



Sustainability Statement

Sondheim (Ambassadors) Theatre

For Delfont Mackintosh Theatres

May 2016

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Contents

Executive Summary	3
Site	4
Planning Policies.....	5
Camden Core Strategy 2010	5
Camden Development Policies 2010	6
Camden Planning Guidance - Sustainability CPG3 - 2013	7
Sustainability Standards	8
Sustainability Standards	8
BREEAM Pre-Assessment	9

About us:

XCO2 Energy are a low-carbon consultancy working in the built environment. We are a multi-disciplinary company consisting of both architects and engineers, with specialists including CIBSE low carbon consultants, Code for Sustainable Homes, EcoHomes and BREEAM assessors and LEED accredited professionals.

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Sustainability Statement

Executive Summary

This report outlines the sustainability strategy for the proposed development known as Sondheim (previously Ambassadors) Theatre, in line with the requirements set out by the London Borough of Camden and the client and design team's aspirations.

This sustainability statement is divided into two parts:

- Policy and Sustainability Standards
- BREEAM New Construction

The first part provides an overview of the site and the planning policies applicable to this development as detailed in the Camden Council planning documents. The report then demonstrates how these policies have been met.

The body of this report outlines the sustainability measures that have been adopted for the scheme to achieve BREEAM 'Excellent'. A summary of the pre-assessment credits for the BREEAM assessment is provided at the end.

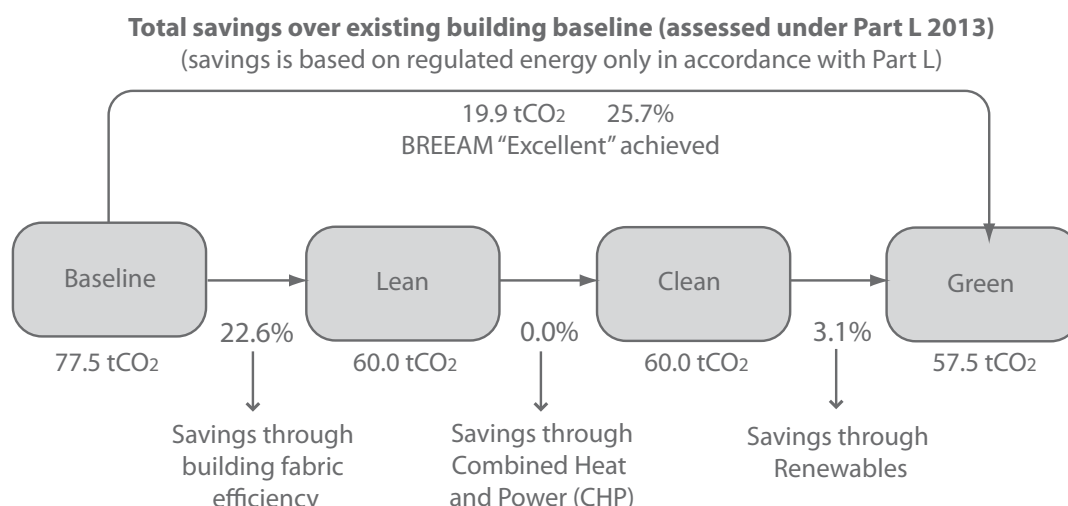
In summary, the proposed development meets the criteria set out by the London Borough of Camden. The proposed light industrial units achieve 75.09 credits, which exceeds the required 70 credits for BREEAM 'Excellent'.

In addition, all mandatory BREEAM 'Excellent' credits in the Energy, Water, Material and Ecology categories have also been satisfied.

A SBEM calculation has been carried out to determine energy and CO₂ savings achievable, the results of which are included in the accompanying Energy Statement.

The diagram below provides a summary of the average CO₂ savings achieved over Part L Building Regulations (2013). The reduction in CO₂ emissions of 25.7% reflects regulated energy use only, in accordance with Part L of the Building Regulations. Unregulated energy use is not taken into account in the calculation of BREEAM credits (e.g. plug-in load and appliances). In addition, given the amount of on-site renewables proposed, the development achieves a reduction in total CO₂ emissions of 15.1%.

The number of credits obtained in the BREEAM pre-assessment reflects the client and design team's determination in incorporating as many sustainability measures as possible.



Sustainability Statement

Introduction

The application proposes a new dedicated theatrical transfer house to accommodate productions that have come to the end of their run in the subsidised sector. The proposed theatre will provide the opportunity for subsidised productions that would not otherwise have the opportunity to transfer to the West End.

