Wildlife	PLA13	The Building Regulations 2010 (SI 2010/2214) as amended SI 2011/151S, SI 2012/718, SI 2013/10, SI 2013/747 (W 89), SI 2013/110S, SI 2013/1959, SI 2013/2621 (W 2S8), SI 2014/1110 (W 10), SI 2014/S79, SI 2014/2362, SI 2015/767, SI 2015/1486 (w 165), s 2016/285	
Planning/ Wildlife	PLA19	Disused Burial Grounds (Amendment) Act 1981	
Planning/ Wildlife	PLA20	Protection of Badgers Act 1992	
Planning/ Wildlife	PLA21	The Treasure Act 1996	

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Legal Register for:

Project / Depot/ Pl

Review Date:

March 2017

Category	ELUSRef	Title	Location Notes - if required (any relevant permits /licences or ERA/ AIR actions)
Planning/ Wildlife	PLA22	Ancient Monuments and Archaeological Areas Act 1979	
Planning/ Wildlife	PLA23	Burials Law Amendment Act 1880	
Planning/ Wildlife	PLA30	The Planning Act 2008 and Commencement Orders as amended SI 2015/949, SI 2016/306	.
Planning/ Wildlife	PLA33	The Town and Country Planning (Tree Preservation) (England) Regulations 2012 (SI 2012/605)	
Planning/ Wildlife	PLA35	Wild Mammals (Protection) Act 1996	
Planning/ Wildlife	PLA41	The Town and Country Planning (Environmental Impact Assessment) Regulations 2011(SI 2011/1824) as amended SI 2015/660	
Planning/ Wildlife	PLA42	Infrastructure Act 2015 (c.7) and Commencement Order and associated Regulations	
Planning/ Wildlife	PLA43	The Planning (Hazardous Substances) Regulations 2015 (SI 2015/627) as amended SI 2015/1359	
Planning/ Wild	PLA49	The Financial Assistance for Environmental Purposes (England and Wales) Order 2015 (SI 2015/479)	
Planning/ Wildlife	PLAS	The Planning (Listed Building and Conservation Areas) Act 1990 (c. 9) as amended 511990/1519 , SI 2006/1063, SI 2009/2262, SI 2009/2711 , SI 2010/2185 , 51 2012/2275 , SI 2013/1239, SI 2013/2146, SI 2014/552 , SI 2015/809	.
Planning/ Wildlife	511997 /1160	The Hedgerows Regulations 1997	
Planning/ Wildlife	SI 2005/2517	The Plant Health (Forestry) Order 2005 (SI 2005/2517) and associated Orders	
Planning/ Wildlife	SI 2015/596	The Town and Country Planning (General Permitted Development) (England) Order 2015 (SI 2015/596) as amended SI 2016/127	
Planning/ Wildlife	W111	Wildlife and Countryside Act 1981 as amended SI 1995/2825, SI 2004/1733, SI 2004/1487 , 5 12008/2356 , 51 2008/431 , 512008/1927, SI 2010/609, SI 2011/2015, SI 20 14/S38 , SI 2015/1180 (W 78), SI 2016/127	
Planning/ Wildlife	W110	The Countryside and Rights of Way Act 2000 (Commencement No. 7) Order.ZOOS	
Planning/ Wildlife	W1111	Salmon and Freshwater Fisheries Act 1975	

ELUS Legal Compliance Register - Laing O'Rourke Holdings Pie

Legal Register for :

Project / Depot/ PI

Review Date:

