SOLAR PROJECT
ACLAND BURGHLEY SCHOOL

Design & Statement

JOJUSOLAR

1.0 Introduction

1.1 The Design & Access Statement has been prepared in support of the proposal to install a solar photovoltaics (PV) array at Acland Burghley School.

2.0 Site Address & Description

2.1 The site address is: Acland Burghley School, 93 Burghley Rd, London NW5 1UJ.
2.2 The property is a three and four storey building whose use as School shall remain unchanged.
2.3 The property was constructed in 1963-7 by Howell, Killick, Partridge & Amis and its main entrance is located on Burghley Road. The rear of the building faces the courtyard. There is an on-site car park at the property.
2.4 The building has a pre-cast concrete façade with a flat concrete roof.
2.5 An aerial photograph of the property is illustrated in Figure 2.5-A.

2.6 –A Acland Burghley School. Aerial photo

3.0 The Proposal

3.1 The London Borough of Camden is committed to reducing its carbon emissions and through The Camden Plan, the Council has committed to an ambitious target to reduce the Borough's carbon emissions as at 2010 by 27% by March 2017 and by 40% by March 2020.

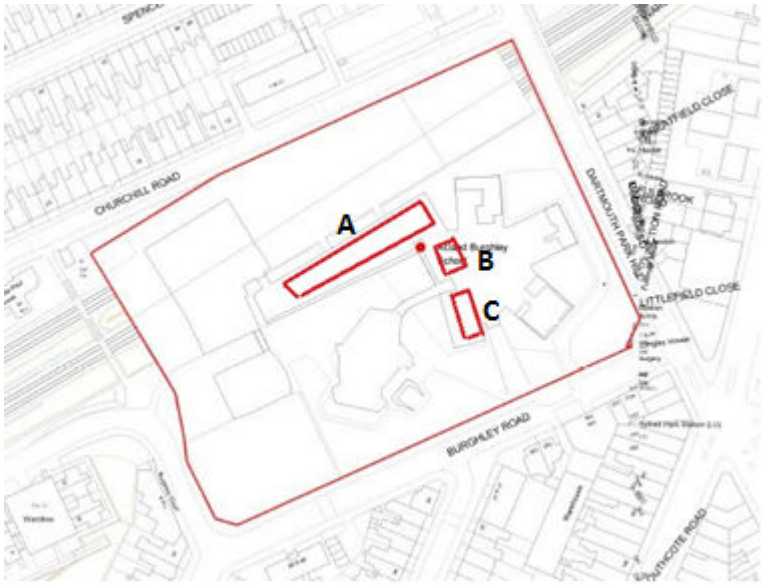
3.2 In order to demonstrate sustainability leadership, the Council is concentrating on reducing its own carbon footprint by at least the target amount through energy saving measures and micro-generation. The vast majority of the Council's carbon emissions arise from use of buildings, including approximately two-fifths from its growing schools estate.

3.3 It is therefore proposed to install a solar panel system on the roofs of this community school in partnership with The Schools Energy Co-operative to help reduce this figure. This is in conjunction with delivering other recent energy-saving measures, both at this site and other education sites.

3.4 Supported renewable energy technologies such as the proposed solar panels also contribute cumulatively to reducing the overall carbon intensity of the national electricity grid, indirectly further helping to reduce the Borough's carbon footprint.

3.5 The proposal will supply renewable electricity to the building and reduce its energy costs. As well as cheap/low cost electricity, the Council and/or School will benefit from the Government's Feed-in Tariff scheme, providing continued revenue for the next 20 years. Together these streams will pay back the system cost and generate surplus, assisting Camden's goals on financial efficiency and tax-payer value for money.

3.6 The proposal is to provide a solar PV array totalling 48.36kWp, to be split across 3 roofs as illustrated in Figure 3.6-A. Orientations range from south to east-west.



3.6-A Site Plan indicating proposed roof areas and site boundaries

3.7 It is proposed to install the panels as indicated on the drawing. The installation will comprise 186 panels covering an area of up to 400 m^2 mounted on the flat roofs. These modules are to be free standing and angled at 10°. The panels will be linked to both the building and the national grid, with approximately half the energy produced used on site, and half sold back to the energy supplier.

3.8 An additional benefit of the solar panels will be the possibility of using the system as an educational and awareness tool for the staff and visitors to the site as well as the wider community. This will be achieved through the installation of a visual display unit, detailing energy produced and carbon emissions saved located within a prominent position within the interior of the building.

4.0 Solar Panel Installation

4.1 The installation will comprise a solar panel array mounted on the flat roof of the main building. This roof was selected due to its orientation in relation to due south to optimize energy yield, along with the lack of trees overshadowing the roof area and the height of this part of the building. The panels will not be visible from the public highway (Burghley Road) due to the layout of the site, ensuring the visual impact of the proposal is very limited.

