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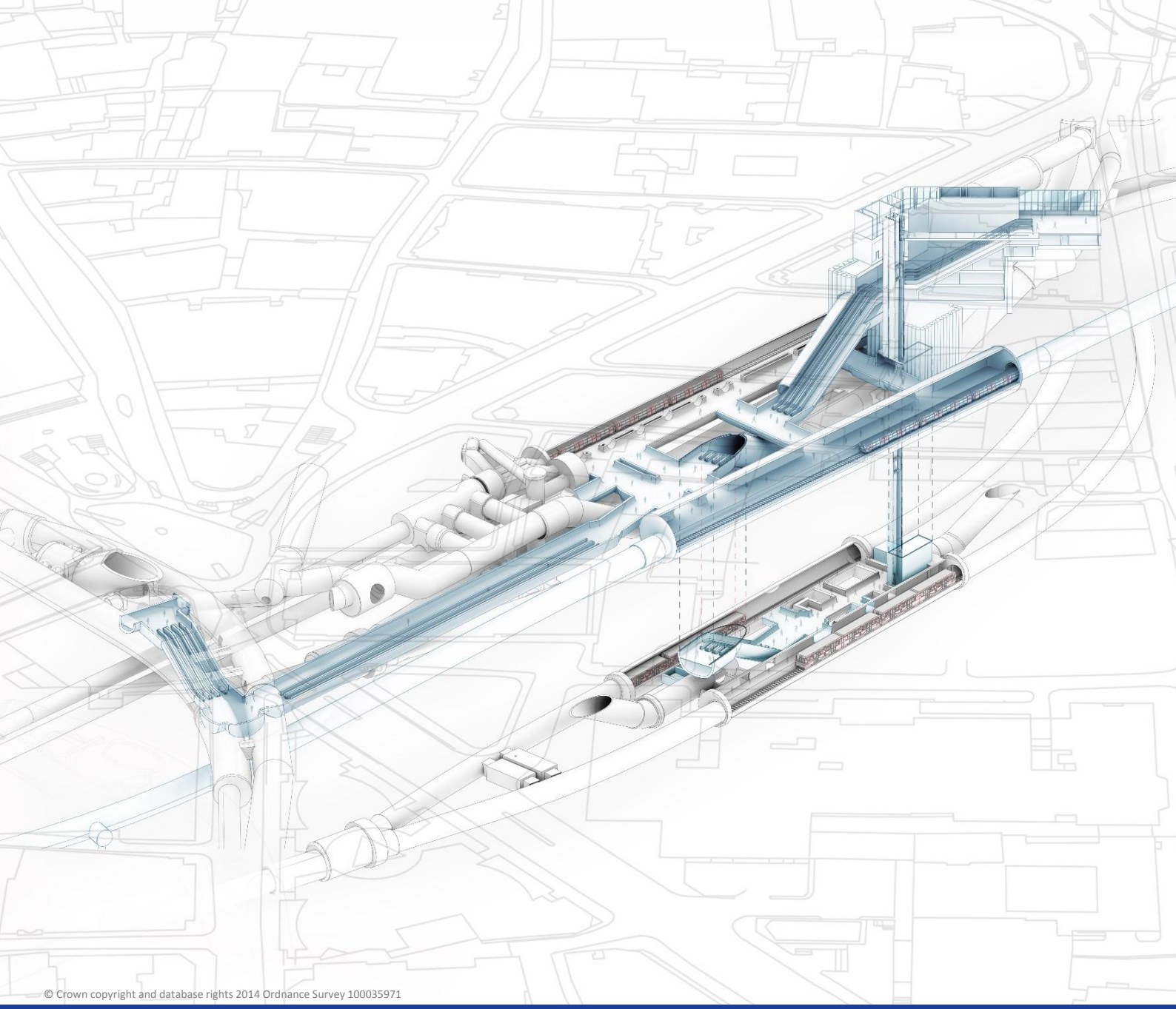

Transport and Works Act 1992

London Underground (Bank Station Capacity Upgrade) Order

Sustainability Statement

September 2014

MAYOR OF LONDON

TRANSPORT FOR LONDON

EVERY JOURNEY MATTERS

Transport and Works Act 1992

London Underground (Bank Station Capacity Upgrade) Order

Sustainability Statement

September 2014

Bank Station Capacity Upgrade Project
5th Floor
10 King William Street
London EC4N 7TW

LUL Document Reference:
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Table of Abbreviations

Abbreviation	Definition
AQMA	Air Quality Management Area
BMS	Building Management System
BP	Mayor's Best Practice Standards
BRE	Building Research Establishment
BREEAM	Building Research Establishment Environmental Assessment Method
BSCU	Bank Station Capacity Upgrade
CCHP	Combined Cooling Heat And Power
CCS	Considerate Contractors Scheme
CCTV	Closed-Circuit Television
CDM	Construction Design and Management
CEEQUAL	Civil Engineering Environmental Quality And Assessment Scheme
CHP	Combined Heat And Power
CLP	Construction Logistics Plan
CMS	Cable Management System
CO_2	Carbon Dioxide
CoCP	Code Of Construction Practice
CPET	Central Point Of Expertise In Timber
DAS	Design And Access Statement
DCLG	Department For Communities And Local Government
Defra	Department For Environmental, Food And Rural Affairs
DLR	Docklands Light Railway
EMS	Environmental Management System
ES	Environmental Statement
ETI	Ethical Trading Initiative
FORS	Fleet Operator Recognition Scheme
FRA	Flood Risk Assessment
FSC	Forestry Stewardship Council
FWEP	Flood Warning And Evacuation Plan
GGBS	Ground Granulated Blast Furnace Slag
GLA	Greater London Authority
GWP	Global Warming Potential
HIA	Health Impact Assessment
HSE	Health, Safety And Environment
ILO	International Labour Organisation

Abbreviation	Definition
ISO	International Standards Organisation
KPI	Key Performance Indicators
LDF	Local Development Frameworks
LUL	London Underground Limited
MEP	Mechanical Electrical and Plumbing Engingeering
MTS	The Mayor's Transport Strategy
NO_2	Nitrogen Dioxide
NOx	Nitrogen Oxide
ORR	Office Of Rail Regulation
OSD	Over Site Development
P	Mayor's Priorities Standards
PEFC	Programme For The Endorsement Of Forest Certification
PFA	Pulverised Fly Ash
PM	Particulate Matter
PPG	Planning Practice Guidance
PPS	Planning Policy Statement
PRM	Person of Reduced Mobility
RC	Reinforced Concrete
SCA	Svenska Cellulose Aktiebolaget
SCL	Sprayed Concrete Lining
SFI	Sustainable Forestry Initiative
SIP	Social Inclusion Programme
SPD	Supplementary Planning Document
SPG	Supplementary Planning Guidance
SUDs	Sustainable Urban Drainage Systems
SWMP	Site Waste Management Plan
TA	Transport Assessment
TfL	Transport For London
TWAO	Transport And Works Act Order
UDP	Unitary Development Plan
VOCs	Volatile Organic Compounds
VUR	Valuing The Urban Realm Toolkit

Executive Summary

This Sustainability Statement has been prepared in support of a Transport and Works Act Order (TWAO) application for the Bank Station Capacity Upgrade (BSCU), by London Underground Limited (LUL).

This report demonstrates how the BSCU will address the Greater London Authority's (GLA) and the City of London Corporation's sustainability policies and objectives. The sustainability assessment structure is set out in accordance with the aims and objectives of Transport for London's (TfL) Sustainability Assessment Framework and informs TfL's 'Pathway' Process, which aims to:

- ensure delivery of Mayoral and legal sustainability requirements;
- deliver a whole life cost approach to asset and service management;
- ensure all benefits are captured and realised during the works;
- deliver sustainability though TfL's assets, programmes, projects and operations.

The main aims of this statement are therefore threefold:

- demonstrate LUL's support for sustainable project development; ensuring that social, environmental and economic factors have been considered and have informed the design and construction process;
- demonstrate the sustainability performance of the BSCU in terms of compliance with the relevant requirements of national policy, GLA and the City of London Corporation on sustainability;
- establish the sustainability performance of the project by assessing it against a number of evaluation tools, including the TfL Sustainability Assessment Toolkit and the Mayor of London Supplementary Planning Guidance (SPG) on Sustainable Design and Construction, and achieving the target of 'Excellent' for the whole team award using CEEQUAL, the assessment and awards scheme for improving sustainability in civil engineering and infrastructure projects.

It is intended that the project achieves the target of 'Excellent' for the whole team award using CEEQUAL.

The BSCU responds to national, regional and local planning policies following the TfL Sustainability Framework structure. The TfL Sustainability Assessment Toolkit is used to explore sustainability within the topics of the TfL Sustainability Framework, as follows:

Tackle Climate Change

- the resulting savings in carbon dioxide (CO_2) emissions due to the incorporation of passive design and energy efficiency measures are expected to be 23 per cent over the baseline scheme;
- materials will be selected on the basis of their environmental properties in line with the Building Research Establishment's (BRE) Green Guide to Specification (BRE Global) and these will be locally and responsibly sourced, where practicable;
- concrete replacements such as Ground Granulated Blast-furnace Slag (GGBS) and Pulverised Fly Ash (PFA) will be considered to reduce the embodied carbon associated with materials selection;
- a 95 per cent target of excavated material and building materials are aimed to be recycled or reused in place of being sent to landfill; and
- water consumption will be minimised through the installation of water efficient sanitary ware, such as reduced volume dual flush toilet cisterns and low-pressure spray taps.

Quality of Life

- the design will increase the capacity of Bank Station and reduce journey times and congestion for passengers;
- construction site impacts will be minimised and monitored at all stages of the works in line with the Project's Code of Construction Practice (CoCP);
- the BSCU Project will register with the Considerate Contractors Scheme administered by the City of London Corporation and apply for the Considerate Contractors Scheme's Environmental Award;
- the design will promote healthy indoor environment through the use of natural ventilation where possible, optimised levels of lighting and acoustic performance and the use of nontoxic materials;
- the design principles adopted respect and enhance the context of the site and the built heritage of the surrounding area; and
- the work will not result in loss of open space and will utilise land that has been classified as of negligible ecological value.

Transport for All

- the design will provide step-free routes to the Northern Line Platforms from street and Docklands Light Railway (DLR) levels, an acceptable means of escape for disabled people and others with reduced mobility, and ability to provide assistance for those with reduced mobility;

- introduction of triple escalators, dedicated interchange route with two moving walkways and new alternative routes to exit platforms will increase the station's capacity to accommodate passenger flows and ease the congestion during peak times thus contributing to an improved passenger experience; and
- the BSCU will contribute to the efficiency and effectiveness of some of the other large infrastructure projects currently on-going in London, such as Crossrail's new Liverpool Street Station, and the London Underground upgrades.

Safety and Security

- the design will accommodate inclusive access and security including incorporation of the principles of Secured by Design, where practicable;
- to further improve security, consultation has been held with the British Transport Police's Principal Architectural Liaison Officer and Counter Terrorist Security Advisor, the LUL Operations Task Manager and LUL Security Risk Manager for Bank Station;
- Safety and Security during construction have also been taken into account and measures such as the provision of hoardings around the perimeter of the site and consideration of road and pedestrian safety within the Traffic Management Plan have been incorporated; and
- the design will improve the emergency fire and evacuation protection measures for Northern Line and DLR passengers.

Economic Progress

- the BSCU is expected to lead to increased employment opportunities in the local area whilst the enhanced transport links will provide local people with greater access to employment opportunities in different parts of London;
- the contractor will develop a Strategic Labour Needs and Training plan (SLNT) with the aim of meeting strategic labour needs and enabling training opportunities;
- promoting fair employment practices, such as through application of the London Living Wage and apply a consistent approach to effective management of labour and industrial relations;
- promoting workforce welfare, including through the contractor's Workforce Welfare Policy; and
- it is expected the scheme will result in an additional 200 jobs for Greater London residents during demolition and construction of the BSCU.

1 Introduction

1.1.1 This Sustainability Statement accompanies the Transport and Works Act Order (TWAO) application for the Bank Station Capacity Upgrade (BSCU). It has been prepared on behalf of London Underground Limited (LUL) and the project design and build contractor, Dragados.

1.1.2 The BSCU seeks to deal with serious shortfalls in the passenger capacity of the existing Bank Monument Station Complex, hereinafter referred to as Bank Station.

1.1.3 Future forecasts show that passenger demand for Bank Station is growing and crowding is expected to become worse unless the station is upgraded to provide more capacity.

1.1.4 This Sustainability Statement sets out how the project team has addressed relevant sustainability policies and guidance and evaluates the sustainability credentials of the BSCU.

1.1.5 The assessment structure is set out in accordance with the aims and objectives of Transport for London's (TfL) Sustainability Assessment Framework and informs TfL's 'Pathway' Process, which purpose is to:

- ensure delivery of Mayoral and legal sustainability requirements;
- deliver a whole life cost approach to asset and service management;
- ensure all benefits are captured and realised during the works; and
- deliver sustainability through TfL's assets, programmes, projects and operations.

1.1.6 The primary aims of the Sustainability Statement are to:

- demonstrate LUL's support for sustainable project development; ensuring that social, environmental and economic factors have been considered and have informed the design and construction process;
- demonstrate the sustainability performance of the BSCU in terms of compliance with the requirements of national policy, Greater London Authority's (GLA) and the City of London Corporation on sustainability; and
- establish the sustainability performance of the project by assessing it against a number of evaluation tools, including the TfL Sustainability Assessment Toolkit and the Mayor of London Supplementary Planning Guidance (SPG) on *Sustainable Design and Construction* (GLA), 2014), and achieving the target of 'Excellent' for the whole team award using CEEQUAL, the assessment and awards scheme for improving sustainability in civil engineering and infrastructure projects.

1.1.7 This report has been prepared based on consultation with the design team, the main contractor Dragados, LUL and through the use of information included in documents that form part of the TWAO application for the BSCU. These documents include but are not limited to:

- Design and Access Statement (DAS);
- Environmental Statement (ES);
- Energy Statement;
- Health Impact Assessment (HIA);
- Safety and Security Report;
- Transport Assessment (TA);
- Draft Code of Construction Practice (CoCP); and
- Outline Construction Logistics Pan (CLP).

1.1.8 Where appropriate, the Sustainability Statement makes reference to these documents.

1.1.9 The remainder of this document is structured as follows:

- Section 2 provides an overview of the BSCU proposals and their construction;
- Section 3 outlines a summary of the relevant policy context and key sustainability drivers;
- Section 4 outlines the adopted sustainability assessment methodology;
- Section 5 presents the sustainability assessment against each of the issue categories in the TfL Sustainability Assessment Framework and sets out the sustainability initiatives the scheme will commit to;
- Section 6 presents the results from the Sustainability Tools used; and
- Section 7 presents the conclusions and way forward.

1.1.10 The Sustainability Statement is accompanied by a series of appendices, which contain supporting technical information, as follows:

- Appendix A presents a comprehensive review of the policy context;
- Appendix B responds to each of the objectives included in the *Sustainable Design and Construction SPG*, 2014;
- Appendix C presents the summary outputs of the Sustainability Workshops held between October-December 2013;

- Appendix D includes the completed assessment using the TfL Sustainability Assessment Toolkit, and
- Appendix E sets out the results of the CEEQUAL Preliminary Assessment.

2 Overview of the BSCU Project

2.1.1 The BSCU involves a major upgrade of the Bank Monument Station Complex to provide greatly improved passenger access, circulation and interchange. It will also improve emergency fire and evacuation protection measures. It includes provision of a new passenger entrance with lifts and escalator connections; a new Northern Line passenger concourse using the existing southbound platform tunnel; a new Northern Line southbound running and platform tunnel; and new internal passenger connections between the Northern Line, the Docklands Light Railway (DLR) and the Central Line.

2.1.2 The new Station Entrance will open on to Cannon Street at the junction with Nicholas Lane. An entrance hall will provide circulation space, as well as accommodating staff facilities, plant rooms and associated retail space. New passenger lifts will link the entrance hall directly with the Northern Line and DLR providing step free access from these lines. Escalators will also connect the entrance hall with the Northern Line.

2.1.3 The existing southbound platform for the Northern Line will be converted into a new passenger concourse. A new southbound running and platform tunnel will be located to the west of the existing platform. New cross passages will connect the Northern Line concourses and platforms. New walkways and escalators will better connect the Northern Line, the DLR and the Central Line. In particular, a tunnelled passageway fitted with moving walkways and new escalators will greatly improve interchange between the Northern Line and the Central Line.

2.1.4 Works to divert and protect utilities and to protect listed and other buildings from ground settlement, will also be undertaken, where monitoring and/or damage analysis indicates this is required. The compulsory purchase and temporary use of land, the temporary stopping up of streets, street works and ancillary works will also be required.

3 Planning Policy Context Overview

3.1.1 The following section outlines national, regional and local policies which the BSCU is required to respond to, following rising international and national aspirations on enhancing sustainability. In this context, the BSCU proposals address a number of policy documents which are detailed further in Appendix A.

3.1 National Planning Policy

3.1.2 The Government has launched a raft of measures to combat global warming, climate change and promote reductions in energy or CO_2, and other greenhouse gas emissions.

Energy Act (Her Majesty's Stationery Office, 2013)

3.1.3 The *Energy Act* makes a provision for the setting of a decarbonisation target range, duties in relation to it and for the reforming of the electricity market for the purposes of encouraging low carbon electricity generation.

Climate Change Act (Her Majesty's Stationery Office, 2008)

3.1.4 The *Climate Change Act* sets up a framework for the UK to achieve its long-term goals of reducing greenhouse gas emissions by 34 per cent over the 1990s baseline by 2020 and by 80 per cent by 2050 and to ensure steps are taken towards adapting to the impact of climate change.

Climate Change and Sustainable Energy Act (Her Majesty's Stationery Office, 2006)

3.1.5 This Act enhances the contribution of the UK to combating climate change and securing a diverse and viable long-term energy supply.

Our Energy Future – Creating a Low Carbon Economy (Department for Transport, 2003)

3.1.6 This White Paper sets a target for 20 per cent of electricity to be produced from renewable sources nationally by 2020, with a 60 per cent reduction in CO_2 emissions by 2050 (from 2003 levels).

The Carbon Plan: Delivering Our Low Carbon Future (Department of Energy and Climate Change, 2011)

3.1.7 The *Carbon Plan* sets out the Government's plans for achieving the emissions reductions commitment made in the *Climate Change Act 2008*. A pathway consistent with meeting the 2050 target is outlined.

3.1.8 This publication brings together the Government's strategy to curb greenhouse gas emissions and deliver climate change targets.

National Planning Policy Framework (Department for Communities and Local Government, 2012)

3.1.9 The *National Planning Policy Framework (NPPF)* sets out the Government's planning policies for England and how these are expected to be applied. It is a material consideration in planning decisions. The document presents a series of policies that constitute the Government's view of what sustainable development in England means in practice for the planning system.

3.1.10 At the heart of the *NPPF* is a presumption in favour of sustainable development.

Planning Practice Guidance (Department for Communities and Local Government, 2014)

3.1.11 In March 2014, the DCLG published the national *Planning Practice Guidance* (*PPG*). This comprises a single online resource that replaces a number of older national planning guidance notes and complements the *NPPF*.

3.1.12 The new online resource of streamlined planning guidance documents includes guidance on a range of issues, including climate change.

3.2 Regional Planning Policy

The London Plan (Greater London Authority, 2011)

3.2.1 *The London Plan* establishes policy over the next 20 – 25 years, and retains the fundamental objective of accommodating London's population and economic growth through sustainable development.

3.2.2 The Mayor's vision is for London to achieve the highest environmental standards and quality of life and lead the world in its approach to tackling the urban challenges of the 21st century, particularly that of climate change.

3.2.3 Key relevant policies from *The London Plan* are set out in Appendix A.

The Mayor's Transport Strategy (Greater London Authority, 2010a)

3.2.4 The *Mayor's Transport Strategy* (*MTS*) sets out the Mayor's transport vision and describes how TfL and its partners, including the London boroughs, will deliver integrated and dynamic 21st century transport systems.

3.2.5 The *MTS* was developed alongside *The London Plan* as part of a strategic policy framework intended to support and shape the economic and social development of London over the next 20 years.

3.2.6 The *MTS* identifies and sets out five goals for implementing the Mayor's vision. The transport strategy should:

- support economic development and population growth;

- enhance the quality of life for all Londoners;
- improve the safety and security of all Londoners;
- improve transport opportunities for all Londoners; and
- reduce transport's contribution to climate change and improve its resilience.

Draft Further Alterations to The London Plan (Greater London Authority, 2014)

3.2.7 Consultation took place between January and April 2014 on the *Draft Further Alterations to The London Plan*. A *Schedule of Suggested Changes to the Draft Further Alterations* was published in July 2014. The relevant altered policies have been reviewed and considered in the context of this report.

3.2.8 Specifically, *Draft Policy 5.4A Electricity and Gas Supply* states that developers, especially of major schemes, should engage at an early stage with relevant boroughs and energy companies to identify the gas and electricity requirements arising from their development proposals.

Sustainable Design and Construction (Greater London Authority, 2014)

3.2.9 The Mayor's Supplementary Planning Guidance (SPG) provides guidance on sustainable design and construction. The SPG aims to support developers, local planning authorities and neighbourhoods to achieve sustainable development. It provides guidance on how to achieve *The London Plan* objectives effectively, supporting the Mayor's aims for growth, including the delivery of housing and infrastructure.

3.2.10 The document sets out the 'Mayor's Priorities' and 'Mayor's Best Practice' standards that apply to all major developments in London.

3.2.11 A response to these Standards is set out in further detail in Appendix B.

3.3 Local Planning Policy

Core Strategy (City of London Corporation, 2011)

3.3.1 The *Core Strategy* sets out the future vision and key policies for planning within the City of London.

3.3.2 The following policies have been considered in the context of this report:

- *Policy CS15 - Sustainable Development and Climate Change*; this policy include sustainability targets and energy requirements for developments; note that the requirements of this policy are mostly relevant to buildings and are not all directly applicable to BSCU;
- *Policy CS17 – Waste minimisation*; this policy aims to enable waste minimisation and adherence to the waste hierarchy; and

- *Policy CS18 - Flood Risk*; this policy aims to minimise river flooding risk.

Unitary Development Plan (City of London Corporation, 2002)

3.3.3 *Policy Util 6* requires adequate provision within all developments for the storage, presentation for collection, and removal of waste, unless exceptional circumstances make it impractical; to encourage provision to allow for the separate storage of recyclable waste where appropriate.

Draft Local Plan (City of London Corporation, 2013)

3.3.4 The final stage of public consultation on the *Draft Local Plan* ended in February 2014. The *Draft Local Plan* sets out the future vision and key policies for planning within the City of London until 2026. It is anticipated that *The Local Plan* will be adopted in late 2014, replacing the *Core Strategy* and *Unitary Development Plan*.

3.3.5 The *Draft Local Plan* includes new policies for Development Management and although these policies have not yet been adopted, draft policies *DM15.1* and *DM15.3* have been consulted to ensure that the BSCU is developed in line with the principles of the emerging *Local Plan*.

Bank Conservation Area: Character Summary and Management Strategy Supplementary Planning Document (City of London Corporation, 2012b)

3.3.6 This Supplementary Planning Document (SPD) states that it is important that sustainable development is sensitive to the historic environment. The development, including the incorporation of climate change adaptation measures, should have regard to the need to protect the historic significance of heritage assets.

3.3.7 The SPD also mentions that the Citigen Network is proposed to be extended along London Wall at Bank Conservation Area's northern boundary. It is anticipated that future buildings within the conservation area will make use of the network.

Consultation Draft Planning Obligations Supplementary Planning Document (City of London Corporation, 2013)

3.3.8 The *Consultation Draft Planning Obligations SPD*, consultation on which ended in January 2014, sets out principles for how carbon offsetting will operate in the City of London and identify the use of section 106 planning obligations as a means of delivery. These obligations are not yet in force.

3.3.9 For further detail on the policies outlined above please refer to Appendix A.

3.3.10 Key TfL and LUL Policy, Standards and Guidance Documents are also summarised in Appendix A.

4 Methodology

4.1.1 LUL recognises that in order to deliver sustainability in development projects it is necessary to embed an integrated approach to sustainability through planning, target setting, monitoring and reporting throughout the design, construction and operational phases. To ensure that all sustainability requirements and LUL and TfL objectives have been captured, the following approach for embedding sustainability has been undertaken during the development of the sustainability strategy for the BSCU:

- a review of relevant planning policy documents has been undertaken to inform and guide the BSCU's sustainability performance throughout its lifecycle;
- consideration of the sustainability requirements and the opportunities for sustainable innovation for the BSCU has been addressed through workshops with project engineers and environment specialists (see Appendix C);
- evidence has been captured from parallel studies prepared as part of the Environmental Statement (ES), HIA and the Energy assessment process; and
- evaluation and appraisal of sustainability performance has been undertaken through the use of relevant tools and methods as listed below:
    - the TfL Sustainability Assessment Toolkit;
    - the *Mayor of London's Sustainable Design and Construction SPG 2014*;
    - CEEQUAL; and
    - other sustainability assessment methodologies (see Section 4.4).

4.1.2 An integrated approach to design has been established through continued dialogue between LUL, TfL and the design team. This process aims to:

- guide the decision making process and provide feedback to the design team;
- align the project proposals with the planning requirements, TfL guidance and sustainability tools and methods adopted; and
- enable the BSCU Project to achieve an 'Excellent' CEEQUAL rating, initially for the Client and Design Interim Award, but ultimately (upon completion of construction) for the Whole Team Award.

4.1.3 It is recognised that the BSCU will have an impact on a number of stakeholders. A Consultation and Engagement Strategy has been

implemented for stakeholders to have their say during design and throughout the construction phase. The consultation has informed the design since its early stages in 2011, with key suggestions incorporated into the final design, where practicable.

4.1.4 A project-wide communications strategy will be coordinated between the Contractor and LUL so this can be incorporated into email alerts, websites and on-board announcements alerting local residents and station users on upcoming changes.

4.1.5 The following sections set out a summary of the key sustainability drivers that have informed the BSCU sustainability strategy.

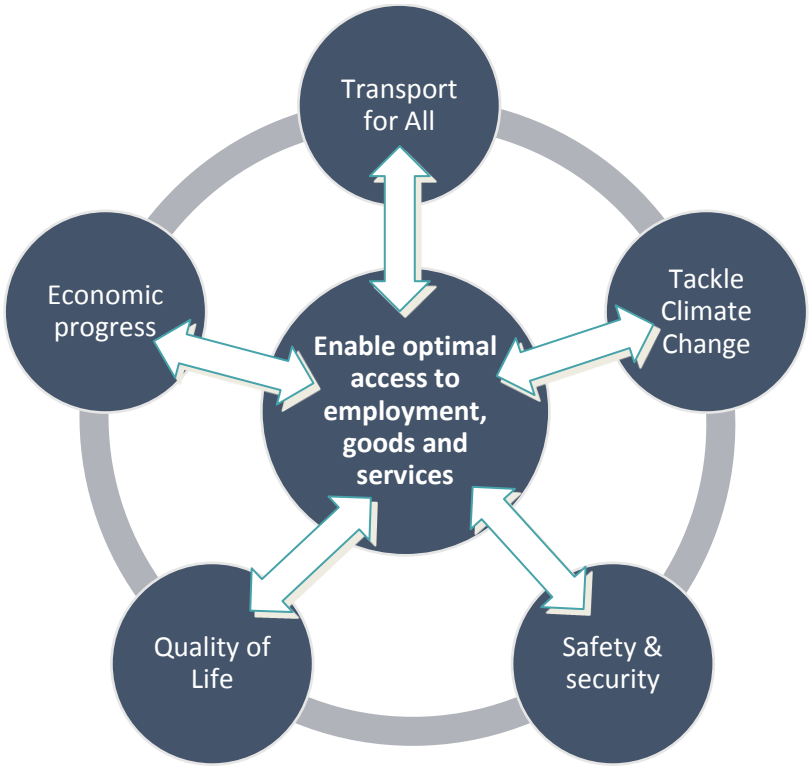
4.1 TfL Sustainability Framework

4.1.6 TfL makes sustainability central to its work by using a structured and systematic approach to ensure that the economic, social and environmental aspects of its activities are balanced and optimised, based upon the TfL Sustainability Framework, and is mainstreamed into all major development projects. This approach is reflected in the TfL 'Pathway' process, the purpose of which is to deliver sustainability through TfL's assets, programmes, projects and operations.

4.1.7 In line with the above, the TfL Sustainability Framework has been used as a basis for evaluating the sustainability performance of the BSCU and in highlighting the opportunities and limitations that apply when planning for sustainability related design aims. In line with the *MTS* goals, the framework recognises that providing transport enables access to employment, goods and services.

4.1.8 The TfL Sustainability Framework is illustrated in Figure 4.1.

Figure 4.1: The TfL Sustainability Framework



4.1.9 This Sustainability Statement has been structured around TfL's Sustainability Framework and covers sustainability topics derived from the relevant planning policies and industry best practice, sustainability guidance documents and assessment methods.

TfL Sustainability Assessment Toolkit

4.1.10 TfL has developed a Sustainability Assessment Toolkit to help assess proposed policies or major projects at an early stage in line with the TfL Sustainability Framework and TfL 'Pathway' process. The TfL Sustainability Assessment Toolkit was developed to optimise the sustainability performance of the project design, construction and operation. The toolkit provides constructive feedback on sustainability performance, allowing the management and mitigation of risks and targeting of areas of under-performance.

