ROYAL CENTRAL
SCHOOL OF SPEECH & DRAMA
UNIVERSITY OF LONDON

The Royal Central School of Speech and Drama

'Phase 5' – Studio 1 Redevelopment

Sustainability Statement

Max Fordham

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MAX FORDHAM

The Royal Central School of Speech and Drama, Phase 5

Sustainability Statement

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1.0 EXECUTIVE SUMMARY

Max Fordham LLP have been appointed to provide pre-planning sustainability advice to The Royal Central School of Speech and Drama (Central) and their design team during the preliminary design stages of the proposed redevelopment of the Phase 5 building at the school site in Swiss Cottage, London.

This report summarises the sustainability issues that Central and their design team have been considering to date and which they will continue to develop as the scheme proceeds.

Sustainability has been considered from the outset with the London Borough of Camden planning guidance in mind.

Core Strategy policy CS13 – Tackling climate change through promoting higher environmental standards sets out a key part Camden's overall approach to tackling climate change. This includes promoting higher environmental standards in design and construction. Policy DP22 – Promoting sustainable design and construction contributes towards delivering the strategy policy CS13 by providing detail of the sustainability standards we will expect development to meet whilst policy DP23 outlines the approach to sustainable water use. Core Strategy policy CS11 and policies DP16 to DP21 set out Camden's approach to sustainable transport.

The remaining sections of this Sustainability Statement describe in detail the aspects of sustainability which have been considered and addressed in response to the Camden planning requirements outlined in the planning guidance documents listed above.

The Phase 5 development will be assessed under BREEAM. The BREEAM pre-assessment for the proposed development has been carried out by Price & Myers. The results of this pre-assessment are included in Appendix A.

2.0 SUSTAINABILITY OVERVIEW

A definition of a 'Sustainable' development widely recognised in the building industry, is one that will meet the needs of the present generation without compromising the needs of future generations.

It has also been recognised that a genuinely sustainable building is one that is sufficiently adaptable such that it remains operationally useful throughout its structural life.

Taking these definitions into account, the current Studio 1 building on the site at Central is no longer sustainable.

Central have therefore taken the decision to demolish and replace the existing Studio 1 building with a new, purpose built Phase 5 building offering extended performance and rehearsal studio space as well as office provision for the School.

Of course, any new development within the existing site will have an inherent impact on the local and global environment. However, the objective should be to minimise this impact through careful design, construction and subsequent management of the premises.

For the Phase 5 development to be considered truly sustainable, the design must address the challenges posed by climate change, both now and in the future, and also be flexible enough to respond to future developments in the provision of the core services offered by Central within the community.

In considering how to achieve these objectives, the design team have given careful thought to the following key issues over the expected life of the buildings:

- social and economic issues;
- energy use;
- water use;
- waste;
- materials;
- health and wellbeing
- landscape and biodiversity;
- transport and
- adapting to climate change.

These issues will continue to be considered independently and collectively as the design team seek to deliver a truly sustainable development at Central.

Additionally, Central and their design team are committed to benchmarking the sustainable credentials of the proposed developments using BREEAM.

3.0 KEY SUSTAINABILITY ISSUES

3.1 Social and Economic Issues

The socio-economic thread runs through all of the key sustainability categories. If the social and economic issues are properly addressed, then the new development will be successfully used for many years and may even help to sustain the local communities within which they sit.

The proposed building has been designed to:

Encourage Social Inclusion – the scheme will provide a theatre studio encouraging the interaction between the students at Central and the local and wider community.

Accommodate the future expansion – the school has been experiencing steady growth for a number of years and is in urgent need of expanding its student and staff facilities. The proposed Phase 5 building will not only meet the current school needs but also provide the much needed space for the future years.

New Office Accommodation for the School – the current aging office facilities within the school are known to be inadequate and offer limited scope for economic growth within the school. The Phase 5 development will provide comfortable office and meeting room facilities in vicinity of the studios, encouraging interaction between the students and the staff.

Allow Flexible Use – it is recognised that the needs of the school will change over time. Whilst the Studios will be designed to allow maximum flexibility in their type of use and fit out, the provision of office, meeting and support services will also inevitably change with time. The building will need to be able to respond to these changes. The concrete frame structure will allow the layout of individual floors to be altered. The building services strategy has also been developed with flexibility in mind.

3.2 Landscape and Biodiversity

As required by the CPG3 document the biodiversity has been considered from the outset.

It is recognised that developments that support a wide range of flora and fauna will enrich the experience for building users as well as providing positive environmental benefits for the wider community.

The development will:

Maintain and Enhance the Ecological Value of the Sites – the current ecological value of the site is very low. The landscape proposals will represent a wholesale improvement for the site. An ecologist has been appointed to the design team to ensure that opportunities for improving the ecological value of the site are fully exploited.

