



RIBBLE VALLEY
BOROUGH COUNCIL

15 JUL 2011	
FOR THE	ATTENTION OF

For office use only

Application No. 320110575 P

Date received

Fee paid £

Receipt No:

Council Offices, Church Walk, Clitheroe, Lancashire, BB7 2RA Tel: 01200 425111 www.ribblevalley.gov.uk

Application for a Lawful Development Certificate

for a Proposed use or development.

Town and Country Planning Act 1990: Section 192,

as amended by section 10 of the Planning and Compensation act 1991.

Town and Country Planning (Development Management Procedure) (England) Order 2010

Publication of applications on planning authority websites

Please note that the information provided on this application form and in supporting documents may be published on the Authority's website.

If you require any further clarification, please contact the Authority's planning department

1. Applicant Name, Address and Contact Details

Title:	Mr	First name:	Matthew	Surname:	Burrow
Company name:					
Street address:	St Augustine Roman Catholic School				
	Elker Lane				Telephone number:
	Billington				
Town/City:	Clitheroe				Mobile number:
County:	Lancashire				Fax number:
Country:	England				Email address:
Postcode:	BB7 9JA				
Are you an agent acting on behalf of the applicant? ☒ Yes ☐ No					

2. Agent Name, Address and Contact Details

Title:		First Name:	Nicholas	Surname:	Prinse
Company name:	Freetricity Plc				
Street address:	Argyll House				
					Telephone number:
Town/City:	Wandsworth				Mobile number:
County:	London				Fax number:
Country:					Email address:
Postcode:	SW18 1EP				nick.prinse@freetricityplc.com

3. Site Address Details

Full postal address of the site (including full postcode where available)

House: Suffix:
House name: ST AUGUSTINES RC HIGH SCHOOL
Street address: ELKER LANE
BILLINGTON
Town/City: CLITHEROE
County:
Postcode: BB7 9JA

Description of location or a grid reference
(must be completed if postcode is not known):

Easting: 372010
Northing: 435564

Description:

4. Pre-application Advice

Has assistance or prior advice been sought from the local authority about this application?

☒ Yes ☐ No

If Yes please complete the following information about the advice you were given (this will help the authority to deal with this application more efficiently):

Officer name:

Title: First name: Surname:

Reference: Unknown

Date (DD/MM/YYYY): 13/07/2011 (Must be pre-application submission)

Details of the pre-application advice received:

Confirmed on website that the school is neither listed nor is it in a conservation area.

5. Lawful Development Certificate - Interest in Land

Please state the applicant's interest in the land:

☒ a) Owner ☐ b) Lessee ☐ c) Occupier ☐ d) Other

6. Authority Employee/Member

With respect to the Authority, I am:

- (a) a member of staff
- (b) an elected member
- (c) related to a member of staff
- (d) related to an elected member

Do any of these statements apply to you?

☐ Yes ☒ No

Grounds for Application

Information about the existing use(s)

320110575 P

Please explain why you consider the existing or last use of the land is lawful or why you consider that any existing buildings, which it is proposed to alter or extend are lawful:

In accordance with General Permitted Development Order 2010 Amendment [Part 32 Class A: "Alterations"], there will only be development to a property that does not involve the creation of additional floor space and this will be the installation of solar panels on the roofspace of the property for the use of generating electricity. By consensus and definition, development is considered to be any active strategy to create value in an individual property or a specific area and since construction/building is not taking place in the sense of assembling infrastructure, the installation of solar PV falls under development and would therefore be classed as an alteration.

Please list the supporting documentary evidence (such as a planning permission) which accompanies this application:

Planning Policy Statement 22 (Renewable Energy – Government Objectives):

"Increased development of renewable energy resources is vital to facilitating the delivery of the Government's commitments on both climate change and renewable energy. Positive planning which facilitates renewable energy developments can contribute to all four elements of the Government's sustainable development strategy: – social progress which recognises the needs of everyone – by contributing to the nation's energy needs, ensuring all homes are adequately and affordably heated; and providing new sources of energy in remote areas; – effective protection of the environment – by reductions in emissions of greenhouse gases and thereby reducing the potential for the environment to be affected by climate change; – prudent use of natural resources – by reducing the nation's reliance on everdiminishing supplies of fossil fuels; and, – maintenance of high and stable levels of economic growth and employment – through the creation of jobs directly related to renewable energy developments, but also in the development of new technologies. In rural areas, renewable energy projects have the potential to play an increasingly important role in the diversification of rural economies."

(p.6)

Planning Policy Statement 21 (Policy CTY1 [Development in the Countryside – Non-Residential Development]):

"Planning permission will be granted for non-residential development in the countryside in the following cases: ... renewable energy projects in accordance with PPS18".

(p.12)

The works are not intended to be permanent due to the fact that the installation has a guaranteed lifespan of 25 years, after which period of time the installation is likely to be removed shortly thereafter.

Planning Policy Statement 1 (Delivering Sustainable Development):

Local planning authorities should "seek to promote and encourage, rather than restrict, the use of renewable resources (for example, by the development of renewable energy)".

(s. 22, p.9)

If you consider the existing or last use is within a 'Use Class' in the Town and Country Planning (Use Classes) Order 1987 (as amended) state which one:

Information about the proposed use(s)

If you consider the proposed use is within a 'Use Class' in the Town and Country Planning (Use Classes) Order 1987 (as amended), state which one:

Is the proposed operation or use: ☐ Permanent ☒ Temporary

If Temporary please give details:

The installation has a guaranteed lifespan of 25 years, after which period it is likely to be taken down in some years time.

Why do you consider that a Lawful Development Certificate should be granted for this proposal?

The applicant wishes to pursue renewable initiatives as recommended by the government and due to the fact that local planning authorities should "seek to promote and encourage, rather than restrict, the use of renewable resources (for example, by the development of renewable energy)" in accordance with section 22 of Planning Policy Statement 1, this proposal should be classified as permitted development.

