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Prepared by:	██████████████████ / ████████████████████
Reviewed by:	██████████████████ & ████████████████████
Objective	To provide an executive summary and evidence of how ██████████ satisfy the Crossrail Green Line requirements and to demonstrate how the project team have shown a marked improvement in Environmental Awareness and Communication as a result of working towards the Green Line award.
Review Agenda	<p>██████████ Compulsory Elements:</p> <ol style="list-style-type: none"> 1. Buy-in from leadership and their regular involvement 2. Stretching environmental objectives and targets set and visibly communicated 3. Progress against targets monitored and regular feedback provided 4. Visible environmental guidance on site on each of the relevant topic areas for that site <ul style="list-style-type: none"> • Communication with site's neighbours • Noise and vibration restrictions • Water and dust pollution control • Listed building and archaeology restrictions • Waste minimisation, categorisation, reuse and recycling • Energy & water minimisation • Sustainable procurement of materials 5. Regular inclusion of environmental issues in site decision making 6. Relevant environmental issues communicated at all weekly and daily briefings 7. Recognition and timely reporting of environmental incidents and near misses 8. Evidence of behaviour change
1. Buy-in from leadership and their regular involvement	<p>██████████ ██████████ and ██████████ Senior Management Team fully support the Green Line initiative and are keen for the project team to be recognised for its high standards of environmental performance. The ██████████ SMT both lead and endorse a range of project environmental initiatives.</p> <p>One way ██████████ senior management demonstrates its commitment to environmental leadership is through regular attendance at a range of key environment related meetings. The meetings provide the opportunity for both the project team to appraise the senior management of environment related matters and also for senior management to provide direction on project environment requirements. Examples of particular issues discussed at these meetings include but not limited to: key performance indicators – resource use</p>

	<p>(energy water, materials), section 61 consent requirements; waste management issues; number and range of complaints arising, noise / dust trigger level exceedances, targeting and delivery of environmental training. These meetings include:</p> <ul style="list-style-type: none"> • weekly Crossrail/ [REDACTED] environment meetings (Appendix 1); • weekly [REDACTED] SHE action meetings (Appendix 2); • monthly Joint Crossrail / [REDACTED] SHE Leadership meetings (Appendix 3), <p>[REDACTED] members of staff who attend these meetings from both Crossrail and [REDACTED] include:</p> <ul style="list-style-type: none"> • [REDACTED], [REDACTED] Project Manager; • [REDACTED], [REDACTED] Project Director; • [REDACTED], Crossrail Project Manager ; • [REDACTED], Crossrail Environment Advisor ; • [REDACTED] / [REDACTED] (Environment Manager); • [REDACTED], SHE Manager; and • [REDACTED], SHE Advisor; • [REDACTED] – Site Superintendent. <p>The [REDACTED] project operates a weekly SHE Leadership Site Inspection rota (Appendix 4) where both [REDACTED] and Crossrail representatives attend site to identify both good practice and address SHE related issues. Observations are disseminated to the site team management (Site Superintendent and Supervisors) either in person or by email (Appendix 5) immediately after the inspection to respond, action and communicate to the site operatives. Ultimately, site visits are aimed at driving improvements in SHE performance in a collaborative manner.</p> <p>[REDACTED] also encourage site operatives to conduct regular environmental site inspections. Observation cards are located around site to encourage the reporting of near misses / good practices and incidents. The Site Superintendent reviews all the submitted cards and responds/acts as appropriate to each card. Observations and actions are captured on each card. The site operatives are regularly encouraged to submit cards at the daily start of shift briefings (SoS) briefings and a £50 'Love-to-shop' vouchers are awarded for the best observation each month. A £25 voucher is awarded to the runner-up.</p>
<p>2. Stretching Environmental objectives and targets set and visibly communicated</p>	<p>The [REDACTED] project has a broad range of stretching environmental objectives based on the Crossrail requirements and the [REDACTED] corporate objectives. These objectives are stipulated in the project Environmental Management Plan [REDACTED]</p> <p>They cover the issues relating to:</p> <ul style="list-style-type: none"> • Resource Management (Water, Energy) • Sustainable Procurement and Design • Nuisance prevention • Waste Management; and