Use Sustainable Landscape Techniques – the landscape proposals will be developed to respond to the natural topography and proposed buildings, make use of sustainable urban drainage systems, incorporate indigenous plants and avoid plants that require heavy irrigation or extensive use of environmentally harmful maintenance methods.

3.3 Transport

Over the past forty years, the car has increasingly dictated the layout of large urban and suburban sites. This can mean that otherwise excellent developments are isolated or unwelcoming to non-motorists. Also, despite technological advances, the vast majority of cars on the road will continue to be powered by fossil fuels in the short to medium term, contributing to poor local air quality and carbon dioxide emissions globally.

The above issues are recognised by the Camden policy DP21 and addressed as follows:

Prioritise Facilities for Pedestrians and Cyclists – Cycle storage and good changing/showering facilities shall be provided to encourage staff to cycle to work. The storage facilities will also serve the residents. Onsite parking for cars has been minimised.

Reinforce Links with Public Transport – the location of the site offers a marvellous opportunity for staff, residents and visitors to use a wide variety of public transport. The lack of car parking will help to reinforce the message that the way to reach the Phase 5 building is via public transport.

Address the needs of wheelchair users – All parts of the Phase 5 building will be fully wheelchair accessible. A suitable disabled refuge strategy will also be in place for emergency evacuation purposes.

3.4 Energy Use

The energy use is addressed within the Camden planning guidance by reference of the following documents:

- CS13
- DP22
- CPG3
- London Plan

A separate Energy Statement has been prepared by Max Fordham LLP in support of this planning submission.

Tackling the significant energy consumption in buildings is a key aspect of the UK's strategy for reducing carbon emissions. The proposed redevelopment of Central delivers a building that will inherently use as little energy as possible. In order to achieve this objective, the designs have adopted the following cost effective hierarchy.

Incorporation of Passive Measures to Reduce Energy Demand – the basic form, orientation and relationship with the surrounding landscape has a significant influence on the potential energy demand of the buildings, as will the final choice of materials and construction. The designs will seek to exploit the following passive measures:

- Orientating buildings to take advantage of solar gain in the winter;
- Insulating the building to significantly reduce fabric heat loss;
- Taking measures to reduce unwanted, uncontrolled air infiltration in the winter;
- Using heavyweight construction so that the thermal mass can be used to reduce the need for heating and cooling;
- Using natural ventilation where possible;
- Using natural light to reduce the reliance on electric lighting;
- Providing appropriate shading to prevent overheating.

Incorporation of Low Energy Systems to Efficiently Meet Residual Energy Demand – it is impossible to completely eliminate the need for energy use within the buildings; building facilities need hot water as well as electricity for lighting, equipment and mechanical plant. Having reduced the energy demand through intelligent passive design of the buildings, it is appropriate to tackle the residual energy demand through the use of the following low energy technologies:

- High efficiency heating and hot water systems, including variable speed pumps and point of use electric heating;
- Heat recovery on mechanical ventilation systems that include variable speed fans;
- Simple user friendly automatic controls;
- Low energy lighting systems that are controlled to respond to occupancy and levels of natural light;
- Power factor Correction where required.

Incorporate Renewable Technologies – some of the residual energy demand will be met by incorporating Low or Zero Carbon (LZC) technologies. At this stage, it is anticipated that the Photo Voltaic technology will be employed to meet the obligations as defined within the planning guidance documentation.

Refer to the Energy Statement issued as a separate document outlining the energy strategy for the Phase 5 building.

3.5 Water Use

The drive to conserve water is not solely about matching supply and demand in areas of increased urbanisation where reserves have been, or may be, diminishing. It is also concerned with the potential waste associated with treating and heating excess quantities of water used within buildings.

Camden policy DP 23 outlines the Camden authority recommendations with regards to treatment of the building surface water run-off, preserving the potable water supply and treating the resulting waste.

The design includes:

Sustainable Urban Drainage System – schemes that deal with surface water run-off on site rather than draining to the public sewer system will avoid adding unnecessary strain to the infrastructure beyond the site. In particular, urban drainage systems often combine foul and surface water resulting in additional energy being wasted to treating larger volumes of water; As recommended by Policy DP23 and Map 2: Flood Risk, the Phase 5 development will incorporate a site run-off attenuation system to minimise the impact of the proposed building on the wider drainage infrastructure.

Low Water Use Appliances – dual flush toilets, flow restrictors on water outlets, low water use appliances will be installed throughout;

Leak Detection and Metering – the water supply to the building will be metered and the output will be conveyed to the building management system so that it can be easily monitored. Sub-meters will also be fitted to allow localised monitoring of consumption. Leak detection will be installed to enable prompt identification of any excessive water loss from the system.

Low Water Irrigation Strategy – planting will be chosen so that it does not require excessive watering.

3.6 Materials

The Phase 5 development is located on the edge of a local conservation area as shown in DP25 Map 3: Heritage. As recommended by policy DP25, all of the building materials used in the project will be chosen to preserve and enhance the character of the local area.