8. Description of Proposal

Does the proposal consist of, or include, the carrying out of building or other operations? ☒ Yes ☐ No

If Yes, please give detailed descriptions of all such operation and indicate on your plans (includes describing any proposal to alter or create a new access, layout or any new street; construct any associated hardstandings; means of enclosure; or draining the land/building)

The roof will be used as a means to support solar PV panels which will generate electricity. There will only be altering of the building and will as such not include any extension or demolition. The overall use of the building will remain the same.

Does the proposal consist of, or include, a change of use of the land or building(s)? ☐ Yes ☒ No

Has the proposal been started? ☐ Yes ☒ No

9. Site Visit

Can the site be seen from a public road, public footpath, bridleway or other public land? ☒ Yes ☐ No

If the planning authority needs to make an appointment to carry out a site visit, whom should they contact? (Please select only one)

☒ The agent ☐ The applicant ☐ Other person

10. Declaration

I/we hereby apply for a Lawful Development Certificate as described in this form and the accompanying plans/drawings and additional information.

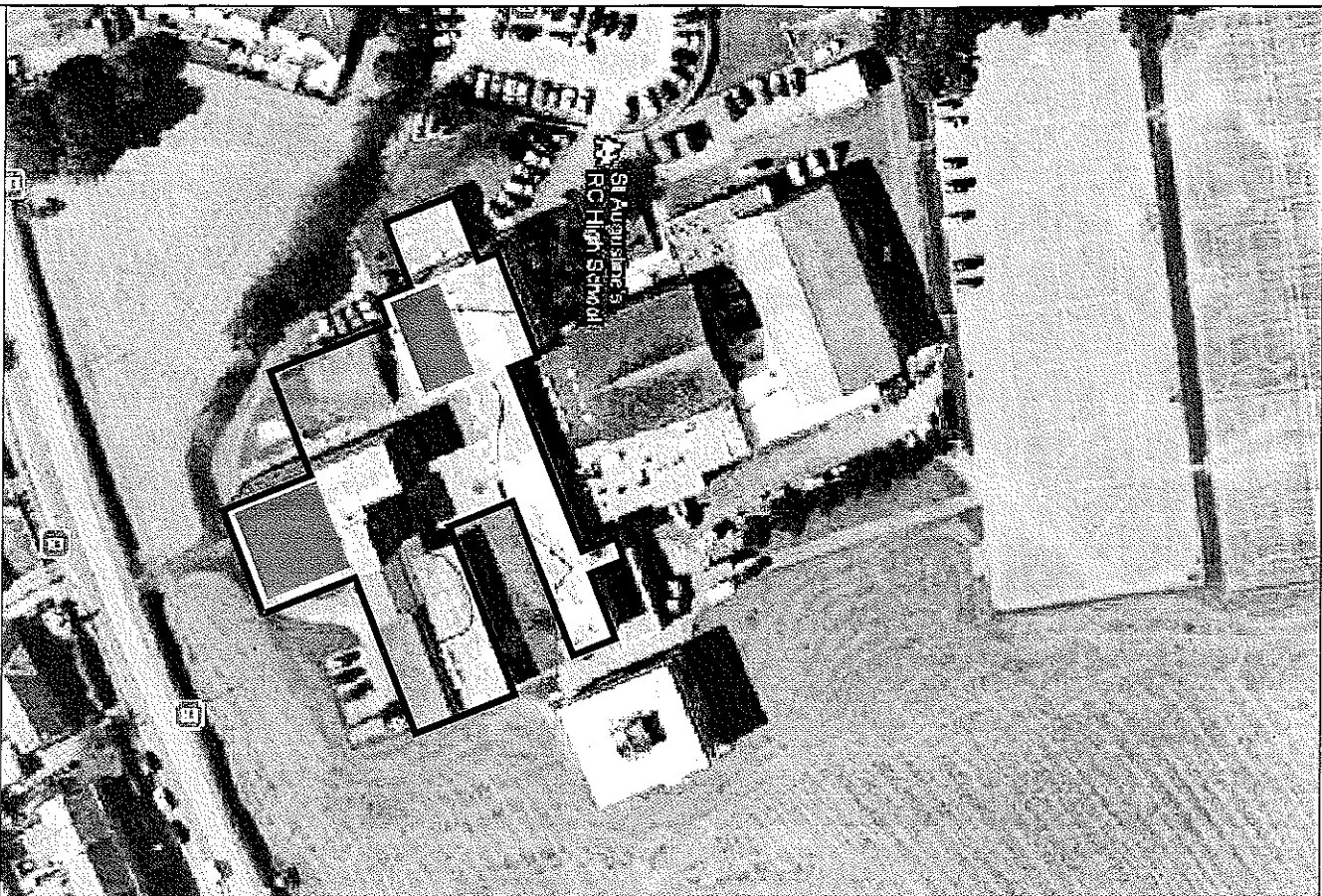


Date:

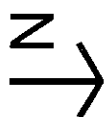
14/07/2011

Warning:

