

**Matrix to Assess Climate Change Impacts**

<b>Aim is to reduce Carbon Emissions (CO2) by 80% by 2050</b>	<b>Positive impact</b>	<b>Negative impact</b>	<b>Mitigation measure</b>	<b>Effect on CO2 emissions (+ or - tonnes of CO2)</b>	<b>Opportunity to promote</b>
<b>Water Use and Flooding</b>	The new and refurbished buildings will meet Part L Building Regulations BREEAM very good – which will include better water efficiency compared to the existing buildings.	There will be increased site use of water due to intensification of site occupation.	<p>Maximise water efficiency measures during works</p> <p>Percussive taps and water efficient dual flush toilets to be installed.</p> <p>Sustainable Urban Drainage System installed beneath new build fly tower to rear of building.</p>	Not Applicable	Encourage tenants to conserve energy and water and to become energy and/ or water conservation champions through management of buildings post occupation.

<p><b>Energy</b> Energy efficiency and energy saving in buildings, including opportunities for installation of renewable energy generation</p>	<p>New services and modifications to existing mechanical services to meet CIBSE Guides, Building Regs Part L2 requirements for energy conservation.</p> <p>Energy Efficient and LED lights are incorporated. No gas or carbon fuel is supplied to the site. Electricity supplemented by Photovoltaics on auditorium roof.</p> <p>Heating is by Air Source Heat Pumps.</p> <p>New plant is modern and energy efficient to reduce CO2 footprint based on SBEM standards.</p>	<p>Energy consumption generated by the construction process</p> <p>Increased energy consumption due to the increased occupancy accommodated in the new venue.</p> <p>Mechanical ventilation to toilets, kitchens and internal occupied spaces.</p>	<p>Encourage tenants to conserve energy via representation on building user group and management of lease.</p> <p>Heating controls via Building Management System to optimise Energy use and reduce waste. Mechanical ventilation includes for energy reclaim facilities to pre-heat incoming fresh air.</p> <p>Photovoltaic array is installed on Auditorium Roof</p>	<p>The proposals comply with council policy to reduce carbon emissions compared to 2013 Building Regulations by 35%.</p> <p>The proposals reduce carbon emissions by 425 tonnes per year. This was calculated and independently validated in successful application for Mayor's Energy Efficiency Fund application.</p>	<p>Opportunity to display energy usage and management via BMS system and community events. .</p> <p>Soft landing approach: the contractor to provide return visits following hand over to fine tune the system controls; check energy meter consumptions against targets and ensure that the buildings are operating as designed</p>
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<p><b>Air</b> Air quality, pollution</p>	<p>New extensions constructed to modern standards with an air leakage rate that will not exceed 5m3/h/m3 at 50Pa</p> <p>New plant and systems are energy efficient using the latest technology to achieve a good carbon footprint for both new and remodelled buildings based on SBEM standards.</p> <p>Development is car free with no additional parking spaces.</p>	<p>Mechanical ventilation will be installed to achieve required ventilation rates and cooling.</p> <p>Air pollution generated by the construction process</p>	<p>Mechanical ventilation includes for energy reclaim facilities to pre-heat incoming air.</p> <p>No gas-fired boiler or other fossil fuel equipment is included. Heating is by Air Source Heat Pumps.</p> <p>Additional cycle parking is provided on site and in the public realm close to the venue.</p> <p>Existing accessible drop-off point in Church Hill is utilised.</p>		<p>Soho Theatre will develop sustainable travel plan.</p> <p>Post-completion monitoring of CO2 emissions as conditions of Mayor's Energy Efficiency Fund award.</p> <p>Marketing for performance ticketing and publicity will highlight proximity to public transport links and cycle parking.</p>

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<b>Waste</b> – reducing, reusing and recycling waste	<p>Reduction of waste through use of sustainable, materials in construction Contractor has engaged with waste recycling specialists to meet the recycling targets published by WRAP and others</p> <p>Co-ordinated Waste Strategy for venue and commercial units being developed by Council officers. Potential to extend strategy into adjacent Hatherley Mews commercial premises. .</p>	Waste generated by the construction process	<p>Design proposals optimise adaptation and refurbishment of existing assets to meet new requirements, thus using fewer resources.</p> <p>The contractor has prepared site waste management plans and is encouraged to use recycled materials as part of the construction.</p>		Monitoring and promotion of good waste management practices through building user group and management of lease.
<b>Land</b> Use of brown-field and green-field sites	Use of existing site	None	Not applicable		Redevelopment of heritage-sensitive Grade II* Listed Building in prominent location.