4.1.11 The TfL Sustainability Assessment Toolkit explores sustainability within the themes of the TfL Sustainability Framework, as follows:

- *Climate Change - Reduce CO_2 emissions, be prepared for rising temperatures and increased flood risk;*

- *Quality of Life - Enable access to health and leisure facilities, improve passenger comfort, improve passenger and staff fitness, enhance London's built and natural environment, improve air quality and reduce noise;*
- *Transport for All - Ensure equal and fair treatment of all people, access to opportunities (housing, jobs), promote regeneration and tackle deprivation;*
- *Safety and Security - Reduce accidents or criminal acts on public transport and road network, anticipate and prepare for terrorist attacks, and improve community safety; and*
- *Economic Progress - Enable reliable, safe, comfortable and affordable access to goods, jobs, education, improve productivity and support wealth generation.*

4.1.12 Based upon the answers to a series of questions against each sustainability theme, a ranking is allocated representing the project's contribution to the indicator, as well as the magnitude and likelihood of the indicator occurring. Where the project has an adverse impact, a negative marking is allocated.

4.1.13 A response to the TfL Sustainability Assessment Toolkit guidance questions has been included in Appendix D of this Sustainability Statement to demonstrate the BSCU's adherence to TfL's own sustainability standards.

4.2 The Mayor of London SPG on Sustainable Design and Construction

4.2.1 In support of the policies included in *The London Plan*, the *Mayor of London's Sustainable Design and Construction SPG* (GLA 2014) has been used to evaluate and measure the sustainability of the BSCU.

4.2.2 The *SPG* includes a summary table to provide clarity on how the standards identified in it are implemented. The BSCU has been assessed against the following three topic areas of the *SPG*:

- Resource Management
    - Land;
    - Site Layout and Building Design;
    - Energy and Carbon Dioxide Emissions;
    - Carbon Dioxide Off Setting;
    - Retrofitting;
    - Monitoring Energy Use;
    - Supporting a Resilient Energy Supply;
    - Water Efficiency; and

- Materials and Waste.
- Climate Change Adaptation
  - Tacking Increased Temperatures and Drought;
  - Increasing Green Cover; and
  - Flooding.
- Pollution Management
  - Land Contamination;
  - Air Quality;
  - Noise;
  - Light Pollution; and
  - Water Pollution.

4.2.3 To ensure that each of the standards in the *SPG* has been given proper consideration, the assessment of performance is presented in a tabular format. Appendix B of this Sustainability Statement presents the BSCU response to these objectives, taking into account that some of the standards are not directly relevant, as they are specifically related to residential development or buildings that will be occupied for some period of time.

4.3 CEEQUAL

4.3.1 CEEQUAL is an evidence-based sustainability assessment and awards scheme for civil engineering, infrastructure, landscaping and public realm projects, which recognises the achievement of high environmental and social performance. CEEQUAL rewards projects and design teams that go beyond the legal, environmental and social minima to achieve distinctive environmental and social performance.

4.3.2 It is a self-assessment process (independently audited and 3rd party verified) that CEEQUAL trained assessors use to assess project or contract performance rigorously based on management and a range of environmental and social issues of concern.

Approach to CEEQUAL

4.3.3 TfL requires the BSCU Project to be assessed under CEEQUAL. The current version of the methodology is Version 5.1 Project (UK and Ireland) and the assessment also covers Sustainability Strategy and Performance (i.e. with CEEQUAL Section 1 included). A Whole Team Award has been targeted, with an Interim Award stage certification sought. LUL's objective is that the final CEEQUAL Whole Team Award should achieve an 'Excellent' rating.

4.3.4 An Interim Client and Design CEEQUAL Award has been pursued to support the application process. An overall scoping exercise involving a CEEQUAL verifier has defined the scope of the CEEQUAL assessment to match the scope of BSCU. Client and Design question scoring is assessed for the relevant CEEQUAL question areas that reflect the stage of Interim design development and reflect where the corresponding Interim assessment evidence base will exist. In support of the TWAO submission, the Interim assessment therefore makes a best fit evaluation and assessment of sustainable solutions proposed for the BSCU.

4.3.5 The Preliminary Assessment undertaken (included as Appendix E) considers only the predicted final assessment result and therefore assumptions have been made about the actions that may be taken by the construction team during the actual construction phase. Accordingly, the Preliminary Assessment estimates the projected score that may be achieved by the Final (Whole Team) assessment. The CEEQUAL Interim rating and score will be influenced by the assessment of available CEEQUAL points split between the two stages of assessment to appreciate where the balance of evidence to support the claim for credits will lie.

4.4 BREEAM

4.4.1 The Building Research Establishment Environmental Assessment Method (BREEAM) for New Construction is a performance based assessment method and certification scheme for new buildings. The primary aim of BREEAM New Construction is to mitigate the life cycle impacts of new buildings on the environment in a robust and cost effective manner.

4.4.2 The BREEAM New Construction 2011 version has been used for the BSCU.

Approach to BREEAM

4.4.3 Due to the nature of the BSCU, CEEQUAL has been selected as the most appropriate methodology for appraising the sustainability performance of the overall infrastructure works.

4.4.4 However, an informal review of the BREEAM elements relevant to the BSCU has been undertaken to ensure that the design, specifications and the construction thereof meet sustainable design and construction practices through consideration of the relevant BREEAM criteria. Formal certification under BREEAM is not proposed for the BSCU, however the approach taken by the project team is considered as ‘CEEQUAL Plus’ to account for the additional sustainability considerations incorporated.

4.5 Summary of Key Sustainability Drivers

4.5.1 Table 4.1 summarises the connection between the project sustainability aims and objectives and shows how the topics covered by each of the above tools and methods align with the TfL Sustainability Framework.

Table 4.1: Summary of Sustainability Aims and Objectives

TfL Sustainability Framework	TfL Sustainability Assessment Toolkit	SPG 2014	CEEQUAL	BREEAM 2011
Tackle Climate Change	Reduction CO_2 Emissions	Energy and Carbon Dioxide Emissions Monitoring Energy Use Carbon Dioxide Off Setting Retrofitting	Energy and Carbon	Low and Zero Carbon Technologies
	Climate Change Adaptation	Tacking Increased Temperatures and Drought Increasing Green Cover Flooding Land Site Layout and Building Design Supporting a Resilient Energy Supply	Land Use Water Resources and the Water Environment	Water leak Detection & Shutoff Flood Risk Energy Monitoring Energy Efficient Transportation systems
	Improve Resource Efficiency	Water efficiency Materials and Waste	Material Use	Life Cycle Impacts of Materials Designing for Robustness Responsible Sourcing of Materials Construction Waste Management Operational Waste Water Consumption
Quality of Life	Enhancing the Built and Natural Environment	Site Layout and Building Design Light Pollution	Project Management Ecology and Biodiversity The Historic Environment	Responsible Construction Practices Construction Site Impacts

TfL Sustainability Framework	TfL Sustainability Assessment Toolkit	SPG 2014	CEEQUAL	BREEAM 2011
	Improving Air Quality	Air quality	Project Management	Travel Plan Impact of Refrigerants Indoor Air Quality
	Improving Noise Impacts	Noise Impacts	Project Management	Responsible Construction Practices Construction Site Impacts
	Improving Health Impacts	Land Contamination Water Pollution	Land Use Ecology and Biodiversity	Travel Plan Indoor Air Quality
	Improving Journey Experience		Project Management People and Communities	Travel Plan Indoor Air Quality
Transport for All	Improving Accessibility		Project Management People and Communities	Public Transport Accessibility Travel Plan
	Improving Connectivity		Project Management Transport	Public Transport Accessibility Travel Plan
	Supporting Regeneration and Tackling Deprivation		People and Communities	Proximity to Amenities Stakeholder Participation

TfL Sustainability Framework	TfL Sustainability Assessment Toolkit	SPG 2014	CEEQUAL	BREEAM 2011
Safety and Security	Reducing Crime, Fear of and Antisocial Behaviour		Project Management Land Use Material Use	Safety and Security
	Improving Road and Public Safety			
Economic Progress	Supporting Population and Employment Growth		Project Management	Stakeholder Participation
	Delivering an Efficient and Effective Transport System		Project Management	Public Transport Accessibility Travel Plan

5 Sustainability Assessment

5.1 Introduction

5.1.1 The following sections set out the sustainable design and construction initiatives and the commitments made by the design and client team for the BSCU in relation to the policy objectives and key sustainability drivers. The structure is based on the TfL Sustainability Framework as described in Section 4.1 and outlines how the BSCU has responded to the key drivers outlined in Table 4.1.

5.1.2 A number of appendices are provided to accompany this assessment that show specifically how the BSCU performs against the objectives of the *Sustainable Design and Construction SPG* as required by the Mayor of London (Appendix B), the themes and indicators of the TfL Sustainability Toolkit (Appendix D) and the target of achieving a CEEQUAL rating of 'Excellent' (Appendix E).

5.2 Site Constraints

5.2.1 The London Underground station is an unusual building type for which some sustainability design measures typically applied to buildings (e.g. favourable orientation) are not applicable.

5.2.2 The majority of the upgrade will be located below ground and the BSCU will be surrounded by a dense network of tunnels. The entrance hall is located in the heart of the City of London closely integrated as part of a wider site redevelopment and surrounded by buildings, many of heritage significance. These factors potentially constrain some opportunities, such as introduction of green roofs or renewable technologies.

5.2.3 The BSCU Project is located in the Bank Conservation Area, with a number of listed buildings nearby, including the Grade I listed St. Mary Abchurch. The southern half of the Whole Block Site falls within the London View Management Framework Protected View 5A.2 from Greenwich Park (wider setting) and the southern edge of the Whole Block Site falls within the Protected View 4A.1 from Primrose Hill to St Paul's Cathedral (background).

5.3 Tackle Climate Change

Reduction in CO_2 emissions

5.3.1 A number of measures have been considered to reduce energy consumption during the construction phase of the BSCU. The complete list of the potential energy saving measures is included in the Energy Statement (Appendix A6.3 of the ES).

5.3.2 The list of the energy saving measures includes the relevant items from the Considerate Contractors Scheme (CCS) as the BSCU will be registered with the scheme. The Carbon Trust's recommendations listed within their *Action Plan to Reduce Carbon Emissions* (Carbon Trust, 2010) are also included.

5.3.3 A draft Code of Construction Practice (CoCP) (Appendix A4.1 of the ES) has been produced for the BSCU Project outlining the principles of environmental management and mitigation strategies to be followed to minimise the impact of the BSCU during the demolition and construction phases. The draft CoCP confirms that TfL will implement working methods that reduce energy consumption and continually improve energy efficiency on site during the construction phase.

5.3.4 In addition, the Energy Statement will be revised through each design stage and will fulfil the role of the Carbon and Energy Efficiency Plan required by TfL's Pathway process to guide energy consumption and reduction during construction.

5.3.5 The BSCU design aims to optimise energy performance and CO_2 emissions during the operational phase. The relevant measures are contained in the Energy Statement, prepared in accordance with the Mayor's Energy Hierarchy (i.e. Be Lean, Be Green, Be Clean) and *The London Plan*. The Energy Statement includes an assessment of anticipated energy demand, measures to be employed to minimise this demand, and details on how the remaining demand will be met.

5.3.6 The BSCU will achieve operational energy consumption reductions through the implementation of passive design and energy efficiency measures, such as:

- natural ventilation for all public areas;
- humped alignment of the running tunnel (to aid breaking and acceleration of trains);
- high efficiency lighting and intelligent controls;
- high efficiency cooling system for staff areas and communication rooms;
- efficient fans and pumps including variable speed drives;
- Building Management System and sub-metering strategy;
- low energy lifts, escalators and moving walkaways; and
- efficient asset handover.

5.3.7 It is currently estimated that the BSCU has the potential to achieve approximately 23 per cent CO_2 emissions savings via the incorporation of passive design and energy efficiency measures. The savings are calculated over a notional scheme, which is represented by 'non-building' infrastructure

constructed to a typical industry standard complying with all relevant regulations and standards (e.g. LUL standards) and 'building' areas that meet the minimum energy efficiency requirements of the Building Regulations.

Climate Change Adaptation

5.3.8 The latest UK climate change scenarios, as described in the UK Climate Projections 2009 (Murphy et al, 2009) indicate that summers will become hotter and drier. There will be an intensification of the urban heat island effect; winters will become milder and wetter, leading to increased flood risk. Extreme climate events such as very hot days and intense downpours of rain are becoming more common.

5.3.9 Adaptation, along with mitigation, is an essential part of addressing the challenges associated with climate change. While adaptation addresses the impacts resulting from a changing climate, mitigation refers to efforts to limit the anthropogenic effects of climate change.

Flooding

5.3.10 Chapter 13: Water Resources and Flood Risk of the ES has considered the existing risk of flood from fluvial, tidal, surface water, overland flow, groundwater and artificial sources. The Flood Risk Assessment (FRA) (Appendix A13.1: Flood Risk Assessment of the ES) has concluded that the Whole Block Site and Arthur Street Work Site are located within Flood Zone 1 and are therefore considered to be at low risk of fluvial and tidal flooding. The tunnels are not considered to be at risk from floodwater associated with fluvial and tidal sources.

5.3.11 A waterproofing strategy has been developed for the new escalator box and lift shaft, mitigating the risk of groundwater flooding and impacts to groundwater resources. An automatic flip-up flood barrier at the new Station Entrance Hall within the Whole Block Site is proposed to reduce any residual risk of flooding. Further details on mitigation and prevention through design are shown in Chapter 13: Water Resources and Flood Risk of the ES.

5.3.12 Although the risk of flooding is considered low, LUL will adopt a Flood Warning and Evacuation Plan (FWEP) that covers the construction and operational phases. This will enable the staff and users to be aware of the residual risks, how to prepare for them and the protocols and procedures required to overcome the risk in the event of a flood.

5.3.13 The assessment concluded that the BSCU will not have an impact on the risk of flooding at nearby developments or increase groundwater flood risk.

Conserve Water Resources

5.3.14 Processes during the construction phase of the BSCU, which may require significant volumes of water supply include:

- concrete mixing;
- supply for washing down; and
- potable water for sanitary facilities for site staff.

5.3.15 Water supply for demolition and construction processes may represent a short term increase in supply volumes to the site. Water saving measures will be adopted where possible thereby reducing the impact on the water supply network. Means of reducing water consumption that will be adopted include:

- selection and specification of equipment to reduce the amount of water required;
- implementation of staff-based initiatives such as turning off taps, plant and equipment when not in use both on-site and within site offices; and
- use of recycling water systems such as wheel washes, site toilets hand wash.

5.3.16 To conserve water resources during the operation, the design of all areas of the BSCU will aim to minimise internal potable water consumption for sanitary uses. This will entail installing water efficient sanitary ware (such as low-water, dual flush toilet cisterns and low-pressure spray taps in bathrooms).

5.3.17 Furthermore, a water meter with a pulsed output will be installed on the mains supplies and a leak detection system will be provided where appropriate for integration into the water metering, with an audible signal when a leak is detected, to reduce the impact of water leaks that would otherwise go undetected.

5.3.18 Flow control devices, such as solenoid valves connected to presence detectors, will be fitted to toilet areas/facility as appropriate to ensure water is supplied only when needed and therefore prevent minor water leaks.

Water Pollution

5.3.19 Throughout construction, surface water pollution will be prevented through the implementation of the CoCP. The Contractor will protect drains/sewerage and groundwater resources and employ appropriate monitoring systems and emergency procedures.

5.3.20 As outlined in the Chapter 14: Land Contamination of the ES, surface and groundwater sources are not expected to be affected during construction and operation of the BSCU.

5.3.21 As the BSCU Works Sites are located in an area that has long been developed for commercial purposes, it is expected that there will be little contamination of groundwater beneath the sites. However, it is possible localised contamination exists in some small areas. The CoCP details mitigation measures to be put in place to prevent any exposure or contamination of controlled waters.

5.3.22 Once operational, there will be no contamination risk to surface or ground waters, as run off will not be in contact with underlying soils. At below ground level, the development will be hydraulically separated from groundwater.

Improve Resource Efficiency

Management of Materials

5.3.23 The selection and use of the materials on the BSCU will respect the scale and setting of the surroundings. The materials will be suitable and robust, with durable long-life properties. Material finishes will consider long term maintenance as well as robustness requirements, avoiding materials that are damaged easily giving due consideration to the high pedestrian use and traffic. Further reviews to evaluate the robustness of materials will be conducted to inform the detailed design stage.

5.3.24 Wherever feasible and practicable, materials employed in key building elements of the station will be selected in line with the *Green Guide to Specification* with a low environmental impact over the full life cycle of the buildings. The *Green Guide to Specification* is BRE's methodology to provide a simple 'green guide' to the environmental impacts of building materials and can be applied to relevant building elements in the station such as the internal walls, and parts of the external structure.

5.3.25 The use of insulants with a high Global Warming Potential (GWP) will be avoided. Chipboard and expanded polystyrene will be avoided as feasible. All thermal insulation products used in the building are currently being considered to have a low embodied impact relative to their thermal properties (to be confirmed at detailed design stage).

5.3.26 All timber products used will be obtained from sustainable sources. In line with TfL commitments, all timber procured will be obtained from recycled, reclaimed sources or be accredited to meet sustainable forestry standard such as the Forestry Stewardship Council (FSC). Any remaining timber not sourced through the above will target a known temperate source using the Department for Environmental, Food and Rural Affairs (Defra) Central Point of Expertise in Timber (CPET).

5.3.27 The need to use primary aggregates will be minimised by the selection of secondary materials, where possible. The maximum amount of secondary materials will be specified for the concrete mixes, subject to ensuring

performance and finish is not compromised and meets LUL standards. Consideration of the use of recycled materials for the use of fibre content within Sprayed Concrete Lining (SCL) will be undertaken at detailed design stage.

5.3.28 Where practicable, the specification of concrete replacements such as Ground Granulated Blast furnace Slag (GGBS) and Pulverised Fly Ash (PFA) will be considered to reduce embodied carbon. The percentage of concrete replacement currently being considered is 50 per cent for concrete works that fall into the following two categories (subject to further detailed evaluation in terms of suitability and practicability):

- Whole Block Site escalator box and Persons with Reduced Mobility (PRM) lift shaft bored concrete piles; and
- Whole Block Site formed reinforced concrete (RC) slabs, walls and columns for the new Station Entrance, escalator box and PRM shaft.

Waste and Recycling

5.3.29 The BSCU Project has adopted principles of designing out waste during the construction to minimise resource use and construction waste. Construction and excavation materials will be segregated and a suitable waste contractor will be selected to maximise diversion from landfill via reuse, recycling and recovery.

5.3.30 During construction, Dragados will develop and operate a Site Waste Management Plan (SWMP) as an internal waste management and monitoring tool. This will establish and implement a sustainable resource and waste management strategy. The SWMP will consider further opportunities to minimise and reduce waste generation, such as:

- agreements with material suppliers to reduce the amount of packaging or to participate in a packaging take back scheme;
- implementation of a ‘just in time‘ material delivery system to avoid materials being stockpiled on-site for long periods of time, increasing the risk of their damage and disposal as waste;
- attention to material quantity requirements to avoid over ordering and generation of wasted materials;
- reuse of materials on-site wherever feasible;
- segregation of waste at source where practical; and
- reuse and recycling of materials off-site where reuse on-site is not practical (e.g. through use of an off-site waste segregation facility and re-sale for direct reuse or reprocessing)

5.3.31 The project has set a 95 per cent target for recycling and reuse of the materials arising from the construction of the tunnels and operational infrastructure. 'Green procurement' objectives will be defined and integrated into the procurement and specification process to use reused or recycled products and construction materials.

5.3.32 The SWMP will support the monitoring of project performance against Key Performance Indicators (KPI). In terms of reporting the following will be measured in terms of forecast and actual:

- total waste;
- total waste to landfill;
- percentage waste diverted from landfill; and
- percentage materials reused on site.

5.3.33 The Contractor will also ensure the potential impacts from waste are minimised by implementing best practice in the classification, storage, transfer and disposal of waste through the maintenance of a duty of care.

5.3.34 Once the BSCU is completed and operational, recycling opportunities will be maximised through the use of dedicated waste management facilities so that recyclable waste streams can be diverted from landfill. The station design will include sufficient space for bin rooms to separate and store materials. A bin store will be located at street level within the new Station Entrance Hall, to house any waste collected from within the station.

5.4 Quality of Life

Enhancing the Built Environment

Sustainable Construction

5.4.1 The BSCU as a major construction project will involve many different types of construction activities including: demolition; site clearance; site investigation; remediation (as necessary); tunnelling; piling; excavation; services diversion and new installations; highway works; and below ground and surface building works. It will also involve changes and/or modifications to existing infrastructure.

5.4.2 The demolition and construction will aim to achieve the vision of *World Class capital delivery with zero harm* by implementing effective health, safety and environmental management systems. Achievement of this aim will be facilitated through the development and implementation of the CoCP, CLP and the implementation of an Environmental Management System (EMS) equivalent to the ISO 14001.

5.4.3 To achieve high levels of sustainable construction, the BSCU will be guided by an integrated works approach. The CoCP details the environmental management procedures which will be followed. The detailed mitigation strategies, which will be implemented by the Contractor, are developed in the EMS. The CLP outlines the delivery procedures and arrangements to ensure vehicle trips and their associated impact on noise levels, traffic and pollution are minimised.

5.4.4 Furthermore, the contractor will register with the Considerate Contractors Scheme administered by the City of London Corporation and apply for the Considerate Contractors Scheme's Environmental Award. A score of between 35 and 39 is expected to be achieved and a score of 40 is targeted.

5.4.5 The Contractor will update the CLP prior to commencement of works with measures to plan and co-ordinate activities to cause as little inconvenience as practicable and ensure safe movement. This will include details on traffic management, vehicle use, highway control measures access arrangements and pedestrian consideration.

5.4.6 The BSCU demolition and construction works will be carried out with the aim to minimise disturbance to neighbouring properties, users and traffic impact, and to have minimal visual impact. It is thus proposed that the sites are surrounded by a LUL branded hoarding which will display information on the project programme and allow for placed observation windows to allow the public to view progress on site.

Maximise Reuse of Land and Buildings

5.4.7 The BSCU will enable the station to accommodate the projected passenger demand and the growth expected in the area. Above ground work will be limited and in the form of creating a new, highly visible and attractive Station Entrance on Cannon Street at the junction with Nicholas Lane. Below ground, the new infrastructure will relieve the pressure on a congested existing station and make efficient use of the existing premises.

5.4.8 An entrance location on Cannon Street has been demonstrated through pedestrian modelling to be the most beneficial in terms of passenger flow. This will benefit more people based on their end destinations and relieve pedestrian congestion at the station exit. The proposed layout of the Station Entrance Hall will ease passenger flows. The location and use of escalators and moving walkways will further ease passenger flow as well as providing a Fire Protected Route.

5.4.9 It is considered that the project will occupy the minimum amount of land needed to construct the most beneficial scheme. Temporary worksites will be returned to their previous uses upon completion of the construction works.

5.4.10 The design of the BSCU has considered a life span for the structure of more than 100 years.

5.4.11 The potential for existing land contamination and the impacts during construction have been examined in Chapter 14: Land Contamination of the ES. It has been estimated that the likelihood for soil, groundwater and ground-gas contamination to be present at all sites is low.

Natural Environment and Biodiversity

5.4.12 The surface areas of the BSCU Work Sites are almost entirely covered by buildings or hard surfacing. Site inspections were made by suitably qualified ecologists in 2011 and again in August 2013. There is currently a single tree and a small amount of vegetation adjacent to the Arthur Street Work Site which is of low ecological value. Investigations indicated that no features of ecological or nature conservation interest will be affected by the works.

5.4.13 There are no sites of nature conservation, or protected species in close proximity to the site considered as sensitive receptors. Therefore, the BSCU will have negligible impact to the natural environment and biodiversity during construction or operational phases.

Built Environment

5.4.14 Chapter 10: Built Heritage and Chapter 11: Archaeology of the ES assess the impacts on buried heritage assets (archaeological remains) and above ground built heritage assets (i.e. structures or features of historic interest such as listed buildings, conservation areas and Registered Parks and Gardens) and their setting.

5.4.15 The potential impact of the BSCU upon the townscape resources and visual amenity of receptors has been considered in Chapter 7: Townscape and Visual Effects of the ES.

5.4.16 During construction, lorry movements will be concentrated on Arthur Street with access to the Whole Block Site via Cannon Street, away from the majority of heritage assets surrounding the BSCU Work Sites.

5.4.17 A series of settlement assessments have been carried out that provide a model of the likely settlement across the tunnelling route allowing for an evaluation of the impacts on each building that may be vulnerable. Bespoke mitigation measures will be developed for affected areas based on further stages of these assessments.

5.4.18 The excavation works may have a potential impact on the Grade I listed St. Mary Abchurch and other structures. Therefore, the works will be planned with special attention to minimising any potential risk of damage to listed buildings

and scheduled monuments, following the mitigation strategy set out in Chapter 10: Built Heritage of the ES.

5.4.19 Disturbance to potential archaeological assets will be managed by developing an appropriate programme of mitigation in consultation with the City of London Corporation's Historic Environment Advisor.

5.4.20 In terms of townscape and visual impact, a number of positive outcomes will be derived from the completed BSCU as a result of the high quality design, such as:

- enhancement of passenger experience by creating a sense of space and light. The design will seamlessly integrate the above and below ground passenger spaces with the external public realm;
- improvements to the public realm streetscape, in particular quality of surfacing, street furniture and legibility, resulting in better pedestrian movement, including after dark when the Station Entrance Hall is lit; and
- improved views and visual amenity following the design of the Station Entrance Hall.

Improving Air Quality

5.4.21 Construction works have the potential to generate dust emissions as a result of demolition, construction, earthworks and track-out activities. The BSCU Work Sites fall within an Air Quality Management Area (AQMA) designated by the City of London Corporation due to exceedances in traffic-borne pollutants such as particulate matter (PM_{10}) and nitrogen dioxide (NO_2). To limit the BSCU's impact on local air quality, control and mitigation measures will be implemented as part of construction.

5.4.22 The Contractor will seek to monitor, control and reduce emissions of gaseous and particulate pollutants through the employment of best practice measures as outlined in the CoCP.

5.4.23 The Contractor will follow a hierarchy of prevention-suppression-containment of dust. A Dust Management Regime will be established to include real time PM_{10} data monitoring and compliance with dust control procedures.

5.4.24 Measures to control impacts will include the following:

- ensuring that the engines of all vehicles and plant on the work sites are not left running unnecessarily;
- use of low emission vehicles;
- use of ultra-low sulphur fuels in plant and vehicles; and
- use of diesel particulate filters where appropriate and practicable.

5.4.25 A full set of dust controls and mitigation measures will be implemented during construction of the BSCU as described within the draft CoCP (Appendix A4.1 of the ES).

5.4.26 The operation of the BSCU Project is not anticipated to lead to an increase in vehicle movements on the local road network, and hence will not affect local air quality.

5.4.27 The impact of emissions to air from the site activities is assessed in Chapter 12: Air Quality of the ES. The assessment concluded that air quality effects of construction based road traffic are not likely to be significant and that the potential dust emissions associated with construction activities will be controlled using on site management practices to the extent that the effects are not considered significant.

Improving Noise Impacts

5.4.28 LUL will, as far as reasonably practicable, seek to control and limit noise and vibration levels so that affected properties and other sensitive receptors are protected from noise and vibration associated with demolition and construction activities.

5.4.29 The noise and vibration generated during the demolition and construction may potentially have an impact on the local residents, workers and pedestrians, as might trains and plant operating on the new infrastructure. Thus, an assessment of noise and vibration has been carried out and is included in Chapter 9: Noise and Vibration of the ES.

5.4.30 Surveys and monitoring have been undertaken at selected receptor locations surrounding the BSCU Works Sites, enabling a comprehensive understanding of the existing noise and vibration climate.

5.4.31 Noise and vibration monitoring will also be undertaken during the construction work and best practicable means will be used to minimise the impacts to sensitive receptors. Full details of proposed best practice measures, working hours and commitment to monitor noise and vibration levels during demolition and construction activities are provided in the draft CoCP, included as Appendix A4.1.

5.4.32 Following the incorporation of proposed mitigation measures, an assessment of demolition and construction noise has identified that the majority of the activities can be undertaken without giving rise to significant adverse effects at the majority of receptor locations. However, significant residual adverse effects remain at some locations although the implementation of the measures within the CoCP will ensure these are mitigated and minimised as much as practicable.

5.4.33 The potential noise and vibration impact during operation has been also assessed. The design of the track includes a number of features which are incorporated to reduce noise and vibration transmission, including the use of a high performance trackform in locations where there are pile interceptions. With these measures, operational groundborne noise and vibration effects will be mitigated and will not be significant. In addition, bespoke mitigation measures for all fixed plant will be introduced to ensure that there are no significant residual noise effects.

Improving Health Impacts

5.4.34 An HIA (Appendix A6.1 of the ES) has been produced to identify and assess the impacts of the BSCU on determinants of health and establish responsibilities for delivering and monitoring mitigation strategies if necessary.

Indoor Comfort

5.4.35 The design will aim to provide for a healthy environment for passengers and staff. While London Underground stations are places of travel, where the duration of stay is relatively short, the comfort of users will be considered in terms of:

- internal air quality;
- use of natural ventilation;
- presence of non-toxic materials;
- use of natural light; and
- temperature control.