It is currently very difficult for successful subsidised productions to transfer to the West End because the internal arrangement of most West End theatres differs substantially from more modern arrangements of the subsidised sector. The vast majority of West End theatres have traditional 'proscenium arch' stages whilst most originating theatres in the subsidised sector have more modern arrangements, such as thrust stages or are arranged 'in the round'. This means that a transfer has to be restaged, often at huge cost to the originating subsidised theatre and eroding the original artistic intention of the director, to the detriment of the audience experience.

There are currently no dedicated theatres in the West End to which productions arising in the subsidised theatre sector can transfer in the event of critical acclaim or audience demand. Typically, publically subsidised productions are pre-programmed in advance at the originating playhouses and run for a period of 6-8 weeks only. The proposed new theatre would provide an opportunity for successful subsidised shows to transfer to the West End for a further 8-16 weeks.

This increased run would provide the subsidised sector with an opportunity to increase revenue at a time of consistently squeezed funding pressures and cuts. It will also diversify the offer for theatre goers and open up a range of quality productions to be viewed as originally intended, enhancing the range and quality of productions and cementing London's status as a world cultural capital in theatre.

Such is the shortage of space in the West End that very many successful subsidised productions are simply never seen again after their original run. Others, due to the physical difficulties of restaging in a proscenium setting simply have no prospect of transfer at all, even if a space in the West End were available.

In order to create a modern and flexible internal arrangement, it is proposed that much of the building is demolished and rebuilt behind the retained West Street façade and the stucco return onto Tower Court. Historically significant elements of plasterwork are to be relocated within the new theatre.

The proposed theatre will then provide a much needed resource for the transfer of productions from the subsidised sector. In turn, the subsidised sector will be able to secure a longer run for critically acclaimed productions that would otherwise close for good, frustrating a large unmet demand from the audience. Thus, the cultural life of the West End will be enhanced along with the audience's opportunity to see good quality subsidised productions for a longer period of time. In their turn, the subsidised sector will realise the opportunity to increase their revenue in an environment of constantly reduced funding.

The proposals have attracted wide ranging support from within the industry. Nicholas Hytner (former Artistic Director of the National Theatre) summarised the situation as:



Sustainability Statement

"Over recent years, a large number of the most successful and ambitious productions in the subsidised theatre sector have been unable to find a venue for further life, leaving a significant potential audience without an opportunity to see work it would like to see. Very often this work would not justify the risks involved in a transfer to a large West End theatre. Cameron Mackintosh's plans for his new 450 seat theatre would greatly increase the chances of a future life for successful productions from theatres like the Dorfman, the Almeida, the Royal Court and the Donmar as well as offering a suitable venue for regional transfers."

Full details of the need for a dedicated transfer house and how the proposed theatre meets that need is set out in the Design and Access Statement and Planning and Heritage Statement that accompany this application.

Site

The development is located on the corner of West Street and Tower Court, to the south east of Shaftesbury Avenue and to the northeast of Charing Cross Road near the popular Seven Dials area of central London's Theatreland. The development is located within the London Borough of Camden.

The project brief revolves primarily around the creation of a 450 seat theatre auditorium. Public areas and rehearsal facilities are also to be improved with the intention of retaining part of the facade and a number of important period features of the original architecture. This internal reworking consists of the demolition and rebuild of the existing Ambassadors Theatre, as renovation in its current form has been deemed unviable. The redevelopment of the Sondheim Theatre is aimed to improve the audience viewing experience during West End productions, offer educational opportunities in Camden, and provide rehearsal space for theatre companies.

The approximate location of the development is shown in the figure below.



Proposed site location highlighted in pink

Sustainability Statement

Planning Policies

This report outlines the sustainability related strategies and policies for the proposed development at Sondheim Theatre, as set out by the London Borough of Camden's planning documents as well as the London Plan 2015 (further alterations to the London Plan).

Camden Core Strategy 2010

The Camden Core Strategy sets out the Council's key planning policies and is a central part of their Local Development Framework (LDF). The pertinent sustainability excerpts are inserted below:

CS13–Tackling climate change through promoting higher environmental standards

Reducing the effects of and adapting to climate change

The Council will require all development to take measures to minimise the effects of, and adapt to, climate change and encourage all developments to meet the highest feasible environmental standards that are financially viable during construction and occupation by:

- a) Ensuring patterns of land use that minimise the need to travel by car and help support local energy networks;
- b) Promoting the efficient use of land and buildings;
- c) Minimising carbon emissions from the redevelopment, construction and occupation of buildings by implementing, in order, all of the elements of the following energy hierarchy:
 1. Ensuring developments use less energy,
 2. Making use of energy from efficient sources, such as the King's Cross, Gower Street, Bloomsbury and proposed Euston Road decentralised energy networks;
 3. Generating renewable energy on-site; and
- d) Ensuring buildings and spaces are designed to cope with, and minimise the effects of, climate change.