	<ul style="list-style-type: none"> • Environmental Awareness. <p>For example, one of the targets relating to Sustainable Procurement and Design is achieve a 30% recycled content of material by value. Stretch target of 40%. The [REDACTED] is far exceeding even the stretch target as demonstrated through the project's outputs from WRAP's Netwaste Tool (Appendix 6)</p> <p>The project Environmental Objectives and Targets (Appendix 7) (as detailed in the EMP) and progress on their achievement are communicated through the:</p> <ul style="list-style-type: none"> • Periodic Environment Dashboard • Energy Model; and • Quarterly Environment Reports. <p>These are displayed on the Environment Board (x5) in each of the site offices (Appendix 8):</p> <ul style="list-style-type: none"> • [REDACTED] (office kitchens (x2) & reception) • [REDACTED] (site canteen) • [REDACTED] (site canteen) <p>All of the above communication media clearly demonstrate the project's exceedance of all its environmental objectives and targets.</p>
<p>3. Progress against targets monitored and regular feedback provided</p>	<p>Progress against the [REDACTED] project environmental objectives is reported on both a monthly basis through [REDACTED] and Crossrail's reporting systems, 'Capture' and 'RIVO' respectively and through Quarterly Environment Reports as detailed above.</p> <p>Environment boards display in site offices (as described in Section 2 above) are updated on a monthly / quarterly basis as appropriate.</p> <p>Progress against the project environmental objectives is also reviewed during the 6 monthly Environmental Management Review [REDACTED]. This comprises both Crossrail and [REDACTED] senior management teams scrutinising all aspects of the project's environmental management system including objectives and targets as part of the review. The outcome being the implementation of an improvement plan to be implemented over the subsequent 6 months.</p> <p>The waste values displayed on the monthly Environment Dashboard are derived from [REDACTED] "SMARTwaste" data. This data also presents the percentages of waste produced by the project that is ultimately successfully diverted from landfill.</p> <p>Environmental audits are carried out by both Crossrail (every 6 months) (Appendix 9) and [REDACTED] (every 3 months) (Appendix 10). The project is audited against the requirements of both the [REDACTED] Environmental Management System and Crossrail's Works Information. The schedule of audits (Appendix 11) ensures quarterly environmental audits</p>

	<p>are conducted by an approved auditor from [REDACTED] across the full range of significant environmental aspects relevant to the [REDACTED] Project. During these audits progress against targets is examined and again opportunities for improvement are identified and implemented.</p>
<p>4. Visible environmental guidance on site on each of the relevant topic areas for the site.</p>	<p>Communication with the site's neighbours Engagement with project stakeholders is ongoing and comprehensive. [REDACTED] publishes resident information sheets for the [REDACTED] site (Appendix 12) which are hand-delivered to sensitive receptors and stakeholders every 3 months. Approximately 800 Information Sheets are distributed within a 100m radius, also to libraries. These monthly newsletters detail upcoming works as well as information regarding the Community Liaison Panel – to keep local communities informed of progress and plans. Should any new out-of- hours noisy activities be proposed bespoke communications are produced and distributed to the appropriate stakeholder in advance. Weekly visits to [REDACTED] and the [REDACTED] are carried out.</p> <p>The [REDACTED] team at [REDACTED] participates in the Considerate Constructors Scheme and most recently achieved a score of 45 out of 50 for “exceptional” performance (with a score of 9/10 for Protection of Environment and Respect for the Community) (Appendix 13). [REDACTED] also won a Gold Award in [REDACTED].</p> <p>Crossrail Helpdesk details are also communicated for residents / stakeholders to contact if they have any complaints / queries.</p> <p>Noise and Vibration restrictions: Section 61 consent, dispensation and variations are sent out to the site team via the [REDACTED] document control system and also displayed on the SHE notice boards to inform site teams of the allowed working hours, equipment, the specific activities and Best Practicable Means which they are consented to undertake.</p> <p>Section 61 hours of working are clearly explained on daily “Start Of Shift” briefings (Appendix 14). Hours of works are also displayed on site Environment Boards, site Emergency Boxes and regularly distributed to Paddington New Yard Team (Appendix 15) Operatives are given regular toolbox talks on the importance of considering our neighbours, Section 61 compliance and effects of noise on the community (Appendix 16).</p> <p>Signage detailing best practice methods for noise are displayed around site to remind staff that we must consider BPM and effects on neighbours at all times (Appendix 17). Vehicle BPM checks are periodically undertaken to ensure plant operates broad band reversing signals. (Appendix 18).</p> <p>A noise and neighbours week campaign was held in [REDACTED] where presentations were given to the site team from a Crossrail Director and the Environment and Communities team on the neighbourhood impacts of construction site activities. There was also an interactive session where the</p>

site team were asked on the types of activities they think are likely to disrupt the neighbours and what mitigation measures could be implemented to mitigate this (**Appendix 19**).