5.4.36 The layout of platforms and vertical circulation elements take into consideration the flow of passengers and capacity as well as the overall appearance of the station. Internal air quality is maximised through natural ventilation flow (with mechanical assistance where required). The proposed design will introduce an extra entrance and broader passenger routes thus increasing the provision of fresh air within the station and secures improvement to the current situation in terms of thermal comfort.

5.4.37 Plant rooms will be easily accessible for maintenance and a programme of regular inspection of the machinery will be implemented to ensure unsafe plant emissions that affect internal air quality (e.g. harmful carbon monoxide emissions) are avoided. Building services will be designed to reduce the risk of legionellosis when in operation.

5.4.38 Internal occupied staff areas will be controlled for comfort levels through wall mounted heaters or fan coil units with user control to regulate temperature to

their preference. These rooms are generally within the range of 21°C plus or minus 2°C.

5.4.39 Decorative paints and varnishes, suspended ceiling tiles, flooring adhesives, wall-coverings and wall-coverings, where in accordance with LUL standards, will meet the requirements of the European Standards for the specification of low volatile organic compounds (VOCs) as practical.

5.4.40 Design of internal and external lighting will be in line with best practice measures for visual performance and comfort, including the specification of high frequency ballasts where appropriate. Lighting design will aim to enhance the use, mood and feel of the station.

5.4.41 The opportunities for utilising daylighting are limited as the BSCU is situated in dense urban environment with the vast majority of areas below ground. Nevertheless, the design maximised the site's limited potential, by providing a double height station entrance that will be heavily glazed with large amounts of natural daylights illuminating the entrance hall.

Cycling and Walking

5.4.42 The local area is well suited for pedestrians, with good access to the area and numerous crossing points. For details on existing pedestrian access routes refer to DAS, submitted with the TWAO.

5.4.43 The Contractor will produce a Construction Worker Travel Plan (as an internal management tool) to encourage construction workers to use sustainable modes of transport to get to the sites. Site parking will not be permitted and the use of public transport will be promoted together with a cycle to work scheme.

5.4.44 Due to limited available areas, no new cycling spaces will be provided as part of the BSCU. However, a number of existing cyclist facilities can be accessed through the London Cycle Hire Scheme at the following locations in close proximity:

- 42 cycles at Cheapside, Bank;
- 21 and 35 cycles at two sites in Queen Street, Bank;
- 15 cycles at Bank of England Museum, Bank;
- 21 cycles at Monument Street, Monument;
- 24 cycles at Lower Thames Street, Monument; and
- 23 cycles at Great Tower St, Monument.

5.4.45 Docking stations are located within approximately 300m of the new Station Entrance and provide opportunities for travel within London, both for commuting and business trips during the working day.

5.4.46 There is a dense network of cycle routes around Bank Station. Two Barclays Cycle Superhighway routes pass close to the site from the east along the Whitechapel Road and The Highway and connect Central London with outer London for cycle journeys. An additional Cycle Superhighway is proposed to run East-West along Upper Thames Street.

Improving Journey Experience

5.4.47 The BSCU will be designed to the highest quality standards to provide improved journey experience for passengers. A number of measures have been specified, which include:

- step free access;
- intuitive way-finding;
- congestion free circulation;
- ticketing facilities;
- security control and communication systems; and
- evacuation facilities.

5.4.48 Currently, passengers entering Bank Station have to take a number of indirect routes with multiple changes in directions and transfers to reach the platforms. The BSCU will provide improved escalators, walkways, lifts and a new passenger concourse to enable a more direct and easy route for passengers involving fewer directional changes.

5.4.49 At the Station Entrance Hall, there will be six ticket machines and thirteen ticket gates, allowing queuing for ticket machines to be parallel to the main flow of passengers and away from the ticket gates for ease of flow and minimising pedestrian congestion.

5.4.50 A dedicated interchange route with two moving walkways will reduce travel distances within the station, improving the cross flow of passengers and the overall passenger experience and journey time. The Triplication Area will be maintained to provide an alternative route between the DLR and the Central Line, the current conflicting flows of passengers on the DLR arrivals platform will be minimised.

5.4.51 Through the provision of new triple escalators, two new passenger lifts and the upgrade of an existing lift, journey times will be reduced, expecting a relief in congestion of the busiest passenger areas. The flexibility of the triple escalators will increase the operational resilience of the station, reducing the impact of surges in demand and reducing disruption to passenger's journeys.

5.5 Transport for All

Improving Accessibility (Designing Inclusive Environments)

5.5.1 The HIA has been produced that assesses in detail the likely impacts and measures in place to improve accessibility and inclusivity.

5.5.2 Accessibility has been a central focus point in the design of the BSCU, and has been integrated in all the areas of the BSCU construction activities. The new Station Entrance Hall on Cannon Street has been designed to focus on creating a direct, step-free passenger route between the entrance and the Northern Line and DLR Platforms.

5.5.3 This step-free access will be provided via the installation of two new 17 person passenger lifts and the upgrade of an existing one. As well as increasing accessibility for passengers with disabilities, step-free access will provide benefits for other passengers with reduced mobility, including:

- people with children;
- people carrying heavy luggage or shopping; and
- older people.

5.5.4 Way-finding and signage will be intuitive and clear for all passengers. Attention will be paid to the use of colours, contrasts and textures to improve accessibility. LUL will develop a clear signage and way-finding strategy to the station in conjunction with the City of London Corporation.

5.5.5 The works on nearby pedestrian walkways will result in improvements to the public realm streetscape, in particular quality of surfacing and street furniture, resulting in better pedestrian movement, including after dark when the new Station Entrance Hall is lit. This is in line with the *Area Enhancement Strategy* (City of London Corporation, 2012c) objective to improve the pedestrian environment by enhancing walking routes and the inclusivity and accessibility of the users.

5.5.6 As described in the DAS, the design has also been developed in line with Commission for Architecture and the Built Environment guidelines, and inclusivity has been central to the design process in line with *The London Plan Policy 7.2.*

Improving Connectivity

5.5.7 The site is located in an area with generally excellent connectivity to the wider public transport system, according to an assessment system that takes into account walk access time and service availability. Given the importance of Bank Station as a gateway into and out of the City of London, the BSCU has the potential to improve further connectivity and journey experiences for users.

5.5.8 Improvement to Bank Station will contribute to the efficiency and effectiveness of some of the large infrastructure projects currently on-going in London, such as Crossrail's new Liverpool Street Station and the London Underground upgrades in close proximity

5.5.9 In addition, LUL is currently in the middle of a significant upgrade plan, which alongside the BSCU proposals, includes further enhancements to the area of Bank Station. One of them is a £16 million investment to improve the station's operation systems including the provision of a new Station Operation Room and staff accommodation at Monument Station, closed circuit television system and a help point system, as well as integration of systems across the whole station (including future proofing for the BSCU).

5.5.10 These improvements will effectively lead to increase the capacity of Bank Station, reduction of journey times and congestion for passengers and the resilience to surges in demand and train service interruption.

Supporting Regeneration and Tackling Deprivation

5.5.11 The BSCU will bring benefits to the surrounding area in terms of improving transport accessibility and access to employment as discussed further in Section 5.7 of this report. The BSCU will support regeneration through supporting the creation of 200 jobs during the demolition and construction of the BSCU.

5.6 Safety and Security

Reducing Crime (Secure Design)

5.6.1 The BSCU's design will seek to design out crime and to help people feel safe. The philosophy of the design is to address safety and security issues identified from undertaking threat and vulnerability risk assessments.

5.6.2 The 'Secured by Design' principles will be observed. 'Secured by Design' (owned by the Association of Chief Police Officers) is a police initiative to encourage the building industry to adopt crime prevention measures in the design of developments to assist in reducing the opportunity for crime.

5.6.3 A steering group will be formed comprising all stakeholders involved with advising on the characteristics of Bank Station, the design, assets that need to be protected, the perceived threats and possible security solutions. Consultation has been held with the British Transport Police's Principal Architectural Liaison Officer and Counter Terrorist Security Advisor, the LUL Operations Task Manager and LUL Security Risk Manager for Bank Station.

5.6.4 The design of the BSCU will incorporate a range of security measures through the layout, lighting, alarm, closed-circuit television (CCTV) coverage and signage used to reduce the potential and perception of crime at the station.

5.6.5 Access controls will be installed on all doors to non-public areas including LUL back-of-house areas, the bin store and all plant rooms to avoid entrance of non-authorised personnel.

5.6.6 The station layout will ensure good visibility to minimise the threat to personal security. The provision of clearly defined routes and access points will result in an environment that feels well connected and secure. Glazing at street level will provide natural surveillance.

5.6.7 Lighting design will incorporate safety measures for platforms, walkways, escalators and the new Station Entrance Hall. The lighting design will help to prevent crime by reducing the availability of the 'cover of darkness', ensuring no dark corners or recesses.

5.6.8 LUL has plans in place with appropriate response procedures for potential security threats.

Safety

5.6.9 LUL has an excellent safety record, and will maintain and improve on this record by following legislation such as Construction Design and Management (CDM) Regulations 2007 to design out risks, and incorporate best practice.

5.6.10 A safety management system is integrated into LUL's Management System and this has been verified by the Office of Rail Regulation (ORR) under their Safety Certification.

5.6.11 Workers and passenger safety during construction and operational phases of the BSCU are a LUL priority.

5.6.12 Prior to the commencement of site construction works, hoardings will be erected around the perimeter of the site. Well lit hoardings will ensure the safety of pedestrians and vehicles, and provide security to the sites. Site access points will be protected with secure gates and security staff will be present 24/7.

5.6.13 Road and pedestrian safety will be considered in the Traffic Management Plan and integrated into the CoCP.

5.6.14 The Contractor will register on the Fleet Operator Recognition Scheme (FORS), which provides advice and guidance for members to improve their compliance with relevant regulations and environmental, social and economic performance. The Contractor will also ensure that its vehicles have safety features fitted such as signage on the rear of the vehicle to warn cyclists, side guards and proximity alarms and mirrors.

5.6.15 Safety threats during the operation will be dealt with in accordance with LUL's Safety Policy Procedures.

5.6.16 Existing lifts cannot be used in the case of fire, presenting an impediment in evacuating the station in an emergency in line with current fire regulations. Evacuation and fire emergency escape will be improved through the additional exit in the Central Line Link, a passenger evacuation lift for Persons with Reduced Mobility, wheelchair refuge areas and through a new protected central concourse.

5.6.17 The BSCU will be designed to be fully compliant with *BS 9999: 2008 Code of Practice* for fire safety and the design, management and use of buildings, which are the criteria agreed by LUL.

5.6.18 The positioning of staff facilities has been considered to enable good visibility for passengers and optimum surveillance, further supported by a help point system provided throughout the station to enable passengers to raise an alarm and a public address system for the delivery of evacuation and safety instructions, if required.

5.6.19 Additionally, a passenger safety survey will be undertaken by LUL to enable a comparison between perceived passenger safety prior to the BSCU construction and passenger safety after completion.

5.6.20 Although the risk of flooding is considered low, LUL will adopt a Flood Warning and Evacuation Plan (FWEP) that covers the construction and operational phase, ensuring the staff and users are aware of the residual risks, how to prepare for them and the protocols and procedures required to manage and overcome the risks in the event of a flood.

Resilience

5.6.21 The BSCU will enhance the resilience or longevity of Bank Station, both structurally and functionally. Station design is governed by the LUL *Category 1 Standards*, which are mandatory standards. In terms of functional requirements, the station must be capable of:

- being structurally sound with a life span of up to 125 years;
- providing a Station Entrance Hall, platforms and vertical circulation elements which are designed to accommodate projected passenger demand;
- enabling passengers to evacuate the station safely under emergency conditions; and
- providing systems for ventilation, draught relief and emergency intervention.

5.6.22 The BSCU is designed to ‘future proof’ the station until 2081 by creating more space and improved legibility to help passengers move through the station.

5.6.23 The Cable Management System (CMS) electrical containment has been designed to give over 25 per cent spare capacity for future expansion.

5.6.24 During construction, potential impacts to neighbouring buildings have been carefully considered with the following aims:

- utilities, and the networked services they provide, will not be compromised;
- access that Arthur Street provides between the A3211 Upper Thames Street to the A3 King William Street will be maintained for cyclists; and
- access will be maintained for neighbours, pedestrians and cyclists on foot that require access along Arthur Street and the adjacent streets.

5.7 Economic Progress

Supporting Population and Employment Growth

5.7.1 Reduced journey times and passenger congestion relief, step-free access and avoidance of station closures during peak times, resulting in an enhanced transport system, will have a positive effect on the wider economy. As identified in Chapter 16: Socio-economics of the ES, businesses are more likely to choose to re-locate within the City of London than they would if the scheme were not to go ahead. The BSCU should therefore lead to increased employment opportunities in the local area whilst the enhanced transport links will provide local people with greater access to employment opportunities in different parts of London. Furthermore, the BSCU will strengthen the City of London's importance within both the local and national economy and lead to further positive economies of agglomeration, including benefits to local businesses.

Employment Growth in Construction

5.7.2 The Contractor will develop a Strategic Labour Needs and Training plan (SLNT) with the aim of meeting strategic labour needs and enabling training opportunities. The Contractor and LUL will provide exemplary performance in terms of community involvement, providing local labour training and provide new opportunities for people with barriers to employment. The contractor will also promote fair employment practices, such as through application of the London Living Wage and apply a consistent approach to effective management of labour and industrial relations, as well as promoting workforce welfare, including through the contractor's Workforce Welfare Policy.

5.7.3 As outlined in Chapter 16: Socio-economics of the ES, it is expected the scheme will result in an additional 200 jobs during the demolition and construction of the BSCU.

Responsible Procurement

5.7.4 TfL's Responsible Procurement Policy will be applied to the delivery of the BSCU:

> *Where possible environmental benefits will be considered as part of the procurement process with consideration given to all relevant aspects of whole life-cycle costs of products. TfL is committed to specific environmental obligations as a signatory of the Mayor's Green Procurement Code.* (TfL Procurement Policy, 2009).

5.7.5 Responsible sourcing will encourage contractors to apply the best practice standards to source construction materials from suppliers with responsible sourcing certification as far as practicable.

5.7.6 The Contractor will also adopt the *BES 6001* Responsible Sourcing of Construction Products Standard. The *BES 6001* is BRE's standard to enable construction product manufacturers to ensure and then prove that their products have been made with constituent materials that have been responsibly sourced.

Efficient and Effective Transport System

5.7.7 It is considered that the BSCU will have an overall positive economic effect on Greater London as a whole, through:

- direct and indirect employment generation;
- improving access to employment opportunities for residents; and
- improving connectivity between employment areas.

5.7.8 As outlined in Chapter 8: Transport and Movement of the ES, it is forecast that the improvements will significantly reduce congestion and journey times at Bank Station once the BSCU is operational.

5.7.9 When operational, the bank of triple escalators will offer greater capacity to accommodate passenger flows and would be orientated to serve dedicated routes to assist flow. Additionally, maintenance works will have a lesser impact on passenger flow than existing scheme.

5.7.10 The provision of new alternative routes to exit platforms will ease the congestion during peak times. Routes that bypass the Triplication Area will reduce cross flow of passengers and ensure that there is a more direct and intuitive way-finding within the station.

5.7.11 To serve the high footfall in Central London there is excellent provision for pedestrians in the area surrounding Bank Station incorporating signalised

crossing, central refuges, advanced cycle stop lines, and a subway for access to Monument Station.

5.7.12 The final outcome of the BSCU will be a more effective Bank Station, which will positively contribute to the overall London Underground Network system and the public transport provision in London.

6 Sustainability Tools

6.1.1 The previous section shows how social, environmental and economic sustainability have been considered through the design process.

6.1.2 This section summarises the quantifiable results of the performance assessment of the BSCU against the sustainability tools used for the project.

6.1 TfL Sustainability Toolkit

6.1.3 The TfL Sustainability Toolkit has been completed in conjunction with the client and design team in order to respond to the key themes identified in the TfL Sustainability Framework, through a response to the key indicators and guiding questions in the Toolkit. A demonstration of how the BSCU Project responds to the Toolkit is provided in Appendix D.

6.1.4 A 'spider graph' has been produced showing contribution towards each sustainability indicator and theme that provides a visual indication of the strengths, weaknesses and gaps of the BSCU. The aim was to have a balanced graph with as many indicators as possible making a positive enhancement to sustainability. The outputs provided feedback on sustainability performance throughout the design process that allowed for management and mitigation of risks. The BSCU's final ‘spider graph’ is presented in Figure 6.1.

6.1.5 The best performing core sustainability theme is ‘Transport for All’, which aligns with the primary objectives and design requirements of the BSCU.

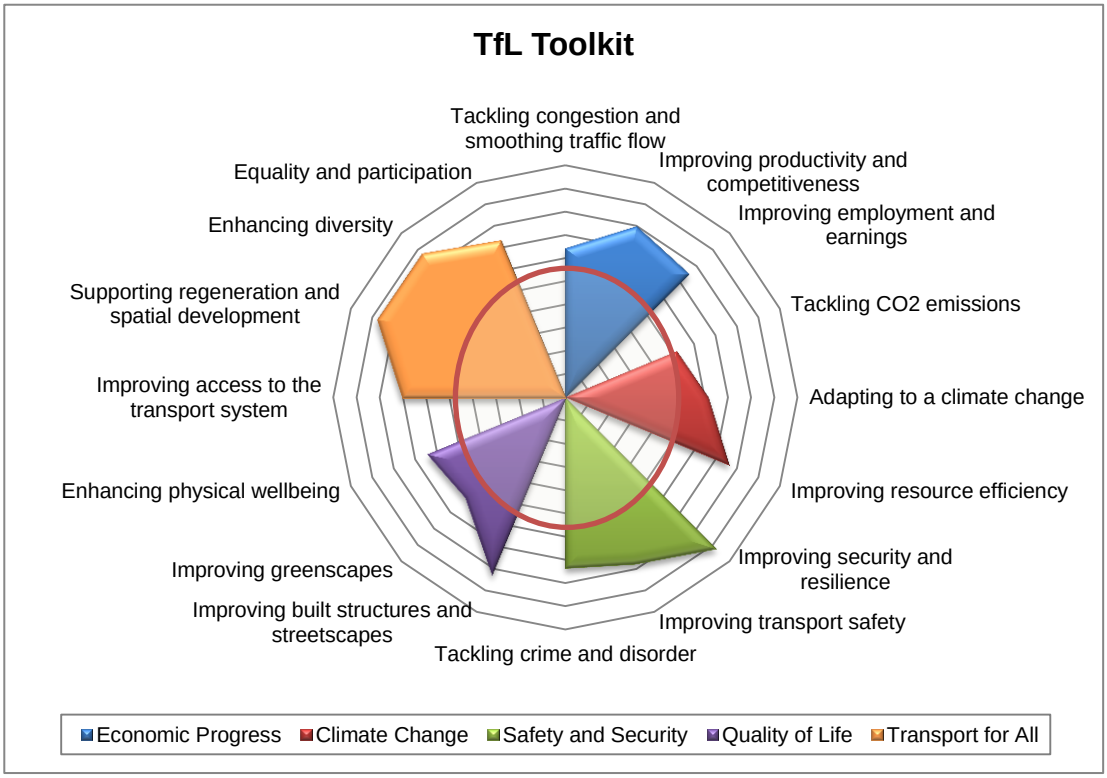
6.1.6 The best performing indicator is ‘Improving security and resilience’. This is in line with the BSCU Project’s objectives and is reflecting LUL’s focus and the design team’s effort towards improved security and resilience of the network.

6.1.7 Economic progress and Safety and Security also perform well under the core sustainability themes, which is in line with the LUL’s objectives.

6.1.8 The lowest performance is displayed under category Climate Change. The nature of the BSCU requires a large amount of materials with high embodied carbon; the requirements on resilience limit the opportunities for reuse of materials. Furthermore, the constraints associated with the site (e.g. space constraints associated with upgrading of an existing station) limit the potential for incorporation of low and zero carbon energy technologies.

6.1.9 Overall, the TfL Toolkit ‘spider graph’ shows that the BSCU achieved a relatively balanced score over all categories, which demonstrates that social, environmental and economic factors have been considered thorough the design process.

Figure 6.1: TfL Toolkit 'Spider Graph'



6.2 CEEQUAL

6.2.1 The potential CEEQUAL v.5 score has been estimated using the preliminary assessment estimator tool. The Pre-Assessment considers only the predicted final CEEQUAL Assessment result when the whole project is complete. Therefore assumptions have been made about the actions that may be taken by the Contractor during the construction phase.

6.2.2 Accordingly, the Pre-Assessment does not purport to predict the actual score that may be achieved by the Interim (Client and Design) assessment. This score will be influenced by the allocation of available CEEQUAL points between the Interim and Final stages of the Assessment. The allocation of points between Interim and Final Assessments provisionally made by the Assessor team will need to be formally agreed by the CEEQUAL Verifier later in the Assessment process.

6.2.3 In its initial assessment, the BSCU excels in sections considering Land Use and Landscape and Project Management. A proportion of the CEEQUAL points available in certain areas cannot currently be scored, but will be further considered throughout detailed design and construction with significant potential to enhance the Final overall score. A comparatively lower score achieved under Physical Resources is considered typical for a project in such constrained environment (See Section 5.2).

6.2.4 The Pre-Assessment indicates that the BSCU is on track to achieve the targeted ‘Excellent’ rating.

6.2.5 A formal CEEQUAL Client and Design Award assessment is currently under way and all commitments made by the design team and contractor have been identified through consultation with the client and design team. The CEEQUAL Verifier has been engaged and adequate procedures have been put in place to track and monitor the collection of evidence for the CEEQUAL assessment.

7 Conclusions and Way Forward

7.1 Sustainability Conclusions

7.1.1 LUL appreciate that in order to deliver sustainability in development projects it is necessary to integrate sustainability through planning, target setting, monitoring and reporting throughout the design, construction and operational phases. In line with this, the BSCU Project has adopted an integrated approach, where opportunities and constraints were assessed at an early stage and effective solutions were incorporated throughout the overall design process and by all disciplines involved.

7.1.2 This Sustainability Statement reports the BSCU's performance against relevant sustainability assessment methodologies and planning policy requirements. The BSCU achieves good sustainability standards in its design and aims to retain these standards throughout its construction and operation.

7.1.3 The BSCU Project has been designed around the objectives and goals of TfL's Sustainability Framework. Specifically the BSCU supports economic development and population growth, improves transport opportunities and considers the safety and security of Londoners. It is anticipated that enhancements to the local area will be achieved through an efficient transport system.

7.1.4 The design was developed with the aim to reduce CO_2 emissions associated with the BSCU as far as practicable through the incorporation of passive and energy efficiency measures, the adoption of high quality design principles, and the consideration of resource efficiency through its specifications.

7.1.5 LUL aims to minimise the BSCU's impact on the environment and its resilience, as far as practicable. However, as it is the case for infrastructure projects of this scale, the BSCU will be associated with extensive use of materials with high embodied carbon (e.g. in-situ concrete). The construction phases will also have an environmental impact on its surroundings. As demonstrated throughout this report, negative impacts will be mitigated as far as practicable through appropriate construction management measures and through effective design solutions.

7.1.6 The BSCU will create a more operationally efficient station which benefits passengers at the station and on the wider network by focusing on the most sensitive areas. The scheme will provide for inclusive and safe access, while actively promoting sustainable modes of transportation and patterns of movement.

7.1.7 The BSCU will also contribute to the improvement of local and regional economies and promote sustainable growth through reduced journey times and

passenger congestion relief and avoidance of station closures during peak times.

7.2 Way Forward

7.2.1 The project team's commitment towards sustainability has been illustrated within this document.

7.2.2 Many of the measures presented in this Sustainability Statement have already been implemented through the design process. Members of the design team have been involved in the development of this Sustainability Statement, which has been an iterative process running parallel to the design of the BSCU. For example, sanitary fittings will be specified in accordance with the commitments set out within this document and energy efficiency measures will be incorporated in the design of the building services systems.

7.2.3 The team have agreed to the commitments made in this Sustainability Statement, and have, for each commitment, either incorporated it into their design proposals or committed to including or giving consideration to, where practicable, at the appropriate stage in the design process.

7.2.4 Sustainability initiatives will be included within subcontractor's documentation where relevant prior to the commencement of work on site; thus providing a mechanism to ensure that commitments are adhered to in terms of construction practices, operation and management of the site. For example, signing up to the Considerate Construction Scheme to ensure that site timber is responsibly sourced, and to employ best practice measures in respect of noise, air and water pollution and waste.

7.2.5 The results of the CEEQUAL Pre-assessment have been provided in Appendix E indicating that the Project is on course to achieve an 'Excellent' rating.

7.2.6 It is expected that the continued management and monitoring of sustainable design and construction performance will enable the following:

- identify what actions can be taken to improve the impact;
- how the impact will be monitored and managed;
- who will be responsible for taking action on each of the sustainability item;
- what actions will be required by each individual responsible;
- what the target date for completion of each action is; and
- when each action is completed.

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Appendix A – Detailed Policy Context and Key Requirements

A.1 National Planning Policy

A.1.1 The Government has launched measures to combat climate change. The following publications include measures that form the UK national policy framework:

- *The National Planning Policy Framework*, (Department for Communities and Local Government, 2012) sets out the Government's planning policies for England and how these are expected to be applied. It must be taken into account in the preparation of local and neighbourhood plans, and is a material consideration in planning decisions. The document presents the Government's view of what sustainable development in England means in practice for the planning system. At the heart of the *National Planning Policy Framework* is a presumption in favour of sustainable development. Policies in Local Plans should follow the approach of the presumption in favour of sustainable development so that it is clear that development which is sustainable can be approved without delay.
- The Department of Transport and Industry White Paper entitled *Our Energy Future – Creating a Low Carbon Economy*, (Department for Transport, 2003), sets a target for 10 per cent of electricity to be produced from renewable sources nationally by 2010 and twice this by 2020, with a goal for 60 per cent reduction in carbon dioxide (CO_2) emissions by 2050;
- *Sustainable and Secure Buildings Act* (Her Majesty's Stationery Office, 2004), sets out the purposes for which Building Regulations may be made to further the conservation of fuel and power, ensure water use efficiency, protect and enhance the environment, and prevent/detect non-compliance;
- *Climate Change and Sustainable Energy Act* (Her Majesty's Stationery Office, 2006), enhances the contribution of the UK to combating climate change, alleviating fuel poverty and securing a diverse and viable long-term energy supply;
- The Department for Communities and Local Government (DCLG), *Building a Greener Future: Towards Zero Carbon Development*, 2006 demonstrates the step change required in the Building Regulations to achieve zero carbon housing in order to ensure energy security, which is a risk of climate change;
- The Department of Trade and Industry, A White Paper entitled *Meeting the Energy Challenge* (Department of Trade and Industry, 2007) sets out the

UK strategy, which recognises the need to tackle climate change and energy security;

- The *Climate Change Act*, (Her Majesty's Office, 2008) sets up a framework for the UK to achieve its long-term goals of reducing greenhouse gas emissions by 34 per cent over the 1990 baseline by 2020 and by 80 per cent by 2050 and to ensure steps are taken towards adapting to the impact of climate change. The Act introduces a system of carbon budgeting which constrains the total amount of emissions in a given time period, and sets out a procedure for assessing the risks of the impact of climate change for the UK, and a requirement on the Government to develop an adaptation programme;
- *The Carbon Plan*, (Department of Energy and Climate Change, 2011)sets out the Government's plans for achieving the emissions reductions committed to in the first four carbon budgets (introduced in the Climate Change Act), on a pathway consistent with meeting the 2050 target. This publication brings together the Government's strategy to curb greenhouse gas emissions and deliver climate change targets, as well as the updated version of actions and milestones for the next five years, replacing the draft Carbon Plan published in March 2011;
- *The Energy Act*, (Her Majesty's Office, 2013), makes a provision for the setting of a decarbonisation target range and duties in relation to it and for the reforming of the electricity market for purposes of encouraging low carbon electricity generation; and
- *The Planning and Energy Act* (Her Majesty's Office, 2008) enables local planning authorities to set requirements for energy use and energy efficiency in local plans.

A.2 Regional Planning Policy

The London Plan, (GLA, 2011)

A.2.1 *The London Plan* establishes policy over the next 20 – 25 years, and retains the fundamental objective of accommodating London's population and economic growth through sustainable development. The Mayor's vision is for London to excel among global cities, expanding opportunities for all its people and enterprises, achieving the highest environmental standards and quality of life and leading the world in its approach to tackling the urban challenges of the 21st century, particularly that of climate change.

A.2.2 *The London Plan* sets out policy and guidance in the London context and identifies six objectives related to improving the living and working conditions in London, giving more detail about how the vision should be implemented and ensuring London is:

- a city that meets the challenges of economic and population growth;
- an internationally competitive and successful city;
- a city of diverse, strong, secure and accessible neighbourhoods;
- a city that delights the senses;
- a city that becomes a world leader in improving the environment; and
- a city where it is easy, safe and convenient for everyone to access jobs, opportunities and facilities.