March 2017

Category	ELUS Ref	Title	Location Notes - if required (any relevant permits /licences or ERA/ AIR actions)
Planning/ Wildl ife	WIL16	The En vironmental Damage (Prevent ion and Remediation) Regula t ions 2009 (SI 2009/153) (SI 2009/995 W 81) as amended SI 2009/327S,SI 2010/587,SI 2015/810, SI 2015/ 1391, SI 2015/1 937	
Planning/ Wildlife	WIL17	The Conservation of Habitats and Species Regulations 2010 (SI 2010/490) as ame nd ed SI 2011/ 625, SI 2012/1927, SI 201S/ 2020	
Planning/ Wildlife	WIL2	Countr yside and Rights of Way Act 2000	
Planning/ Wildlife	WIL21	The Timber and Timber Product s (Placing on the Market) Regulation s 2013 (SI 2013/233)	
Pl ann ing / Wildl ife	WIL22	The Fore st Law Enforcement, Gove rn anc e and Trade Regulations 2012 (SI 2012/ 178) as amende d, SI 2014n 339	
Planning/ Wildlife	WILS	The Cons ervat i on (Natural Habitats &c) Regulations 1994 (SI 1994/2716) as amended SI 2007/1843, s1 2008/ 2112, s1 2009/6, s1 2009/2438, SSI 2015/249	
Planning/ Wildlife	WIL6	The Natural Environment and Rural Communities Act 2006 (c. 16)	
Pollution	IPC18	The Environmental Civil Sanction s (England) Order 2010 (SI 2010/1157) and The Environmental Civil Sanctions (Miscellaneous Amendm ents) (England) Regulations 2010 (SI 2010/1159)	
Pollution	IPC2	Environmental Protection (Prescribed Processe s and Substances) Regulation s 1991 (511991/472) as amended s1 1993/2405,SI1994/1271,SI1994/1329,SI1995/3247,SI1996/2678,SI1998/767,SI	
!Pollut i on	IPC28	The Environmental Perm itting (England and Wales) Regulations 2016 (SI 2016/1154) Replacing IPC 21 a)	
Pollution	PPGs	Po llution Prevention Guidance Series (PPGs) - NOTIFICATION - WITHDRAWN	
Pollution	512015/664	The Legal Ai d, Sentencing and Punishment of Offenders Act 2012 (Fines on Summary Convict ion) Regulations 2015 (SI 2015/664)	
Safety _ _ _	SIF2	The Control of Noise at Work Regulations 2005 (SI 200571'643) as amend ed by sr 201S/ 1 631	
Safety	SAF7	The International Carriage of Dangerous Goods by Road (Fees) (Amendment) Regulations 2009 (SI 2009/856)	
Waste	EC 2000/532/ EC	Commission Decision 2000/532/EC estab l ishing a list of Hazardous Waste pursuant to Article 1(4) of Council Directive 31/689/EC on hazardous waste	

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Waste	EU 493/2012	Commission Regulation (EU) No 493/2012 laying down, pursuant to Directive 2006/66/EC of the European Parliament and of the Council, detailed rules regarding the calculation of recycling efficiencies of the recycling processes of waste batteries and accumulators	
Waste	EUWEEE2012	Directive 2012/19/EU of the European Union Parliament and of the council of 4 July 2012 on waste electrical and electronic equipment (WEEE) (recast)	
Waste	PAC1	The Producer Responsibility Obligations (Packaging Waste) Regulations 2007 as amended SI 2008/1941, SI 2010/2849, SI 2012/3082, SI 2013/1857, SI 2014/2890, SI 2016/241	
Waste	PAC7	Packaging (Essential Requirements) Regulations 2015 (SI 2015/1640)	
Waste	SI 2015/1385	The Landfill Tax (Qualifying Fines) (No. 2) Order 2015 (SI 2015/1385)	
Waste	SI 2015/426	The Control of Waste (Dealing with Seized Property) (England and Wales) Regulations 2015 (SI 2015/426)	
Waste	SMDA 2013	Scrap Metal Dealers Act 2013 and associated Orders and Regulations	
Waste	WAS1	Environmental Protection Act 1990 (c. 43) Part II, section 34 as amended SI 2015/1360	
Waste	WAS10	Finance Act 1996 (c. 8) Part III Landfill Tax ss.39-71 as amended by Finance Act 2000 Part V	
Waste	WAS13	The Clean Neighbourhoods and Environment Act 2005 (c. 16) Parts 3 and 5 (ss. 18-27 and 35-54) and Commencement	
Waste	WAS14	The Landfill Tax Regulations 1996 (SI 1996/1527) as amended	
Waste	WAS16	The End-of-Life Vehicles Regulations 2003 (SI 2003/2635) as amended SI 2010/1094	
Waste	WAS17	The Waste Electrical and Electronic Equipment Regulations 2013 (SI 2013/3113) as amended SI 2014/1771, SI 2015/1968	
Waste	WAS22	The Restriction of the Use of Certain Hazardous Substances in Electrical and Electronic Equipment Regulations 2012 (SI 2012/3032) as amended SI 2014/1771	
Waste	WAS23	The Waste Management (England and Wales) Regulations 2006 (SI 2006/937)	
Waste	WAS25	Batteries Directive 2006/66/EC	