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<b>Bio-diversity</b> Effects on bio-diversity including green space, trees, rivers and streams	Minimal potential to introduce green space or improve biodiversity due to site constraints.	None identified.	Opportunity taken for minor improvement to biodiversity with introduction of planting troughs to fly tower wall at rear of venue.		None identified.

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<p><b>Transport</b> Travelling to deliver service. Discouraging car use and encouraging walking, cycling and use of public transport</p>	<p>A new entertainment venue in Walthamstow Town Centre supports the objectives of the 15-minute neighbourhood reducing the frequency and distance of journeys and the potential for vehicle use.</p> <p>There are excellent public transport links near the venue for Waltham Forest residents and those visiting the borough.</p>	<p>Potential for local congestion due to increased deliveries and waste collections.</p>	<p>Soho Theatre are developing a venue management plan to include the management of deliveries. A co-ordinated Waste Strategy for venue and commercial units being developed by Council officers.</p> <p>Additional cycle parking is provided on site and in the public realm close to the venue.</p> <p>Existing accessible drop-off point in Church Hill is utilised.</p>		<p>Marketing for performance ticketing and publicity will highlight proximity to public transport links and cycle parking.</p>

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<b>Buildings</b> Adaptability of buildings to heat or flooding. Use of green roofs, rainwater harvesting etc.	<p>The environmental conditions in the building are modelled to moderate comfort conditions at predicted weather extremes.</p> <p>Other measures that make the buildings adaptable to changes in temperature are much improved insulation and air tightness.</p>	<p>Greater Water consumption but no change to surface water run-off.</p>	<p>Insulation and air tightness measures,</p> <p>Sustainable Urban Drainage System installed to rear of the building beneath the fly tower.</p>		<p>Ensure that sustainability is integrated into the building construction process and the school's curriculum.</p>



<b>Commentary on any differences in financial costings for climate change mitigation / adaptation measures including energy efficiency and potential external grant sources</b>
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The Mayor of London's Energy Efficiency Fund provided low interest financing at a borrowing rate of 1.41% on the sum of £5,400,000 of eligible carbon reducing capital expenditure to ensure that the CO2 emission reductions of 425 tonnes per year are achieved.
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<b>Potential “whole life costing” savings i.e.: increased installation costs will achieve running cost savings over lifetime; including reduced use of resources e.g.: water saving devices</b>
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The investment in the buildings brings a heritage asset back into use and in doing secures economic benefits, employment, and training. Those benefits have an estimated value of between £46 and £61 million growth to the local economy over 10 years with a further estimated £17m of wider economic benefits. This includes a value of £1m over 10 years arising from reduced CO2 emissions. (Source – Soho Theatre Walthamstow – Update to Strategic and Economic Assessment of 2017: Inner Circle Consulting - February 2023)
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<b>Explanation of Proposal chosen in context of results matrix assessment, including what mitigating steps can and have been taken.</b>
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The carbon saving features including insulating materials, energy sources, use of heat pump technologies, heat recovery and photovoltaic installations are the key areas for sustainability improvements that are in the Council's Control.
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<b><u>Total Tonnes of CO2 &amp; DEC rating of building to be occupied:</u> TO BE QUOTED DIRECTLY IN CABINET REPORT</b>
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CO2 emissions from the proposed design are an estimated 222 tonnes CO2 per year compared to a baseline forecast against the standards in the 2013 Building regulations of 647 tonnes, a saving of 425 tonnes CO2 per year.
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An Energy Performance Certificate for the building will be provided at handover.
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