The Council will have regard to the cost of installing measures to tackle climate change as well as the cumulative future costs of delaying reductions in carbon dioxide emissions.

Water and surface water flooding

We will make Camden a water efficient borough and minimise the potential for surface water flooding by:

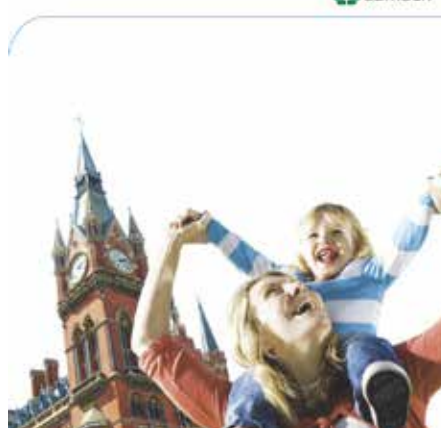
- h) making sure development incorporates efficient water and foul water infrastructure;
- i) requiring development to avoid harm to the water environment, water quality or drainage systems and prevents or mitigates local surface water and downstream flooding, especially in areas up-hill from, and in, areas known to be at risk from surface water flooding such as South and West Hampstead, Gospel Oak and King's Cross.

CS13 – Dealing with our waste and encouraging recycling

The Council will seek to make Camden a low waste borough. We will:

- b) make sure that developments include facilities for the storage and collection of waste and recycling.

Camden Core Strategy
2010-2025
Local Development Framework



Sustainability Statement

Camden Development Policies 2010

In addition to the Core Strategy Document the Camden Development Policies also forms part of the LDF. The policy relating to sustainability is listed below:

DP22 – Promoting sustainable design and construction

The Council will require development to incorporate sustainable design and construction measures. Schemes must:

- a) demonstrate how sustainable development principles have been incorporated into the design and proposed implementation; and*
- b) incorporate green or brown roofs and green walls wherever suitable.*

The Council will promote and measure sustainable design and construction by:

- e) expecting non-domestic developments of 500sqm of floorspace or above to achieve "Excellent" in BREEAM assessments and "excellent" from 2016 and encouraging zero carbon from 2019.*

The Council will require development to be resilient to climate change by ensuring schemes include appropriate climate change adaptation measures, such as:

- f) summer shading and planting;*
- g) limiting run-off;*
- h) reducing water consumption;*
- i) reducing air pollution; and*
- j) not locating vulnerable uses in basements in flood prone areas.*

DP23 – Water

The Council will require developments to reduce their water consumption, the pressure on the combined sewer network and the risk of flooding by:

- a) incorporating water efficient features and equipment and capturing, retaining and re-using surface water and grey water on-site;*

- b) limiting the amount and rate of run-off and waste water entering the combined storm water and sewer network through the methods outlined in part a) and other sustainable urban drainage methods to reduce the risk of flooding;*

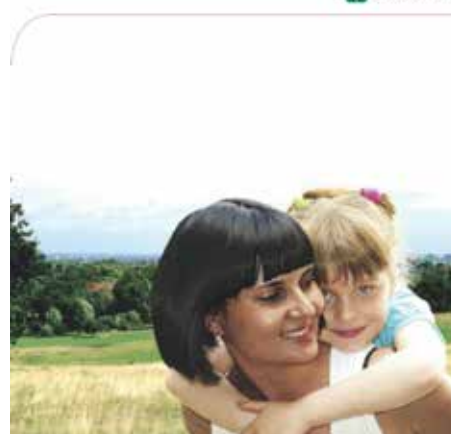
- c) reducing the pressure placed on the combined storm water and sewer network from foul water and surface water run-off and ensuring developments in the areas identified by the North London Strategic Flood Risk Assessment and shown on Map 2 as being at risk of surface water flooding are designed to cope with the potential flooding;*

- d) ensuring that developments are assessed for upstream and downstream groundwater flood risks in areas where historic underground streams are known to have been present; and*

- d) encouraging the provision of attractive and efficient water features.*

Camden Development Policies
2010-2025
Local Development Framework

 Camden



Sustainability Statement

Camden Planning Guidance - Sustainability CPG3 - 2013

The Camden Planning Guidance support the policies set out in the Local Development Framework (LDF). While the Camden LDF contains policies relating to sustainability in their Core Strategy and Development Policies documents, the Council also has a separate planning guidance specific to sustainability.