All construction materials have an impact on the local and global environment. The extraction of raw materials, the manufacturing process, transportation to site, the construction process, maintenance and ultimately the demolition and disposal of materials at the end of a building's life all need to be considered when specifying materials for use in any construction project.

The 'cradle to grave' energy associated with building materials is known as embodied energy and studies on typical buildings have estimated that the embodied energy can be equivalent to half of the total energy used by the resulting building in operation.

The use of recognised standards and certification schemes such as the Building Research Establishment Green Guide to Specification and the Forest Stewardship Councils scheme for timber will be used to help select the most appropriate materials for the construction as the design develops.

The following issues have been taken into account as part of the design development:

Using Locally Sourced Materials – this helps to both support the local economy and reduce the environmental impact associated with transportation to the site.

Avoiding Materials Known to be Harmful to the Environment or Human Health – these include ozone depleting substances, pvc, volatile organic compounds, tropical hardwoods and other timber which is not obtained from an accredited source.

Considering Long Term Maintenance and Replacement – the design team have sought to avoid specifying materials that will require regular wholesale replacement or use environmentally unfriendly techniques/treatments as part of their on-going maintenance.

Using Recycled Materials – the opportunity to re-use materials from the demolition process will be explored as will the potential to specify recycled materials from elsewhere.

3.7 Waste

It should be the aim of every new development to minimise the amount of waste associated with both the initial construction and subsequent operation of the site. The issues of wasted energy and water have been discussed above but refuse and other material waste is another area that requires attention. The following hierarchy will be adopted at the Phase 5 development:

Reduce Waste – strategies will be developed for both the construction process and the building in operation. For example systems that run off mains electricity are preferable to battery operated systems, the use of bulk purchasing, and recycled goods will all help to reduce the amount of waste sent to landfill. Individual bedsit units will be provided with separate bins for recyclable waste thereby reducing the volume designated for landfill. The centralised refuse store will have adequate space to separate all waste generated both by the residents and the office.

Re-Use Products and Materials – opportunities for the use of recycled materials in the construction of the building will be encouraged and explored in the detailed specifications.

Recover Materials that can be Re-used – during construction contractors will be required to ensure that waste is sorted on site, thereby reducing the volume of waste sent to landfill or for incineration. Recycling facilities have been incorporated into the design for post occupancy use as noted above.

3.8 Health and Wellbeing

Given the services that will be provided at Central, it is essential that the building promotes a sense of health and wellbeing in staff, students and visitors alike. It is intended to achieve this through:

Good Access to Natural Light – the depth of building plan and arrangement of accommodation, orientation and use of glazing will all help to provide good access to natural light within the building. Internal light levels have been modelled to see that all residential units are subject to high daylight factors in excess of British Standard recommendations.

Good Access to Fresh Air – the mechanical ventilation systems, where provided, will incorporate a filtration standard appropriate to this central urban location. Intake positions will take due account of potential sources of pollution, including extract or flue terminals from Phase 5 building itself. The North and West façade of the building will be exposed to high level of acoustic pollution. The rooms located along these façades will be provided with fan assisted mixed mode ventilation system to provide adequate fresh air throughout most of the school season. User controlled natural ventilation will be adopted wherever possible for rapid ventilation in the summertime.

Avoiding Noise Pollution – road noise will be audible given the site location. Mixed mode and mechanical ventilation systems with heat recovery will ensure that fresh air can be delivered to the building via an acoustically secure path. Acoustic privacy within the building and providing appropriate acoustic separation between plant areas and habitable spaces will be considered through careful space planning and construction detailing. Box in box construction will be employed in the most acoustically sensitive studios to avoid noise transfer to and from adjacent rooms.

Reducing Pollution – the level of NOx emissions associated with the heating plant for the new building will be lower than is the case for the current building. A refrigeration leak detection system will be specified in conjunction with the mechanical cooling system for the office areas.

4.0 BREEAM

4.1 Introduction to BREEAM

The Building Research Establishment Environmental Assessment Method (BREEAM) was originally developed in 1990 as a method of determining the environmental credentials of commercial office developments.

The success of the scheme led to the development of similar assessments that could be applied to other building types including homes, schools and industrial buildings.

BREEAM was originally introduced in 2006 and awards credits for achieving certain criteria under the following headings:

- Management
- Health and Wellbeing
- Energy
- Transport
- Water
- Materials
- Waste
- Land Use and Ecology
- Pollution

In order to achieve an 'Excellent' rating as stipulated by the local planning authority, a score of at least 70% is required.

Given that the design is at an early stage, it is prudent to aim for a target beyond the minimum 70% threshold. This is because credits can only be finally awarded if there is appropriate documentary evidence to demonstrate that any particular credit has been achieved.

A BREEAM pre-assessment has been carried out by Price and Myers and a summary of the results for the proposed development is shown in the appendix A.

5.0 APPENDIX A – BREEAM PRE-ASSESSMENT