A “██████████” campaign has been implemented on site (**Appendix 20**). This campaign was initiated following complaints from local commercial receptor – ██████████; who overlook the site when rolling activities commenced on site. The complaints from ██████████ were related to the use of the vibratory roller on site. See section 8 for further details.

Water and Dust pollution control:

The ████████ project team appreciate the importance of complying with the Thames water Groundwater Permit. In order to ensure compliance with the groundwater permit the site team installed a ‘Siltbuster’ in order to capture any suspended solids from the dewatering of excavations (**Appendix 21**)

A spill response poster has been displayed around site in areas relevant to spill kit areas as well as the smoking huts, mobile phone huts, fire points as well as SHE notice boards to provide a reference for what the site operatives should do in the case of a spill (**Appendix 22**). A spill response drill was also carried out to observe the response of the site team in the event of an unexpected spill. A best practice was written up which includes the lessons learned from the exercise (**Appendix 23**). These were then briefed out at the next SOS.

A site drainage plan is displayed on the site noticeboard so the team are aware of the discharge locations (**Appendix 24**).

A dust toolbox talk was delivered to the site team to raise awareness of dust pollution control and the importance of monitoring air quality levels particularly in central London (**Appendix 25**).

Waste minimisation, categorisation reuse and recycling:

Waste management is communicated to all new staff through the site Induction (**Appendix 26**), waste training sessions (**Appendix 27**) and awareness posters (**Appendix 28**)

When backfilling an area around the piles, the site team used recycled 6f2 material, rather than primary aggregate. Not only does this have environmental benefits, there are economic benefits for the project – the cost of 1 tonne of recycled aggregate is £6 pounds compared to £31.50.

Energy and water minimisation:

██████████ are contracted to achieve an 8% reduction of our predicted energy emissions at the end of project. In order to achieve this ████████ have trialled, and where possible, implemented energy reducing initiatives on site. These include PIR lighting in site cabins which have a cost and carbon saving compared with the unsensored lights. Other savings include hybrid tower lighting for night works and selection of fuel efficient plant and machinery. The energy targets/savings and initiatives are displayed on the site notice boards

(Appendix 8)

██████████ is tracking their embodied carbon emissions through the use of the Environment Agency’s Carbon Calculator. **(Appendix 29)** It details the breakdown of embodied carbon per material type. The data derived from the information has provided us with key areas that affect the carbon footprint of this project i.e. concrete, fuel, etc.

Sustainable procurement of materials:

██████████ use a responsible procurement system. The suppliers who are placed on the online procurement system have to meet the SHE values and sustainable procurement policy of ██████████ including green materials and plant **(Appendix 30)**.

The WRAP Netwaste Tool has been developed, using the cost figures from the materials in the project bill of quantities and the quantities of materials used to date. The recycled content of materials purchased to date is 61%. **(Appendix 6)**.

Ecology on and near site:

██████████ have needed to cut down trees as part of the works at the ██████████ site. An Ecologist came to assess the trees to ensure that no nesting birds / bats would be affected and to confirm absence of invasive species, of which there were none. A tool box talk on ecology/invasive was provided as part of the ecology assessment and ensure maintained vigilance. **(Appendix 31)**.

Environmental issues are regularly considered in site decision making and discussed in detail during weekly meetings as detailed in section 1 **(Appendix 1 & 2)**.

The ██████████ management team review subcontractors SHE management during the tendering process and during pre-start meetings. This allows ██████████ to obtain an insight into the management of the company and where they may need to improve, or adopt new processes.

5. Regular inclusion of environmental issues in site decision making

The environmental aspects and impacts of works activities are considered in all method statements and risk assessments which are reviewed by the site Environmental Manager **(Appendix 32)**

Examples of instances where careful consideration of environmental impacts of proposed works has led to alternatives to mitigate those impacts:

- Works taking place at ██████████ are in close proximity to ██████████. Works include breaking concrete, backfilling and laying the new road. To minimise complaints, it was agreed with ██████████ and site team that works would take place between 10-12pm and 4 – 6pm. “██████████” initiative. **(Appendix 20)**.
- The ██████████ Engineering team redesigned a set of works to minimise time