The sections that will be covered by a combination of the Sustainability Statement and accompanying Energy Statement are listed below:

The energy hierarchy

All new developments are to be designed to minimise carbon dioxide emissions by being as energy efficient as is feasible and viable.

Energy efficiency: new buildings

- *All buildings, whether being updated or refurbished, are expected to reduce their carbon emissions by making improvements to the existing building. Work involving a change of use or an extension to an existing property is included. As a guide, at least 10% of the project cost should be spent on the improvements.*

- *Development involving a change of use or a conversion of 5 or more dwellings or 500sq m of any floorspace, will be expected to achieve 60% of the un-weighted credits in the Energy category in their EcoHomes or BREEAM assessment, whichever is applicable. (See the section on Sustainability assessment tools for more details).*

- *Special consideration will be given to buildings that are protected e.g. listed buildings to ensure that their historic and architectural features are preserved.*

Decentralised energy networks and combined heat and power

Development should follow the Energy Hierarchy

1. *use less energy*
2. *supply energy efficiently*
3. *use renewable energy*

Renewable Energy

All developments are to target at least a 20% reduction in carbon dioxide emissions through the installation of on-site renewable energy technologies. Special consideration will be given to heritage buildings and features to ensure that their historic and architectural features are preserved.

Water Efficiency

The Council expects all developments to be designed to be water efficient by minimising water use and maximising the re-use of water. This includes new and existing buildings.

Sustainable use of materials

Major developments are anticipated to be able to achieve 15-20% of the total value of materials used to be derived from recycled and reused sources.

Sustainability assessment tools

Developments are anticipated to be able to achieve BREEAM 'Excellent' from 2013 onwards and at least 60% of Energy and Water credits and 40% of Materials credits.

Brown roofs, green roofs and green walls

The Council will expect all developments to incorporate brown roofs, green roofs and green walls unless it is demonstrated this is not possible or appropriate. This includes new and existing buildings. Special consideration will be given to historic buildings to ensure historic and architectural features are preserved.

Flooding

Developments must not increase the risk of flooding, and are required to put in place mitigation measures where there is known to be a risk of flooding.

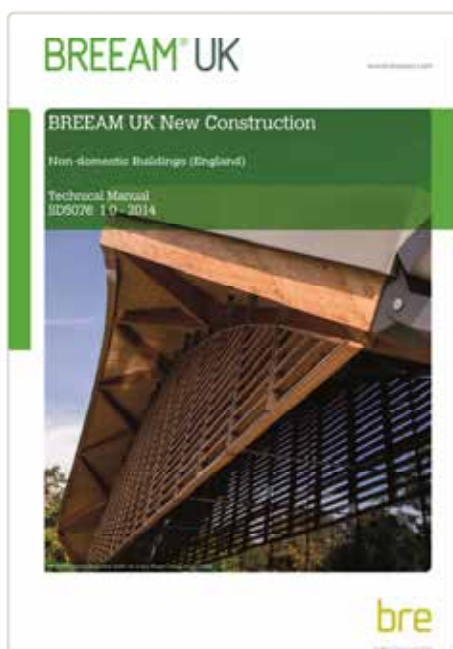
Adapting to climate change

All development is expected to consider the impact of climate change and be designed to cope with the anticipated conditions.



Sustainability Standards

This development will be assessed using BREEAM New Construction 2014 and aims to achieve a 'Excellent' rating. The following sections provide an overview of the most widely used sustainability assessment method in the UK.



Sustainability Standards

BREEAM

BREEAM New Construction 2014 is a performance based environmental assessment method and certification scheme for new buildings. The primary aim of BREEAM New Construction is to mitigate the impacts of new developments on the environment over the entire life-cycle of the building in a comprehensive and cost-effective manner. This is achieved through the integration of the BREEAM scheme at key stages of the design and procurement process.

A BREEAM Theatre (Assembly & Leisure) Pre-Assessment was carried out for the proposed development.

The pre-assessment tool uses established benchmarks to evaluate a building's specification, design, construction and operation, over a broad range of categories and criteria:

- Management processes
- Health and wellbeing
- Energy use
- Transport
- Water use
- Materials
- Waste
- Land use and ecology
- Pollution

BREEAM 2011 Ratings	Percentage of Credits Required
Outstanding	85%
Excellent	70%
Excellent	55%
Good	45%
Pass	30%

The outcome of the pre-assessment is expressed as a single certified BREEAM rating, ranging from Pass (30%) to Outstanding (85%).