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Waste	WAS26	Directive 2008/98/EC on waste - The Waste Framework Directive	
Waste	WAS3	Controlled Waste (England & Wales) Regulations 2012 (SI 2012/811) as amended SI 2012/2320, SI 2015/1360, SI 2015/1417 (W 1410)	
Waste	WAS33	The Landfill Tax (Material Removed from Water) Order (SI 2007/2909) •	
Waste	WAS36	The Landfill Tax (Material from Contaminated Land) (Phasing out of Exemption) Order 2008 (SI 2008/2669)	
Waste	WAS38	The Waste Batteries and Accumulators Regulations 2009 (SI 2009/890) as amended SI 2015/1360, SI 2015/1935	
Waste	WAS39	The Landfill Tax (Prescribed Landfill Site Activities) Order 2009(SI 2009/1929)	
Waste	WAS42	The Waste (England & Wales) Regulations 2011(SI 2011/988) as amended SI 2012/1889, SI 2014/656, SI 2015/13 60, (SI 2015/1417 (W 1410)	
Waste	WASS	Environmental Protection Act 1990 : Part 2 ss33, and s35 repealed by SI 2007/3538	
Waste	WAS7	The Hazardous Waste (England and Wales) Regulations 2005 (SI 2005/894) as amended SI 2009/507, SI 2011/988, SI 2015/1360,SI2016/336	
Waste	WMA1998	Waste Minimisation Act 1998	
Water	LDA1991	Land Drainage Act 1991(c 59), as amended	
Water	SI 1989/ 1149	The Controlled Waters (Lakes and Ponds) Order 1989	
Water	WAT1	Water Resources Act 1991	
Water	WAT10	The Water and Sewerage Undertakers (Inset Appointments) Regulations 2000 (SI 2000/1842) as amended SI 2005/268	
Water	WAT12	The Water Environment (Water Framework Directive) (England and Wales) Regulations 2003 (SI 2003/3242) as amended by SI 2015/1623, Si 2016/138	
Water	WAT13	The Control of Pollution (Oil Storage) (England) Regulations 2001 (SI 2001/1702)	

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Water	WAT14	The Water Supply (Water Fittings) Regulations 1999 (SI 1999/1148) as amended SI 1999/1506	
Water	WAT16	The Water Resources (Environmental Impact Assessment) (England and Wales) Regulations 2003 (SI 2003/164) as amended SI 2006/3124	
Water	WAT17	The Water Act 2003 (c. 37)	
Water	WAT18	The Water Act 2003 (Commencement No 4, Transitional Provisions and Savings) Order 2005 (SI 2005/968)	
Water	WAT19	The Water Resources (Abstraction and Impounding) Regulations 2006 as amended SI 2008/165	
Water	WAT2	Control of Pollution (Applications, Appeals and Registers) Regulations 1996 (SI 1996/2971)	
Water	WAT22	The Protection of Groundwater Against Pollution and Deterioration (2006/118/EC)	
Water	WAT28	The Flood Risk Regulations 2009 (SI 2009/3042) as amended (SI 2011/2880)	
Water	WAT3	Water Industry Act 1991 as amended by Water Industry Act 1999	
Water	WAT31	Flood and Water Management Act 2010 and Commencement Orders	
Water	WAT37	The Flood Risk Management Functions Order 2010 (SI 2010/2232)	
Water	WAT38	The Water Use (Temporary Bans) Order 2010 (SI 2010/2231)	
Water	WAT39	The Water Industry (Schemes for Adoption of Private Sewers) Regulations 2011 (SI 2011/1566)	
Water	WAT4	Trade Effluent (Prescribed Processes and Substances) Regulations 1989 (SI 1989/1156) as amended SI 1990/1629, SI 1992/339	
Water	WATS	Anti-Pollution Works Regulations 1999 (SI 1999/1006)	
Water	WATS1	The Water Quality and Supply (Fees) Order 2016 (SI 2016/303)	
Water	WATS2	The Water Supply and Sewerage Licences (Cross-Border Applications) Regulations 2016 (SI 2016/181)	
Water	WATT	Water Resources Act 1991 (C. 57), Part 2 Water Resources Management (ss. 19-81)	
Water	WATS	Water Industry Act 1991 (C. 56), s. 73 & 75	
Z Other/ Client		CLAIRE and Chartered Institute of Environmental Health Guidance	
Z Other/ Client		CLAIRE Draft Code of Practice: The Definition of Waste	

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Z Other/ Client	London	London Low Emission Zone - Nonroad mobile machinery (NRMM)	