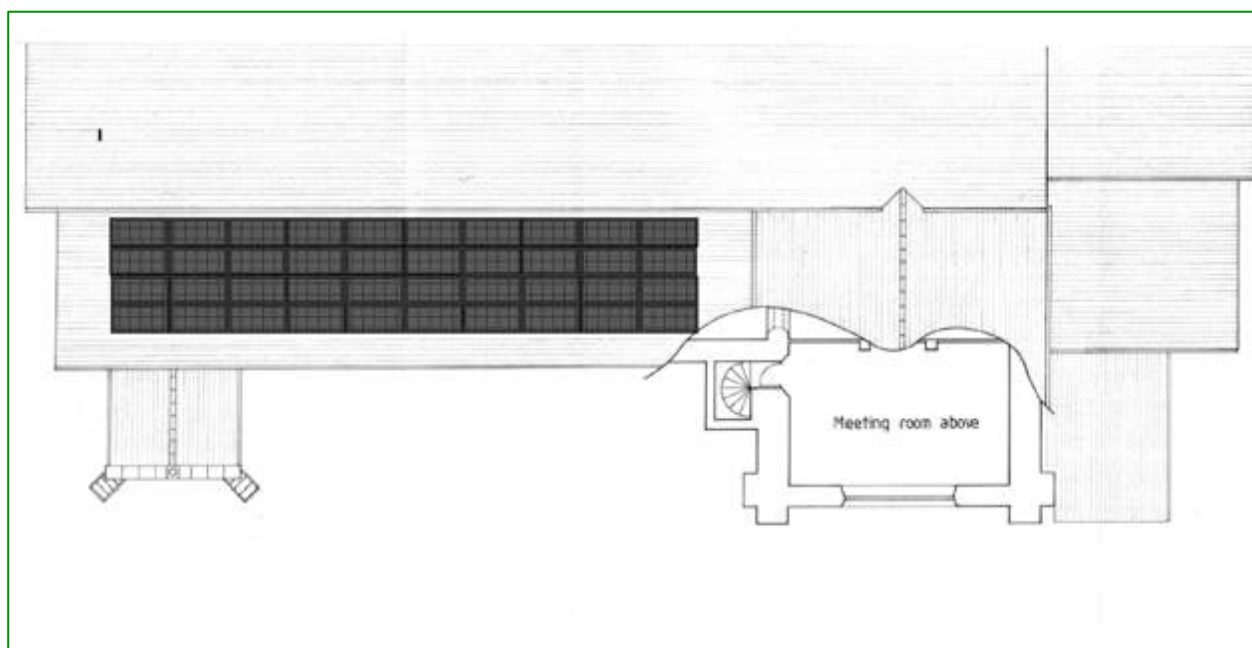


12.00 kWp Solar PV System

Proposal & Quotation



| | | |
|--------------------|--------------------------------|--|
| For | Client: | Geof Thompson St Luke's Church |
| | Site Address: | St Luke's Church West Holloway Hillmarton Road Holloway London N7 9JE |
| Prepared by | Surveyor: Engineer: | Guy Hewitt Peter Cross |
| Job No | TL3383 | |
| Date | 15/11/2019 | Doc Ref.: 041 Rev. 2.0 |

SUMMARY

| | | | |
|----------------------|--|---------------|----------|
| Client | Geof Thompson St Luke's Church | | |
| Installation address | St Luke's Church West Holloway Hillmarton Road Holloway London N7 9JE | | |
| Date: | 15/11/2019 | | |
| Job / Ref No: | TL3383 | Quotation No: | TL3383/1 |

Solar PV Proposal

Investing in a Solar PV system for this property will allow the owners to benefit from a saving off their annual electricity bill and help the environment by reducing their annual CO2 emissions. This represents a return on investment with highlight figures as follows:

System Performance Expectation

| | |
|-------------------------------------|------------|
| System Size | 12.00 kWp |
| Solar Panels & wattage | 40 x 300W |
| Estimated Annual System Generation | 10,212 kWh |
| Fully Installed System Cost ex vat | ████████ |
| Annual Benefit Year 1 | ████████ |
| Annual Return On Investment (ROI) * | ████████ |
| Payback Period * | ████████ |
| Total Benefit over a 20 year term * | ████████ |
| Annual CO ₂ saving | 5.30t |

* Using an annual fuel inflation of 3.60%.

Please note:

- | | |
|----------------------------|---|
| Financial forecast | - Our figures take into account the future effect any fossil fuel energy cost increases will have as per the Government's current forecasts. As such, your annual benefit will increase year on year. |
| Planning Permission | - The property is in a conservation area and so planning consent is required. We will be happy to assist you with your application. |
| MCS | - We are a fully accredited installer (Micro-generation Certification Scheme). An MCS Certificate will be provided upon receipt of final payment. |
| Warranty | - A 2 year warranty on the quality of our workmanship is provided. |
| Guarantees | - Solar panel 25 year output and inverter guarantees pass to the client upon receipt of final payment. |
| Insurance | - We are fully insured and carry £5M Public Liability insurance. |
| Roof access | - Scaffolding, Edge Protection & Lifting Gear (as required) provided by the client |