BREEAM Pre-Assessment

This report discusses how the development addresses the BREEAM sustainability criteria required to meet BREEAM 'Excellent'.

The BREEAM Pre-Assessment shows that the development at Sondheim Theatre is expected to achieve a score of 74.32%, which exceeds the target of 70% for BREEAM 'Excellent'. The results are listed in the table below, including a breakdown of the indicative scores available and achieved in each section.

The BREEAM Pre-Assessment shows that the building design meets the client and design team's sustainability aspirations whilst also aiming for the highest possible rating for this development.

The following pages address each of the sustainability categories as set out in BREEAM. Each category highlights the sustainability measures that have been adopted to meet BREEAM 'Excellent'.

There are two BREEAM targets outlined within Camden's planning policy documents; given that the Camden Planning Guidance document is the most recent (2013), the target of 'Excellent' has been assumed and subsequently targeted.

BREEAM 2014 Categories	Indicative Scores Available	Indicative Scores Achieved: Theatre Building type
Management	12.0%	9.7%
Health & Wellbeing	15.0%	10.6%
Energy	15.0%	11.1%
Transport	9.0%	7.4%
Water	7.0%	6.1%
Materials	13.5%	8.7%
Waste	8.5%	6.4%
Land Use & Ecology	10.0%	7.0%
Pollution	10.0%	6.2%
Innovation	10.0%	2.0%
Total	100%	75.09%

Sustainability Statement

Management

Man 01 Project Brief and Design

Prior to completion of the Concept Design (RIBA Stage 2 or equivalent), a project delivery consultation meeting will be held to identify and define stakeholders' roles and responsibilities at each key stage of the project delivery. A third party stakeholders' consultation will also be carried out in line with BREEAM requirements.

Man 02 Life Cycle Cost and Service Life Planning

An elemental life cycle cost (LCC) analysis will be carried out at Concept Design Stage 2 and a component level LCC plan will be developed by the end of Technical Design Stage 4. The capital cost for the building will also be reported via the BREEAM Assessment Scoring and Reporting Tool in pounds per square metre (£k/m²).

Man 03 Responsible construction practices

All timber used in the project will be 'legally harvested and traded' timber. This is a prerequisite for the following issues which will also be included for this project:

- The principal contractor will operate a compliant Environmental Management System covering their main operations.
- The principal contractor will achieve exemplary compliance with the Considerate Constructors Scheme and go beyond best practice with a total CCS score of more than 40 points, and a minimum score of 7 in each of the 5 sections.
- Energy use and water consumption from on-site construction processes will be monitored and recorded.



Man 04 Commissioning and Handover

A schedule including a time scale for commissioning and testing all building services and control systems will be completed. An appropriate team member will be appointed to monitor and programme all commissioning requirements on behalf of the client.

A commissioning manager will be appointed to undertake design reviews, give advice and manage performance testing and handover/post-handover stages.

A thermographic survey and airtightness test will be carried out and any defects identified in the building fabric will be rectified.

A Building User Guide and a training schedule will be prepared for the building occupier and user, to ensure the efficient operation and maintenance of the building.

Man 05 Aftercare

Operational infrastructure will be in place to provide aftercare support to the building occupier. Consumption data for water and energy will be collected and monitored for a minimum of 12 months.

Seasonal commissioning activities will be completed over a minimum 12 month period once the building becomes substantially occupied.

A post-occupancy evaluation will be carried out one year after initial building occupation in order to gain in-use performance feedback from building users to inform operational processes.

There will be operational infrastructure and resources in place to co-ordinate the following activities for three years after building occupation:

- collection of occupant satisfaction, energy and water consumption
- analysis of the data to check the building is performing as expected
- setting targets for reducing water and energy performance
- feedback any lessons learned to the design team and developer for use in future projects
- provision of the actual annual building energy, water consumption and occupant satisfaction data to BRE.



Sustainability Statement

Health and Well being

Hea 01 Visual comfort

All fluorescent and compact fluorescent lamps specified will be fitted with high frequency ballasts to meet the mandatory requirements of this category. Internal lighting should be zoned to allow for occupant control. In office areas, zones of no more than 4 workplaces should be allowed for.

All lighting will be designed to give occupants the flexibility in achieving desired illuminance levels without excessive energy use. Appropriately maintained illuminance levels will be achieved in line with the SLL Code for Lighting 2012, CIBSE Lighting Guide 2009 and other relevant industry standards.