	<p>and noise impacts from breaking out raking piles. The re-design consisted of moving a man hole a few meters further away to avoid the need to break through the raking piles.</p> <ul style="list-style-type: none"> • Another reconsideration was the methodology of cleaning / painting the sheet piles along the boundary of the site in [REDACTED]. Grit blasting was the first option; however this methodology is noisy, especially during night shifts. The team are looking into an alternative methodology as a result of this. <p>[REDACTED] have a noise champion who is on site daily (Appendix 33). The noise champion is one of the site engineers which is beneficial in ensuring that task briefings and on site activities all consider the BPM stated in the s61 consent.</p> <p>Attended vibration monitoring for works near to [REDACTED] (slightly greater than 15m). There was lack of knowledge on the structure of the wall and therefore the trigger levels set were at lower thresholds than the British Standard. Each time a trigger above the threshold was reached, works were stopped and reviewed. A report was produced which is available to share to provide any further insight into the structure of [REDACTED] (Appendix 34).</p>
<p>6. Relevant Environmental issues communicated at all weekly and daily briefings</p>	<p>Daily Start-of-Shift briefings contain key environmental aspects to ensure effective communication to the workforce (Appendix 14). The Supervisor also briefs out the observation cards submitted, and provides feedback on the mitigation implemented with the site operatives.</p> <p>Topic specific issues are communicated during the daily SoS briefings where the need arises. (Appendix 27)</p> <p>The Environmental Manager reviews all method statements and risk assessments to ensure that all necessary environmental risks are both assessed and controlled (Appendix 32).</p>
<p>7. Recognition and timely reporting of environmental incidents and near misses</p>	<p>During the Periodic SHE Leadership Meetings (Appendix 3) the Environment Dashboard periodic presentations and reviewed any trends, incidents or anomalies are reviewed and considered to identify where actions are required (Appendix 35).</p> <p>[REDACTED] encourage all operatives and employees on [REDACTED] to report environmental incidents of non-compliance with environmental procedures or environment near misses.</p> <p>We use the RIVO safeguard system to record, track and close out any environmental incidents. These incidents are reported from a number of different channels which include:</p> <ul style="list-style-type: none"> • Weekly Safety, Health and Environmental (SHE) inspections • Environmental Observation tours; and • SHE observation and learning event cards <p>The cards are available on site, in the welfare areas and in the site offices, and are routinely collected by the SHE manager throughout the day. This</p>

enables timely action/close out if required.

8.Evidence of behavioural change, and promoting Environmental Awareness

Initiative

The “ ” campaign (**Appendix 20**) as highlighted in Section 4 was a prime example on how the Project implemented a behavioural change initiative on site. The campaign was initiated following complaints when rolling activities commenced on site during the early summer 2015.

The complaints arose from a local commercial neighbour, who overlook the site. The complaints from were related to the use of the vibratory roller on site and mapped out in relation to where the roller was in use at the time on a location drawing so the sensitive locations were identified.

Based on this, zones were established stipulating:

- where each kind of roller could be used;
- the times of use; and
- when should be notified
-

The plan (**Appendix 20**) that shows these zones was briefed to the roller drivers, the engineering team and supervisors so they were aware to contact the team before rolling in specific locations. Since the campaign was implemented, there have been no complaints from use of the rollers.

The initiative and the way it was implemented meant that the site team took ownership of the problem without subsequent or ongoing ‘policing’ by the Environment Team/ Community Liaison or Crossrail. Works progressed without further delays and with the support of Council. The initiative was so successful that the adjacent project () adopted the initiative when they had to undertake similar rolling activities in near vicinity with equal success.

Spill Response Exercise

In order to promote awareness and test the site team’s pollution prevention and spill response arrangements a surprise spill response exercise was carried out on site. Green food colouring was used and poured onto the ground to simulate an oil/fuel leak. The site team was alerted to the spill in order to implement a spill response. The exercise was successfully implemented and observed by the Environmental Advisor in order that lessons learned could be obtained and shared with the rest of the site team. The lessons learned were then briefed out to the rest of the team and a best practice was also typed up and distributed (**Appendix 23**).

Environmental Champions

Environmental Champions have been appointed to promote understanding and best practice for the following areas: Waste, Energy, Air Quality, Pollution Prevention, COSHH and Noise (**Appendix 36**). By giving a team member responsibility for a certain discipline, the environment team have found that the members of staff take ownership of that area, and pride in the results.

Learning Legacy Document