4.2 The panels will be mounted on a 10° angled roof mounted system, to gain maximum natural daylight exposure whilst minimising visual intrusiveness. There is capacity to provide up to 400 m^2 of solar panels (equating 186 modules).

4.3 In accordance with principles of good non-domestic solar planning design, the selected siting minimises impacts on the appearance of the building and the amenity of the area. Its highest point will be significantly less than 1 metre from the highest part of the roof and it will be separated by at least 1 metre from the external edge of the roof. When no longer needed, it will be removed as soon as is reasonably practicable.

5.0 System Summary

5.1 A total of approximately 186 modules are to be used as part of the development and the array shall be split across 3 roof spaces.

	Number of Modules	System size (kWp)
Roof A	102	26.52
Roof B	36	9.36
Roof C	48	12.48

Table 5.1-A summarises the number of modules and relative sub-system sizes per roof

5.2 Each module measures 1640x992x40mm. The proposed modules are Microgeneration Certification Scheme (MCS) approved and are glass fronted with an aluminium frame. The modules will be specified to have an anti-reflective coating over the glass to enhance solar energy capture and therefore have a visually matt appearance, with significantly reduced light reflection and glare.

5.3 Access to the site from the highway will not be affected as the installation works will take place to the rear of the main entrance. Temporary access tower and edge protection along the rear of building will be required for a few days during the installation works.

5.4 The PV array will provide up to 48.36 kWp of power into the building. Over the course of the year it will provide 42,500 kWh of electricity, resulting in a carbon saving of 23,000 kg CO2 per annum, equating to 460 tonnes of CO_2 over the minimum 20 year system lifetime.

6.0 Local Information Statements

Affordable housing statement

6.1 N/A

Air quality statement

6.2The application is for minor works and no impact on local air quality is expected.

Airport safeguarding zone details

6.3 The site does not lie within any Airport Safeguarding Zone.

Biodiversity survey and report

6.4 As minor works to an existing building, there will be no adverse effects on the local area.

Daylight/sunlight assessment

6.5 None deemed necessary.

Economic statement

6.6 Over the 20 year guaranteed lifetime of the system, the scheme is expected to provide an annual income for the Council and/or School of about £5,000 plus savings for the school on its electricity bill of around £1,500. The system is expected to pay back its installation costs within approximately 12 years. In line with well-maintained similar systems, all other things being equal, this scheme is expected to continue to generate electricity for many years beyond its guaranteed lifetime, at levels well in excess of guaranteed output.

Energy efficiency statement (including renewable energy statement)

6.7 Energy efficiency and thermal measures will remain unaffected. The sole purpose of this installation is the provision of renewable energy directly into the building, totalling 42,500 kWh per annum, thereby reducing the Centre's carbon footprint.

Environmental Impact Assessment

6.8 The application is for minor works and no EIA is deemed necessary.

Flood Risk Assessment

6.9 As minor works, no impact on flood risk is expected. The site does not fall within zone two or three of the Environment Agency's Flood Map.

Heritage Statement

6.10 The building is listed as Grade II, list entry number 1431508.

6.11 The design of the sub-arrays ensures that the ensuing guidance has been followed:

- It is not on a roof or wall fronting the highway;

- No part is within one metre of the external edge of the roof;
- It is substantially lower than the highest part of the roof (excluding chimneys);
- It is sited, so far as practicable, to minimise its effect on the external appearance of the building and the amenity of the area;
- Solar panels no longer needed for microgeneration shall be removed as soon as reasonably practicable.

Land containment assessment

6.12 No land contamination is known or expected from the installation of solar panels.

Noise assessment

6.13 The solar arrays have no moving parts and operate completely silently. The solar inverter equipment will operate with minimal noise and will be inaudible from external ground level

Open space assessment

6.14 The application does not affect any community open spaces.

Parking and access arrangements

6.15 N/A

Refuse disposal details

6.16 Collection of refuse is unaffected.

Section 106 Heads of Terms

6.17 As minor works, a S106 is not deemed necessary.

Site waste management plan

6.18 Any debris for the installation will be disposed of by the contractor's team at the Local Waste and Recycling Centre or an equivalent commercial destination.

Sustainability Statement

6.19 All new building components where applicable will be sourced from sustainable sources.

Transport Assessment

6.20 No amendment to car parking or deliveries is proposed within this application.

Travel plan

6.21 No amendments to travel arrangements are required by this application.

Tree survey/arboricultural assessment

6.22 No trees will be affected on this site or within the local area, so no survey is deemed necessary.

Ventilation extraction statement

6.23 No ventilation or extraction equipment is required.

7.0 Conclusions

7.1 The solar panel array will be a valuable addition to both Acland Burghley School and the Council, ensuring there is a reduction in imported grid electricity, and providing a statement to the London Borough of Camden's residents that the Authority is serious about reducing its impacts upon the environment and raising awareness around energy conservation and supply.

7.2 The solar panels will also help the London Borough of Camden to meet stated carbon emission targets and is inspired by national legislation supporting renewable energy.