# SAFETY METHOD STATEMENT

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| **1** | PROJECT SAFETY METHOD STATEMENT PREPARED FOR: | St Annes C of E Church<br>Highgate<br>London<br>N6 6AP |
| **2** | CLIENT NAME, CONTACT AND ADDRESS: | Power Up North London<br>Sara de la Serna<br>Project Manager<br>0793 559 0059<br>saradelaserna@yahoo.es |

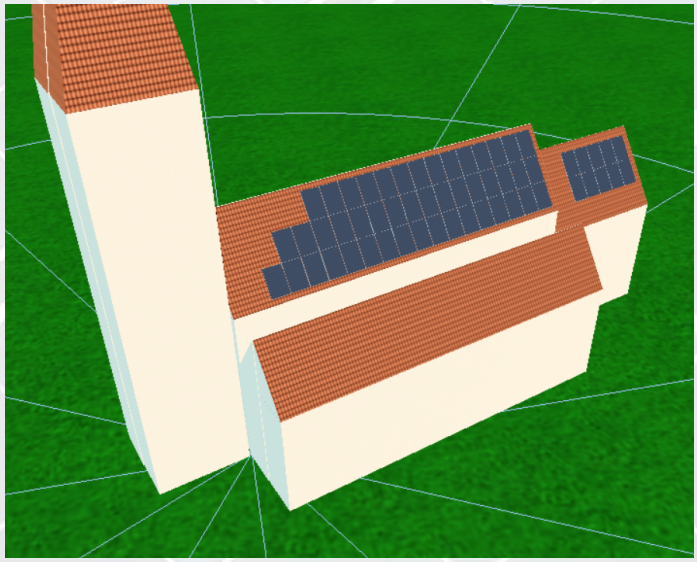
**3** JOJU MANAGEMENT TEAM:

| Name | Responsibility | Telephone |
|---|---|---|
| Joe Michaels | Director | 02076971000 |
| Joe Gabriel | Head of Major Projects | 07962224528 |
| Jon Cowdrill | Project Manager | 07878639582 |
| Ben Budding | Project Manager | 07811362795 |
| Kevin Champion | Electrical Lead | 07507342909 |
| Stuart Fyall | Roofing Lead | 07949515556 |
| Chris Patrick | Scaffolding Contractor | 07947340668 |
| Nicholas Weedon | hmdw architects Ltd | 020 7267 8855 |
| Roland de Cholewa | Church Warden | 0788 061 7064 |
| Martin Narraway | Consultant | 07742076471 |
| Chris Newton | Church Electrical Contractor | 0780 334 2528 |

**4** SUMMARY OF THE SCHEDULED WORK TO BE CARRIED OUT

**18.97kWp Solar Installation**

58no. 327Wp Sunpower solar panels are to be installed on two roofs s below. 48 on the min roof and 10 on the rear.



Working hours (from planning notice)
8am – 6pm. Monday to Friday.
8am – 1pm Saturday.
No works on Sunday.

**Works**

- Construction, commissioning and dismantling of tubular steel scaffolding comprising roof access, ladder access towers.
- Installation of solar PV modules, brackets and clips.
- Integration of electrical supplies, distribution of wiring, testing and commissioning.
- Striking of scaffolding.
- Final snagging and hand-over.
- All necessary paperwork.

## Site Layout

### Site Setup

1. Site Manager to inspect is suitable scaffolding before installation
2. Storage of materials will be in a secure area. The panels will be delivered to site and stored out of the way.
3. Where necessary access will be sectioned off when deliveries or scaffolding is due.
4. Welfare facilities **TBD**; these will be detailed at the site induction. **All areas should be left as found.**

### Safety Notes

- Operations only to be carried out by suitably trained and qualified staff.
- Individuals shall familiarise themselves with the work, through drawings, specifications and consultation with the site agent and Joju Solar site manager
- All works shall be carried out so as not to affect other people on site or operational requirements of the site.
- Access and egress onto site will be made available so that scaffolders can work directly from rear of lorry as close to the workplace as permitted to minimize carrying distances.

### Prior to site works commencing

- All personnel MUST report to the Joju Site Manager or site manager upon arrival.

- All personnel MUST sign in and out on arrival and departure.
- All personnel MUST attend the Site Induction before starting any solar install work.
- Scaffolding and ladder access carried out by approved contractor.
- Carry out weather risk assessment and monitor conditions continuously.
- Check scaffold tags/certificates are in place. Also check daily scaffold checks are carried out.
- Brief responsible person(s) of work to be carried out, and safety information relevant to themselves.
- Inspect area for safety access and egress.
- Ensure clear access to roof for installation.
- Hand over all completed documentation relevant to the installation to the Site Manager or responsible person.