A.2.3 The Greater London Authority published *Revised Early Minor Alterations to the London Plan* in October 2013, which form part of the development plan for Greater London. *Draft Further Alterations to the London Plan* were published in January 2014 and a *Schedule of Changes to the Draft Further Alterations* in July 2014. The following provides a summary of *The London Plan Policies* relevant to the BSCU:

London's places

- *Policy 2.9 – Enhance economic and demographic growth, improve environment, neighbourhoods and public realm, improve quality of life and health;*
- *Policy 2.10 – Enhance Central Activities Zone, enhance distinctive environment and heritage, enhance links between Central Activities Zone and labour markets, address urban heat island and realise district energy networks, improve public transport, walking and cycling, optimise regeneration;*
- *Policy 2.11 – Support Central Activities Zone;*
- *Policy 2.13 – Provide social and other infrastructure for growth, realise intensification, promote inclusive access, support regeneration; and*
- *Policy 2.18 – Incorporate green infrastructure, encourage links with green infrastructure, improve accessibility*.

London's people

- *Policy 3.1 – Ensuring equal access for all, enhance facilities and services for particular groups;*
- *Policy 3.2 – Assess health impacts, improve health and addressing health inequalities;*
- *Policy 3.16 – Proposals with high quality social infrastructure to be supported.*

London's economy

- *Policy 4.1 – Drive a low carbon economy, sustain regeneration, aid innovation; and*
- *Policy 4.12 – Support local employment, skills and training*.

London's response to climate change

- *Policy 5.1 – Reduce carbon dioxide emissions;*
- *Policy 5.2 – Minimise carbon dioxide emissions, demonstrate reduction in energy assessment using energy hierarchy, meet reporting requirements;*
- *Policy 5.3 – High standards of sustainable design and construction, adapt to climate change, demonstrate integral sustainable design and construction, minimise carbon emissions, avoid overheating, efficient use of natural resources, minimise waste, maximise reuse or recycling, avoid natural hazards impacts, ensure comfort and security, secure sustainable materials and local supplies, promote biodiversity and green infrastructure;*
- *Policy 5.12 – Comply with the flood risk assessment and management, remain safe and operational during flooding, safe evacuation, provision of key services, quick recovery following a flood;*
- *Policy 5.13 – Use sustainable drainage, green field runoff rates, follow drainage hierarchy;*
- *Policy 5.15 – Minimise use of mains water, use water saving measures;*
- *Policy 5.17 – Provide waste and recycling storage; and*
- *Policy 5.21 – Avoid spread of contamination.*

London's transport

- *Policy 6.1 – Integration of transport and development, reduce need for travel, improve capacity and accessibility of public transport, walking and cycling, improve interchange, encourage modal shift, use low carbon technology, promote walking by an improved public realm, safety in use including step free access;*
- *Policy 6.2 – Improve the integration, reliability, quality, accessibility, frequency, attractiveness and environmental performance of the public transport system, deliver safe and secure network, increase capacity;*
- *Policy 6.10 – Ensure high quality pedestrian environment; and*
- *Policy 6.13 – Ensure electric charging point, parking for disabled people, meet cycle parking, needs for delivery and servicing.*

London's Living Places and Spaces

- *Policy 7.1 – Improve people's access to social and community infrastructure, enable healthy active lives, maximize the opportunity for*

community diversity, inclusion and cohesion, contribute to people's sense of place, safety and security, meet the principles of lifetime neighbourhoods, reinforce or enhance the permeability and accessibility of the neighbourhood;

- *Policy 7.2 – Achieve the highest standards of accessible and inclusive design, the design and access statement should explain how inclusive design have been integrated into the development and how it will be maintained and managed;*
- *Policy 7.3 – Reduce opportunities for crime, contribute to a sense of security, provide for convenient movement, surveillance of publicly accessible spaces, maximise activity throughout the day and night, promote sense of ownership and respect, incorporate security features, design for management and future maintenance costs for safety and security;*
- *Policy 7.4 – Provide a high quality design reflecting existing pattern and grain, contribute to a positive relationship between the urban structure and natural landscape, create a positive relationship with street level activity, make a positive contribution to the character of a place, be informed by the surrounding historic environment;*
- *Policy 7.5 – Make a comprehensible public realm, landscape treatment. Street furniture and infrastructure should be of the highest quality, have a clear purpose, maintain uncluttered spaces and should contribute to the easy movement of people, consider public art, maximise greening through planting and trees, public realm should be informed by the heritage values, incorporate local social infrastructure, reinforce the connection between public spaces and existing local features;*
- *Policy 7.13 – Minimise risk of fire, flood and related hazards, include measures to design out crime . Deter terrorism, assist in the detection of terrorist activity and help defer its effects;*
- *Policy 7.14 – Minimise increased exposure to existing poor air quality, reduce emissions from demolition and construction, be at least 'air quality neutral', focus on on-site measures;*
- *Policy 7.15 – Minimise existing and potential noise impacts, promote new technologies;*
- *Policy 7.18 – Avoid loss of local open space, replace loss with equivalent or better quality provision.*

Mayor's Environment Strategies

A.2.4 The Mayor published the following strategies of relevance to the Sustainability Statement:

- *The Mayor's Climate Change Mitigation and Energy Strategy* (GLA, 2011e);
- *The Mayor's Biodiversity Strategy* (GLA, 2002);
- *The Mayor's Waste Management Strategies* (GLA, 2011a);
- *The Mayor's Ambient Noise Strategy* (GLA, 2004);
- *The Mayor's Air Quality Strategy* (GLA, 2010c);
- *The Mayor's Water Strategy* (GLA, 2011d);
- *The Mayor's Climate Change Adaptation Strategy* GLA, 2011c);
- *The Mayor's Transport Strategy* (GLA, 2010a);
- *The Mayor's Economic Development Strategy* (GLA, 2010); and
- *The Mayor's Health Inequalities Strategy* (GLA, 2009).

A.2.5 The sustainability aspects and implications of the strategies are summarised in the following subsections.

Delivering London's Energy Future: The Mayor's Climate Change Mitigation and Energy Strategy (GLA 2011e)

A.2.6 The *Mayor's Climate Change Mitigation and Energy Strategy* sets out the Mayor's strategic approach to limiting further climate change and securing a low carbon energy supply for London.

A.2.7 To limit further climate change the Mayor has set a target to reduce London's CO_2 emissions by 60 per cent of 1990 levels by 2025. The Strategy details the programmes and activities that are ongoing across London to achieve this. These include:

- RE:NEW – retrofitting London's homes with energy efficiency measures, and helping Londoners save money off their energy bills.
- RE:FIT – retrofitting London's public sector buildings, saving millions of pounds every year.
- RE:CONNECT – ten low carbon zones in London aiming to reduce CO_2 emissions by 20 per cent by 2012 across the community.
- Decentralised energy programme – aiming to supply 25 per cent of London's energy from secure, low carbon local sources.

A.2.8 The Strategy also details policies and activities underway to reduce CO_2 emissions from new development and transport through *The London Plan* and the *MTS*.

Connecting with London's Nature: The Mayor's Biodiversity Strategy (GLA, 2002)

A.2.9 The objectives of the *Biodiversity Strategy* are:

- ensuring all Londoners have ready access to wildlife and natural green spaces;
- conserving London's plants, animals and their habitats;
- encouraging businesses to incorporate green design into their development proposals;
- promoting the functional benefits of biodiversity, for example flood and erosion prevention and the amelioration of ambient noise and absorption of pollutants; and
- providing sustainable development: good quality open spaces together with green footpaths and cycle ways; growing food locally and organically in allotments and gardens (providing wildlife habitat) and composting green waste and growing energy crops in London to reduce its wider ecological footprint.

The Mayor's Waste Management Strategies (GLA, 2011b)

A.2.10 The Mayor has published his waste management strategies: *London's Wasted Resource*, on the management of municipal waste (not directly relevant to the BSCU), and *Making Business Sense of Waste*. This *Business Waste Management Strategy*, which sets out initiatives to help all kinds of London's businesses, from shops, restaurants, office buildings, manufacturers to construction companies to save money and reduce harm to the environment through better waste management.

Sounder City: The Mayor's Ambient Noise Strategy (GLA, 2004)

A.2.11 The overall aim of the Mayor's *Ambient Noise Strategy* is to minimise the adverse impacts of noise on people living and working in, and visiting London using the best available practice and technology within a sustainable development framework.

A.2.12 The initial priorities identified as part of this strategy, which are relevant:

- seeking improved railway track quality and maintenance on National Rail and London Underground lines as far as organisation and funding allow;
- securing support for exemplary noise barrier-integrated photovoltaic power generation along suitable roads and railways, and noise screening from safety and security fencing; and

- reducing noise through better planning and design, where London's growth in people and jobs presents challenges, but redevelopment and refurbishment also offer opportunities - high density, mixed-use development can create quiet outdoor spaces away from traffic.

A.2.13 The Mayor expects noise and vibration to be minimised through better design and maintenance of the London Underground Network as far as feasible. Issues to be addressed include groundborne vibration from London Underground lines, noise from trains on the surface, and in-train noise for passengers.

Clearing London's Air: The Mayor's Air Quality Strategy (GLA, 2010c)

A.2.14 The first priority of the Mayor's *Air Quality Strategy* is to achieve European Union limit values for particulate matter (PM_{10}), ($PM_{2.5}$) and nitrogen dioxide (NO_2) in London.

A.2.15 The Mayor's vision for air quality is to protect and improve the health of Londoners and increase their quality of life by significantly improving the quality of the air in London. This will:

- make London a more pleasant place to live and work in;
- reduce the burden on health services in the capital;
- enhance London's position as a green city – making it more attractive to tourists and businesses; and
- make London cleaner, whilst safeguarding its biodiversity.

Securing London's Water Future: The Mayor's Water Strategy (GLA, 2011d)

A.2.16 The Mayor's *Water Strategy* promotes increasing water efficiency and reducing water wastage to balance supply and demand for water, safeguard the environment and help tackle water affordability problems. It also sets out how the Mayor will help communities at risk of flooding to increase their resilience to flooding.

Managing Risks and Increasing Resilience: The Mayor's Climate Change Adaptation Strategy (GLA, 2011c)

A.2.17 The Mayor's *Climate Change Adaption Strategy* identifies who and what is vulnerable to extreme weather today, considers how climate change will affect the existing climate risks, or create new risks or opportunities in the future and provides a framework for action.

The Mayor's Transport Strategy (GLA, 2010a)

A.2.18 The *MTS*, 2010 sets out the Mayor's transport vision and describes how TfL and its partners, including the London boroughs, will deliver integrated and dynamic 21st century transport system.

A.2.19 The *MTS* was developed alongside *The London Plan* as part of a strategic policy framework intended to support and shape the economic and social development of London over the next 20 years.

A.2.20 *MTS* is shaped by the Mayor's transport vision:

> *London's transport system should excel among those of world cities, providing access to opportunities for all its people and enterprises, achieving the highest environmental standards and leading the world in its approach to tackling urban transport challenges of the 21st century.*

A.2.21 Achieving this vision for an integrated and dynamic 21st century transport system can be broken down in to the following aims:

- enhanced capacity and connectivity;
- efficient and integrated;
- encourages mode shift to cycling, walking and public transport;
- easily accessible and fair to users;
- ensuring value for money;
- environment and quality of life are improved;
- extends opportunities for all Londoners.

A.2.22 The *MTS* identifies and sets out five relevant goals for implementing the Mayor's vision. The transport strategy should:

- support economic development and population growth;
- enhance the quality of life for all Londoners;
- improve the safety and security of all Londoners;
- improve transport opportunities for all Londoners;
- reduce transport's contribution to climate change and improve its resilience.

The Economic Development Strategy (GLA, 2010)

A.2.23 The Mayor's vision is for London to be the best big city in the world. *The Economic Development Strategy* sets out this vision with respect to the London economy, and how it can be realised.

A.2.24 Underlying *The Economic Development Strategy* is a projection of continuing growth in London's economy and population to 2031 and beyond.

A.2.25 A number of themes thread through *The Economic Development Strategy*, including the statutory cross-cutting themes of equality of opportunity, community safety, health, health inequalities, sustainable development, and climate change adaptation and mitigation.

Health Inequalities Strategy (GLA, 2009)

A.2.26 The *GLA Act 2007* requires that the Mayor sets out the health inequalities facing London, the priorities for reducing them and the role to be played by a defined list of key partners in order to deliver the strategy's objectives. This was addressed in the very first London Health Inequalities Strategy

A.2.27 The *Health Inequalities Strategy* refers to health inequalities in respect of life expectance or general state of health which are wholly or partly a result of differences in respect of general health determinants, which are described as:

a. standards of housing, transport services or public safety;

b. employment prospects, earning capacity and any other matters that affect levels of prosperity;

c. the degree of ease or difficulty with which persons have access to public services;

d. the use, or level of use, of tobacco, alcohol or other substances, and any other matters;

e. of personal behaviour or lifestyle that are or may be harmful to health; and

f. any other matters that are determinants of life expectancy or the state of health of persons generally, other than genetic or biological factors.

London Supplementary Planning Guidance (SPG)

A.2.28 The following *SPG* and policy documents have been considered with respect to the sustainability performance of the BSCU:

- *Draft - Dust and Emissions* (GLA, 2013);
- *Sustainable Design and Construction* (GLA, 2013);
- *Adapting to Climate Change: A Checklist for Development* (GLA, 2005);
- *Land for Industry and Transport* (GLA, 2012); and
- *The GLA Group Responsible Procurement Policy* (GLA, 2008).

Draft Dust and Emissions (GLA, 2013)

A.2.29 The *SPG* aims to regulate the emissions of airborne particulate matter (PM), nitrogen dioxide (NO_2) and once final, it will replace *The Control of Dust and Emission from Demolition and Construction Best Practice*.

Sustainable Design and Construction SPG

A.2.30 The *Sustainable Design and Construction SPG 2014* has been used to provide a response to the Mayors guidelines. The *SPG* aims to support developers, local planning authorities and neighbourhoods to achieve sustainable development. It provides guidance on to how to achieve the London Plan objectives effectively, supporting the Mayor's aims for growth, including the delivery of housing and infrastructure.

A.2.31 The *SPG* offers a series of 'Mayor's Best Practice' and 'Mayor's Priorities', which indicate exemplary benchmarks that are not policy requirements.

A.2.32 Although the *SPG* provides some guidance on how the standards might be achieved, it is not prescriptive. Likewise, it identifies the various methods and tools by which performance against the standards might be measured, but again it is not prescriptive. It is the responsibility of the applicant to ensure that performance is appropriately assessed and demonstrated.

A.2.33 Many of the standards set out in the *SPG* are targeted at residential development, or buildings that will be occupied for some period of time. The BSCU proposals related to transport infrastructure and hence some of the standards are not directly relevant.

Adapting to Climate Change: A Checklist for Development (GLA, 2005)

A.2.34 This document, published by the GLA in 2005, contains a checklist and guidance for new developments to adapt to climate change.

Land for Industry and Transport (GLA, 2012)

A.2.35 The *SPG Land for Industry and Transport* issued in September 2012 notes that the 'Making Walking Count' programme aims to increase overall mode share of walking to 25 per cent of transport by 2031, through better information, active travel programmes and physical improvements to the urban realm. It also records that the Mayor is seeking to increase cycle trips by 400 per cent by 2026, against the 2001 baseline, taking cycling's overall mode share from 2 to 5 per cent.

The GLA Group Responsible Procurement Policy (GLA, 2008)

A.2.36 The *GLA's Responsible Procurement Policy* outlines the Mayor's commitment to using responsible procurement as a mechanism for achieving the key

principles for the sustainable development of London. These key principles are outlined as; strong and diverse economic growth, social inclusivity and fundamental improvements in environmental management and use of resources.

A.3 Local Planning Policy

A.3.1 Alongside *The London Plan* the relevant *adopted Local Development Frameworks (LDF)* and *saved Unitary Development Plan (UDP)* for City of London, have been considered within this Sustainability Statement and are listed in the following sections.

City of London Adopted Core Strategy (City of London Corporation, 2011)

A.3.2 *The City of London Local Development Framework - Core Strategy*: September 2011.

- *Policy CS15 - Sustainable Development and Climate Change* - Proposals for major development should aim to achieve a BREEAM rating of "Excellent" or "Outstanding". *Policy CS15* also include energy requirement for development to minimise carbon emissions and contribute to a city-wide reduction in emissions:
    - adopting energy-efficiency measures;
    - enabling the use of decentralised energy, including the safeguarded Citigen CHP network, CHP-ready designs in areas where CCHP networks are not yet available, and localised renewable energy technologies;
    - adopting offsetting measures to achieve the Government's zero carbon targets for buildings.

  It should be noted that the requirements specified within *Policy CS15* are relevant to buildings and are not all directly applicable to BSCU.
- *Policy CS17 – Waste minimisation* - This policy aims to enable waste minimisation and adherence to the waste hierarchy:
    - requiring the provision of facilities for waste segregation, handling and management within new developments;
    - increasing the proportion of municipal solid waste recycled to at least 45 per cent by 2015 in line with the City of London Municipal Waste Management Strategy; and
    - promoting improved waste management choices for businesses and residents.

- *Policy CS18 - Flood Risk* - This policy aims to minimise river flooding risk, requiring development in Flood Risk Areas to seek opportunities to deliver a reduction in flood risk compared with the existing situation, and reducing rainwater run-off, through the use of suitable Sustainable Drainage Systems (SuDS), such as green roofs and rainwater attenuation measures, particularly in critical drainage areas.

Unitary Development Plan (City of London Corporation, 2002)

A.3.3 *Policy Util 6* requires adequate provision within all developments for the storage, presentation for collection, and removal of waste, unless exceptional circumstances make it impractical; to encourage provision to allow for the separate storage of recyclable waste where appropriate.

City of London Bank Area Enhancement Strategy (City of London Corporation, 2012c)

A.3.4 It sets out the City of London Corporation's vision for transport and public realm improvements in the Bank area over the next 10 years. *The Strategy* acknowledges in 2.3.3 the major plans by London Underground to upgrade Bank station, by providing extra capacity and new exits/entrances to accommodate increasing numbers of passengers.

City of London Air Quality Strategy 2011-2015 (City of London Corporation, 2010c)

A.3.5 The Air Quality Strategy outlines the direction for air quality policy at the City of London through to 2015, with a focus on action to reduce nitrogen dioxide and course and fine particles (PM_{10} and $PM_{2.5}$). Policy development will, where appropriate, reflect action being taken by the Mayor of London and the Government's wider air quality strategy.

A.4 TfL and LUL Policy, Standards and Guidance

A.4.1 This section includes a number of relevant TfL documents within the LUL and TfL Management System. It should be noted that LUL Management System conforms to the principles of ISO 14001.

TfL Health, Safety and Environment (HSE) Policy (Transport for London, 2013b)

A.4.2 LUL's *HSE Policy* (Transport for London, 2013b) aims to improve TfL's HSE performance through:

- complying with the spirit and letter of HSE legislation;
- setting progressive objectives and targets to improve HSE management and performance;

- taking account of HSE risks and benefits in decision making and business planning process;
- striving to realise environmental benefits, in addition to pollution prevention, with a focus on managing emissions and mitigating the effects of, and adapting to climate change; and
- actively supporting the Mayor in delivering the environmental strategies on air quality, ambient noise, biodiversity, energy and municipal waste.

A.4.3 TfL has set environmental objectives and targets and has reported annually on its environmental performance since 2004.

London Underground Asset Management Strategy and Policy (Transport for London, 2010a)

A.4.4 *The London Underground Assessment Management Strategy and Policy* (LUL, 2010), outlines LUL's approach to asset management decisions based on whole life assessment, optimisation of cost, risk and performance, whilst ensuring safety, environmental and legal statutory compliance.

Ethical Sourcing Policy (Transport for London, 2008)

A.4.5 The *Ethical Sourcing Policy* issued in 2008, sets out TfL's procurement strategy for the ethical sourcing of all goods, works and services. Working within its obligations as a Best Value Authority, and in compliance with EU and UK legislation, the policy outlines TfL's conduct as part of the procurement process to be in line with the internationally recognised Ethical Trading Initiative (ETI) Base Code standards of the International Labour Organisation (ILO).

A.4.6 The guiding principles outlined in the policy are as follows:

- identify suitable applications of ethical sourcing considerations;
- improve labour conditions in the supply chain;
- monitor working conditions;
- engage with suppliers; and
- deliver benefits within law and best value.

TfL HSE Report (Transport for London, 2013a)

A.4.7 TfL has produces an integrated *HSE report* annually which focuses on:

- health and safety performance data covering employee safety, customer safety, contractor safety and staff sickness absence;
- road safety data; and

- environmental performance data relating to London's public transport operations.

A.4.8 TfL has set environmental objectives and targets and has reported annually on its environmental performance since 2004. The key targets relevant to this Sustainability Statement are as follows.

- reduce the normalised emissions (measured in grams CO_2 per passenger km) from its main public transport services by 20 per cent in 2017/18, against a 2005/2006 baseline;
- achieve a 40 per cent reduction in total NOx emissions by 2017/18 against 2005/06 levels;
- reduce transport related noise and vibration;
- a commitment to increasing the recycling rate of Commercial and Industrial waste to 70 per cent and Construction and Demolition waste to 95 per cent by 2017/18.

TfL Vision (The Plan – Value and Sustainability Workstream)

A.4.9 *The Plan* sets out where Rail and LUL is focusing its efforts in delivering step-change in performance.

A.4.10 *The Value & Sustainability Programme Board*, which forms part of *The Plan*, takes responsibility for the long-term strategic view of costs and revenues in providing services. One of the projects undertaken by the board is the development of a sustainable business. The key activities of the project are listed as follows:

- embedding sustainability considerations across Rail & Underground's processes and activities;
- sourcing of low carbon and/or high-thermal efficiency power for direct delivery to Rail & Underground's power network;
- improvements to Rail & Underground's energy metering capability; use of energy data to inform operational and maintenance performance management;
- trialling of low-energy assets and technologies and adoption into business as usual activities; and
- setting out the roadmap for long -term sustainable development in Rail & Underground.

TfL Environmental Framework (Transport for London, 2010)

A.4.11 TfL agreed new environmental strategy document, its *Corporate Environment Framework* covers the activities which TfL directly manages or specifies and

sets out refreshed targets and objectives. It shows TfL's corporate contribution to achieving Mayoral environmental strategy and policy. This replaces *the LU Environment Strategy 2008-2013*.

S1-352 Station Ambience Standard (Transport for London, 2007)

A.4.12 *The Station Ambience Standard 1-352* (Transport for London, 2007) provides the ambience requirements with regards to stations. This covers the following areas:

- station condition;
- cleanliness;
- spillages, seepages, snow and ice;
- barriers;
- litter;
- graffiti and unauthorised stickers;
- air quality; and
- noise and vibration.

Valuing the Urban Realm TfL Guidelines (Transport for London, 2012)

A.4.13 The latest version of the *Valuing the Urban Realm (VUR) toolkit* was released in April 2012. The toolkit is used to quantify and evaluate the financial benefits of public urban realm investment and can compare different magnitudes of interventions. *The Toolkit* aims to inform the evaluation of proposed streetscape improvements, undertake cost-benefit analysis, development of business cases and justification of investment in public realm projects.

LUL G1323 Asset Design Guidance – Noise and Vibration (**LUL, 2012)**

A.4.14 *The Asset Design Guide* issued in April 2012, outlines LUL's approach to defining noise and vibration assessment methodologies and design criteria for new assets and those undergoing major upgrade or reinstatement.

A.4.15 The aim of these criteria is to reduce the occurrences of uncontrolled noise and vibration complaints from vibration sensitive receptors (e.g. residential properties, offices and theatres) and the resulting expenditures required to rectify installations.

Project Management Framework 10565 Site Noise and Vibration Evaluation and Control (LUL, 2013c)

A.4.16 *The Project Management Framework 10565* (LUL, 2013c) provides a template for evaluating and assessing the risk of significant site noise and vibration and

guidance on appropriate control measures for proposed works and it is used during construction.

A.4.17 In order to provide this information site noise and vibration are assessed as part of the *Environmental Risk Assessment* and identified risks included on the risk register.

Appendix B – SPG 2014 Standards and London Plan 2011

Note: Only *The London Plan* policies and sections relevant to the BSCU are included. For full text of the policies please refer to *The London Plan* directly.

The SPG summary table below discusses only the 'Mayor's Priorities (**P**)' and 'Mayor's Best Practice (**BP**)' standards that are considered relevant to the BSCU Project.

SPG Guidance and Section	Mayor's Priority (P) and Best Practice (BP) Standards as per SPG 2014	Key London Plan 2011 Policies (based on the SPG 2014)	Performance of the BSCU Project
Resource Management			
Land			
Optimising the use of land	**(P)** Boroughs should aim for **100%** of development to be delivered on previously developed land.	Policy 1.1 Delivering the Strategic Vision and Objectives for London: Growth will be supported and managed across all parts of London to ensure it takes place within the current boundaries of Greater London without: a. encroaching on the Green Belt, or on London's protected open spaces b. having unacceptable Impacts on the environment. London is a growing city with a limited supply of land for economic, residential, recreational and natural land uses. Therefore it is essential that developers make the most of the opportunities provided by their site, based on its specific circumstances.	The BSCU Project will utilise 100% land that has been previously developed. The BSCU Project will enable the station to accommodate the projected passenger demand and the growth expected in the area. It is considered that the project will occupy the minimum amount of land needed for construction. Temporary worksites will be returned to their previous uses upon completion of the construction works.
	(P) Developers should optimise the scale and density of their development, considering the local context, to make efficient use of London's limited land.	Policy 7.1 Building London's Neighbourhoods and Communities: In their neighbourhoods, people should have a good quality environment in an active and supportive local community with the best possible access to services, infrastructure and public transport to wider London. Policy 7.6 Architecture: Architecture should make a positive contribution to a coherent public realm, streetscape and wider cityscape. It should incorporate the highest quality materials and design appropriate to its context. Policy 6.2 Providing public transport capacity and safeguarding land for transport.	The BSCU Project is located on previously developed land and will maximise the use of the internal spaces through improving passenger flows and pedestrian usage enhancing its immediate surroundings The design of the BSCU has taken into account the sensitive townscape context at ground level. It will also have beneficial impacts on the public realm streetscape, and improve visual amenity through enhanced façade, Station Entrance Hall and street furniture and surfacing. The BSCU Project has been designed to maximise the use of the site and minimise waste generation during construction. The final outcome of the BSCU will be a more effective underground network, which will positively contribute to the overall LU network system and the public transport provision of London.
Basement and Lightwells	(**BP**) Where there is pressure for basement developments, boroughs should consider whether there are any particular local geological or hydrological issues that could particularly effect their construction, and adopt appropriate policies to address any local conditions.	Policy 5.12 Flood Risk Management: Development proposals must comply with the flood risk assessment and management requirements set out in PPS25 over the lifetime of the development and have regard to measures proposed in Thames Estuary 2100 (TE2100 – see paragraph 5.55) and Catchment Flood Management Plans. Policy 5.13 Sustainable Drainage: Development should	The BSCU Project comprises predominantly works that will be undertaken below ground level. As such the geological and hydrological conditions of the site and surrounding area have been considered. As part of the Environmental Impact Assessment (EIA) and the Health Impact Assessment (HIA), the effects of the design proposals have been evaluated and mitigation measures proposed. A waterproofing strategy has been developed for the new escalator box and lift shaft,

SPG Guidance and Section	Mayor's Priority (P) and Best Practice (BP) Standards as per SPG 2014	Key London Plan 2011 Policies (based on the SPG 2014)	Performance of the BSCU Project
	(**P**) When planning a basement development, developers should consider the geological and hydrological conditions of the site and surrounding area, proportionate to the local conditions, the size of the basement and lightwell and the sensitivity of adjoining buildings and uses, including green infrastructure. (**P**) When planning and constructing a basement development, developers should consider the amenity of neighbours	utilise sustainable urban drainage systems (SUDS) unless there are practical reasons for not doing so, and should aim to achieve greenfield run-off rates and ensure that surface water run-off is managed as close to its source as possible. Policy 7.13 Safety. Security and Resilience to Emergency: Development proposals should contribute to the minimisation of potential physical risks, including those arising as a result of fire, flood and related hazards. Development should include measures to design out crime that, in proportion to the risk, deter terrorism, assist in the detection of terrorist activity and help defer its effects.	mitigating the risk of groundwater flooding and impacts to groundwater resources. In regards to Policy 7.13, the philosophy of the design of the BSCU Project is to address safety and security issues identified from undertaking threat and vulnerability risk assessments. A Safety and Security Report has been prepared as part of the TWAO application. A fire strategy has been developed to ensure that the design provides for compliant fire and evacuation protection measures. In terms of flood risk, the site is located within Flood Zone 1 and is therefore considered to be at low risk of fluvial and tidal flooding. Additionally, the tunnels are not considered to be at risk from floodwater associated with fluvial and tidal sources. The BSCU will be carried out with mitigation measures in place to minimise disturbance to neighbouring properties, users and traffic impact, and have minimal visual impact.
Local food Growing	(**P**) To protect existing established food growing spaces. (**BP**) To provide space for individual or communal food growing, where possible and appropriate. (**P**) To take advantage of existing spaces to grow food, including adapting temporary spaces for food growing.	Policy 2.18: Green Infrastructure: The Network of Open and Green Spaces: Development proposals should: a. incorporate appropriate elements of green infrastructure that are integrated into the wider network b. encourage the linkage of green infrastructure including the Blue Ribbon Network, to the wider public realm to improve accessibility for all and develop new links, utilising green chains, street trees, and other components of urban greening (Policy 5.10). Policy 7.22: Land for Food: The Mayor will seek to encourage and support thriving farming and land-based sectors in London, particularly in the Green Belt. Use of land for growing food will be encouraged nearer to urban communities via such mechanisms as 'Capital Growth'.	The above ground BSCU Work Sites are almost entirely covered by buildings or hard standing and therefore scope for ecological enhancements and provision of green infrastructure is limited. It is considered that provision of space for individual or communal food growing is not relevant to this application.
Site Layout and Building Design			
Site Layout and Design	**(P)** The design of the site and building layout, footprint, scale and height of buildings as well as the location of land uses should consider: Existing features • the possible retention and reuse of existing buildings and structures; • the retention of existing green infrastructure, including trees and potential for its improvement and extension; and • access routes to public transport and	Policy 2.18 Green Infrastructure: Development proposals should: a. incorporate appropriate elements of green infrastructure that are integrated into the wider network b. encourage the linkage of green infrastructure including the Blue Ribbon Network, to the wider public realm to improve accessibility for all and develop new links, utilising green chains, street trees, and other components of urban greening (Policy 5.10).	The BSCU Project is located on previously developed land as described under SPG Section *Optimising the use of land* above. As the project relates to below ground improvement works and the introduction of a new Station Entrance Hall for Bank Station, there is limited existing green infrastructure to be retained. The BSCU Project overall will introduce improvements to the public realm streetscape, in particular quality of surfacing, street furniture and legibility, resulting in better pedestrian and commuting movement. The Station Entrance Hall will support the legibility and presence of the station within the streetscape, including after dark when it is lit. The principles of inclusive design, including the specific needs of disabled people are addressed, while the project will be integrated with the public realm, will be accessible and clearly visible to pedestrians as well as cyclists at surface level and from the street. Way-