All external lighting will be designed to provide illuminance levels that enable the users to perform outdoor visual tasks efficiently at night. External lighting will be specified in accordance with BS 5489-1:2013 and BS EN 12464-2:2014.

Hea 02 Indoor Air Quality

An Indoor Air Quality plan will be produced, with the objective of facilitating actions to minimise indoor air pollution during occupation of the building.

All internal finishes (including paints, varnishes, wood panels, timber structures, adhesives, coverings) will comply with VOC emissions levels standards.

A pre-occupancy air quality testing will be performed to ensure formaldehyde concentration level complies with WHO guidelines for indoor air quality.

Hea 04 Thermal Comfort

A thermal model will be built and thermal comfort analysed. The model will inform the development of a thermal zoning and control strategy and considers the influence of the projected climate change scenarios, or demonstrates how the building can be adapted in future using passive design solutions.

Hea 05 Acoustic Performance

A suitably qualified acoustician will be appointed to define a bespoke set of performance requirements for all function areas in the building using the three acoustic principles for sound insulation, indoor ambient noise level and reverberation times, setting out the performance requirements for each and the testing regime required.

Hea 06 Safety and security

A suitably qualified security specialist (SQSS) will be appointed to conduct a Security Needs Assessment (SNA) during the Concept Design stage (RIBA Stage 2) of the project, and the resulting set of recommendations implemented on site.

Energy

Ene 01 Reduction of energy use and carbon emissions

An SBEM calculation was carried out to determine the energy demand and CO₂ emissions for the notional and actual buildings. The results were subsequently applied to the Ene01 calculator within the BREEAM 2014 Pre-assessment Scoring tool.

An overall building energy performance ratio (EPR_{NC}) of >0.75 is achieved for the proposed development through a number of energy efficiency measures which are discussed in the accompanying Energy Statement.

Ene 02 Energy monitoring

An energy monitoring and management system that enables at least 90% of the estimated annual energy consumption of each fuel to be assigned to the various end-use categories of energy consuming systems will be installed.

In addition, sub-meters will be installed to the energy supply of each separate function area. Where the function area extends beyond a single floor plate, sub-meters will be installed per floor plate for each tenanted unit.



Sustainability Statement

Ene 03 External lighting

All external luminaries are to be energy efficient and all light fittings are to be controlled for the presence of daylight. Daylight sensors will help to ensure that artificial lights are not used when daylight levels are sufficient.

The average initial luminous efficacy of the external light fittings within the construction zone will not be less than 60 luminaire lumens per circuit Watt.

Ene 04 Low Carbon Design

A feasibility study will be carried out by the completion of RIBA Stage 2 to establish the most appropriate low or zero carbon energy source(s) for the building, which will aim to meet at least 5% of the overall building energy demand.

Ene 06 Energy Efficient Transportation Systems

The usage patterns of the building will be assessed to determine the optimum number of lifts and their energy consumption be calculated in line with BS EN ISO 25745 Energy Performance of Lifts (elevators).

The following energy efficient features will be specified:

- standby mode operation (during off peak periods),
- the lamp efficacy of lift car and lift display lighting (>55 lamp lumens/circuit Watt), and
- drive controllers with variable speed, voltage and frequency control of the drive motor.

Transport

Tra 01 Public Transport Accessibility

The site has excellent public transport links with a public transport accessibility index of 93.

Tra 02 Proximity to amenities

There are restaurants, cash points and open spaces located in close proximity to the building site.

Tra 03 Cyclist facilities

Cycle storage spaces for will be provided for staff in an appropriate and secure location. These will be within proximity of the main building entrance.

Tra 04 Maximum Car Parking Capacity

Car parking spaces will not be provided on site.

Tra 05 Travel Plan

A travel plan will be developed as part of the design and feasibility stage, encouraging the use of sustainable modes of transport of people and goods during the buildings' operation and use. The travel plan will be based on site specific travel assessment.



Sustainability Statement

Water

Wat 01 Water consumption

A minimum of 50% improvement over baseline performance will be sought in all water consuming components. The following maximum flow rates will be used:

Office spaces:

- Wash hand basin taps: flow rate 3.5 litres/min.
- WC: effective flush volume 3.5 litres
- Kitchenette taps: flow rate 5.0 litres/min

Any other water consuming fixtures, fittings or appliances will be compared against BREEAM performance levels before specification.

A rainwater harvesting system could be considered to achieve additional credits in this category.

Wat 02 Water monitoring

A water meter with a pulsed or other open protocol output will be provided on the mains water supply to accurately monitor the building's water usage. Building service systems with a significant water demand will be have additional water monitoring equipment fitted to them. All water meters will be connected to the BMS if applicable.