## Installation – Scaffolding

As per scaffolding method statement.

## Installation - Roofing

- **Appropriate PPE must be worn at all times during this work activity, high visibility vests at all times.** Gloves when carrying panels and rails, goggles and ear defenders when cutting.
- **ALL ROOFERS MUST WEAR HARNESSES CONNECTED TO THE SCAFFOLDING WHEN WORKING WITHIN 3 METERS OF THE RIDGE – THIS I BECAUSE THERE IS NO RIDGE EDGE PROTECTION**
- Unload panels and fixings, check all parts are correct.
- Raise mounting equipment and tools using correct manual handling techniques and a safe manner.
- Unpack all materials and store waste in black bags, separate recyclable with non-recyclable waste. Waste to be stored and to be collected by a removal company at the end of the project completion.
- Rails can be lifted by hand.
- The material will be distributed along the roof to spread the weight.
- Solar panels to be lifted by hand using intermediate lifts on scaffolding and fixed on to the mounting system.
- Schletter Rapid+ 45 hooks to be installed by qualified roofer as per manufacturer's instructions and waterproofed appropriately using Ubiflex flashing.
- Installation to follow panel layout and keep even distances from edges.

- It is understood that two-person panel carrying has its own safety concerns. Single person carrying is acceptable, however, two hands must be used to protect from a gust of wind taking it away. Also, if winds pick up, workers MUST carry the panels at waist height.
- Panels should be stored so they cannot be blown over by wind.
- Raise DC cables to roof.
- DC "fly leads" must be laid down first and fixed using external grade cable ties.
- String modules together in accordance to electrical string layout. The cable run will go from the panels across the roof to the area over the plant room below. **The strings must be properly labelled using an appropriate method.**
- Roofers must check string voltages. These voltages must be given to the Site Manager to check. **This is very important.**
- Panel cables are tidied away using external grade cable ties.
- After fixing the panels in place inform the Joju electrician on-site that they are ready for testing and wiring.
- Remove all tools, rubbish and equipment from scaffolding, and inform foreman/supervisor that scaffold is ready for dismantle.
- Scaffolding strike – see Scaffolding Subcontractor's Method Statement. Roofer to be present during strike so as to repair any slates where necessary.
- Make sure all debris is cleared away and that a safe working place is kept at all times.

## Installation - Electrical

- **CABLE ROUTE MUST FOLLOW PRE-AGREED ROUTES AS PER DOCUMENTS "St. Ann's cable routes" and "St. Ann's Church – external cable routes." THIS IS TO CONFORM TO PLANNING OBLIGATIONS. ANY PROPOSED CHANGES TO BE DISCUSSED WITH CLIENT BEFORE ANY WORK IS CARRIED OUT.**
- Electrical contractor must follow the schematic. Any queries please contact the design team, before making any changes to the electrical install.
- DC Cables to be run in approved conduit down front of church and in through wall to electrical roof. Here new garage units are to be installed as existing distribution boards are soon to be replaced.
- Please arrange with client before cutting any power to any part of the building. The final electrical connection must be made at the agreed time and date.
- All electrics to be installed to BS7671 and dti standards.

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| | | • Inverters must be installed as per manufacturer's recommendations. Especially as far as ensuring adequate ventilation space.<br>• Voltage magnitude and polarity MUST be checked before inserting into inverters. This is the electrician's responsibility to do this – whatever the roofing team has indicated.<br>• Check DC and AC and prepare documentation. Please send documentation back to Joju office within a week of completing the job.<br>**PLANT & TOOLS**<br>• Standard installation tools<br>• Drills below 110v<br>• Battery operated equipment<br>• 110v Transformer<br>• Metal chop saw<br>• Ladder if required to BS EN 131 OR Class "1"<br>SAFETY GOGGLES MUST ALSO BE USED WHILST CUTTING.<br>• OTHER CONSIDERATIONS: All works must be clearly communicated with the person responsible at the school and any changes to the plan discussed. |
| **5** | CONTRACT PERIOD | 2 weeks |
| **6** | NUMBER OF PERSONS ON SITE AND PLANNED NUMBER OF WORKED MAN-HOURS | 3 Roofers – approx. 160 man hours<br>2 Electricians – approx. 80 man hours |
| **7** | GENERAL DESCRIPTION AND FUNCTION OF THE PREMISES | Noise will be kept to a minimum so not to disturb neighbours. All solar equipment and tools will be kept safe and secure. |
| **8** | WELFARE ARRANGEMENTS/FACILITIES | Operative will have access to on-site welfare facilities; these will be identified in the site induction. All facilities should be treated with respect and left as found. |
| **9** | CLIENT'S PREMISES REPORT INCLUDING NOTIFICATIONS ABOUT RESTRICTIONS AND LIMITATIONS | n/a |
| **10** | DETAILS OF UNAVAILABLE OR INCOMPLETE INFORMATION THAT MAY FORESEEABLY INFLUENCE THE COMPANY'S OVERALL *SAFETY MANAGEMENT AND INCIDENT PREVENTION* REQUIREMENTS | Any suspect materials will be checked by a certified asbestos contractor. Until it has been declared safe work in this area will be suspended. |