SPG Guidance and Section	Mayor's Priority (P) and Best Practice (BP) Standards as per SPG 2014	Key London Plan 2011 Policies (based on the SPG 2014)	Performance of the BSCU Project
	other facilities that minimise the use of public transport. New design of development • the existing landform; • the potential to take advantage of natural systems such as wind, sun and shading; • the principles sets out London Plan policies 7.1 and 7.6; • the potential for adaption and reuse in the future; • potential for incorporating green infrastructure; • potential for incorporating open space, recreation space, child play space; • energy demands and the ability to take advantage of natural systems and low and zero carbon energy sources; • site wide infrastructure; • access to low carbon transport modes; • potential to address any local air quality, noise disturbance, flooding and land contamination issues; and • the potential effect on the microclimate.	Policy 5.2 Minimising CO_2 Emissions: Development proposals should make the fullest contribution to minimising CO_2 emissions in accordance with the following energy hierarchy: 1. Be lean: use less energy 2. Be clean: supply energy efficiently 3. Be green: use renewable energy Policy 5.3 Sustainable Design & Construction: Development proposals should demonstrate that sustainable design standards are integral to the proposal. Policy 7.1 Building London's Neighbourhoods and Communities: The design of new buildings and the spaces they create should help reinforce or enhance the character, legibility, permeability and accessibility of the neighbourhood. Policy 7.6: Buildings and structures should: • be of the highest architectural quality • be of a proportion, composition, scale and orientation that enhances, activates and appropriately defines the public realm • comprise details and materials that complement, not necessarily replicate, the local architectural character • not cause unacceptable harm to the amenity of surrounding land and buildings, particularly residential buildings, in relation to privacy, overshadowing, wind and microclimate. This is particularly important for tall buildings • incorporate best practice in resource management and climate change mitigation and adaptation • provide high quality indoor and outdoor spaces and integrate well with the surrounding streets and open spaces • be adaptable to different activities and land uses, particularly at ground level • meet the principles of inclusive design • optimise the potential of sites	finding and signage will be intuitive and clear for all passengers. The BSCU will be constructed to a high standard to ensure durability over its lifetime, although it should be considered that the BSCU will inevitably have to be designed for the operation of underground trains and thus is not designed to accommodate for alternative uses. The design of the BSCU was developed with the aim to reduce operational CO_2 emissions as far as practicable. For more details refer to the Energy Statement. In terms of noise, the design incorporates acoustic criteria at platform level, public areas and plant rooms. Acoustic measurements will be incorporated to ensure that acoustic levels are comfortable for passengers and users. Best Practice Guidance in terms of air quality and dust control during demolition and construction in line with the Mayor's Air Quality Strategy will be adopted throughout the demolition and construction phases. In terms of flood risk, the site is located within Flood Zone 1 and is therefore considered to be at low risk of fluvial and tidal flooding. Details on mitigation and prevention through design are shown in Chapter 13: Water Resources & Flood Risk of the ES. With regards to resilience and safety, the BSCU design is governed by the LUL Category 1 Standards (see SPG Section Flood resilience and resistance of buildings in flood risk areas below). The BSCU Project aims to increase the capacity of the Bank Station, reduce journey times and congestion for passengers, while ensuring resilience to surges in demand and train service interruption. It is intended that the overall sustainability performance of the proposed BSCU will be demonstrated through the achievement of an 'Excellent' CEEQUAL Whole Team Award rating.

SPG Guidance and Section	Mayor's Priority (P) and Best Practice (BP) Standards as per SPG 2014	Key London Plan 2011 Policies (based on the SPG 2014)	Performance of the BSCU Project
Reuse of Existing Buildings	**(BP)** Any existing buildings that can be practically refurbished, retrofitted, altered, or extended should be retained and reused.	Policy 5.4 Retrofitting: The environmental impact of existing urban areas should be reduced through policies and programmes that bring existing buildings up to the Mayor's standards on sustainable design and construction. In particular, programmes should reduce CO_2 emissions, improve the efficiency of resource use (such as water) and minimise the generation of pollution and waste from existing building stock.	The BSCU will enhance the existing station and will allow it to operate more efficiently. Reuse of material streams will be maximised. Stringent targets have been set to minimise the waste from construction activities. The SWMP sets a 95 per cent target for recycling and reuse for spoil and building materials. The BSCU will adopt the *BES 6001 Responsible Sourcing of Construction Products Standard* andTFL's Responsible Procurement Policy which provides a framework for purchasing, and ensures that wherever possible, recycled / reused materials are used.
	(BP) A mix of uses, where suitable should be included to provide a range of services commensurate to the public transport accessibility.	Policy 4.3 Mixed Use Developments and Offices - Strategic: Within the Central Activities Zone and the north of the Isle of Dogs Opportunity Area (see Chapter 2 and Annex 1), increases in office floorspace should provide for a mix of uses including housing, unless such a mix would demonstrably conflict with other policies in this plan. Elsewhere in London, mixed use development and redevelopment should support consolidation and enhancements to the quality of the remaining office stock in the types of strategically specified locations identified in paragraph 4.12.	The BSCU relates to below ground improvement works and the introduction of a new Station Entrance Hall for Bank Station. There is limited scope for provision of a mix of uses. In addition to underground station, retail spaces will be provided.
Energy and Carbon Dioxide (CO_2) Emissions			
Energy and Carbon Emissions	**(P)** The overall CO_2 emissions from a development should be minimised through the implementation of the energy hierarchy set out in London Plan policy 5.2.	Policy 5.2 Minimising CO_2 Emissions: Development proposals should make the fullest contribution to minimising CO_2 emissions in accordance with the following energy hierarchy: a. Be lean: use less energy b. Be clean: supply energy efficiently c. Be green: use renewable energy.	The Energy Statement carried out for the BSCU Project demonstrates how the designers are considering the aspirations set in *The London Plan* 2011 by following the Mayor's energy hierarchy and the detailed guidance provided in the GLA Energy Team Guidance on Planning Energy Assessments, and including: • passive design and energy efficiency (i.e. 'be lean'); • energy efficient supply of services (i.e. 'be clean'); and • on site renewable energy technologies to provide energy (i.e. 'be green').
	(P) Developments should be designed to meet the regulated CO_2 standards, in line with London Plan policy 5.2.		It should be noted that *The London Plan* CO_2 emissions targets are set against the Building Regulations. The BSCU will include only a very small proportion of areas falling under the remit of the Building Regulations. These areas would not qualify as a major development. Therefore the targets are not directly applicable to the BSCU. Nevertheless, the design of the BSCU was developed with the aim to reduce operational CO_2 emissions as far as practicable. Operational efficiency will be achieved through measures, such as: • natural ventilation for public areas; • humped alignment of running tunnels; • high efficiency lighting and intelligent controls; • high efficiency cooling system for staff areas and communication rooms;

SPG Guidance and Section	Mayor's Priority (P) and Best Practice (BP) Standards as per SPG 2014	Key London Plan 2011 Policies (based on the SPG 2014)	Performance of the BSCU Project
			• efficient fans and pumps including variable speed drives; • Building Management System and sub-metering strategy; • low energy lifts, escalators and moving walkaways; and • energy awareness schemes and efficient asset handover
Energy and Carbon Emissions	**(BP)** Developments should contribute to ensuring resilient energy infrastructure and a reliable energy supply, including from local low and zero carbon sources	Policy 5.6 Decentralised Energy in Development Proposals: Major development proposals should select energy systems in accordance with the following hierarchy: a. Connection to existing heating or cooling networks (Where future network opportunities are identified, proposals should be designed to connect to these networks.) b. Site wide CHP network c. Communal heating and cooling. Policy 5.7 Renewable Energy: Within the framework of the energy hierarchy (see Policy 5.2), major development proposals should provide a reduction in expected CO_2 emissions through the use of on-site renewable energy generation, where feasible. Policy 5.8 Innovative energy technologies Hydrogen fuel cell vehicles are being trialled in London and the Mayor actively supports the greater deployment of electric vehicles.	The potential for connection to existing heating and cooling network (i.e. Citigen), incorporation of an on-site Combined Heat and Power (CHP) plant, Combined Cooling Heat and Power (CCHP) plant or a system recovering waste heat from the tunnels have also been considered and investigated in detail, however found to not be appropriate for the BSCU. For further details refer to the Energy Statement. A feasibility analysis of renewable energy technologies has been also undertaken. However, it was concluded that due to the site constraints and the nature of the BSCU, there are no viable renewable energy technologies that could be utilised.
	(BP) Developers are encouraged to include innovative low and zero carbon technologies to minimise CO_2 emissions within developments and keep up to date with rapidly improving technologies.		
Energy Demand Assessment	**(P)** Development applications are to be accompanied by an energy demand assessment)	Policy 5.2 Minimising CO_2 Emissions: Major development proposals should include a detailed energy assessment to demonstrate how the London Plan targets for CO_2 emissions reduction are to be met within the framework of the energy hierarchy. Policy 5.3 Sustainable Design and Construction: Major development proposals should meet the minimum standards outlined in the Mayor's supplementary planning guidance and this should be clearly demonstrated within a design and access statement. The standards include measures to achieve other policies in this Plan and the following sustainable design principle of minimising CO_2 emissions across the site, including the building and services (such as heating and cooling systems)	An Energy Demand Assessment has been undertaken and is reported in Energy Statement. The Energy Statement was developed following the Mayor's energy hierarchy (i.e. be lean, be clean and be green) and *The London Plan,* which ensures that priority is given to passive design. The Energy Statement includes an assessment of anticipated energy demand, measures to be employed to minimise demand, and details on how this demand will be met.
	(P) The design of developments should prioritise passive measures		
Use less	(**BP**) Developers should aim to achieve Part L		As stated in the Energy Statement, the BSCU will include only a very small proportion of

SPG Guidance and Section	Mayor's Priority (P) and Best Practice (BP) Standards as per SPG 2014	Key London Plan 2011 Policies (based on the SPG 2014)	Performance of the BSCU Project
energy	2013 Building Regulations requirements through design and energy efficiency alone, as far as is practical.		areas (<200m^2) falling under the remit of the energy efficiency requirements of the Building Regulations. These areas would not qualify as a major development and therefore for the purposes of the TWAO application have not been modelled for the Building Regulations compliance.
Efficient Energy Supply	**(P)** Where borough heat maps have identified district heating opportunities, boroughs should prepare more detailed Energy Master Plans (EMPs) to establish the extent of market competitive district heating networks	Policy 5.6 Decentralised Energy in Development Proposals a. Development proposals should evaluate the feasibility of Combined Heat and Power (CHP) systems, and where a new CHP system is appropriate also examine opportunities to extend the system beyond the site boundary to adjacent sites. b. Major development proposals should select energy systems in accordance with the following hierarchy: • Connection to existing heating or cooling networks; • Site wide CHP network; • Communal heating and cooling; c. Potential opportunities to meet the first priority in this hierarchy are outlined in the London Heat Map tool. Where future network opportunities are identified, proposals should be designed to connect to these networks.	As showed in the Energy Statement, the connection to the Citigen district energy network was considered. However, the BSCU heat profile is expected to be characterised by negligible loads in summer and relatively low loads in winter. These characteristics suggest that the potential CO_2 emission reductions associated with the heat provided by the energy network would be minimal. Based on the results of the preliminary analysis, the cost and embodied energy associated with the infrastructure required to allow this connection would significantly exceed the benefits of the connection.
	(**P)** Developers should assess the potential for their development to: • connect to an existing district heating or cooling network; • expand an existing district heating or cooling network, and connect to it; or • establish a site wide network, and enable the connection of existing buildings in the vicinity of the development. **(P)** Where opportunities arise, developers generating energy or waste heat should maximise long term CO_2 savings by feeding the decentralised energy network with low or zero carbon hot, and where required, cold water.		As above.
Renewable Energy	**(P)** Boroughs and neighbourhoods should identify opportunities for the installation of renewable energy technologies in their boroughs and neighbourhoods. (p) Major developments should incorporate renewable energy technologies to minimise overall CO_2 emissions, where feasible.	Policy 5.7 Renewable Energy: Within the framework of the energy hierarchy, major development proposals should provide a reduction in expected CO_2 emissions through the use of on-site renewable energy generation, where feasible. Note that although not required by a specific policy, there is a presumption within the London Plan that all major development proposals will seek to reduce CO_2 emissions by at least 20% through the use of on-site renewable energy generation wherever feasible.	Renewable technologies have been examined, however none of the assessed technologies were found feasible for installation as part of the BSCU, due the following reasons, further detailed in the Energy Statement; - the majority of areas will be underground and surrounded by a dense network of tunnels; - above ground areas are closely surrounded by commercial buildings; and - the BSCU Project is located in the Bank Conservation Area, and surrounded by a number of listed buildings
Carbon Dioxide (CO_2) Off Setting			
Carbon Dioxide (CO_2) Off Setting	**(P)** Where developments do not achieve the Mayor's CO_2 reduction targets set out in London Plan policy 5.2, the developer should make a contribution to the local borough's CO_2 off-setting fund.	Policy 5.2 Minimising CO_2 Emissions: Development proposals should make the fullest contribution to minimising CO_2 emissions in accordance with the following energy hierarchy: 1. Be lean: use less energy	Due to the non-building nature of the scheme, carbon off-setting policies are not applicable to the BSCU.

SPG Guidance and Section	Mayor's Priority (P) and Best Practice (BP) Standards as per SPG 2014	Key London Plan 2011 Policies (based on the SPG 2014)	Performance of the BSCU Project
		2. Be clean: supply energy efficiently 3. Be green: use renewable energy The CO_2 reduction targets should be met on-site. Where it is clearly demonstrated that the specific targets cannot be fully achieved on-site, any shortfall may be provided off-site or through a cash in lieu contribution to the relevant borough to be ring fenced to secure delivery of CO_2 savings elsewhere.	
Retrofitting			
Retrofitting	(**P**) Boroughs should set out policies to encourage the retrofitting of CO_2 and water saving measures in their borough (**P)** Where works to existing developments are proposed developers should retrofit CO_2 and water saving measures.	Policy 5.4 Retrofitting: The environmental impact of existing urban areas should be reduced through policies and programmes that bring existing buildings up to the Mayor's standards on sustainable design and construction. In particular, programmes should reduce CO_2 emissions, improve the efficiency of resource use (such as water) and minimise the generation of pollution and waste from existing building stock.	The BSCU will enhance the existing station and will allow it to operate more efficiently. As part of the BSCU more efficient equipment will be provided than that of the existing station (e.g. energy efficient lifts and escalators lighting and lighting controls, pumps and fans and heating and cooling systems). Sanitary ware specified will be provided with water saving features as far as practicable. It should be noted that potable water consumption of the BSCU is considered to be negligible.
Monitoring Energy Use			
Monitoring Energy Use	**(BP)** Developers are encouraged to incorporate monitoring equipment, and systems where appropriate to enable occupiers to monitor and reduce their energy use	Policy 5.2 Minimising CO_2 Emissions: Development proposals should make the fullest contribution to minimising CO_2 emissions in accordance with the energy hierarchy.	In line with the Energy Statement, a Building Management System (BMS) will be provided to control and monitor BSCU services. The BMS system will be installed as part of the BSCU and will allow energy monitoring and efficient control of the Mechanical and Electrical systems. The BMS will be connected to the existing critical fault monitoring system.
Supporting a Resilient Energy Supply			
Supporting A Resilient Energy Supply	(**BP**) Developers are encouraged to incorporate equipment that would enable their schemes to participate in demand side response opportunities.		It is considered that this issue is not directly applicable to the BSCU. Due to the nature of the BSCU, operational and maintenance safety and durability issues of the underground network take precedent.
Water Efficiency			
Water Efficiency	**(P)** Developers should maximise the opportunities for water saving measures and appliances in all developments, including the reuse and using alternative sources of water.	Policy 5.3 Sustainable design and construction: Efficient use of natural resources (including water), including making the most of natural systems both within and around buildings Policy 5.15 Water use and supplies: Development should minimise the use of mains water by: • Incorporating water saving measures and equipment • Designing residential development so that mains water consumption would meet a target of 105 litres or less	The design the BSCU will minimise internal potable water consumption for sanitary uses. This will be through the specification of water efficient sanitary ware (such as low-water, dual flush toilet cisterns and low-pressure spray taps), installation of water metering and leak detection system as appropriate. A water meter with a pulsed output will be installed on the mains supplies and a leak detection system will be provided for integration into the water metering as feasible, with an audible signal when a leak is detected, to reduce the impact of water leaks that would otherwise go undetected. Flow control devices, such as solenoid valves connected to presence detectors, will be

SPG Guidance and Section	Mayor's Priority (P) and Best Practice (BP) Standards as per SPG 2014	Key London Plan 2011 Policies (based on the SPG 2014)	Performance of the BSCU Project
		per head per day. New development for sustainable water supply infrastructure, which has been selected within water companies' Water Resource Management Plans, will be supported.	fitted to each toilet area/facility as appropriate to ensure water is supplied only when needed and therefore prevent minor water leaks. Due to the nature of the BSCU, CEEQUAL has been selected as the most appropriate methodology for appraising the sustainability performance of the overall infrastructure works. An informal review of the BREEAM elements relevant to the BSCU has been undertaken to ensure that the design, specifications and the construction thereof meet sustainable design and construction practices through consideration of the relevant BREEAM criteria.
	(P) New non-residential developments, including refurbishments, should aim to achieve the maximum number of water credits in a BREEAM assessment or the 'best practice' level of the AECB (Association of Environment Conscious Building) water standards.	Policy 5.15 Water use and supplies: Development should minimise the use of mains water by: • Incorporating water saving measures and equipment • Designing residential development so that mains water consumption would meet a target of 105 litres or less per head per day. New development for sustainable water supply infrastructure, which has been selected within water companies' Water Resource Management Plans, will be supported. Policy 5.3 Sustainable design and construction: c) Efficient use of natural resources (including water), including making the most of natural systems both within and around buildings.	
	(P) All developments should be designed to incorporate rainwater harvesting.	Policy 5.15 Water use and supplies Note: Alternative sources of water, such as rainwater and greywater, particularly for uses other than drinking, will be increasingly important to reducing the consumption of mains water.	The BSCU will have no run off, and therefore no rainwater harvesting system is used.
Materials and Waste			
Design Phase	**(P)** The design of development should prioritise materials that: • have a low embodied energy, including those that can be re-used intact or recycled; • at least three of the key elements of the building envelope (external walls, windows roof, upper floor slabs, internal walls, floor finishes / coverings) are to achieve a rating of A+ to D in the BRE's The Green Guide of specification; • can be sustainably sourced; • at least 50% of timber and timber products should be sourced from accredited Forest Stewardship Council (FSC) or Programme for	Policy 5.3 Sustainable Design and Construction: Major development proposals should meet the minimum standards outlined in the Mayor's supplementary planning guidance and this should be clearly demonstrated within a design and access statement. The standards include measures to achieve other policies in this Plan and the following sustainable design principles: • efficient use of natural resources (including water), including making the most of natural systems both within and around buildings • minimising pollution (including noise, air and urban runoff) • minimising the generation of waste and maximising reuse or recycling	The BSCU have adopted the *BES 6001* and TfL's Responsible Procurement Policy which provides a framework for purchasing, and ensures that wherever possible, recycled / reused materials are bought. Where possible environmental benefits will be considered as part of the procurement process with consideration given to all relevant aspects of whole life-cycle costs of products. TfL is committed to specific environmental obligations as a signatory of the Mayor's Green Procurement Code. Wherever feasible, materials employed in key building elements of the station will be selected in line with the Green Guide to Specification. The need to use primary aggregates will be minimised by the selection of secondary materials, where possible. In line with TfL commitments, all timber procured will be obtained from recycled, reclaimed sources or be accredited to meet sustainable forestry standard such as the Forestry Stewardship Council (FSC), Programme for the Endorsement of Forest Certification (PEFC), Svenska Cellulose Aktiebolaget (SCA) or the Sustainable Forestry Initiative (SFI). Any remaining timber not sourced through the above will target a known temperate source

SPG Guidance and Section	Mayor's Priority (P) and Best Practice (BP) Standards as per SPG 2014	Key London Plan 2011 Policies (based on the SPG 2014)	Performance of the BSCU Project
	the Endorsement of forestry Certification (PEFC) source; • are durable to cater for their level of use and exposure; and • will not release toxins into the internal and external environment, including those that deplete stratospheric ozone	• securing sustainable procurement of materials, using local supplies where feasible, and • promoting and protecting biodiversity and green infrastructure Policy 5.20 Aggregates: The Mayor will work with all relevant partners to ensure an adequate supply of aggregates to support construction in London. This will be achieved by: • encouraging re-use and recycling of construction, demolition and excavation waste within London • extraction of land-won aggregates within London • importing aggregates to London by sustainable transport modes.	using the Defra's Central Point of Expertise in Timber (CPET). Chipboard and expanded polystyrene will be avoided as feasible. The materials comprising the BSCU Project will respect the scale and setting of the surroundings. The materials will be suitable and robust, with durable long-life properties. Material finishes will consider long term maintenance as well as robustness requirements, avoiding materials that are damaged easily giving due consideration to the high pedestrian use and traffic. The use of insulants with a high Global Warming Potential (GWP) will be avoided. All thermal insulation products used in the building are currently being considered to have a low embodied impact relative to their thermal properties and will be confirmed at detailed design stage. All decorative paints and varnishes, suspended ceiling tiles, flooring adhesives, wall-coverings and wall-coverings, where practical and in accordance with LU standards, will meet the requirements of the European Standards for the specification of low VOCs.
Design	(**BP**) The design of developments should maximise the potential to use pre-fabrication elements.	Policy 5.3 as above.	The potential for incorporation of prefabricated elements is limited for the BSCU. Wherever practicable pre-assembly and pre-fabrication of elements will be considered to minimise on-site waste and improve quality.
Construction	**(P)** Developers should maximise the use of existing resources and materials and minimise waste generated during the demolition and construction process through the implementation of the waste hierarchy.	Policy 5.3 as above.	The waste hierarchy will be implemented during the demolition and construction. The BSCU adopts principles of designing out waste during the construction to minimise resource use and construction waste, the segregation of construction and excavation materials and the use of a suitable waste contractor to maximise diversion from landfill via re-use, recycling and recovery. During the construction, the BSCU will follow a sustainable resource and waste management strategy as outlined in the Site Waste Management Plan (SWMP). The SWMP will set a 95 per cent target for recycling and reuse of the materials arising from the construction of the tunnels and operational infrastructure. Furthermore, 'Green procurement' objectives will be defined and integrated into the procurement and specification process to use reused or recycled products and construction materials. Several Key Performance Indicators (KPI) have been identified to enable monitoring in accordance with the 95 per cent target for demolition, excavation and construction waste.
	(P) Developers should provide sufficient internal space for the storage of recyclable and compostable materials and waste in their schemes. (**P**) The design of development should meet borough requirements for the size and location of recycling, composting and refuse storage and its removal.	Policy 5.17: Waste Capacity: Proposals for waste management should be evaluated against the following criteria: a. locational suitability (see LDF preparation paragraphs F and G below) b. proximity to the source of waste c. the nature of activity proposed and its scale d. a positive carbon outcome of waste treatment methods and technologies (including the	Recycling opportunities will be maximised through the provision of dedicated waste management facilities for the collection of the station's recyclable waste streams, so that such waste is diverted from landfill. The station will be designed with sufficient space for bin rooms to separate and store materials. Suitable waste and recycling storage facilities will be provided within the station and the passengers and staff will be encouraged to use them and, these will be easy to access will be provided throughout the station. Due to the nature of the scheme, opportunities for waste treatment on site are not considered feasible.

SPG Guidance and Section	Mayor's Priority (P) and Best Practice (BP) Standards as per SPG 2014	Key London Plan 2011 Policies (based on the SPG 2014)	Performance of the BSCU Project
		transportation of waste, recyclates and waste derived products) resulting in greenhouse gas savings, particularly from treatment of waste derived products to generate energy e. the environmental impact on surrounding areas, particularly noise emissions, odour and visual impact and impact on water resources f. the full transport and environmental impact of all collection, transfer and disposal movements and, in particular, the scope to maximise the use of rail and water transport using the Blue Ribbon Network.	
Nature Conservation And Biodiversity	**(P)** There is no net loss in the quality and quantity of biodiversity. **(P)** Developers make a contribution to biodiversity on their development site.	Policy 5.3: Sustainable Design and Construction: Major development proposals should meet the minimum standards outlined in the Mayor's supplementary planning guidance and this should be clearly demonstrated within a design and access statement. The standards include measures to achieve other policies in this Plan and the following sustainable design principles: • a– h as mentioned above, and i. promoting and protecting biodiversity and green infrastructure.	The surface areas of the BSCU Work Sites are almost entirely covered by buildings or hard surfacing. There is currently only a single tree and a small amount of vegetation adjacent to the Arthur Street Work Site, which is of low ecological value. Investigations undertaken by a suitably qualified ecologist indicated that nothing of ecological or nature conservation interest will be affected by the BSCU. There are no sites of nature conservation, or protected species in close proximity to the site considered as sensitive receptors. Therefore, the BSCU will have negligible impact to the natural environment and biodiversity during construction or operational phases. As the majority of the BSCU will be located below ground, the opportunities to contribute to biodiversity on the site are minimal.

SPG Guidance & Section	Mayor's Priority (P) and Best Practice (BP) Standards as per SPG 2014	Relevant London Plan 2011 Standards	Performance of the BSCU Project
Climate Change Adaptation			
Tackling Increased Temperature And Drought			
Overheating	**(P)** Developers should include measures, in the design of their schemes, in line with the cooling hierarchy set out in London Plan policy 5.9 to prevent overheating over the scheme's lifetime	Policy 5.3 Sustainable Design and Construction: Major development proposals should meet the minimum standards outlined in the Mayor's supplementary planning guidance and this should be clearly demonstrated within a design and access statement. The standards include measures to achieve other policies in this Plan and the following sustainable design principles: • avoiding internal overheating and contributing to the urban heat island effect	As demonstrated in the Energy Statement, heat gains will be mitigated by passive measures to prevent overheating, such as the efficient use of thermal mass and improved natural ventilation strategy.
Heat and drought	**(BP)** The design of developments should prioritise landscape planting that is drought resistant and	Policy 5.15: Water Use Supplies: The Mayor will work in partnership with appropriate agencies within London and	The surface areas of the BSCU Work Sites are almost entirely covered by buildings or hard standing with limited potential for planting at ground level. No planting requiring

SPG Guidance & Section	Mayor's Priority (P) and Best Practice (BP) Standards as per SPG 2014	Relevant London Plan 2011 Standards	Performance of the BSCU Project
resistant planting	has a low water demand for supplementary watering.	adjoining regional and local planning authorities to protect and conserve water supplies and resources in order to secure London's needs in a sustainable manner by: • minimising use of mains water	supplementary watering is provided as part of the BSCU.
Resilient foundations	**(BP)** Developers should consider any long term potential for extreme weather events to affect a building's foundations and to ensure they are robust	Policy 7.6 Achitecture: Buildings and structures should: a. be of the highest architectural quality b. be of a proportion, composition, scale and orientation that enhances, activates and appropriately defines the public realm c. comprise details and materials that complement, not necessarily replicate, the local architectural character d. not cause unacceptable harm to the amenity of surrounding land and buildings, particularly residential buildings, in relation to privacy, overshadowing, wind and microclimate. This is particularly important for tall buildings e. incorporate best practice in resource management and climate change mitigation and adaptation f. provide high quality indoor and outdoor spaces and integrate well with the surrounding streets and open spaces g. be adaptable to different activities and land uses, particularly at ground level.	The existing risk of flood from fluvial, tidal, surface water, overland flow, groundwater and artificial sources has been assessed. The Flood Risk Assessment (FRA) has concluded that the Whole Block Site and Arthur Street Work Site are located within Flood Zone 1 and are therefore considered to be at low risk of fluvial and tidal flooding. Additionally, the tunnels are not considered to be at risk from floodwater associated with fluvial and tidal sources. A waterproofing strategy has been developed for the new escalator box and lift shaft, mitigating the risk of groundwater flooding and impacts to groundwater resources.
Increasing Green Cover			
Urban Greening	**(P)** Developers should integrate green infrastructure into development schemes, including by creating links with wider green infrastructure network.	Policy 2.18 Green Infrastructure - The network of Open and Green Spaces: Enhancements to London's green infrastructure should be sought from development and where a proposal falls within a regional or metropolitan park deficiency area (broadly corresponding to the areas identified as "regional park opportunities" on Map 2.8), it should contribute to addressing this need. Development proposals should:	As the majority of the BSCU will be located below ground, the opportunities to integrate green infrastructure into the BSCU or to contribute to the Mayor's target on increasing green cover are minimal.