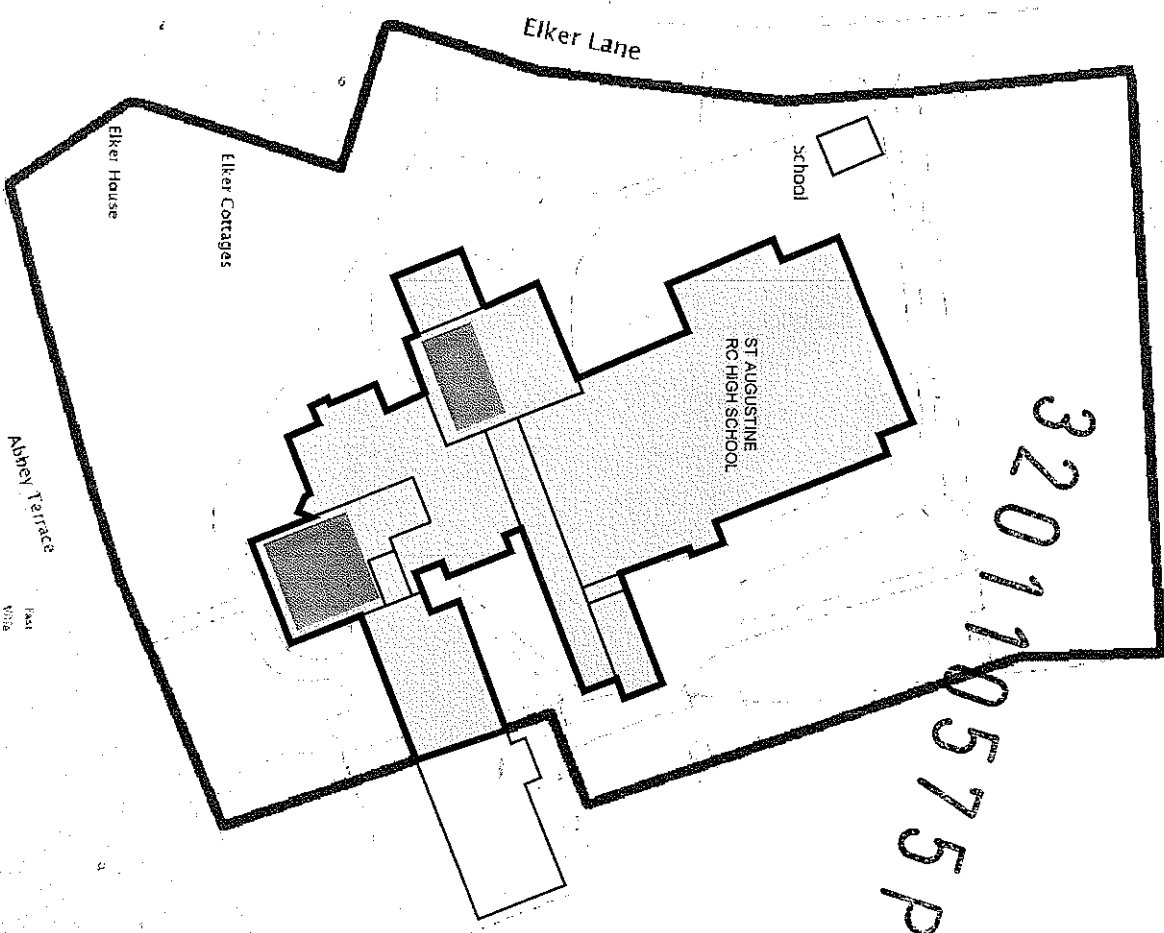
The amended section 194 of the 1990 Act provides that it is an offence to furnish false or misleading information or to withhold material information with intent to deceive. Section 193(7) enables the authority to revoke, at any time, a certificate they may have issued as a result of such false or misleading information.



ST AUGUSTINE RC HIGH SCHOOL



streetcity
The power of green



LOCATION PLAN A4 SCALE 1/1250

Construction Method Statement – Roof 50kW

Project

The project involves the installation of approximately 176 Photovoltaic (PV) solar panels on the roof of the building, which will have an energy generation capacity of 50kW. The proposed works include: the erection of scaffolding, installation of mounting structures, PV panels, inverters and cabling

Duration of Works

The expected duration is 1 – 2 weeks.

General Site Health and Safety

The Contractor will ensure

- Personnel have a responsibility to conduct work in a safe manner.
- Appropriate warning signs will be used on site where relevant – these may include, but are not limited to:
 - Hard Hats To Be Worn
 - No Entry to Unauthorised Persons
 - Works in Progress
- All operatives will be made aware of the site specific fire evacuation procedures during the site induction.
- All routes will be kept free of obstacles and trip hazards during the period of installation.
- Appropriate PPE will be worn by all individuals on site during the period of works, including hard hats, high visibility vests, and safety footwear, as well as gloves and goggles where required.
- Two or more people will carry larger or heavier items.
- The scaffolding will be checked weekly to ensure safety.
- All personnel are to sign in and out of the site.
- All areas of work will be left in a clean, orderly condition.
- All items of equipment are to be stored appropriately on site.

PV Specific Health and Safety

- A PV panel is live when exposed to light. A PV panel cannot be switched off.
- DC voltages are more hazardous than AC voltages due to the nature of the shock, which causes contraction and can lead to the victim of a shock holding onto the conductor
- Arcs created when attempting to break a DC current can be alarming and can damage test equipment. Test leads with PV shielded connectors at one end must be used, not standard multimeter test probes.
- All persons overseeing the installation work will be experienced with, or have had specific training on, working with such systems.

Operatives / Competence

- All personnel on site will be required to show task specific CSCS, CPCS etc competency cards during the site induction;
- All electrical works to be undertaken by qualified electricians;

Scaffolding

The design of all working platforms, their supporting structures and means of protection from falling material or objects, used on this contract must comply with the Construction Health and Safety & Welfare Regulations 1996

The Contractor will ensure that all working platforms, supporting structures and edge protection are erected by competent personnel who possess the adequate training, knowledge and experience. They must also ensure that the personnel who erected the scaffolding issues a handover certificate containing the following information:

- That the erected structure is complete and complies with the Construction (Health and Safety) Regulations 1996 and all relevant British Standards.
- The distribution loads permitted on the working platforms.
- That guard rails, working platforms, toe board braces and ties are complete and comply with the Construction (Health and Safety) Regulations 1996 and all relevant British Standards.
- That the Contractor using the platform is now responsible for their employees working on it and ensure the requirements under regulation 4 of the Construction (Health and Safety) Regulations 1996 are complied with.
- Lights, or coloured tapes, should be placed so that the public or other contractors are protected from accidentally damaging themselves or the scaffold
- Each morning the scaffolding is to be checked to ensure it has not been interfered with.
- During dismantling, at no time is the scaffold to be left in an unstable condition.

All scaffolding is to be left at the end of each working day in a manner to prevent unauthorised access and use. Ladders are to be locked away or removed from site at the end of each working day.

Where there is an increased risk of children using scaffolds to climb to high levels, access at ground level should be prevented by a barrier at least 1.5m high.