SYSTEM QUOTATION

| | | | |
|----------------------|--|---------------|----------|
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| Date: | 15/11/2019 | | |
| Job / Ref No: | TL3383 | Quotation No: | TL3383/1 |

Description




Supply, Install & Certify a 12.00 kWp grid connected Photovoltaic (PV) system

Equipment

40 Suntech STP 300S-20/Wfb Mono All Black panels
1 SolaX ZDNY TL12000 3 Phase Dual MPPT inc WIFI & DC Inverter
1 SolaX WIFI Dongle (WIFI or network data point required)
40 panel GSE inclined in-roof mounting system
1 OFGEM Approved 3 Phase Total Generation Meter
1 Extended cable run
1 Balance of system incl. DC & AC isolators, armoured cable, MC4 connectors, switches
Delivery to site

Installation

Mechanical & Electrical Installation, Testing,
Commissioning, MCS Certification & O&M Documentation.
DNO Application
Allow 5 crew days

| | |
|----------------------|---|
| Sub-Total |  |
| VAT @ 20.00% |  |
| Total Payable |  |

Quotation valid for: 60 days

Notes:

1. To place an order please complete the attached Order Confirmation and return it to Treadlighter Ltd together with your deposit payment - upon receipt we will contact you to arrange an installation date.
2. A full breakdown of services to be supplied is given on the enclosed "Schedule of Materials & Services to be supplied"
3. For internet monitoring, either a permanent functional WIFI signal at the inverter location, or preferably a network data point (RJ45) within 3 meters of the inverter is required.
4. If Additional Works are required due to exceptional circumstances not reasonably foreseeable or if you request specification changes, a further estimate will be provided.
5. The total installation price is based on a continuous working period. If circumstances beyond our control necessitate a split programme of works we reserve the right to charge for additional time.
6. Please see our attached full Terms & Conditions of Business

Detailed System Performance Expectation

| | | | |
|----------------------|--|---------------|----------|
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The UK Microgeneration Certification Scheme (MCS) requires all certified companies to give an assessment of a Solar PV system's performance based on the standard MCS procedure in Microgeneration Installation Standard MIS3002, Issue 3.1¹.

The performance of Solar PV systems is impossible to predict with certainty due to the variability in the amount of solar radiation (sunlight) from location to location and from year to year. This performance estimate is based upon the standard MCS procedure and is given as guidance only. It should not be considered as a guarantee of performance.

In optimal circumstances (a property in the south of the UK with an un-shaded south-facing roof sloping at an angle of 35 degrees) a 10.0kWp PV system typically generates 9,840 kWh per annum.

Your system is predicted to produce, on average, 10,212 kWh per annum.

For your system, where the panels are all oriented in the same way we take:

- The size of the PV array (in kWp)
- How much solar radiation the array is estimated to get (the 'solar radiation input factor' or Kk for short). We use official tables to estimate this which take into account your postcode region, the inclination (or tilt) of your roof and its orientation (which direction it faces), and
- How much shading there is on the panels (the 'shade factor' or SF), such as from surrounding trees, chimneys, shadow from nearby buildings). We have estimated this using the sunpath diagram(s) below.

The calculation we do is: **kWp (size of system) x Kk (solar radiation input factor) x SF (shade factor)**

A - Installation Data

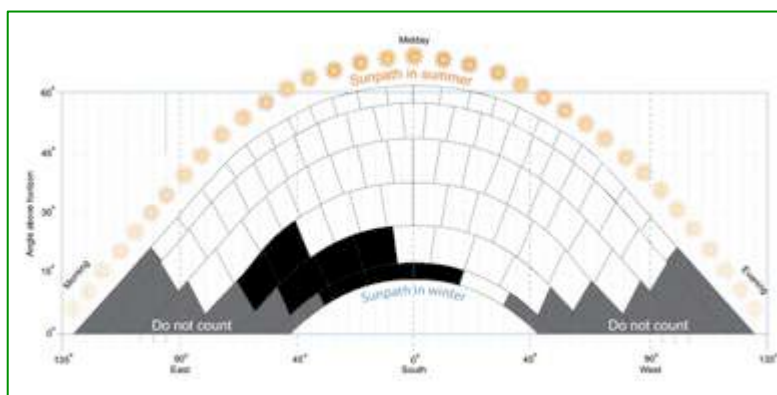
Installed Capacity of the PV System
Postcode Region

12.00 kWp
Zone 1

B - Calculations

Orientation of the PV array - degrees from south
Inclination of the array - degrees from horizontal
kWh/kWp from table (Kk)
Shade Factor (SF)
Estimated annual output (kWp x Kk x SF)

45 deg
30 deg
925 kWh/kWp
0.92
10,212 kWh



¹ The method is set out in the Guide to the Installation of Photovoltaic Systems, at Section 3.7. The Guide is available on the MCS website

Predicted System Performance Expectation cont'd

Please note:

Where the shade factor is less than 1

This shade assessment has been undertaken using the standard MCS procedure. It is estimated that this method will yield results within 10% of the actual energy yield for most systems.

If we have not surveyed your property or worked from a set of plans.