SPG Guidance & Section	Mayor's Priority (P) and Best Practice (BP) Standards as per SPG 2014	Relevant London Plan 2011 Standards	Performance of the BSCU Project
	(**P**) Major developments in the Central London Activity Area (CAZ) should be designed to contribute to the Mayor's target to increase green cover by 5 per cent in this zone by 2030.	a. incorporate appropriate elements of green infrastructure that are integrated into the wider network b. encourage the linkage of green infrastructure including the Blue Ribbon Network, to the wider public realm to improve accessibility for all and develop new links, utilising green chains, street trees, and other components of urban greening (Policy 5.10). Policy 5.3 as above. Policy 5.10 Urban Greening: Development proposals should integrate green infrastructure from the beginning of the design process to contribute to urban greening, including the public realm. Elements that can contribute to this include tree planting, green roofs and walls, and soft landscaping. Major development proposals within the Central Activities Zone should demonstrate how green infrastructure has been incorporated.	
Trees	**(P)** Developments should contribute to the Mayor's target to increase tree cover across London by 5% by 2025. (**P**) Any loss of a tree/s resulting from development should be replaced with an appropriate tree or group of trees for the location, with the aim of providing the same canopy cover as that provided by the original tree/s.	Policy 7.21 Trees and Woodlands: Existing trees of value should be retained and any loss as the result of development should be replaced following the principle of 'right place, right tree'. Wherever appropriate, the planting of additional trees should be included in new developments, particularly large-canopied species.	As above.
Flooding			
Surface water flooding and Sustainable drainage	**(P)** Developers should maximise all opportunities to achieve greenfield runoff rates in their developments	Policy 5.13 Sustainable Drainage: Development should utilise SUDS unless there are practical reasons for not doing so, and should aim to achieve Greenfield run-off rates The developments should ensure that surface water run-off is managed as close to its source as possible in line with	The BSCU will not lead to an increase to rainwater run-off. The attenuation will be provided as part of the Over Site Development.

SPG Guidance & Section	Mayor's Priority (P) and Best Practice (BP) Standards as per SPG 2014	Relevant London Plan 2011 Standards	Performance of the BSCU Project
	(P) When designing their schemes developers should follow the drainage hierarchy set out in London Plan policy 5.13	the Mayors drainage hierarchy. 1. store rainwater for later use 2. use infiltration techniques, such as porous surfaces in non-clay areas 3. attenuate rainwater in ponds or open water features for gradual release 4. attenuate rainwater by storing in tanks or sealed water features for gradual release 5. discharge rainwater direct to a watercourse 6. discharge rainwater to a surface water sewer/drain 7. discharge rainwater to the combined sewer	
	(**P**) Developers should design Sustainable Drainage Systems (SuDS) into their schemes that incorporate attenuation for surface water runoff as well as habitat, water quality and amenity benefits.	Drainage should be designed and implemented in ways that deliver other policy objectives of the London Plan 2011, including water use efficiency and quality, biodiversity, amenity and recreation.	
Flood resilience and resistance of buildings in flood risk areas	(**P**) Development in areas at risk from any form of flooding should include flood resistance and resilience measures in line with industry best practice.	As above Policy 5.13. Policy 7.13 Safety, Security and Resilience to Emergency: Development proposals should contribute to the minimisation of potential physical risks, including those arising as a result of fire, flood and related hazards. Development should include measures to design out crime that, in proportion to the risk, deter terrorism, assist in the detection of terrorist activity and help defer its effects.	In terms of flood risk, the site is located within Flood Zone 1 and is therefore considered to be at low risk of fluvial and tidal flooding. Additionally, the tunnels are not considered to be at risk from floodwater associated with fluvial and tidal sources. In regards to Policy 7.13, the BSCU design is governed by the LUL Category 1 Standards, which are mandatory standards. Therefore, in terms of functional requirements, the station will be capable of: • being structurally sound with a life span of up to 125 years; • providing a Station Entrance Hall, platforms and vertical circulation elements which are designed to accommodate projected passenger demand; • enabling passengers to evacuate the station safely under emergency conditions; and • providing systems for ventilation, draught relief and emergency intervention.
Flood Risk Management	(**P**) Developments are designed to be flexible and capable of being adapted to and mitigating the potential increase in flood risk as a result of climate change	Policy 5.12 Flood Risk Management: Development proposals must comply with the flood risk assessment and management requirements set out in PPS25 over the lifetime of the development and have regard to measures proposed in Thames Estuary 2100 (TE2100 – see paragraph 5.55) and Catchment Flood Management Plans. Developments which are required to pass the PPS25 Exceptions Test will need to address flood resilient design and emergency planning by demonstrating that: a. the development will remain safe and operational under flood conditions b. a strategy of either safe evacuation and/or safely	The BSCU is not located in a local action zone under the current baseline and under the effects of climate change as identified by TE2100 Plan, Though the risk of flooding is considered low following the implementation of design mitigation measures, LUL will adopt a Flood Warning and Evacuation Plan (FWEP) that covers the construction and operational phases. This will enable the staff and users to be aware of the residual risks, how to prepare for them and the protocols and procedures required to overcome the risk in the event of a flood. It is assessed that the BSCU will not have an impact on the risk of flooding at nearby developments or increase groundwater flood risk. A waterproofing strategy has been developed for the new escalator box and lift shaft, mitigating the risk of groundwater flooding and impacts to groundwater resources. Further details on mitigation and prevention through design are shown in Chapter 13:
	(**P**) Developments incorporate the recommendation of the TE2100 plan for the future tidal flood risk management in the Thames estuary.		
	(**P**) All sources of flooding need to be considered when designing and constructing developments.		

SPG Guidance & Section	Mayor's Priority (P) and Best Practice (BP) Standards as per SPG 2014	Relevant London Plan 2011 Standards	Performance of the BSCU Project
		remaining in the building is followed under flood conditions c. key services including electricity, water etc will continue to be provided under flood conditions d. buildings are designed for quick recovery following a flood. e. Development adjacent to flood defences will be required to protect the integrity of existing flood defences and wherever possible should aim to be set back from the banks of watercourses and those defences to allow their management, maintenance and upgrading to be undertaken in a sustainable and cost effective way.	Water Resources and Flood Risk of the ES.

SPG Guidance and Section	Mayor's Priority (P) and Best Practice (BP) Standards as per SPG 2014	Relevant London Plan 2011 Standards	Performance of the BSCU Project
Pollution Management			
Land Contamination			
Land Contamination	(**P**) Developers should set out how existing land contamination will be addressed prior to the commencement of their development.	Policy 3.2 Improving Health and Addressing Health Inequalities: New developments should be designed, constructed and managed in ways that improve health and promote healthy lifestyles to help to reduce health inequalities. Policy 5.21 Contaminated Land: Appropriate measures should be taken to ensure that development on previously contaminated land does not activate or spread contamination.	The potential for existing land contamination and the impacts during construction have been examined in Chapter 14 of the ES: Land Contamination. It has been estimated that the likelihood for soil, groundwater and ground-gas contamination to be present at the BSCU Work Sites is low.
Air Quality			
Air Quality	**(P)** Developers are to design their schemes so that they are at least 'air quality neutral'.	Policy 7.14 Improving air quality: Development proposals should: a. Minimise increased exposure to existing poor air quality and make provision to address local problems of air quality such as by design solutions, buffer zones or steps to promote greater use of sustainable transport modes through travel plans b. Promote sustainable design and construction to reduce emissions from the demolition and construction of buildings following the best practice guidance c. Be at least 'air quality neutral' and not lead to further	The emissions associated with the demolition and construction will be minimised through the implementation of an Air Quality and Dust Management Plan and a series of measures outlined within the CoCP and CLP. These measures will be implemented on-site. The operation of Bank Station, is not anticipated to lead to an increase in vehicle movements on the local road network, and hence will not affect local air quality.

SPG Guidance and Section	Mayor's Priority (P) and Best Practice (BP) Standards as per SPG 2014	Relevant London Plan 2011 Standards	Performance of the BSCU Project
		deterioration of existing poor air quality d. Ensure that where provision needs to be made to reduce emissions from a development, this is usually made on-site. Where the development requires a detailed air quality assessment and biomass boilers are included, the assessment should forecast pollutant concentrations. Permission should only be granted if no adverse air quality impacts from the biomass boiler are identified	
	(P) Developments should be designed to minimise and mitigate against increased exposure to poor air quality.	Policy 5.3 Sustainable design and construction	As above.
	(P) Developers should select plant that meets the standards for emissions from combined heat and power and biomass plants set out in Appendix 7.	Policy 7.14 Improving air quality:	No combined heat and power or biomass plants are proposed for the BSCU.
	(P) Developers and contractors should follow the guidance set out in the emerging *The Control of Dust and Emissions during Construction and Demolition SPG* when constructing their development.	Policy 7.14 Improving air quality: Policy 5.3 Sustainable design and construction	Best Practice Guidance in terms of air quality and dust control during demolition and construction in line with the Mayor's Air Quality Strategy will be adopted throughout the demolition and construction phases. An extensive list of dust controls and mitigation measures, described within the CoCP will be implemented throughout the BSCU.
Noise			
Noise	**(P)** Areas identified as having positive sound features or as being tranquil should be protected from noise. (**P**) Noise should be reduced at source, and then designed out of a scheme to reduce the need for mitigation measures.	Policy 7.15 Reducing noise and enhancing soundscapes: Development proposals should seek to reduce noise by: a. Minimising the existing and potential adverse impacts of noise on, from, within, or in the vicinity of, development proposals b. Separating new noise sensitive development from major noise sources wherever practicable through the use of distance, screening, or internal layout in preference to sole reliance on sound insulation Promoting new technologies and improved practices to reduce noise at source.	LUL will, as far as reasonably practicable, seek to control and limit noise and vibration levels so that affected properties and other sensitive receptors are protected from excessive or prolonged noise and vibration associated with construction and operational activities The design incorporates acoustic criteria at platform level, public areas and plant rooms. Acoustic measurements will be incorporated to ensure that acoustic levels are comfortable for passengers and users. The design of the new southbound running tunnel will ensure that there are no significant impacts arising from groundborne noise or vibration through installing a high performance track system in locations where there are pile interceptions.
Light Pollution			
Light pollution	**(P)** Developments and lighting schemes should be designed to minimise light pollution	Policy 7.5: Public Ream Note 7.19: The lighting of the public realm also needs careful consideration to ensure places and spaces are appropriately lit, and there is an appropriate balance between issues of safety and security, and reducing light pollution.	External areas design will incorporate lighting specifications that address reduction of light pollution balanced with requirements for safety and local character.

SPG Guidance and Section	Mayor's Priority (P) and Best Practice (BP) Standards as per SPG 2014	Relevant London Plan 2011 Standards	Performance of the BSCU Project
Water Pollution			
Surface Water Run Off	(**P**) In their aim to achieve a greenfield runoff rate developers should incorporate sustainable urban drainage systems (SuDS) into their schemes which also provide benefits for water quality	Policy 5.14 Water Quality and Wastewater Infrastructure: Development proposals must ensure that adequate wastewater infrastructure capacity is available in tandem with development. Proposals that would benefit water quality, the delivery of the policies in this Plan and of the Thames River Basin Management Plan should be supported while those with adverse impacts should be refused. Development proposals to upgrade London's sewage (including sludge) treatment capacity should be supported provided they utilise best available techniques and energy capture. The development of the Thames Tideway Sewer Tunnels to address London's combined sewer overflows should be supported in principle.	The BSCU will not lead to an increase to rainwater run-off. The attenuation will be provided as part of the Over Site Development.
	(**BP**) Encourage those working on demolition and construction sites to prevent pollution by incorporating prevention measures and following best practice.		
	(P) Commercial developments discharging trade effluent should connect to the public foul sewer or combined sewer network where it is reasonable to do so subject to a trade effluent consent from the relevant sewerage undertaker.		
Wastewater Treatment	**(P)** Developments should be properly connected and post-construction checks should be made by developers to ensure that misconnections do not occur.		

Appendix C - Sustainability Workshops

Introduction

C.1.1 An iterative process of design development was undertaken through the use of workshops to inform the sustainability aims and objectives and ensure sustainability initiatives would be incorporated into the design, construction and operation of the BSCU.

Overview of Workshop Process

C.1.2 Workshops involved key stakeholders including, Transport for London, London Underground Limited and key representatives of the design team, including civil and structural engineers, mechanical and electrical engineers, the architects, and environmental specialists.

C.1.3 The following key sustainability workshops included:

- meetings/workshops – 13th August 2013, 19th September, 2013 and 14th March 2014; and
- sustainable design workshop with TfL, LUL and project environmental specialists - 10th October 2013.

Objectives:

C.1.4 The following specific objectives were identified for the Sustainability Workshops:

- increase awareness of the concept of sustainability and its relevance to TfL, LUL and the project team;
- review the sustainability aims and objectives and outcomes anticipated to be either delivered or confirmed as commitments;
- identify where opportunities to sustainability initiatives can be identified or adopted for BSCU;
- provide early input on the design objectives and measures to be taken;
- identify documentary evidence to support the Sustainability Statement.

Sustainable Design Workshop – Approach to Sustainability for TWAO

C.1.5 At the workshop the team reviewed the project's vision, key sustainability drivers for the project and aims and objectives so that the strategy could be mapped out and project specific targets and Key Performance Indicators (KPIs) developed, through which the project could be monitored and measured.

CEEQUAL Workshop and Scoping

C.1.6 Outputs of the CEEQUAL workshops also held on the 10th October and 18th December 2013 have informed the preliminary assessment and the on-going Client and Design Interim Award and the strategy for achieving an 'Excellent' rating.

C.1.7 The initial CEEQUAL workshop aimed to introduce the project to the CEEQUAL methodology, agree the general approach to the assessment, consider which part of the methodology might be scoped out on the grounds of relevance and identify strategic issues that present either significant risks to the eventual CEEQUAL score or opportunities to increase the score.

C.1.8 The second workshop aimed to identify the key areas of concept design and their interface with CEEQUAL criteria. The workshop covered selected technical issues and identified which points were at greater risk of non-achievement or likely to increase the predicted score. In each case, the nature and source of the evidence required to secure the CEEQUAL points were identified along with critical path of their incorporation.

Appendix D – TfL Sustainability Assessment Toolkit

Appendix D - Sustainability Toolkit: Climate Change

Indicator	Guiding Question	BSCU Response
Tackling CO_2 emissions	Will the scheme impact CO_2 emission levels from private transport (i.e. cars)?	The BSCU will improve the passenger experience at Bank Station which could encourage passengers to use the underground in oppose to private transport. However overall CO_2 levels arising from transport and car use are not expected to be affected.
	Will the scheme use or change the level of use of cleaner technologies, renewable energy, regenerative energy or energy conservation techniques?	The scheme will use passive design and energy efficiency technologies wherever feasible. Design has been developed for the BSCU to maximise the opportunities for utilising energy conservation techniques.
	Will the scheme use or change the level of use of low carbon materials and resources?	As for a similar scale infrastructure projects, a large amount of concrete with high embodied carbon will be used due to the requirements on its resilience. Where practicable materials with high embodied energy such as concrete have been considered in terms of reducing their embodied carbon footprint through specifying concrete replacements such as GGBS and PFA.
	Will it impact public transport emissions?	It is not expected that there would be a change in public transport emissions as a result of the BSCU.
Adapting to a climate change	Does the scheme consider retrofitting to climate change? For example alter insulation, building fabric to increase energy efficiency.	The scheme is an upgrade and regeneration of the station and energy efficiency will be optimised through best practice including the incorporation of energy efficiency measures.
	Is this project at a risk of flooding?	The work sites and new station entrance all allocated within Flood Zone 1 and are therefore considered to be at low risk of fluvial and tidal flooding. Nevertheless, a FRA has been undertaken to identify appropriate measures to abate the risk. The BSCU will benefit from existing flood defences.
	Will this project be able to adapt to a changing climate?	Climate change adaptation measures have been incorporated in the design of the BSCU. These will include measures such as an automatic flip-up

Indicator	Guiding Question	BSCU Response
		flood barrier at the new Station Entrance Hall. In addition, LUL will adopt a Flood Warning and Evacuation Plan (FWEP) for the staff and users to be aware of the risks, how to prepare for them and the protocols and procedures required to overcome the risk in the event of a flood
Improving resource efficiency	Will the project impact material efficiency in all aspects of the design (i.e., not overdesign)?	Locally sourced materials will be promoted in accordance with TfL requirements.
	Will it promote efficient water use?	Efficient water fittings will be incorporated alongside appropriate water metering equipment
	Will it impact the proportion of waste that is reused, recycled or converted to energy?	A Site Waste Management Plan (SWMP) has been developed, and includes procedures and commitments to minimise non-hazardous construction waste with a 95 per cent target for recycling and reuse for spoil and building materials. In line with *The London Plan 2011* targets, the development will aim to minimise operational waste through considering recycling facilities on-site.
	Will the scheme use ethically sourced materials?	TfL's policy supports ethical sourcing and sustainable and ethical procurement strategies will be applied to the BSCU.
	Will the project influence the construction supply chain with regard to resource efficiency and quantity of all forms of waste?	TfL will prioritise suppliers and products with certification on responsible sourcing of materials. The BSCU aspiration is to divert 95 per cent of waste from landfill. This will require the construction supply chain to improve resource efficiency and quantity of all forms of waste.
	Will it impact the levels of energy efficiency?	The project will incorporate a number of measures to improve significantly the levels of energy efficiency as outlined in Section 5.3.

Appendix D - Sustainability Toolkit: Quality of Life

Indicator	Guiding Question	BSCU Response
Improving Built Structures And Streetscapes	Will it promote high quality design and sustainable construction methods?	High quality design and sustainable construction methods will be employed as outlined in Section 5.4
	Will it affect noise levels?	No significant change in noise levels are anticipated during the operational phase. A number of mitigation measures have been specified to mitigate noise impact of the BSCU construction as outlined in Section 5.4
	Will it affect the condition of the built environment (including litter and graffiti)?	The appearance of the built environment would be enhanced. Operational waste strategy is expected to provide sufficient amount of bins to avoid littering and surfaces where practicable will be designed to be graffiti resistant.
	Will it affect the physical quality of the built environment?	The BSCU will enhance and provide high quality environment via: • enhancement of passenger experience by creating a sense of space and light. The design will seamlessly integrate the above and below ground passenger spaces with the external public realm; • improvements to the public realm streetscape, in particular quality of surfacing, street furniture and legibility, resulting in better pedestrian movement, including after dark when the Station Entrance Hall is lit; and • improved views and visual amenity following the design of the Station Entrance Hall.
Improving Greenscapes	Will it affect the number and/or quality of open/public spaces?	The BSCU will not result in any loss to, or provision of, open or public space.
	Will it enhance the quality of the public realm?	The local public realm will be enhanced as a result of the BSCU Project.
	Will it conserve or enhance natural or semi-natural habitats?	No natural or semi-natural habitats are identified to be within the site, and there are little or no opportunities to enhance such habitats.
Enhancing Physical Wellbeing	Will this project affect road or public transport customer satisfaction?	The design of the BSCU will be of high quality to improve customer satisfaction. The track is designed so that the horizontal curvature is minimised to allow for smooth journeys. The reduction in journey time will increase capacity and contribute to alleviate traffic congestion.
	Will the project affect healthy lifestyle choices (including promoting walking and cycling)?	It is not anticipated that the BSCU will affect healthy lifestyle choices during operation.

Indicator	Guiding Question	BSCU Response
	Will this project impact London's air quality including levels of air pollutants such as nitrogen oxides and particulates?	An air quality assessment was prepared for the site to identify potential impacts on local air quality and specify appropriate mitigation measures. As a result the air quality in the area is not expected to be adversely affected by the BSCU.
	Will the project impact stress levels of users?	It is anticipated that reduced journey time and ease of congestion will lower stress levels.
	Will it impact the health of the local residence?	It is anticipated that the BSCU will have marginal indirect positive effects resulting from regeneration and employment opportunities.

Appendix D - Sustainability Toolkit: Transport for All

Indicator	Guiding Question	BSCU Response
Improving Access to the Transport System	Does it impact physical or attitudinal barriers to using the transport network?	Yes, through the improved design with the aim of being accessible to all members of the community, the BSCU reduces barriers to using the transport network. The BSCU offers a more accessible and efficient transport interchange.
	Will it affect access to high quality public services?	Yes, the design aim is to improve access and also quality of Bank Station in regards to travel times and capacity.
	Will it cause modal shift to or from more sustainable forms of travel?	The BSCU is not expected to cause significant modal shift. BSCU will enhance the existing public/sustainable transport mode.
	Will it impact public transport connectivity?	The connectivity between employment areas and access to labour market will be marginally improved through quicker and easier interchange at Bank Station.
	Will the affordability of travel be affected?	It is not anticipated that the BSCU would have an impact on the affordability of travel.
Supporting regeneration and spatial development	Will it impact the provision of appropriate services and facilities for new residents?	The BSCU will improve the current provision of services in the area.
	Will the eligibility of new office, retail or commercial developments be affected?	The area is expected to attract new businesses development opportunities including the regeneration of the OSD for commercial use.
	Will it affect the attraction of the area to new people and businesses?	The area is expected to attract new businesses and provide new jobs in terms of the overall economic agglomeration and the BSCU is needed to support this growth.
Enhancing diversity	Does this project meet the diverse needs of all users now and in the future?	Yes, the BSCU is designed to meet the needs of all users providing improvement to the existing situation at Bank Station.
	Does this project meet the diverse needs of all people involved in the project?	An Equality Impact Assessment is being carried out for the BSCU to ensure that the diverse needs of all people involved are met.
	Does this project promote personal well-being, social cohesion and inclusion?	Measures to promote personal well-being of staff and passengers where practicable. The design will deliver step-free access and an accepted means of escape for Persons with Reduced Mobility. In addition it will allow for free flowing passenger movement with no blocking or conflict of other flows.
	Does this project create equal	An Equality Impact Assessment is being carried out

Indicator	Guiding Question	BSCU Response
	opportunity for all people involved in the project	for the BSCU to ensure that equal opportunities are created for all people involved.
	Does this project create equal opportunity for all users / passengers?	Yes, the BSCU is designed to meet the diverse needs of all users and passengers, including those with reduced mobility for example via the provision of step-free access.
Equality and participation	Will the project promote stakeholder relationships at all stages?	Stakeholder engagement through public consultations and key stakeholder involvement in a steering group will be undertaken throughout the project and will guide the design. The results of the consultation process are available to the public on the TfL website.

Appendix D - Sustainability Toolkit: Safety and Security

Indicator	Guiding Question	BSCU Response
Improving security and resilience	Will it impact the security of the transport network?	The design of BSCU will incorporate a range of security measures through the layout, lighting, alarm, CCTV coverage and signage to reduce the potential for and perception of crime at the station. The station layout will ensure good visibility to minimise the threat to personal security. The provision of clearly defined routes and access points will result in an environment that feels well connected and secure.
	Will the scheme reduce the perception of crime on the public transport network?	The security measures of the station are described above. It is anticipated that these will help to reduce the perception of crime.
	Will the resilience and reliability of the transport network be affected?	The resilience of the station would be enhanced through the BSCU. In terms of functional requirements, the station will be capable of: • being structurally sound with a life span of up to 125 years; • providing a Station Entrance Hall, platforms and vertical circulation elements which are designed to accommodate projected passenger demand; • enabling passengers to evacuate the station safely under emergency conditions; and • providing systems for ventilation, draught relief and emergency intervention.
Improving transport safety	Will it affect the number of people killed or seriously injured on London's roads?	High safety standards will be embedded within the design of the station and platforms to prevent serious injuries, although the impact to London's roads is considered to be negligible.
	Will it impact the safety of users and all people involved in the project?	The station and platforms will be designed to high safety standards, which will have positive impact on the safety of users and all people involved in the project.
Tackling crime and disorder	Will it affect the level of crime on the public transport system?	It is anticipated that security measures specified for the station will positively affect the level of crime on the public transport system.
	Will it affect the perception of crime?	It is anticipated the security measures will help to reduce the perception of crime.

Appendix D - Sustainability Toolkit: Economic Progress

Indicator	Guiding Question	BSCU Response
Tackling congestion and smoothing traffic flow	Will freight be transferred through rail or other sustainable mode?	Both rail and other sustainable modes of transport (e.g. river) have been considered for the transportation of soil and materials to alleviate road congestion. However, none of these alternative means have proven to be suitably viable. The operational scheme is for passenger movements only, and no freight will be transferred via the new alignment.
	Will reliability be affected for all users (station and approach users)?	Yes, the upgrade of the underground station will achieve high levels of reliability through reduced journey times and passenger congestion relief, step-free access and avoidance of station closures during peak times.
	Will public transport capacity be improved?	Yes, capacity will be improved and existing issues associated with congestion will also be reduced.
	Will the scheme affect journey times?	Improvements in journey time and reliability will be provided by the scheme.
	Will it encourage people to travel less using private transport?	It is estimated that the scheme will result in reduced congestion and reduction in journey times. It will also improve accessibility to Bank Station. These factors may potentially encourage to travel less using private transport.
Improving productivity and competitive-ness	Will the scheme positively affect the Mayor's aims for more jobs and growth in London's economy?	Net jobs created in the demolition and construction phase are anticipated to be 200.
	Will the project impact local/ regional businesses?	It is expected that there will be a positive local / regional economic agglomeration effect from the BSCU.
	Will the scheme affect operating costs?	Operating cost savings for LUL are expected per annum compared with Base Case.
	Will the project deliver value for money through responsible procurement practices?	Responsible procurement practices will be promoted thorough the procurement stages of the project. TfL has a strong Green Procurement Policy framework, which will be implemented for the BSCU and this expects to deliver value for money as overall effect in the economy.
	Will the scheme have long term effect on costs through knowledge sharing and bringing firms closer together?	It is anticipated the scheme will improve knowledge sharing and bringing firms closer. Businesses are more likely to choose to re-locate within the City of London than they would if the scheme was not to go ahead.

Indicator	Guiding Question	BSCU Response
	Will it alleviate poverty in the area?	Deprivation and unemployment are not considered to be significant issues in the City of London area.
	Will employers' access to labour markets be affected?	The connectivity between employment areas and access to labour market will be marginally improved through quicker and easier interchange at Bank Station.
	Will it affect employment levels in the local area?	The BSCU will be the catalyst for delivering a number of additional jobs in the area, particularly during construction with 200 net jobs created.
	Will the scheme affect the eligibility of new businesses?	The scheme opens up eligibility for new businesses through redevelopment of nearby properties such as the OSD which will provide opportunities through new office and commercial space.
	Will it impact the essential skills levels in the workforce?	Essential skill levels in the workforce are expected to be enhanced, particularly through construction under the Strategic Labour Needs and Training plan. Consideration has been given to the contractor linking up with existing tunnelling academies via other major infrastructure projects. An apprenticeship programme for MEP engineers has also been considered.
	Will the London Living Wage be paid to all employees in the supply chain?	It is currently assumed that the London Living Wage will be paid to employees in the supply chain, in London. Dragados is an accredited Living Wage Employer, and applies a consistent approach to effective management of labour and industrial relations.
	Will it impact the accessibility to employment and training opportunities, particularly for disadvantaged sections of the community?	Accessibility to employment and training opportunities, particularly for disadvantaged sections of the community will be improved as a result of the BSCU under the Strategic Labour Needs and Training plan.

Appendix E – CEEQUAL Preliminary Assessment

Bank Station Capacity Upgrade Project

CEEQUAL Preliminary Assessment

May 2014

MAYOR OF LONDON

Transport for London

Safely Together

Bank Station Capacity Upgrade Project

CEEQUAL Preliminary Assessment

May 2014

Bank Station Capacity Upgrade
Project Office
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London EC4N 7TW

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Table of Contents

1 Introduction

1.1.1 The Civil Engineering Environmental Quality Assessment and Award Scheme (CEEQUAL) is an established methodology for objectively measuring the sustainability performance of civil engineering-led infrastructure and public realm developments. This document comprises a CEEQUAL Version 5 Pre-Assessment report, and is included with the Transport and Works Act Order (TWAO) application as an Environmental Technical Report.

1.1.2 This report includes the following sections:

- overview of CEEQUAL;
- application of CEEQUAL to the Bank Station Capacity Upgrade (BSCU) Project;
- the outcomes of the Pre-Assessment; and
- the conclusions drawn from the exercise.

1.1.3 This report includes references to a previous CEEQUAL Pre-Assessment exercise carried out by Mott MacDonald [N133-BCR-MMD-00-Z-DC-N-0015-S0-1.0] on behalf of Transport for London (TfL) in 2012 and comments on its relevance to the present exercise.