Installation

Working Environment:

- The site is exposed to the elements, being outside.
- All personnel will be required to wear appropriate PPE to protect them from adverse weather conditions and will be encouraged to use sunscreen as required.
- Works should cease in bad weather (persistent heavy rain, storm, high winds) as instructed by the site manager

Deliveries:

- The PV modules are delivered packaged in cardboard on pallets. The modules will be marked and identifiable into power bands.
- The framework will be delivered strapped together in bundles secured to pallets.
- All other goods will be delivered to the site secured and removable via tail lift or onsite plant.
- Deliveries will be made in a timely manner to avoid any delays in installation.

Distribution of Goods:

- PV modules should remain in their packaging until they are installed onto the support framework. All packaging will be removed from site daily.
- The support framework and modules will need to be manually handled; protective gloves should be used for this.

Storage:

- Solar modules and framework will be protected from the elements and securely stored.
- PV module packaging should be kept dry to avoid collapse or compression of the packaging which might lead to damage to the modules or other equipment.
- All other equipment will be stored and secured until ready to be installed.

Installation:

- Gloves are to be worn by personnel whilst installing the framework to protect against sharp edges and hot / cold surfaces and final connections to complete works.
- Cloves should be worn when lifting and carrying modules to protect against sharp edges and corners.
- Modules are fixed to the mounting structures.
- PV modules only weigh approximately 15kg, but have a large wind uplift area and so should be handled by 2 persons. Works may need to be discontinued in adverse weather conditions.
- PV modules are made of glass, and are therefore at risk of fracture or cracking. Care of handling is to be a priority.
- Any damaged modules are to be wrapped and repackaged to avoid any further damage and risk of injury to persons. They are to be clearly marked as damaged and returned to a storage area. The site manager must be notified.
- Once a module is exposed to daylight, it generates a DC voltage.
- The modules are pre-wired with touch-proof connectors which isolate the current, but care must be taken not to interfere with or expose the terminals. The voltage generated from one module is not considered dangerous (approximately 48 Volts). As the modules are connected to each other, the voltage increases and so does the risk of a harmful shock.
- Before each module is fixed into the framework, a simple voltage check should be carried out to ensure that the module is operating.
- Any suspected faulty modules should be set aside for return.

- Protect the cables from stress (i.e. ensure they are not trapped or trodden on) during installation as well as during storage prior to installation.
- All cables must be fitted with multicontact shielded connectors at both ends before connection to the modules is made to prevent the possibility of personnel being exposed to bare live conductors.
- Keep the DC connectors dry where possible.
- As the modules are installed, they will be cabled up in series-connected 'strings'. As each string is connected, a string voltage and polarity check will be carried out to ensure that all connections are sound, and findings recorded on a DC test sheet.
- All DC cables are to be labelled at both ends with the string number.
- All DC cables will be tested and logged on test sheets.

Discovery of Asbestos Based Materials

Should any materials be discovered during the course of any works, which are considered to possibly contain asbestos fibres, then works in that area will stop immediately.

- No materials will be disturbed or removed by site personnel at any time.
- A specialist asbestos removal sub-contractor will be appointed to analyse and remove any asbestos based materials.
- The specialist contractor will also submit a site-specific method statement and risk assessment prior to commencing works on site.
- If asbestos based materials are found to be present on site the relevant notice will need to be issued to the Health and Safety Executive.

Amenity

- Noise: Best practice means to minimise noise and vibration from the site will be employed at all times, with special consideration given to Part 1, Section 5 of British Standard 5228: 1994 Noise Control on Construction and Open Sites, in particular:
 - Work will only be undertaken between the hours of 0800 and 1800, to avoid noise at unreasonable hours
 - Care will be taken when loading and unloading vehicles, installing and dismantling scaffolding, etc to minimise noise impact
- Waste: Contractors will remove all debris and rubbish from site, and dispose of it appropriately
- Dust: The installation of PV panels on to the roof of the building is unlikely to result in a dust nuisance.

DESIGN & ACCESS STATEMENT

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1.0 Introduction

1.1 General

Freetricity Commercial Ltd. is intending to install solar PV panels on the roof of the relevant building with a maximum energy output of just under 50 kW, which is the approximate energy usage of 12-15 dwelling houses in the United Kingdom.

1.2 Site Address

Site Address: *St Augustine Roman Catholic School, Elker Lane, Billington, Clitheroe, Lancashire, BB7 9JA*

2.0 Policy Context

1.1 Listed Buildings

Freetricity Commercial Ltd. refers you to Planning Policy Statement 5 (Planning for the Historic Environment):

"HE1.1 Local planning authorities should identify opportunities to mitigate, and adapt to, the effects of climate change when devising policies and making decisions relating to heritage assets by seeking the reuse and, where appropriate, the modification of heritage assets so as to reduce carbon emissions and secure sustainable development. Opportunities to adapt heritage assets include enhancing energy efficiency, improving resilience to the effects of a changing climate, allowing greater use of renewable energy and allowing for the sustainable use of water. Keeping heritage assets in use avoids the consumption of building materials and energy and the generation of waste from the construction of replacement buildings.

HE1.2 Where proposals that are promoted for their contribution to mitigating climate change have a potentially negative effect on heritage assets, local planning authorities should, prior to determination, and ideally during pre-application discussions, help the applicant to identify feasible solutions that deliver similar climate change mitigation but with less or no harm to the significance of the heritage asset and its setting."

There is no change in the structural integrity of the building by way of demolition or damage in fixing the panels to the roof, as the panels are held in place by brackets which are either supported by the roof surface or non-penetrating through the breathable roofing membrane.

DESIGN & ACCESS STATEMENT

1.2 Non-Listed Buildings

Freetricity Commercial Ltd. refers you to Planning Policy Statement 18 (Renewable Energy):

F12. "The technology will be familiar to most and from the planning point of view, whilst there are clearly implications for listed buildings and the sensitive front elevations of some conservation areas, in general 'solar panels' are to be encouraged. In many cases involving dwelling houses, provided the building is not a listed building, or in a conservation area and the installation complies with the relevant constraints, PV will be 'permitted development' and is thus deemed not to require a planning application."