Any water consuming plant or building areas installed by the tenant need not be assessed.

Wat 03 Water leak detection and prevention

A leak detection system capable of detecting a major leak on the mains water supply within the building and between the building and the utilities water meter will be installed.

Flow control devices that regulate the supply of water to each WC area/facility according to demand will be installed in order to minimise water leaks and wastage from sanitary fittings.

Materials

Mat 01 Life cycle impacts

The materials specified for the main building elements will have a low environmental impact. For this development it will be required that the external walls, windows, upper floor slab, internal walls, floor finishes and roof achieve a Green Guide rating of between A+ and C.

Mat 02 Hard landscaping and boundary protection

More than 80% of all external hard landscaping will achieve a Green Guide rating of either A+ or A.

Mat 03 Responsible sourcing

Building materials used for the main construction elements will need to be 'responsibly sourced' with a documented Sustainable Procurement plan in place. All timber and timber based products specified will be legally harvested and traded timber.

In addition, at least 18% of the responsible sourcing of materials (RSM) points must be achieved in accordance with the BREEAM methodology.

Mat 04 Insulation

All insulation specified for the development will have a low embodied environmental impact relative to its thermal properties. Insulation specified for use within external walls, ground floor, roof and building services will be assessed and the Insulation Index should be equal to or greater than 2.5.

Mat 05 Designing for durability and resilience

The design will incorporate suitable durability and protection measures or designed features/solutions to prevent damage to vulnerable and exposed parts of the internal and external building and landscaping elements

Mat 06 Material Efficiency

The design and construction teams will identify opportunities where material use can be optimised during the RIBA stages 1-5 (Preparation and Brief through to Construction).



Sustainability Statement

Waste

Wst 01 Construction waste management

A Resource Management Plan (RMP) will be developed with the aim of minimising and monitoring waste, where the amount of construction waste generated is lower than or equal to 7.5m³ per 100m² of gross internal floor area is measured. The proportion of this construction waste diverted from landfill will also be measured and reported.

A pre-demolition audit will be carried out for any existing buildings, structures or hard surfaces to identify key refurbishment/demolition materials.

In addition, 70% of non-demolition waste and 80% of demolition waste must be diverted from land fill.

Wst 03 Operational waste

There will be dedicated space to cater for the segregation and storage of operational recyclable waste volumes generated by the assessed building/unit, its occupant(s) and activities. A minimum of at least 2m² of waste storage space per 1000m² of net floor area shall be provided.

Wst 05 Adaption to climate change

A climate change adaptation strategy appraisal for structural and fabric resilience will need to be conducted by the end of the Concept Design stage (RIBA Stage 2), to identify the impact of climate change influenced weather conditions on the projected lifespan of the building.

Wst 06 Functional Adaptability

A building specific functional adaptation strategy study needs to be conducted by the Concept Design stage (RIBA Stage 2), including recommendations to incorporate measures for future building adaptation. Where practical and cost effective, these measures are to be implemented.

Land Use & Ecology

LE 01 Site Selection

The footprint of this development is entirely located on a site previously developed.

LE 02 Ecological value of site and protection of ecological features

Due to its location and absence of ecological features on the existing site, the site is likely to be considered to be of low ecological value according to the BREEAM checklist. A suitably qualified ecologist (SQE) will need to be appointed to confirm this. Any features of ecological value surrounding the site will need to be protected in line with BS42020: 2013.

LE 03 Minimising impact on existing site ecology

As the development site has an absence of ecological features, no negative change in plant species richness is expected. This will be calculated via the BREEAM LE03/L04 calculator by the SQE.

LE 05 Long term impact on biodiversity

The appointed SQE will confirm that the protection and enhancement of the ecology will be carried out in compliance with the relevant UK and EU legislations.

An appropriate landscape and habitat management plan will be prepared, covering at least the first five years after project completion, in compliance with BS 42020:2013. This is to be handed to the building owner and occupants.

In addition, the SQE should advise on any additional measures applicable to the development, such as appointment of a biodiversity champion during construction to minimise impacts of site activities on biodiversity, protection of surrounding biodiversity and provide training on site for all workers, and development of a biodiversity action plan by the SQE.



Sustainability Statement

Pollution

Pol 02 NOx emissions

The high efficiency boiler installed to meet the heating demand of the development will have a NOx emission level below or equal to 70 mg/kWh, under normal operating conditions.