2 Overview of CEEQUAL

2.1.1 CEEQUAL is an established methodology for objectively measuring the sustainability performance of civil engineering-led infrastructure and public realm developments. The Scheme has run since 2003. Some 200 Assessments have been completed and 538 more, with a total civil engineering value of £23 billion, are in progress.

2.1.2 The CEEQUAL Award is based on a formal process carried out by a trained CEEQUAL Assessor who works with an independent CEEQUAL-appointed Verifier. CEEQUAL Version 5 is the current methodology. It offers users the opportunity to choose between a Sustainability Performance Assessment and a Sustainability Strategy and Performance Assessment.

2.1.3 Under both forms of Assessment five types of Award are available. The first type is the Whole Team Award – the full CEEQUAL Award applied for jointly by the client, designer and principal contractor(s). As an option, an Interim Design Award is available. This integrates a Client and Design Award as an intermediate step in the process that leads to the Whole Team Award.

2.1.4 The other four award types comprise part-team awards. These are available for projects where not all project partners can take part or where individual

members of the team would like to have their own role assessed and recognised separately: the range comprises the Client and Design Award – for a joint application by the client and designer, the Design Award – for principal designer(s) only, the Design and Construction Award – for a joint application by the contractor and their designer and finally the Construction Award – for principal contractor(s) only.

2.1.5 There are four award grades under CEEQUAL, based on the score achieved, and these reflect the level of attainment in respect of sustainability performance of the assessed project:

- Pass – over 25 per cent;
- Good – over 40 per cent;
- Very Good – over 60 per cent; and
- Excellent – over 75 per cent.

2.1.6 The CEEQUAL Scheme celebrates the commitment of the civil engineering industry in achieving and demonstrating high environmental quality, economic and social performance.

2.1.7 While all four CEEQUAL grades reflect attainment beyond the legal minimum of environmental and social performance in the industry, the BSCU Project aims to achieve a project rating of Excellent, the highest of the categories.

2.1.8 In essence, CEEQUAL is a tool for project teams to assess how well they have dealt with the environmental and any social issues on their projects. It provides a mechanism for having those judgements externally and independently verified and recognition gained. It is an evidence-based assessment, using a question set that can be used by project teams as a checklist to influence the development of design and/or construction management as a project progresses from concept to completion.

2.1.9 Eight separate sustainability issues are addressed within the CEEQUAL 'Sustainability Performance Assessment'. They are:

- Project Management;
- People and Communities;
- Land Use and Landscape;
- The Historic Environment;
- Ecology and Biodiversity;
- The Water Environment;
- Physical Resources – Use and Management; and

- Transport.

2.1.10 The optional CEEQUAL Sustainability Strategy and Performance Assessment includes the above eight issues and in addition a ninth topic that examines the Project Strategy. This extra topic assesses how the project team has related its project to the wider sustainability and sustainable development agendas. In particular, the issues covered in the optional Project Strategy section are intended to assess:

- the contribution of the project to the interests and concerns of the communities in which it is situated;
- the social, economic and environmental impacts at a scale beyond that local to the project, and the interests of the promoter; and
- longer-term sustainable living.

3 Application of CEEQUAL to the Bank Station Capacity Upgrade Project

3.1.1 The BSCU Project is being assessed under CEEQUAL. The applicable scheme is Version 5 Project (UK and Ireland) and the Assessment is to cover Sustainability Strategy and Performance (i.e. with CEEQUAL Section 1 included). A Whole Team Award has been targeted, with an Interim Award included. The Project aims that the final CEEQUAL Whole Team Award should achieve an 'Excellent' rating.

3.1.2 CEEQUAL is one of a suite of tools to be employed to drive sustainability throughout the BSCU Project, and in particular to assist with obtaining the necessary planning and legal consents to allow the project to proceed. To predict the eventual outcome of the CEEQUAL Assessment and to help the project team to understand the risks and opportunities created by the application of the CEEQUAL methodology, a preliminary CEEQUAL Pre-Assessment was undertaken in November 2013.

3.1.3 A central part of the Pre-Assessment process was a workshop meeting led by the Assessor team and attended by representatives of the client, design team, principal contractor and the tunnelling sub-contractor. The purpose of the workshop meeting was to introduce the project team to the CEEQUAL methodology, agree on the general approach to the Assessment, consider which parts of the methodology might be scoped out on the grounds of relevance and identify strategic issues that presented either significant risks to the eventual CEEQUAL score or opportunities to increase the score.

3.1.4 This document is the report of the CEEQUAL Pre-Assessment.

4 Pre-Assessment Outcomes

4.1.1 An earlier Pre-Assessment exercise was carried out for TfL by Mott MacDonald in 2012 on the client's design as it stood then. This Pre-Assessment was not wholly comparable with the latest one that is the subject of this report. This is because it was done under a previous version (v4.1) of the CEEQUAL methodology. Nevertheless, the Mott MacDonald report gave a useful indication of the project's sustainability credentials. This exercise predicted a final score of 87.5 per cent under a Whole Project Award (the previous version's equivalent of the present Whole Team Award), comfortably over the 75 per cent threshold required for an 'Excellent' rating.

4.1.2 The current Pre-Assessment considers only the predicted final CEEQUAL Assessment result when the whole project is complete. Commitments have been made in relation to scored opportunities. The score will be influenced by the allocation of available CEEQUAL points between the Interim and Final stages of the Assessment for certain questions where a split of the 'Design' points is permitted.

4.1.3 The Pre-Assessment indicates that the predicted final score will be 83.35 per cent. This score is comfortably sufficient for the achievement of an 'Excellent' rating. Table 5.1 below is the Scoring Summary taken from the Pre-Assessment tool.

4.1.4 Appendix A to this report contains the predicted scores by section in greater detail. It also indicates where questions have been provisionally 'scoped out'. Appendix A also reflects the assumptions made by the Assessor team about whether or not the CEEQUAL criteria for individual questions will be met.

Table 5.1: Scoring Summary

Section Number	Section Title	Max Score	Max Score after scoping	Initial Assessment Score	Section %	Potential Score Still To Come	Section %	Potential Final Score	Section %
1	Project Strategy	625	604	415	68.71%	0	0.00%	415	68.71%
2	Project Management	545	545	481	88.26%	16	2.94%	497	91.19%
3	People and Communities	530	530	296	55.85%	234	44.15%	530	100.00%
4	Land Use and Landscape	1004	561	524	93.40%	0	0.00%	524	93.40%
5	The Historic Environment	230	168	143	85.12%	12	7.14%	155	92.26%
6	Ecology and Biodiversity	299	56	49	87.50%	0	0.00%	49	87.50%
7	The Water Environment	283	203	166	81.77%	15	7.39%	181	89.16%
8	Physical Resources - Use and Management	1217	997	471	47.24%	197	19.76%	668	67.00%
9	Transport	267	234	187	79.91%	43	18.38%	230	98.29%
Total		**5000**	**3898**	**2732**	**70.09%**	**517**	**13.26%**	**3249**	**83.35%**

5 Conclusions

5.1.1 The Pre-Assessment process at the present stage of the project, approximately nine months into the contract, has confirmed the validity of the conclusion drawn from the previous Pre-Assessment exercise. A Final CEEQUAL rating of 'Excellent' is predicted to be comfortably achievable for the BSCU Project. This conclusion is subject to the successful collation of all evidence and information.

5.1.2 The Pre-Assessment indicates that the project should score exceptionally highly in the People and Communities, Land Use and Landscape, Historic Environment and Transport sections of CEEQUAL. High scores are also expected in the Project Management and Water Environment sections of CEEQUAL.

5.1.3 Proposals to increase scoring have been considered and incorporated into the Physical Resources and Project Strategy sections of CEEQUAL. A Sustainable Design Plan programme offers an opportunity to review these areas that appear to present the more significant CEEQUAL risks and to mitigate them.

Appendix A: Preliminary Assessment Score Projection

Version: WTA-v5.0c(PA)

Sustainability Strategy & Performance Assessment / Sustainability Performance Assessment

WHOLE TEAM AWARD PRE-ASSESSMENT SPREADSHEET VERSION 5.0

PROJECT NAME: Bank Station Capacity Upgrade

this should be entered on the Project Information Sheet along with all other background information

Section and Ques No.	Section Titles & Question topics	Mandatory?	Client Score	Design Score	Const. Score	Max Total Score	Initial Assess. Score as at XX/XX/20XX	Evidence for scores awarded or reason for scoping out	Potential Score Still to Come	Evidence Required to achieve Potential Score	Potential Final Score
Which 'Assessment' are you applying for? (Selecting the 'Sustainability Performance Assessment' will automatically remove the scores from Section 1)			**Sustainability Strategy & Performance Assessment**								
Section 1 - Project Strategy											
1.1.1	Is there evidence that the Client and Designer have actively adopted the principles of sustainable development in the planning and design of the project?	M	70		70	70					70
1.1.2 a)	Is there evidence that the Client and/or Designers have undertaken an economic impacts and benefits assessment of the project on a wider scope than just the project owners' interests?	M	14		14	14					14
1.1.2 b)	Is there evidence that the assessment demonstrates significant economic benefits of the project to wider society on the following or similar issues that are relevant to the project?	M	44		44	44		The project will promote other development, create new constructon employment and reduce travel times. Other relevant economic beneftis are not assumed at this stage.			44
1.1.2 c)	Is there evidence that, where appropriate, actions to support the results of these economic impacts and benefits assessments have been included within relevant contract documentation?	M	16		16	16					16
1.1.3 a)	Is there evidence that the Client and/or the Designers have undertaken a social impacts and benefits assessment of the project on a wider scope than just the project owners' interests?	M	14		14	14		The impact of traffic blockades on the surrounding community have been taken into account.			14

1.1.3 b)	Is there evidence that the assessment demonstrates significant social benefits of the project to wider society on the following or similar issues that are relevant to the project?	**M**	44		44	0	No evidence for any of the specified features, and not assumed.				0
1.1.3 c)	Is there evidence that, where appropriate, actions to support the results of these social impacts and benefits assessments have been included within relevant contract documentation?	Y	0		0	0	Consequence of 1.1.3.b				0
1.1.4 a)	Have the Client and/or the Designers undertaken an environmental impacts and benefits assessment of the project on a wider scope than just the project owners' interests and appropriate to the nature, scale, design life and location of the project, including assessments of possible enhancements to the local environment?	**M**	12		12	12					12
1.1.4 b)	Is there evidence that the promises of enhancements given in the Environmental Statement or other output from the environmental impact assessment have been delivered in the design alongside those for environmental mitigation and compensation?	N	36		36	0	TBC				0
1.1.4 c)	Is there evidence that, where appropriate, actions to support the results of these environmental impacts and benefits assessments have been included within relevant contract documentation?	N	12		12	0	TBC				0
1.1.5 a)	Did the project strategy include consideration of the potential effects of predicted climate change scenarios?	**M**	20		20	4	Scoring opportunity for considering/addressing the Flood Risk effect of climate change. Other effects will not be documented/ scored as they have not been considerations in the project strategy development.				4
1.1.5 b)	Has the consideration assessed in Question 1.1.5 a) led to the implementation of appropriate adaptation strategies?	N	40		40	8	Assumed Flood Risk Strategy implemented as a consequence of 1.1.5.a				8
1.1.6 a)	Did the project brief include instructions to consider how to balance land use efficiency with other priorities?	Y	0		0	0	Scope out on grounds that there is no land take.				0

1.1.6 b)	Have the Client and/or the Designers prepared a project resources strategy in line with the guidance below?	**M**	20		20	20	Assumed that all aspects will be included.				20
1.1.6 c)	Is there evidence that the resources strategy for the project been implemented in and significantly influenced the design?	N	25		25	25	Assumed that all aspects will be included.				25
1.1.6 d)	Is there evidence that resource efficiency objectives and (where appropriate) benchmarks and/or targets have been included within relevant contract documentation?	N	9		9	9					9
1.1.7	Has the project team brought together and analysed the results of the assessments covered in Questions 1.1.2 to 1.1.5 (economic, social, environmental impacts & benefits, and climate change) to assess whether, overall, the project outcome delivers for the community(ies) it serves the ability to achieve more-sustainable living?	**M**	75		75	75	Positive impact assumed				75
1.1.8	Is there evidence that the project team has taken active steps to ensure that the results of the strategic assessments and decisions have been delivered into the completed project?	**M**	28		28	28	Driven by Sustainable Design Plan				28
1.2.1	Is there evidence that the project team has actively adopted a sustainability-driven approach to the development of the construction management strategy and plan for the project?	**M**	7	8	15	15	Both parties have actively considered sustainability as a driver for construction management.				15
1.2.2 a)	Has the construction team developed their own resources strategy for the construction stage of the project, or reviewed and refined the strategy developed by the Client and Designers?	**M**		12	12	0	Compliance with 2 of 4 aspects assumed.				0
1.2.2 b)	To what extent have the actions (by number) identified in the construction stage resources strategy been implemented?	**M**		24	24	24	The SDP will required all the identified actions to be implemented.				24

1.2.3 a)	Has the Construction Team undertaken a social impacts and benefits assessment of the construction stage of the project and used the results in the development of the Construction Management Plan?	M			13	13	0	Not assumed at this stage.				0
1.2.3 b)	Have the social aspects of the Construction Management Plan been implemented?	M			24	24	0	Consequence of 1.2.3.a				0
1.2.4 a)	Has the Construction Team undertaken an environmental impacts assessment of the construction stage of the project and used the results to strengthen where practicable the scope and coverage of the Construction Management Plan compared to the normal Plan used before?	M			13	13	13	Strong emphasis assumed.				13
1.2.4 b)	Have the environmental aspects of the Construction Management Plan been implemented?	M			24	24	24	Strong emphasis assumed.				24
				Section Total		604	415		0			415
				Section %			68.71%		0.00%			68.71%

Section 2 - Project Management

2.1.1	Was there a documented commitment to consider and assess the environmental and social aspects of the project?	M	10	5	5	20	20	In Works Information documents				20
2.1.2	Is there clear evidence that a member of the project team was appointed as responsible for co-ordinating the management of the environmental and social aspects of the project and was aware of the duties and responsibilities involved?	M	10	10	10	30	30	Steve Pearce and Nick warans				30
2.1.3	Have the environmental risks, impacts and opportunities for environmental enhancements, and the associated social issues, been: (i) identified and clearly recorded for each stage, and (ii) prioritised according to significance?	M	25		25	50	50	EIA Scoping Report				50

2.2.1	Have appropriate mechanisms been put in place to manage the project's environmental and social risks, impacts and opportunities?	M	5	10	10	25	25	Sustainable Design Plan				25
2.2.2	Have regular checks been made to ensure that these mechanisms have been implemented?	M	5	10	10	25	25	Reporting protocols				25
2.2.3	Have the results (success or otherwise) of the implementation of the environment and social aspects management mechanisms been assessed?	M	5	10	10	25	25	Reporting againat SDP targets				25
2.2.4	Has there been a programme of training on environmental and social issues relevant to the project delivered at an appropriate level for those engaged in the project?	M	13	13	13	39	26	Assumed this can be demonstrated for TfL and Dragados project personnel				26
2.2.5	Is there evidence that the project team actively delivered the sustainable-development-based Project Strategy addressed in Section 1? OR if no such strategy was developed: Is there evidence that the project team actively considered the principles of sustainable development in the planning, design and construction of the project?	M	26	15	5	46	46	SDP processes and EIA Scoping report				46
2.3.1	Have all those directly engaged in the project been informed of the significant environmental impacts and opportunities, and associated social issues, of their part and/or stage of the project?	M	5	10	10	25	15	Assumed this can be demonstrated for TfL and Dragados project personnel				15
2.3.2	Did the selection process for: (i) the principal Designer (ii) the main Contractor (iii) the key sub-contractor(s), include past environmental and social performance as one of the evaluation criteria?	N	30		15	45	30	Requires procurement documentation from 2012				30
2.3.3	Is there evidence that the contract requirements for the Designers and Contractors expressly include: (i) achievement of specified environmental and social performance; and (ii) a requirement to monitor and report on them during the course of the contract?	M	25			25	25	Works Information documents				25

2.3.4	Has the resource efficiency strategy sought in Section 1 been implemented? OR If no such strategy has been developed: Is there evidence that steps have been taken identify and implement opportunities to improve the resource efficiency of the project? AND Are resource efficiency objectives and (where appropriate) benchmarks and/or targets included within relevant contract documentation?	N	7	7	7	21	21	Set out in objectives and implementation arrangements of the SDP			21
2.4.1	Is there clear evidence that the Client and the design team have adopted a whole-life approach to design of the project?	**M**	10	25		35	35	Assumed			35
2.4.2	Did the whole-life approach include consideration of the potential effects of predicted climate change scenarios, leading to appropriate adaptation strategies?	**M**		25		25	25	Assumed - see 1.1.5			25
2.4.3	Is there evidence that the design team and/or construction teams have addressed the environmental and social implications of different construction methods and materials for the project that will improve its whole-life performance?	**M**		10	10	20	10	A score of 10 points is considered to be achievable overall, with reference to CLP and SCL design documents.			10
2.4.4 a)	Have specific targets been set during the concept and design process for the environmental and social performance of the project during construction? AND Is progress towards them monitored, reported and shared with the staff and workforce at construction stage?	**M**		8	8	16	8	Works Information and SDP	8	Contractor monitoring	16
2.4.4 b)	Have relevant key environmental objectives and performance targets been set for key sub-contractors and are they monitored against performance?	**M**			16	16	8	SDP	8	Contractor monitoring	16
2.4.5	Have specific targets been set during the concept and design process for the environmental and social performance of the project during operation or once in use; and is there a monitoring programme in place for the operational phase?	N		20		20	20	Project justification, SDP, TfL public reporting			20

2.5.1	Has ongoing engagement or two-way dialogue between project staff and the construction workforce been undertaken with regards to management of environmental and social issues; and is there evidence that the suggestions from these discussions have been considered in the construction stage?	N			19	19	19	SDP, project controls and reporting			19
2.5.2	Has the project team shared any innovation or best practice in sustainability-driven management and practice with other parts of the civil engineering sector or other relevant sectors?	N	6	6	6	18	18	Assumed that a project of this nature and complexity will generate plenty to share with the transport and engineering sectors.			18
				Section Total		545	481		16		497
					Section %		88.26%		2.94%		91.19%

Section 3 - People and Communities

3.1.1 a)	Does the project have a policy or code of practice regarding considerate behaviour by construction companies?	M	3			3	3	CCS assumed			3
3.1.1. b)	Has the policy been communicated to all appropriate people working on the project?	M			3	3	3	Dragados systems			3
3.1.1 c)	Is there evidence that the policy is embedded in the project's management system?	M			3	3	3	Dragados systems			3
3.1.1 d)	Were the policy and its implementation independently assessed and judged to be at least satisfactory?	N			3	3	3	CCS certification			3
3.1.2 a)	Are there any innovative solutions or other measures included in the design of the project that go beyond those agreed at an earlier planning permission or consenting stage that are intended to mitigate any nuisance caused by the operation of the scheme once constructed?	N	27			27	0	uncertain at this stage	27	Assumed that changes will be made within the 7 year constructon period that demonstrate innovation.	27
3.1.2 b)	Has the Contractor applied any innovative solutions within the construction methodology designed to remove or minimise any nuisance during the construction stage?	N			27	27	0	uncertain at this stage	27	Assumed that changes will be made within the 7 year constructon period that demonstrate innovation.	27

3.2.1 a)	Has a community consultation exercise been carried out by the Client and the results been passed to appropriate members of the project team and, as and where appropriate, the results fed back to consultees?	M	6			6	6	Will be covered within the TWAO/planning documentation			6
3.2.1 b)	Has a community consultation exercise been carried out at the design and construction stages of the project and the results been passed to appropriate members of the project team and, as and where appropriate, the results fed back to consultees?	N		7	3	10	10	Will be covered within the TWAO/planning documentation			10
3.2.2	Have all appropriate Stakeholders been consulted regarding the effects on neighbours that are expected to occur during both the construction stage and operation of the completed works?	M	11			11	11	Will be covered within the TWAO/planning documentation			11
3.3.1	Have baseline studies and predictions for all potential effects on Neighbours been carried out for the project and have proposals been put forward for mitigating effects potentially occurring during (1) construction and (2) operation?	N	22			22	22	Will be covered within the TWAO/planning documentation			22
3.3.2	Have appropriate proposals to mitigate effects on neighbours during construction and operation been incorporated into the design(s) (as consulted with stakeholders)?	N		22		22	22	Construction methodology and road closures plans, also TWAO Code of Constructon Practice			22
3.4.1	Has a SEMP or equivalent section in a Project Environmental Management Plan considered the effects of the construction process on neighbours?	M			27	27	27	Will be covered in Code of Constructon Practice			27
3.4.2 a)	Is there evidence that the proposals to mitigate for all potential effects on neighbours during the construction period were implemented?	N			19	19	0		19	Dragados reports	19
3.4.2 b)	Has the Contractor applied any innovative solutions within the construction methodology designed to remove or minimise any nuisance during the construction phase?	N			19	19	0		19	Assumed that changes will be made within the 7 year constructon period that demonstrate innovation.	19

3.4.3	Were all aspects that could have had potential effects on neighbours (identified at Question 3.3.1) monitored at appropriate intervals throughout the construction stage?	N			16	16	0		16	Dragados reports	16
3.4.4	Did the monitoring of aspects assessed at Question 3.4.3 demonstrate that acceptable levels of emissions from all aspects (leading to potential effects) were achieved throughout the construction stage?	N			12	12	0		12	Dragados reports	12
3.4.5	On completion of the contract, have any enforcement notices or fines been served and not revoked?	M			21	21	0		21	Assumed	21
3.4.6	On completion of the contract, has any physical damage been caused to buildings and structures by vibration from construction processes?	N			7	7	0		7	Assumed	7
3.4.7	Is there evidence that measures have been taken to minimise the adverse visual impact of the site during the construction stage?	M			8	8	8	Code of Construction Practice			8
3.4.8	Have the proposals for mitigation of all potential effects for the operational stage been implemented in full as far as can be expected at the end of construction?	N			19	19	0		19	Post Constructon Review	19
3.5.1	Has a member of the project team been made responsible for ongoing community consultation?	M	2	2	2	6	6	Assumed. (TfL)			6
3.5.2	Has there been a continuing community engagement programme covering all relevant project stages?	N	7	7	7	21	14	Assumed	7	Assumed	21
3.5.3	Has the community engagement programme assessed the community demographics and diversity to ensure that communication is appropriately targeted?	N	20			20	20	Required by GLA/COL policies. Equality Impact Assessment			20

3.5.4 a)	Is there evidence that partnership links have been actively pursued through the design process and promoted for the construction stage?	M	8			8	8	TWAO application documentation			8
3.5.4 b)	Has the Contractor implemented the links identified by the Client, or significant links that the Client has not identified?	M			19	19	0		19	Assumed	19
3.6.1	Has there been a mechanism to ensure that all comments from the local community were recorded?	N	3	3	3	9	9	EIA, Code of Construction Practice			9
3.6.2	Has the Client and design team assessed all the responses from the community engagement programme and taken appropriate action within the project decision making and design?	N	30			30	30	Assumed			30
3.6.3	Has the construction team assessed the responses from the community engagement programme and taken appropriate action within the construction stage?	N			30	30	0		30	Assumed	30
3.7.1	Is there evidence that due consideration has been given, during the project's feasibility stage and during design, to wider social benefits of the project during construction and operation, and to the effects of the completed project on the human environment?	N	11	9		20	20	EIA, Planning/TWAO documentatiion			20
3.7.2	Is there evidence that potential impacts of the project on the health and welfare of the construction workforce and any occupants, users, neighbours and/or any operational staff have been considered, and the design modified as a result?	M	9	7		16	16	Logistics plans, records of consultations with LUL workforce/Trades Unions			16
3.7.3	Has the Client set specific targets to actively encourage local firms to quote for work, competitively or otherwise? Have these targets been achieved during construction? Or is evidence provided showing why local firms are not appropriate?	M	11		11	22	11	GLA Responsible Procurement Policy	11	Dragados reports	22

3.7.4	Is there evidence that consideration has been given to enhancing the project design features, user enjoyment and additional facilities for the benefit of users beyond functional requirements of the facility and that this has been fully achieved in the construction stage?	N	6	10	4	20	20	Assumed - look for evidence of public art, decorative finsishes etc.			20
3.7.5	Is there evidence that the diversity of the local community has been considered and respected in the design solution to promote equal access for all (for example, disabled, elderly people, and different cultures and religions) and the specification achieved in the completed project?	N	12	12		24	24	Equalities Statement, project aim of achieveing step-free access			24
				Section Total		530	296		234		530
					Section %		55.85%		44.15%		100.00%

Section 4 - Land Use and Landscape

4.1.1 a)	Is there evidence that the Client has collected sufficient and relevant information to be able to make appropriate and positive decisions on the project's location?	y	0			0	0	On grounds that no alternative locations exist for the remodelling of an underground railway stations.			0
4.1.1 b)	Was there a demonstrable process for considering the relative merits of the options?	y	0			0	0	Consequence of 4.1.1.a scope out.			0
4.1.2 a)	Have desk and site studies been undertaken that assisted the Client in confirming that their chosen site was suitable?	**M**	35			35	25	Design Statement (walkover to be confirmed)			25
4.1.2 b)	Was there a clear process for the evaluation of the key risks and opportunities of the site?	**M**	35			35	35	EIA Scoping, OSD proposals			35
4.1.3	Has the land-take of different scheme designs, process designs and layouts of the planned works been calculated, and have these calculations influenced the design process and the land-use efficiency of the final design?	y	0			0	0	Design Statement, selection process for Arthur Street site			0

4.1.4 a)	Has a formal process for selecting temporary land for construction been employed?	N	2	2	5	9	9	Design Statement, selection process for Arthur Street sit				9
4.1.4 b)	Is there evidence that the construction team has made effective use of land resources made available to them, and minimised the long-term adverse impacts of the temporary greenfield land take during construction?	N			9	9	9	Design Statement, selection process for Arthur Street sit				9
4.1.5	Has the site been previously used for built development?	N	23			23	23	EIA Scoping Report				23
4.1.6	Apart from the actual land take, did the site selection and design of the project also take into consideration the conservation of topsoils, subsoil, seabed surface geology, and conservation or use of on-site mineral resources?	y	0			0	0	Geotechnical report, Design Statement				0
4.2.1 a)	Was the desk study covered by Question 4.1.2 a formal study assessing risk and implications that may be associated with the land or seabed? Did it include issues related to soil, groundwater, gas, residual man-made structures and surrounding land uses, or has it been extended into such a suitably formal and detailed study?	M	10			10	10	Assume 4.2.1.a evidence includes a compliant study report				10
4.2.1 b)	Did the study go beyond the above scoring to provide additional input to project decision-making?	N	19			19	19	Assume study report is more comprehensive than 4.2.1.a default, and includes illustrations of links. EIA Scoping Report indicates that this is the case.				19
4.2.2	If the studies mentioned in Question 4.2.1 have suggested that contamination may be present on site, has a suitably experienced chartered contaminated land specialist or even a specialist in land condition been consulted?	N	36			36	36	Assume SILC was included with team. Potential scope-out to be reviewed.				36
4.2.3	If contamination was present on site, was the site assessed in line with appropriate local procedures for the management of land contamination or, where not available, in accordance with other internationally recognised best practice?	Y	0			0	0	Scope out - EIA Scoping Report indicates that contamination is unlikely.				0

4.2.4	If the site had been contaminated, and remediation was part of the scope of work being assessed, is there evidence of remedial solutions/optins?	Y	0	0	0	consequence of 4.2.3				0
4.2.5	If ground-generated gases were present, was there evidence of risk reduction and management in place and fully implemented?	Y	0	0	0	Scope out - EIA Scoping Report implies that gas presence is unlikely.				0
4.2.6	Is there evidence that the impacts of the implementation of the remedial solution have been assessed and appropriate control measures been put in place?	Y	0	0	0	consequence of 4.2.3				0
4.2.7	Is there evidence that the effectiveness and durability of the remedial solution, and maintenance and monitoring, have been considered over the lifetime of the project and beyond, and operational information conveyed to the operator?	Y	0	0	0	consequence of 4.2.3				0
4.2.8	Is there evidence that pollution control measures are in place to prevent any future contamination occurring in relation to the site?	N	14	14	14	EIA scoping report refers to mitigation measures: e.g. ventilation				14
4.3.1	Have the run-off, flood risk, and potential increased flood risk elsewhere as a result of the completed works all been assessed* over their expected working life, and then appropriate flood management measures included in the design?	**M**	26	26	26	EIA Scoping Report 12.3.6 - 12.3.9				26
4.3.2	Is there evidence that the design team has actively considered opportunities for providing enhancements as part of the flood risk management measures and/or the merits of designing for a larger event or for greater flood resilience than required by planning regulations or guidance?	N	79	79	79	EIA Scoping Report 12.3.10 - 12.3.13				79
4.3.3	Have the proposals recommended in Question 4.3.2 been included in the design and incorporated in the project?	N	80	80	80	Assumed to be included within Design Statement				80