1.3 All Building Types

Planning Policy Statement 22 (Renewable Energy):

"Increased development of renewable energy resources is vital to facilitating the delivery of the Government's commitments on both climate change and renewable energy. Positive planning which facilitates renewable energy developments can contribute to all four elements of the Government's sustainable development strategy:

- social progress which recognises the needs of everyone – by contributing to the nation's energy needs, ensuring all homes are adequately and affordably heated; and providing new sources of energy in remote areas;*
- effective protection of the environment – by reductions in emissions of greenhouse gases and thereby reducing the potential for the environment to be affected by climate change;*
- prudent use of natural resources – by reducing the nation's reliance on everdiminishing supplies of fossil fuels; and,*
- maintenance of high and stable levels of economic growth and employment – through the creation of jobs directly related to renewable energy developments, but also in the development of new technologies. In rural areas, renewable energy projects have the potential to play an increasingly important role in the diversification of rural economies." (Government Objectives, p.6)*

Planning Policy Statement 21 (Policy CTY1 [Development in the Countryside – Non-Residential Development]):

"Planning permission will be granted for non-residential development in the countryside in the following cases: ...renewable energy projects in accordance with PPS18".
(p.12)

Planning Policy Statement 1 (Delivering Sustainable Development):

Local planning authorities should *"seek to promote and encourage, rather than restrict, the use of renewable resources (for example, by the development of renewable energy)".*
(s. 22, p.9)

3.0 Site Appraisal

3.1 Site Description

- Building use/type: *School*
- Type of roof: *Flat*
- Visibility of roof from surrounding sites and public spaces: *Limited*

1.3 Local Context

Brief description of surrounding environment including:

- Adjoining land uses: *Residential*
- Close Proximity to Area of Conservation: *No*
- Close Proximity to Listed Buildings: *No*
- Any other notable features in the surrounds: *None*

4.0 Proposed Development

1.4 Proposed Use

The roof will be used as a means to support solar panels which will generate electricity.

1.1 Scale and Amount

- Number of panels: 210
- Mounting system to be used: If flat, mounting frames angled at 10 degrees; if pitched, flush with roof at identical roof angle.
- Other installations: *Inverter(s)*

1.1.1 Construction

The installation will take approximately 1-2 weeks to complete, with approximately 1 truckload to deliver 60 panels maximum per day.

1.1.2 Operation

Maintenance requirements involve 2 yearly visits for cleaning and repair, aside from that the development will be passive in operation, with low impacts. These include low/ negligible noise levels and no emissions.

1.2 Layout

Please refer to the attached layout plan and proposed array images contained within the desktop survey. Area of each panel is 0.99m x 1.65m = 1.6335sqm.

DESIGN & ACCESS STATEMENT

1.3 Appearance

Sample photos of pitched/ flat arrays are included as examples of the final appearance.

Figure A: Flat Roof Installation

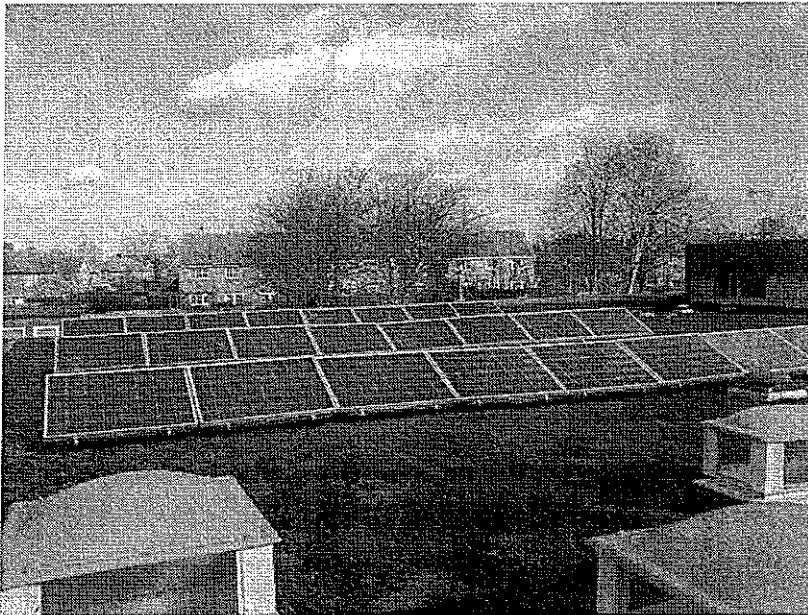


Figure B: Pitched Roof Installation



1.4 Landscaping

Unlikely to need landscaping with a roof installation, note that the impacts will be minor and therefore no landscaping is considered necessary.

DESIGN & ACCESS STATEMENT

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There is a misconception that PV panels might cause adverse glint and glare effects, with reflected sunlight creating a nuisance or even a safety risk for planes or traffic. This is not the case. The panels are designed to absorb as much daylight as possible, and therefore have a low level of reflectivity when compared to surfaces such as window glass, water or snow. Less than 9% of total incident visible light is reflected by PV panels, whereas normal glass reflects about 17%. Studies have shown that PV panels do not create a risk for aircraft or vehicle traffic, due to the absorptive properties and low reflection levels of the panels, and in fact in Germany and the USA it is common for PV systems to be installed on airport terminal buildings, or within airport grounds.

1.5 Access

Please refer to the enclosed location plan. The solar photovoltaic system will be positioned on the roof and will therefore not require any access to the general public.

There will be no impact on the local highway and the construction traffic will be unnoticeable such that there will be no increase in volume of traffic on the local network.

5.0 Conclusions

With above criteria recognised and fulfilled to accommodate the installation, the design for renewable energy works should meet Council approval in light of the government climate change mitigation targets.