This system performance calculation has been undertaken using estimated values for array orientation, inclination and shading. Actual performance may be significantly lower or higher if the characteristics of the installed system vary from the estimated values.

If we have had to estimate or take remotely any of the factors that affect this estimate, we will carry out a full site survey before installation commences. If the survey results in a lower performance estimate than in this quote, we will issue you with a new quotation.

Benefits - Electricity & CO₂ Savings

Proposed System Size 12.00 kWp

Predicted Annual System Output (using standard MCS procedure) 10,212 kWh

Energy Savings


To work out how much you might save, we have estimated how many kWh your system will produce, and have assumed that you will use 60%. [As the system only generates in daylight hours, you can only use its output in daylight hours.]


Electricity generated and used on premises (60% x 10,212 kWh x import Tariff @ UK Average £0.144)

Year 1 Electricity Cost Saving 

Your savings from using some of the electricity generated will also increase if electricity prices rise.

Year 1 Electricity Export Payment (SEG - Smart Export Guarantee Scheme from 1 Jan 2020)

Estimated Solar Electricity exported to the grid (40% x 10,212 kWh @ 5.24 p/kWh) 


Year 1 Estimated Total Benefit 

Annual CO₂ saving 5.30t

Payback & Return on Investment (ROI)

To estimate how long the system will take to 'pay for itself' ('Payback'), we compare what you pay for the system with our estimate of how much you will get and save each year. We then factor in annual fuel inflation of 3.60%.

System Cost - Fully installed excl VAT 

Annual Return On Investment (ROI) * 

Payback Period * 

Estimated Total value of Electricity Saved over 20 years * 

Schedule of materials and services to be supplied

Job No: TL3383

| Materials & Services | Supplied by Treadlighter | Not included in quote | Comments |
|---|--------------------------|-----------------------|--|
| Liaise with District Network Operator (DNO) for connection of system to mains network. | ✓ | | |
| Project management: Liaise with site & other trades | ✓ | | |
| HSSE co-ordination; preparation of Risk Assessment & Method statement | ✓ | | |
| Structural engineers report if required | n/a | | |
| Final design, specification and installation works to provide a PV system to Engineering recommendation G98, G99 and "Guide to the Installation of PV Systems" DTI/pub URN 02/788 | ✓ | | |
| Provision of roof mounting system as per our specification | ✓ | | |
| Safe access, scaffolding & lifting equipment | | ✓ | Scaffolding, Edge Protection & Lifting Gear (as required) provided by the client |
| Supply and fit PV Panels as per our specification | ✓ | | |
| Supply and fit A.C. cable to our specification between inverter location and distribution board | ✓ | | |
| Supply and fit isolators, total generation meter and wired or wireless display as per our specification | ✓ | | A wireless display has been specified; no wiring is required |
| A.C. testing according to current regulations and Part P if applicable | ✓ | | |
| Waste removal | | ✓ | Use of site facilities |
| Storage of PV modules, ancillaries & tools | ✓ | | |
| Provision of welfare facilities (minimum of toilet & hand-washing) | | ✓ | Client to provide |
| Testing & commissioning PV system | ✓ | | |
| Documentation including operation and maintenance manuals | ✓ | | |
| Contact with electricity company to enable payment on generation & export | | ✓ | Treadlighter will advise and assist upon completion |
| Provision of warranties to include 2 year Treadlighter workmanship guarantee and manufacturer's warranty on all equipment | ✓ | | |
| 25 year solar module output guarantee | ✓ | | |
| 10 year inverter guarantee | ✓ | | |

ORDER CONFIRMATION

| | | | |
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 1 Extended cable run
 1 Balance of system incl. DC & AC isolators, armoured cable, MC4 connectors, switches
 Delivery to site

Installation

Mechanical & Electrical Installation, Testing,
 Commissioning, MCS Certification & O&M Documentation.
 DNO Application
 Allow 5 crew days

| | | |
|--|-----------|---|
| | Sub-Total | |
| | | |
| | | 3 |

Method of Payment: Please make cheques payable to Treadlighter Ltd

Bank Transfers - Account Name: Treadlighter Ltd
 Sort Code: 40-05-31 Account No: 21503677

Planning Permission: By signing this contract you are confirming that you have received planning permission for the proposed installation or ascertained that planning permission is not required. Although Treadlighter Ltd will advise, Treadlighter Ltd cannot be held responsible for any installations where planning permission was required but not obtained and no refunds will be offered.

Service and Maintenance: The Treadlighter Commercial Solar PV Service and Maintenance contract is available at £30.00 p'm + VAT. It covers all labour for reactive servicing and parts when under warranty.

ORDER CONFIRMATION

By signing this form, you are confirming the order for the products and installation services specified on the attached quotation. This order will become binding when Treadlighter Ltd notifies you of its acceptance and will be governed by its attached Terms & Conditions of Business.

To proceed with this order please sign, date this form below and return it to Managing Director - Treadlighter Ltd at the above address.

If you prefer you may email your confirmation to guy.hewitt@treadlighter.co.uk.

| Customer Name (print) | Customer Signature | Date |
|-----------------------|--------------------|------|
| | | |