4.3.4	Is there evidence that the project team has designed for long-term flood resilience and adaptation?	N		79		79	79	Assumed to be included within Design Statement			79
4.4.1	Is there evidence that landscape and visual factors have been considered by a suitably qualified landscape professional at each stage of the project, including the evaluation of scheme options?	N	19	12		31	31	EIA Heritage Sections, also OSD planning documentation			31
4.4.2	Is there evidence that the project design fits the local landscape character in terms of: landform and levels, materials, planting, style and detailing, sclae, landscape or townscape pattern?	N		24		24	24	EIA Heritage Sections, also OSD planning documentation			24
4.5.1	If the project is located in an area of acknowledged and/or protected high amenity value for its landscape, coastal or townscape character, has the impact of the development on the character of the area been assessed?	N	31			31	12	EIA Heritage Sections, also OSD planning documentation. Neutral impact assumed.			12
4.5.2	Do the landscape proposals go beyond the aims of applicable landscape development or enhancement policies published by the relevant local, regional or national authority?	Y	0			0	0	Scope out - assumed there will be no landscaping works associated with TWAO applilcation			0
4.5.3 a)	Has the condition of existing vegetation been assessed and has the retention of vegetation with high or moderate value influenced design proposals?	Y		0		0	0	Scope out - assumed there is no substantial vegetation on the site.			0
4.5.3 b)	Based on this assessment, what percentage of vegetation of high or moderate quality has been retained as part of the design?	Y		0		0	0	Consequence of 4.5.3.a			0
4.5.3 c)	Is there evidence that vegetation (including root protection areas) to be retained as part of the design has been adequately protected during construction?	Y			0	0	0	Consequence of 4.5.3.a			0
4.5.4	Has the landscape and amenity value of other features (not vegetation) been assessed and has the retention of valuable, distinctive or historic features influenced design proposals?	N		21		21	13	EIA Heritage Sections, also OSD planning documentation. Neutral impact assumed.			13

4.6.1	Was a system or plan implemented during the construction period to ensure that: planning and third party commitments were implemented; best practice was applied for planting or habitat areas to avoid damage to landscape features; and ensure that soil conditions met the requirements for successful establishment of the landscape design?	y			0	0	0	EIA Scoping Report, Design Statement				0
4.6.2	Have opportunities for advance landscape works been considered, such as planting prior to construction?	Y	0	0		0	0	Scope out on grounds that there will be no opportunities for landscape works.				0
4.6.3	Has planting design taken the appropriateness of species selection into account to include factors such as climate adaptation, local provenance and soil stability?	Y		0		0	0	Scope out on grounds that planting will not be included within the scope of the TWAO works.				0
4.7.1 a)	Has a management plan been developed that: defines long-term landscape objectives, establishes recommendations for work required to ensure that objectives are achieved, and sets a programme for ongoing monitoring and review to assess the effectiveness of maintenance operations?	Y	0	0		0	0	Scope out on grojnds that no planting works are included.				0
4.7.1 b)	Is there evidence that: responsibility for the implementation of the management plan has been allocated to an appropriate individual or organisation; that appropriate skills and resources (including financial) are committed; and that a programme of monitoring is in place beyond the normal planting establishment period?	Y	0			0	0	Consequence of 4.7.1.a				0
				Section Total		561	524			0		524
				Section %			93.40%			0.00%		93.40%

Section 5 - The Historic Environment

5.1.1 a)	Has a baseline historic environment study or survey been carried out at the project planning stage? And has it considered the full range of registered and non-registered historic environment assets?	M	9			9	6	Assume regional research agenda not included - to be checked				6
5.1.1 b)	Has the baseline study or survey been: (i) prepared or authorised by a suitably qualified historic environment professional? (ii) prepared to a recognised standard appropriate to the scope and location of the project?	M	14			14	14	Assume full compliance - to be checked				14

5.2.1	Have the relevant statutory consents been sought, approved and complied with at all project stages?	N	5		5	2	Consents team	3	Dragados reports	5
5.2.2	Have the relevant consultations been carried out with: (i) local government (ii) national government agency, (iii) statutory amenity societies (iv) other voluntary consultations with local and amateur public organisations (v) If these consultations were conducted prior to planning application submission or	N	12		12	12	TWAO application/OSD appolication			12
5.3.1 a)	If statutory listed or registered heritage assets have been identified within the development area in Question 5.1.1, has: (i) the project design enabled their retention, restoration and successful re-use or integration into the development? (ii) a future management strategy been agreed?	y	0	0	0	0	EIA chapter 9			0
5.3.1 b)	Has the methodology in Question 5.3.1 a) been successfully extended to include non-registered assets?	y		0	0	0	EIA Scoping Report 9.2.7			0
5.3.2	Has the design successfully addressed any setting issues and provided a neutral or enhanced setting for listed buildings, scheduled monuments or historic landscape areas?	N		14	14	10	EIA Chapter 9. Neutral impact assumed.			10
5.3.3 a)	If the potential for significant below-ground archaeological remains has been identified in Question 5.1.1, have the appropriate staged surveys been undertaken to establish the extent and condition of these prior to the design being finalised?	N	14		14	14	EIA Scoping Report 10.4			14
5.3.3 b)	If the surveys identified in Question 5.3.3 a) above have revealed the presence of significant archaeological remains, has a mitigation strategy document been prepared for archaeological investigation and agreed with the relevant development control archaeologist?	N	12		12	12	EIA Scoping Report 10.4			12
5.3.3 c)	If registered or non-registered historic environment assets have been demolished or removed, has an appropriate mitigation design been developed and agreed with the relevant conservation or heritage agency?	Y		0	0	0	Scope Out - it is understood that no assets are to be demolished or removed. This point may change as a result of inclusion of demolitions of the OSD within the scope of TWAO.			0

5.3.4 a)	Is there evidence that the mitigation designs referred to in Questions 5.3.3 b) and 5.3.3 c) have been implemented, managed and monitored in accordance with a SEMP or other site management framework?	N			14	14	14	EIA Scoping Report 10.4/Code of Construction Practice	0		14
5.3.4 b)	Have sensitive assets to be retained been cordoned off or other protection measures put in place to avoid accidental damage and have site staff received appropriate instruction (such as via toolbox talks)?	N			14	14	14	Code of Construction Practice	0		14
5.3.4 c)	Has an appropriate historical environment professional (archaeologist, conservation architect or historic buildings specialist) been appointed to manage and monitor the mitigation works?	N			11	11	11	EIA Scoping Report 9.4.22 - 9.4.23/10.4.23 Compliance assumed	0		11
5.3.5 a)	If restoration or enhancement works to heritage assets have been completed, is there evidence that current best practice has been applied and historically appropriate materials used?	Y		0	0	0	0	Scope out - assumed no restoration or enhancement is included. TBC			0
5.3.5 b)	Has the project been able to contribute to maintaining key specialist conservation skills and creating sustainable heritage employment?	Y		0		0	0	Scope out - consequence of 5.3.5.a. TBC			0
5.4.1 a)	Have the reports and archives from the baseline studies stage been prepared and submitted before the end of construction?	N		16		16	16	Assumed			16
5.4.1 b)	Has the final output from the mitigation works (such as archaeological excavation or building recording works) been prepared and archives submitted?	N		18		18	18	Assumed			18
5.4.2	Has there been any public opportunity provided to learn about, observe or take part in any activity to understand or promote the historic environment local to the project?	N			15	15	0		9	Full compliance assumed, except for public access to the site	9
			Section Total			168	143		12		155
			Section %				85.12%		7.14%		92.26%

Section 6 - Ecology and Biodiversity

6.1.1	Is the project, including land used for temporary works, being placed on or using land or seabed that has been identified as of high ecological value or as having species of high value?	N	28			28	28	EIA scoping report 16.2 confirms the land is not of high ecological value.				28
6.1.2	Has consultation with a relevant nature conservation organisation on the ecological impact of the proposals been undertaken and communicated to project team members at each stage of the project?	Y	0	0	0	0	0	Scope out - EIA Scoping Report 16.3 confirms no ecological impacts.				0
6.1.3	Has an ecological works plan or an ecological section in the integrated project management plan or site environmental management plan been drawn up, and then implemented during construction?	**M**	7	7	7	21	14	Client compliance uncertain TWAO application will confirm design compliance Code of Construction Practice assumed to address contractor compliance	0			14
6.2.1 a)	Have appropriate surveys for protected plant and animal species been specified by the Client and the resources provided to undertake them effectively?	N	7			7	7	EIA Scoping report 16.2.1 confirms compliance.				7
6.2.1 b)	Have appropriate surveys for protected plant and animal species been undertaken at each stage of the project?	y	0	0	0	0	0	Scope out - consequence of 6.1.2				0
6.2.1 c)	If protected plant and animal species were found on the project site and/or temporary working areas, have plans for protecting these been: Drawn up and approved? Monitored? Achieved?	Y	0		0	0	0	Scope out - consequence of 6.2.1.a				0
6.2.2	If there were invasive animal or plants species or injurious weeds present on site, has: A method statement (or equivalent) been drawn up and approved for their control and management? Has it been monitored? And achieved?	Y	0		0	0	0	Scope out - EIA Scoping Report 16..2.2 - 16.2.5				0
6.3.1 a) & b)	a) Have recommendations been included in the design for conserving existing ecological features, such as species and habitats or green infrastructure, identified in an ecological assessment as being of value? b) Have recommendations been included in the design for mitigating or compensating for any loss of such ecological features?	Y	0			0	0	Scope out - consequence of 6.1.2				0

6.3.1 c)	Have recommendations been included in the design for enhancing the existing ecological features of the site?	Y	0		0	0	Scope out - consequence of 6.1.2				0
6.3.2	Is there evidence that the implementation of these recommendations has been monitored throughout the course of the contract?	Y	0		0	0	Scope out - consequence of 6.1.2				0
6.3.3	Does monitoring data show that implementation of these measures has been successful?	Y	0		0	0	Scope out - consequence of 6.1.2				0
6.4.1	Have recommendations or opportunities for creating new wildlife habitats been identified by a specialist ecologist and incorporated in the project?	Y	0	0	0	0	Scope out - assumed that no reocmmendations have been made in respect of TWAO works,				0
6.4.2	Have recommendations or opportunities for installing special structures or facilities for encouraging or accommodating appropriate wildlife (especially BAP species) been identified and incorporated in the project?	Y	0	0	0	0	Scope out - on grounds that there will be no recommendations for the TWAO works.				0
6.4.3	On completion of the project, is there any evidence of a net increase in area or features of high ecological value compared to site baseline data?	Y	0		0	0	Scope out - no opportunity exists.				0
6.5.1	Has a programme been drawn up for the ongoing ecological management of habitats and species conservation measures, including instructions for emergencies or abnormal events, to be handed over to the owner or managing agent of the completed project?	Y	0		0	0	Scope out - no need for ecological management				0
6.5.2	Is there a programme in place (for the years after project completion) for monitoring the success or otherwise of any management, habitat creation or translocation and species conservation measures undertaken on site?	Y	0		0	0	Scope out - no measures appropriate				0
			Section Total		56	49			0		49
			Section %			87.50%			0.00%		87.50%

Section 7 - The Water Environment

7.1.1 a)	Has a plan to control the impacts of the completed project on the water environment (fresh and/or marine as appropriate) been produced and necessary elements of the plan been incorporated in the design?	M	28		28	28	Assumed - EIA Scoping Report section 12 refers				28
7.1.1 b)	Has this plan been implemented as far as practicable up to the end of the assessment?	M	14		14	14	Assumed				14
7.1.1 c)	Has a plan to control the impacts of the project on the water environment (fresh and/or marine as appropriate) during construction been produced and has this plan been implemented?	M			28	28	28	Code of Construction Practice			28
7.2.1	Has consultation been undertaken with regulatory authorities about water issues related to the project, including the need for any consents, and has the outcome been communicated to project team members at each stage of the project?	M	6	6	6	18	18	Assumed from EIA Scoping report 12.4			18
7.2.2	Have there been negative regulatory actions on water-related issues (such as prosecution for pollution of a water body) during construction?	M			6	6	0		6	Dragados report	6
7.3.1 a)	Have specific measures been taken to prevent pollution of groundwater, existing freshwater features or the sea (as appropriate) during operation and maintenance?	N	14		14	14	Assumed - EIA Scoping Report 12.3.1 - 12.3.9 points to impacts that have to be addressed.				14
7.3.1 b)	Have specific measures been taken to prevent pollution of groundwater, existing freshwater features or the sea (as appropriate) during construction?	N			20	20	20	Code of Construction Practice - EIA Scoping Report 12.3.1 - 12.3.9 points to impacts that have to be addressed.			20
7.3.1 c)	Have existing water features been protected from degradation or physical damage by construction plant and processes?	N			9	9	0		9	Dragados report	9
7.3.2	Have measures (or equipment) been incorporated in the project that will allow long-term monitoring of the project's impact on the freshwater and/or marine environments as appropriate?	N	18		18	18	Assumed from comments about a shallow aquifer at 12.3.4 of EIA Scoping Report				18

7.3.3 a)	Is there evidence that the use of Sustainable Drainage Systems* (SuDS) has been considered for incorporation into the design?	N	6		6	6	Assumed - Design Statement to confirm			6
7.3.3 b)	Is there evidence that Sustainable Drainage Systems* (SuDS) have been incorporated into the project where appropriate?	N		22	22	0	Unceertain. Potential scope-out			0
7.3.4	What percentage of total surface water runoff* from the completed project has been managed at source through infiltration?	Y	0		0	0	Scope out - assumed that there will be no run off from sub-surface installations and above-ground station facilites contained within the OSD.			0
7.3.5	If the works could affect a body of ground or surface waters, has the water quality of that water body been monitored before construction and then regularly during construction in accordance with the regime identified as appropriate in the risk assessment?	N			20	20	20	Assumed, from comments about risk in EIA Scoping Report			20
7.4.1 a)	Have opportunities to improve the local water environment been considered and identified, and, where appropriate, included in the design?	y	0		0	0	Grounds that the evidence confirms there are no water bodies local to the project capable of being improved.			0
7.4.1 b)	Have the designed features been implemented?	Y			0	0	0	Scope out - assumed that no features will be included in the design.			0
7.4.2	Have existing water features been incorporated (for example as an amenity and/or for site drainage) in the design of the project?	Y	0		0	0	0	Scope out - assumed that no features will be included in the design.			0
7.4.3	Is there evidence that the project team has made provision for capturing run-off for beneficial use on the project or nearby and, if appropriate, have those provisions actually been incorporated in the completed project?	Y		0	0	0	0	Scope out - grounds that there will be no surface water run-off to be captured from the completed underground/internal project			0
				Section Total	203	166			15		181
				Section %		81.77%			7.39%		89.16%

Section 8 - Physical Resources - Use and Management

8.1.1 a)	Is there evidence that all those directly engaged in the project have formal corporate-level policies and targets for ensuring physical resources can be used in the most efficient way in the operation of the works?	M	5	5		10	10	TBC			10
8.1.1 b)	Is there evidence that all those directly engaged in the project have formal corporate-level policies and targets for ensuring physical resources are used in the most efficient way in the design and construction process?	M		5	5	10	10	Assumed			10
8.1.1 c)	Is there evidence that the policies and targets described in Question 8.1.1 a) and b) have been implemented and monitored on the project?	M	8	8	8	24	16	Client & Designer assumed	8	Dragados reports	24
8.2.1	Has a life-cycle assessment been undertaken for the project?	M		56		56	0	Assumed non-compliance. TBC			0
8.2.2	What percentage of the reductions identified in the life-cycle assessment undertaken in Question 8.2.1 has subsequently been incorporated in the project?	M		56		56	0	Assumed non-compliance as a consequence of 8.2.1			0
8.3.1	Was a plan drawn up that identifies opportunities for improving material resource efficiency and reducing waste using the five key principles?	M		10		10	10	Design Statement EIA Scoping Report section 14			10
8.3.2	Has this plan been implemented and monitored?	M			16	16	16	Design Statement			16
8.3.3	Has an assessment been made at design stage to ensure optimisation of cut and fill to reduce the quantity of excavated material to be taken off site?	N		12		12	0	Assumed no fill is practicable in this underground railway project			0
8.3.4	Is there evidence that durability and low maintenance of structures and components have been actively considered in design and specification?	N		12		12	12	Relevant LU standard(s)			12

8.3.5	Is there evidence that long-term planned maintenance has been considered properly in the design process?	M		15		15	15	Relevant LU standard(s)			15
8.3.6	Has a soil management plan been prepared and implemented?	Y		0		0	0	Scope out - there will be handling of topsoil.			0
8.3.7	Has all topsoil been re-used beneficially as topsoil on the site or on a site within a reasonable distance?	Y			0	0	0	Scoe out - consequence of 8.3.6			0
8.3.8	What percentage by volume of components or pre-fabricated units used can be easily separated on disassembly/de-construction into material types suitable for recycling?	N		12		12	10	Over 75% assumed - tbc			10
8.3.9	Has a materials register been provided to the Client or future managing agent at hand-over that identifies main material types to facilitate recycling during disassembly or de-construction?	M			5	5	0		5	Dragados reports	5
8.4.1	Is there evidence that the design has considered options for reducing both the energy consumption and carbon emissions of the project during operation, including the option of designing-out the need for energy-consuming equipment and the energy requirements in maintenance?	M	21			21	21	Assumed Energy Statement to confirm			21
8.4.2	Is there evidence of appropriate measures having been incorporated to reduce energy consumption and carbon emissions in use and what percentage of the recommended energy consumption reduction has been saved?	N	35			35	0	Uncertain pending Energy Statement			0
8.4.3	Is there evidence that the design has explored opportunities for the incorporation of energy from renewable and/or low- or zero-carbon sources and thus a reduction in carbon emissions?	N	11			11	0	Uncertain pending Energy Statement			0

8.4.4	To what extent has energy from renewable and/or low- or zero-carbon sources been incorporated in the scheme where appropriate and what percentage of the identified potential renewable energy generation has been implemented?	N	30		30	0	Uncertain pending Energy Statement Potential scope-out depending on answer to 8.4.3				0
8.5.1 a)	Is there evidence that the Designer has considered the energy consumption of the project during construction?	M	20		20	20	Uncertain				20
8.5.1 b)	Is there evidence that the Designer has incorporated appropriate measures to reduce energy consumption during construction where feasible?	N	27		27	27	Uncertain				27
8.5.2 a)	Is there evidence that the Contractor has considered measures to reduce the energy consumption and associated carbon emissions of the project during construction and have these been incorporated through an energy management plan or equivalent?	M			16	16	0		16	Dragados Energy Managemnet Plan	16
8.5.2 b)	Have the measures in the plan been monitored throughout construction stage and have the measures been achieved?	M			22	22	0		22	Dragados Monitoring records	22
8.5.3	Has the selection and procurement/hiring of construction plant been influenced by consideration of their energy efficiency, energy type or carbon emissions? AND Is there evidence that construction plant and ancillary equipment has been maintained to maximise fuel efficiency and minimise carbon emissions?	M			9	9	0		9	Assumed	9
8.5.4 a)	Has energy from renewable and/or low- or zero-carbon resources been considered during construction?	M			6	6	0	No consideration assumed.			0
8.5.4 b)	What percentage of the savings from the above considerations have been implemented?	N			9	9	0	Consequential zero score			0

8.6.1 a)	Has an assessment been made at design stage considering the embodied water in the materials required during construction?	M		39		39	39	Assumed				39
8.6.1 b)	Have the outcomes of the assessment been implemented?	M			39	39	0	Assumed that LUL standards will prevail.				0
8.6.2 a)	Have the potential impacts on water resources of the operation and maintenance of the completed project been actively considered during design?	Y	0			0	0	Scope out - it is assumed that there will be no water consumption within the compelted TWAO works.				0
8.6.2 b)	Have measures to conserve water and reduce water consumption during operation and maintenance of the completed project been included in the design?	Y		0		0	0	Scope out - consequence of 8.6.2.a scope out				0
8.6.2 c)	Have the measures referred to in Question 8.6.2 b) been incorporated in the works?	Y			0	0	0	Scope out - consequence of 8.6.2.a scope out				0
8.6.3 a)	Have specific and measurable requirements to measure, monitor and minimise the consumption of mains or abstracted water during construction been included in the project brief and the procurement documentation?	M	26			26	26	Assumed - tbc				26
8.6.3 b)	Have formal project-level policies and identified measurable targets for reducing water usage during construction been adopted; AND Has a plan to measure, monitor and minimise the consumption of mains, tankered or abstracted water used during the construction process been produced?	M			39	39	39	Assumed				39
8.6.3 c)	Has the plan been implemented?	M			45	45	0		45	Dragados reports		45

8.7.1 a)	Is there evidence that the responsible sourcing of materials has been considered and specified prior to placing the order?	M	18		18	18	GLA policies, Sustainable Design Plan			18
8.7.1 b)	To what extent has the specification for responsible sourcing been achieved?	M		20	20	0		20	Dragados reports	20
8.7.2 a)	Has the Client required consideration be given to the use of locally sourced and recycled material?	M	5		5	5	Assumed - tbc			5
8.7.2 b)	Have the Designer and Contractor researched all locally available material sources, including recycled materials?	M	5		5	5	Assumed - tbc			5
8.7.2 c)	Have the Designer and Contractor adapted the designs and specifications to allow for their use, where appropriate?	M	5		5	5	Assumed - tbc (LUL standards may be a barrier)			5
8.7.3 a)	Is there evidence that the highest possible proportion of timber and timber products used in the permanent works has been sourced from legal and sustainably managed sources with recognised timber labelling (Forest Stewardship Council or equivalent), or from re-use?	Y	0		0	0	Scope out - Assumed that there will be no timber in the permanent works - tbc			0
8.7.3 b)	Is there evidence that the highest possible proportion of timber and timber products used in the temporary works has been sourced from legal and sustainably managed sources with recognised timber labelling (Forest Stewardship Council or equivalent), or from re-use?	Y		0	0	0	Scope out - consequence of 8.7.3.a scope out			0
8.7.4	What percentage by volume of any existing structures and materials, such as roads, tanks and pipework, have been retained and used within the project as opposed to being demolished and crushed or disposed of?	N	15		15	5	Assumed - tbc. (Some scope for re-use of structures and materials in the existing below-ground station facilities.)			5

8.7.5	What percentage by volume of materials (excluding bulk fill and sub-base) for use in the permanent works has been specified and made from reclaimed or recycled material, whether reclaimed from the site or elsewhere?	M	8	8	16	4	Up to 50% assumed. Tbc				4
8.7.6	What percentage by volume of bulk fill and sub-base material specified in the project was made from previously used material, whether reclaimed from the site or elsewhere?	N	5	5	10	3	60%-80% asssumed - tbc				3
8.8.1	Has an assessment been made at the design stage regarding the substitution of hazardous materials with less hazardous materials?	N		15	15	15	LUL standards assumed to address this matter.				15
8.8.2	Have all appropriate coatings and treatments for permanent work materials been factory-applied (except for cut ends)?	N	12		12	12	Assumed - tbc				12
8.8.3	What percentage of all coatings and other treatments (for temporary and permanent works) has been specified as low-VOC and/or biodegradable and subsequently used as specified?	N	6	6	12	12	Over 80% assumed. LUL standards.				12
8.8.4	Has the health and safety assessment process for hazardous materials been: (i) extended to cover the wider environmental impacts of those materials? (ii) and have the results of this been used in drawing up the SEMP or equivalent?	N			8	8	8	Assumed to be addressed within ES/Sustainability Statement			8
8.9.1 a)	Has a Site Waste Management Plan (SWMP) or waste section of a SEMP been prepared and updated as appropriate for the duration of the project?	M	6	6	12	12	Code of Construction Practice				12
8.9.1 b)	Have the targets or key performance indicators for waste reduction and waste recovery been met?	M	6	12	18	6	Monitoring of ES targets	12	Dragados reports		18
8.9.2	Is there evidence that all waste produced on site has been managed to meet duty of care requirements?	M			10	10	10	Compliance with Consents			10

8.9.3	If transfer stations and/or recycling facilities were used, is there evidence that the recycling rate of the facilities was considered prior to placing the order?	N			21	21	21	Compliance with Consents			21
8.9.4	Have the appropriate permits, licenses or exemptions been obtained for waste that has been treated on site or for waste imported to site?	M			14	14	0		14	Dragados reports	14
8.9.5 a)	Is there evidence that hazardous (special) waste has been appropriately segregated (from other controlled waste) and stored appropriately on site?	N			7	7	0		7	Dragados reports	7
8.9.5 b)	Has this waste been taken to a suitable facility and the construction site registered as a hazardous waste producer where appropriate?	N			7	7	0		7	Dragados reports	7
8.10.1 a)	Have the most environmentally beneficial ways of dealing with clearance and disposal of existing vegetation been explored and recommendations been made?	Y		0		0	0	Scope out - EIA Scoping Report 16.2.3 confirms there is no vegetation			0
8.10.1 b)	Have these recommendations been implemented for the majority of vegetation cleared?	Y			0	0	0	Scope out - consequence of 8.10.1.a scope out			0
8.10.2	What percentage by volume of material from demolition or de-construction on site has been incorporated into the project?	Y		0		0	0	Scope out - assumed that the nature of the works means that there will be no opportunity to re-use materials. TBC			0
8.10.3	What percentage by volume of excavated material has been beneficially re-used on-site?	N		35		35	0	Assumed that less than 30% of excavation arisings can be re-used within the project. TBC			0
8.10.4	What percentage by volume of inert waste material has been segregated (on or off site) in accordance with the SWMP and diverted from landfill?	N			15	15	15	Over 95% assumed. Compliance with SDP and Consents.			15

8.10.5	What percentage by volume of non-hazardous waste material has been segregated (on or off site) in accordance with the SWMP and diverted from landfill?	N			21	21	21	Over 95% assumed. Compliance with SDP and Consents.			21
8.10.6	Has an assessment been undertaken and implemented to reduce the amount of surplus materials ordered?	M			23	23	23	Assumed. Code of Construction Practice			23
8.10.7	Is there evidence that materials have been stored appropriately to avoid wastage?	M			23	23	0		23	Dragados records against Code of Construction Practice	23
8,10.8	What percentage of unused (surplus) materials have been beneficially re-used (or stored for re-use)?	M			18	18	0		9	Over 905 assumed. Dragados records.	9
				Section Total		997	471		197		668
				Section %			47.24%		19.76%		67.00%

Section 9 - Transport

9.1.1	(i) In the case of a transport project, does the project provide improved levels of service and does it extend to all modes in a way that delivers improved integration? (ii) In the case of a non-transport project, has the site been selected because the project a) requires no or minimal new transport infrastructure and/or b) mainly makes use of public transport systems?	M			18	18	14	Equestrian and aviation modes not scored			14
9.1.2	Has the project team considered and incorporated measures that reduce relevant, transport-related impacts of the completed project on the local community?	N			28	28	28	Project Brief			28
9.1.3	Has there been consultation on, or consideration given to, the ability of pedestrians and cyclists to pass through the site on dedicated paths and to establishing links with existing and proposed routes to local services?	N			19	19	19	Project Brief/Transport Assessment/EIA Scoping Report section 7			19
9.2.1	Does the project require provision of, or increase the need for, additional transport infrastructure?	Y			0	0	0	Scope out - this is a transport infrastructure project			0

9.2.2 a)	Is there evidence from the design process that Designers have worked beyond the standards specified in the design codes to deliver enhanced operational transport outcomes?	N	11			11	11	Assumed				11
9.2.2 b)	Is there evidence from the design process that the community affected by the project has been involved in specifying the design objectives?	N	21			21	21	Assumed				21
9.2.3	Has the resilience and recovery of the transport network been considered during the design process?	N	8	8		16	16	Raison d'etre of the project				16
9.2.4	Is there evidence that the design delivers a transport network with improved ability to accommodate future change?	N	7	7		14	14	Fit with Tube Improvement Plan				14
9.2.5	Is there evidence that the project team has provided measures that improve the level of performance for non-motorised users either within or outside the project site?	N	11			11	11	Tube Improvement Plan/Step Free Access				11
9.3.1	Have construction traffic movements been reviewed or considered by the project team prior to the construction stage commencing?	M	11			11	11	EIA Scoping Report 7.10				11
9.3.2	Has the project team incorporated measures that deliver improved performance on the following effects of construction activities on the local community?	N	20			20	20	Design Statement Code of Construction Practice				20
9.3.3	Have measures been included in the project specification and construction management that minimise disruption caused by construction traffic, whether on the public network, from construction vehicles on site, or on both?	N	6	18		24	6	Design Statement Code of Construction Practice	18	Dragados reports		24
9.3.4	Is there evidence available at the end of the construction stage to demonstrate that measures to minimise the impacts of construction traffic have been monitored and been successful?	N			13	13	0		13	Dragados reports		13

9.3.5 a)	Has the project team considered possible use of other, more-sustainable transport routes (other than road), such as rail and/or water, for the movement of construction materials and/or waste?	M		4		4	4	Assumed			4
9.3.5 b)	Has the outcome of this assessment implemented some or all of the measures?	Y		0		0	0	Scope out assumed - non-road modes won't be applicable			0
9.4.1 a)	Is there a travel plan in place for each of the organisations responsible for delivering the project that is aimed at an appropriate balance of effectiveness for the travellers, and at minimising adverse environmental and social impacts associated with the travel involved?	M	4	4	4	12	12	Corporate policies			12
9.4.1 b)	For each travel plan identified in Question 9.4.1 a), have the Plans been successfully implemented for each of the project team organisations?	M	4	4	4	12	0		12	Reports from all parties	12
				Section Total		234	187		43		230
				Section %			79.91%		18.38%		98.29%