Pol 03 Surface water run off

The Environmental Agency Flood Map shows that the development is located in an area with a low probability of flooding. A Flood Risk Assessment will be carried out for the site to confirm this.

As there will be no change in the impermeable area post-development, two credits (peak and volume of run-off) will be met by default.

Pol 04 Reduction of night time light pollution

External lighting will be confined to appropriate areas for security and safety purposes, and lighting will comply with the Institution of Lighting Engineers guidance notes for the reduction of obtrusive light.

All external lighting (except for safety and security lighting) will be fitted with timers to enable them to switch off automatically between the hours of 2300hrs and 0700hrs.

Illuminated advertisements must be designed to comply with ILE Technical Report 5 - The Brightness of Illuminated Advertisements.

Pol 05 Noise attenuation

As there are noise-sensitive buildings within 800m radius of the development, the following will be carried out:

- A noise impact assessment in compliance with BS7445 to determine the existing background noise levels at the nearest or most exposed noise-sensitive development to the proposed development and the rating noise level resulting from the new noise source

- The noise level from the proposed site is a difference no greater than +5dB during the day and +3dB at night compared to background noise level
- Where the noise source from the proposed site is greater than the levels described above, measures will be installed to attenuate the noise at its source to a level where it will comply with the above.

BREEAM Pre-Assessment Results

A BREEAM pre-assessment was carried out for the proposed development at Sondheim Theatre, based on the sustainability targets set out by the Council and the design measures adopted by the client and design team.

The table on the following page summarises the number of credits achieved in each of the BREEAM categories.

The proposed development achieves a total of 75.09 credits, which meets the level required for BREEAM 'Excellent', reflecting the client and project team's commitment in adopting a range of sustainability measures over the life-cycle of the development.

Conclusion

The proposed development will comprise a highly sustainable scheme. It is compliant with strategic and local policy requirements and objectives regarding sustainability and will achieve a BREEAM rating of "Excellent".



BREEAM Pre-Assessment Results Summary

BREEAM Section			Score Assessment		
			Sub Total	Weighting (%)	Score (%)
Management	Man 01 Project brief and design	2	17	12	9.7%
	Man 02 Life cycle cost and service life planning	4			
	Man 03 Responsible construction practices	4			
	Man 04 Commissioning and handover	4			
	Man 05 Aftercare	3			
Health & Wellbeing	Hea 01 Visual comfort	1	12	15	10.6%
	Hea 02 Indoor air quality	3			
	Hea 04 Thermal comfort	3			
	Hea 05 Acoustic Performance	3			
	Hea 06 Safety and security	2			
Energy	Ene 01 Reduction of energy use and carbon emissions	10	17	15	11.1%
	Ene 02 Energy monitoring	2			
	Ene 03 External lighting	1			
	Ene 04 Low carbon design	1			
	Ene 06 Energy efficient transportation systems	3			
	Ene 08 Energy efficient equipment	0			
Transport	Tra 01 Public transport accessibility	5	9	9	7.4%
	Tra 02 Proximity to amenities	1			
	Tra 03 Cyclist facilities	0			
	Tra 04 Maximum Car Parking Capacity	2			
	Tra 05 Travel Plan	1			
Water	Wat 01 Water consumption	4	7	7	6.1%
	Wat 02 Water monitoring	1			
	Wat 03 Water leak detection and prevention	2			
Materials	Mat 01 Life cycle impacts	3	9	13.5	8.7%
	Mat 02 Hard landscaping and boundary protection	1			
	Mat 03 Responsible sourcing	2			
	Mat 04 Insulation	1			
	Mat 05 Designing for durability and resilience	1			
	Mat 06 Material efficiency	1			
Waste	Wst 01 Construction waste management	3	6	8.5	6.4%
	Wst 02 Recycled aggregates	0			
	Wst 03 Operational waste	1			
	Wst 05 Adaptation to climate change	1			
	Wst 06 Functional adaptability	1			
Land Use & Ecology	LE 01 Site selection	1	7	10	7.0%
	LE 02 Ecological value of site and protection of ecological features	2			
	LE 03 Mitigating ecological impact	2			
	LE 04 Enhancing site ecology	0			
	LE 05 Long term impact on Biodiversity	2			
Pollution	Pol 01 Impact of Refrigerants	0	8	10	6.2%
	Pol 02 NOx emissions	2			
	Pol 03 Surface water run off	4			
	Pol 04 Reduction of night time light pollution	1			
	Pol 04 Noise Attenuation	1			
Innovation	Inn 01 Innovation	2	2	10	2.0%
BREEAM - Excellent			Total Points Scored: 75.09%		