Freertricity Proposal, Solar PV System

Installation Details:

St Augustine's RC High School

Elker Lane

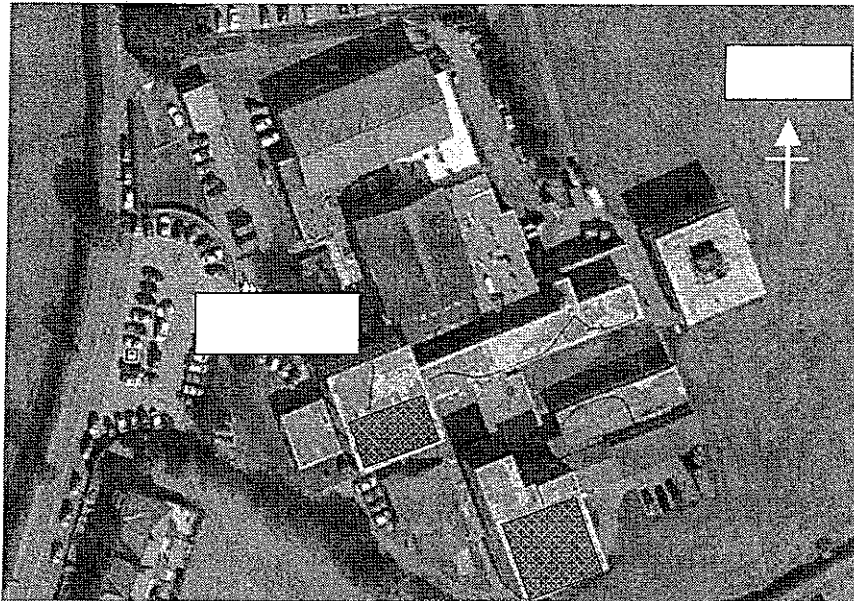
Billington

BB7 9JA

Installers Reference: J00244/1157 Issue 1

29-Jun-11

Proposed Array



Site Map



Scale 1:500 approx

Size of System

Energy Generated by 1kW peak installation in UK	800	kWh
No of Panels	210	
Output of Panel	235	W
Area of Panels	343	m ²
Peak Output	49.4	kW
Slope & Orientation Factor	988	South
Shading Factor	1	
Energy Generated per Annum (MW hrs)	39.0	MWh/yr
Annual Saving in CO2 emissions (tonnes)	16.8	Tonnes CO ₂ /yr

Financial Benefits

Method Used	SAP method	PV GIS
Size of System (kWp)	49.4	49.4
Estimated energy generated (kWh) per annum	38987	39800
Feed in Tariff Rate (p/kWh)	32.9	32.9
Estimated Annual income from FiT (£/yr)	£12,827	£13,094
Export income (£/yr) - Assume 25% exported (@3.1p per kWh)	£302	£308
Avoided Electricity (£/yr) - Assume 75% used in the property @13p per kWh	£3,801	£3,881
Total Estimated Financial Benefit Per Annum (£/yr) (for 25 years)	£16,930	£17,283
Simple Payback Time (years)	9.3	9.1
Return on Investment	11%	11%

Both estimates based on:

Orientation: South
 Panel Pitch: 10 degrees
 PV GIS Estimate based on location of: Billington

Cost of Installation (Excl VAT) £157,920

PLANNING STATEMENT:

FOLLOWING THE PROVISIONAL ACCEPTANCE

OF A SCHOOL PROPERTY FOR FREE SOLAR PV PANELS

PERMITTED DEVELOPMENT (LAWFUL USE CERTIFICATE)

The roof will be used as a means to support solar panels which will generate electricity. In accordance with General Permitted Development Order 2010 Amendment [Part 32, Class A: "Alterations"], there will only be development to a property that does not involve the creation of additional floor space and this will be the installation of solar panels on the roof space of the property for the use of generating electricity.

By consensus and definition, development is considered to be any active strategy to create value in a property or specific area and since construction/ building is not taking place in the sense of assembling infrastructure, the installation of solar PV falls under development and would therefore be classed as an "alteration". The alteration of school, college, university and hospital buildings is a Permitted Development, so long as:

- The PV is not installed within 5m of the property boundary.
- The PV does not increase the building height by more than 5m, if within 10m of a legal boundary.
- The height of the building does not increase in all other cases.
- The building is not within the curtilage of a listed building.
- The development must be within the curtilage of an existing school, college, university or hospital (i.e. not a new one being developed).
- If the building is located on article 1(5) land (a National Park, AONB, conservation area, areas specified for enhancement and protection of natural beauty and amenity of the countryside, and the Broads) materials must have a similar external appearance to the original building. Flat roofs will not normally have any visual impact and so the need for materials of similar appearance should not apply.

It should be noted that this school application for solar PV should not be confused with Part 40, which is only relevant to dwelling houses or buildings within the curtilage of a dwelling house. In support of our application for planning, Freetricity Commercial Ltd. also refers you to the following example piece of legislation in the provision of Permitted Development by the government for the installation of solar panels to schools in the country:

Planning Policy Statement 18 (Renewable Energy)

F12. "The technology will be familiar to most and from the planning point of view, whilst there are clearly implications for listed buildings and the sensitive front elevations of some conservation areas, in general 'solar panels' are to be encouraged. In many cases involving dwelling houses, provided the building is not a listed building, or in a conservation area and the installation complies with the relevant constraints, PV will be 'permitted development' and is thus deemed not to require a planning application."

For the application of Permitted Development, Freetricity Commercial Ltd. recognises that the relevant school building(s) must be of no particular architectural note to the extent of being Listed and there should be no significant impact on its appearance or the amenities of neighbours. If the premises are in a Conservation Area, Freetricity Commercial Ltd. will attempt to conceal the panels as much as is reasonably possible from a public highway view.

NON-PERMITTED DEVELOPMENT (FULL PLANNING)

In the case of development which may fall short of the above criteria, an application for full planning may be preferred by the Local Planning Authority, in which case the following legislation would be adhered to by Freetricity Commercial Ltd. and the Local Planning Authority:

Planning Policy Statement 5: Planning for the Historic Environment

"HE1.1 Local planning authorities should identify opportunities to mitigate, and adapt to, the effects of climate change when devising policies and making decisions relating to heritage assets by seeking the reuse and, where appropriate, the modification of heritage assets so as to reduce carbon emissions and secure sustainable development. Opportunities to adapt heritage assets include enhancing energy efficiency, improving resilience to the effects of a changing climate, allowing greater use of renewable energy and allowing for the sustainable use of water. Keeping heritage assets in use avoids the consumption of building materials and energy and the generation of waste from the construction of replacement buildings.

HE1 2 Where proposals that are promoted for their contribution to mitigating climate change have a potentially negative effect on heritage assets, local planning authorities should, prior to determination, and ideally during pre-application discussions, help the applicant to identify feasible solutions that deliver similar climate change mitigation but with less or no harm to the significance of the heritage asset and its setting."

There is no change in the structural integrity of the building by way of demolition or damage in fixing the panels to the roof, as the panels are held in place by brackets which are either supported by the roof surface or non-penetrating through the breathable roofing membrane. Therefore, no roof materials and finishes will change. As a result, planning should be in favour of solar photovoltaic panels.

ADDITIONAL SUPPORTING LEGISLATION (BOTH PLANNING TYPES)

Planning Policy Statement 22: Renewable Energy – Government Objectives

"Increased development of renewable energy resources is vital to facilitating the delivery of the Government's commitments on both climate change and renewable energy. Positive planning which facilitates renewable energy developments can contribute to all four elements of the Government's sustainable development strategy:

– social progress which recognises the needs of everyone – by contributing to the nation's energy needs, ensuring all homes are adequately and affordably heated; and providing new sources of energy in remote areas;

– effective protection of the environment – by reductions in emissions of greenhouse gases and thereby reducing the potential for the environment to be affected by climate change;

– prudent use of natural resources – by reducing the nation's reliance on everdiminishing supplies of fossil fuels; and,

– maintenance of high and stable levels of economic growth and employment – through the creation of jobs directly related to renewable energy developments, but also in the development of new technologies. In rural areas, renewable energy projects have the potential to play an increasingly important role in the diversification of rural economies.”

(p.6)

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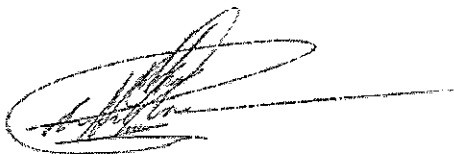
The works are not intended to be permanent, due to the fact that the installation has a guaranteed lifespan of 25 years, after which period of time the installation is likely to be removed shortly thereafter.

Planning Policy Statement 1: Delivering Sustainable Development

Local planning authorities should “seek to promote and encourage, rather than restrict, the use of renewable resources (for example, by the development of renewable energy)”.

(s. 22, p.9)

The relevant Local Planning Authority will be supplied with regular supporting documentation, primarily the location plan with legal boundary, and any other plans available to Freetricity Commercial Ltd., such as desktop survey site plans with proposed arrays, model specifications, and design and access statement with sample photos, which may be submitted in due course in order to assist planning officers in deciding the proposal. However, it is understood that the Planning Portal tends to only set out “Mandatory Documentation” as Evidence to Verify Application and the Location Plan for Lawful Use Certificate, and the additional inclusion of a Site Plan for Full Planning. With these criteria fulfilled, renewable energy development rights should be acknowledged upon our reasonable request.

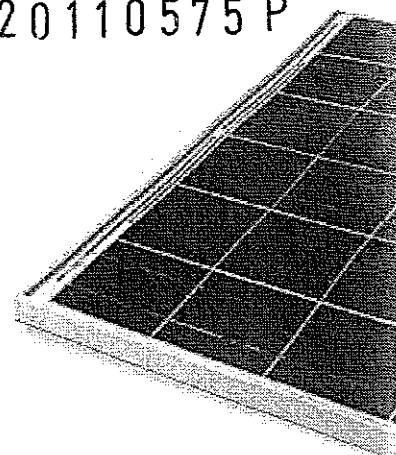


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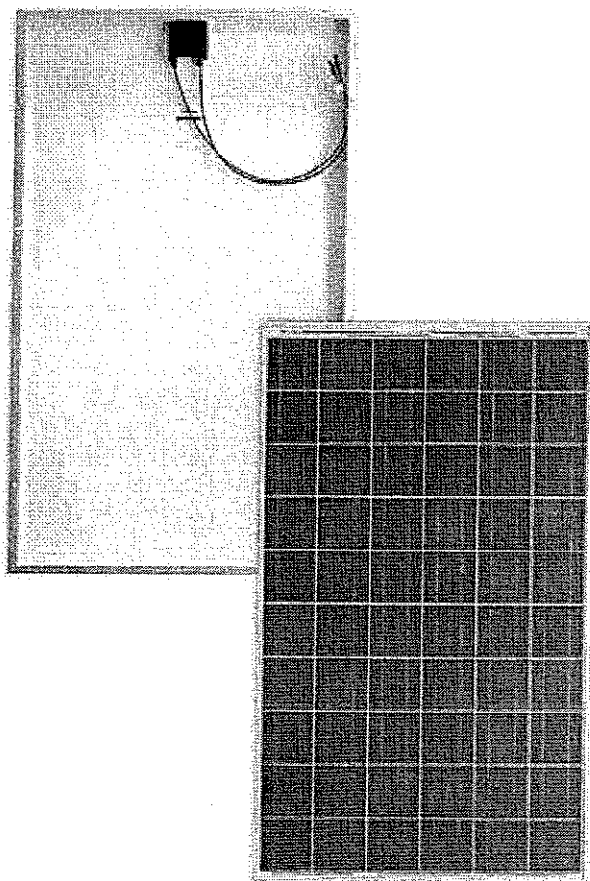
Enfinity-235P6

Crystalline Solar Modules



Technology

Enfinity-235P6 crystalline solar module provides excellent value and performance for operation of both DC loads and in an inverter equipped system for AC Loads. The rated output and the efficient design of the module with their large surface area are ideally suited for high power applications, including telecommunications and grid supplemental systems. Enfinity-235P6 module is designed for easy interconnection to achieve voltage and current configurations for grid-connected systems as well as stand-alone systems.



Module design

High-efficiency 6 inch (156mm) poly-crystalline solar cells form the crux of the Enfinity-235P6 module. These 156 mm square cells offer a homogeneous appearance, optimal use of the area and are known for high energy yields. Due to its construction of Glass/ EVA/TPT, the module is light in weight in addition to protecting the module/cells against harsh environmental conditions. A torsion resistant module frame made of electrophoresis aluminum guarantees high mechanical strength, making the module resistant to extreme wind, hail and snow.

Features

- 1 Module assembled using high quality and performance components sourced from leading international suppliers
- 2 State-of-art, automated manufacturing facilities guarantee consistent high quality & electrical performance.
- 3 Narrow power tolerance range of $\pm 3\%$ ensures the module maximum rated power output
- 4 Certified as per international standards (IEC 61215:2005, IEC 61730-1/2:2007 and safety class II for 1000VDC) for high performance and safety
- 5 Robust and lightweight anodized aluminum frames with lock pin for better strength, quick and easy installation.

Warranty

Manufacturing:	10 years
Power production:	90% = 10 years
	80% = 25 years



Enfinity-235P6 module type

Electrical characteristics

Max-power	P _m (W)	235
Power tolerance	(%)	± 3
Max-power Voltage	V _m (V)	35.5
Max-power current I _m	I _m (A)	7.04
Open-circuit voltage	V _{oc} (V)	43.21
Short-circuit current	I _{sc} (A)	7.63
Max-system voltage	(VDC)	1000
Cell efficiency	η _c (%)	16.1
Module efficiency	η _m (%)	14
No. type & arrangement of cells		60 pcs poly-crystalline silicon (6x10)
Cell size	(mm)	156x156
No. of bypass diodes	(pcs)	6
P _m temperature coefficient	(%/°C)	-0.51
I _{sc} temperature coefficient	(%/°C)	0.035
V _{oc} temperature coefficient	(%/°C)	-0.36
NOCT - Nominal Operating Cell Temperature	(°C)	46 ± 2

Mechanical characteristics

Cable type, diameter and length	4 mm ² , TUV certified, 1250 mm
Type of connector	MC4 compatible
Dimension L x W x H (mm)	1650 x 990 x 50
Weight	23 kg
No. of draining holes in frame	4
Glass type and thickness	High transmission, low iron, tempered glass 0.12" (3.2mm)

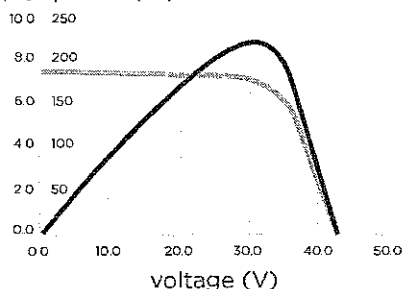
Absolute ratings

Dielectric Insulation Voltage	(VDC)	3000 max
Operating Temperature	(°C)	-40 - +90
Storage Temperature	(°C)	-40 - +90

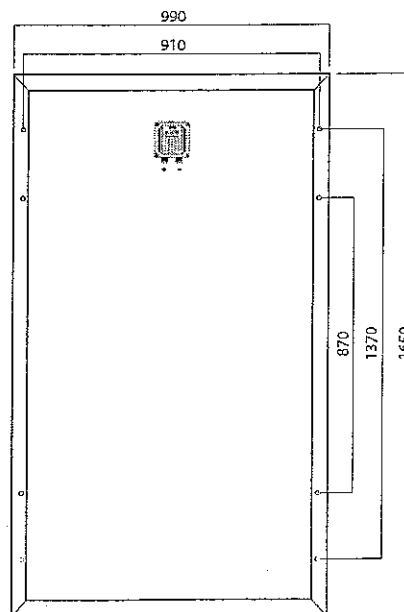
Strengths

- Tolerance ± 3%
- Plug & Play Connectors
- High transmission, low iron tempered glass
- Can bear static loads up to 5400Pa

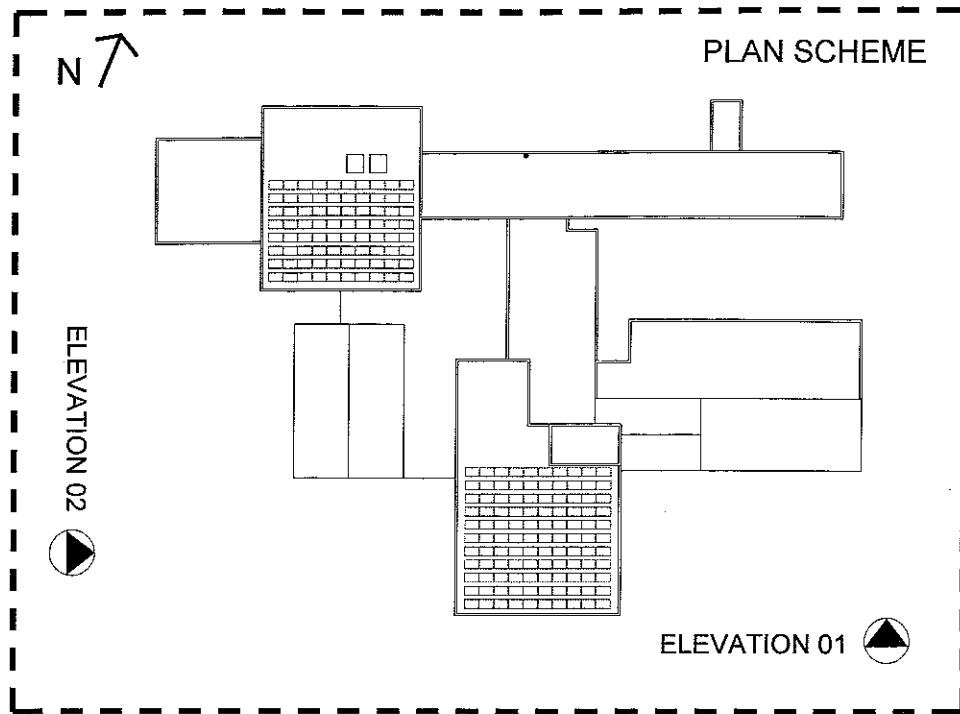
current (A) power (W)



Current / voltage dependence on Irradiance and module temperature
This is only indicative showing effect of temperature and intensity on power



0 2 4 6 8 10m



freetricity
The power of green

320110575P



ELEVATION 01 (SOUTH) SCALE 1/100



ELEVATION 02 (WEST) SCALE 1/100

PROPERTY NAME

ELEVATIONS A1 SCALE 1/100