| 11 | INDEPENDENT SUB-CONTRACTORS APPOINTED BY *JOJU SOLAR LIMITED*: | |
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| | SPECIALISATION | Scaffolding |
| | DETAILS AND CONTACTS | Efficient Scffolding (TBC) |
| | COMPETENCY REQUIREMENTS | Scaffolding installation |
| | SPECIALISATION | Electrical |
| | DETAILS AND CONTACTS | Kevin Champion |
| | COMPETENCY REQUIREMENTS | Working at height. Installation of solar panels and electrical works. |
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| | SPECIALISATION | Roofing |
| | DETAILS AND CONTACTS | STUART FYALL |
| | COMPETENCY REQUIREMENTS | Working at height. Installation of solar panels and electrical works. |
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| | SPECIALISATION | DIAMOND DRILLING |
| | DETAILS AND CONTACTS | HOLE MASTERS |
| | COMPETENCY REQUIREMENTS | CHAS, CITB ACCREDITATIONS |
| | COMPETENCY REQUIREMENTS | |

| 12 | PROJECT *SAFETY MANAGEMENT AND INCIDENT PREVENTION CONTROL MEASURES* TO BE IMPLEMENTED AND APPLIED | |
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| | ARRANGEMENTS FOR CO-ORDINATION WITH THE CLIENT'S APPOINTED REPRESENTATIVE ON SITE | JoJu Solar Ltd senior representative on site will report to the School's Site Manager(or his nominee) before the start of work each day.<br>- The planned operations will be explained;<br>- Requirements for the establishment of any exclusion zones will be agreed;<br>- Module distribution will be confirmed;<br>- Confirmation of visitor safety requirements will be noted and actioned |
| | ARRANGEMENTS FOR THIRD-PARTY SAFETY | The school is protected by a fence and gates which will be kept closed at all times. Entry into the school will be for Joju Solar operatives and deliveries only.<br><br>The closest hospital to site is:<br>Royal Free Hospital<br>Pond Street<br>London<br>NW3 2QG<br>Tel: **020 7794 0500** |
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| | TRAFFIC MANAGEMENT AND PARKING | There will be plenty of parking close to the work area. This will be explained upon during the site induction. Large delivery vehicles will be guided by a banksmen into and on site. |

| 12 | PROJECT *SAFETY MANAGEMENT AND INCIDENT PREVENTION CONTROL MEASURES* TO BE IMPLEMENTED AND APPLIED | |
|---|---|---|
| | MATERIALS STACKING AND STORAGE | Panels will be stored onsite and loaded out onto the roof for immediate installation once the rails are complete. |
| | ARRANGEMENTS FOR SAFE ACCESS TO AND EGRESS FROM THE ROOF AREA/S | Access to the roof area will be by means of a dedicated tubular steel scaffold. The scaffold and boards will be erected and maintained in accordance with TG20:08(NASC) and SG4:10(NASC) and BS2482:2005<br><br>ALL staff have up to date Working at Height training. |
| | CONTROLS FOR THE PREVENTION OF FALLS OF PERSONS AND/OR MATERIALS FROM OR THROUGH THE ROOF AREA | The means for preventing any person falling from the roof are: |
| | ARRANGEMENTS FOR HOISTING AND LOWERING PV PANELS AND ASSOCIATED FIXTURES AND FITTINGS ONTO/FROM THE ROOF AREA | Panels and components will be loaded from ground to roof area by hand.<br>PV panels are loaded out across the roof by hand.<br><br>Crosswinds will be constantly monitored and panel distribution will be halted in the event of excessive cross-winds or turbulent weather. The Install manager will be responsible for this. |
| | WEATHER CONSIDERATIONS | Scaffolding will not be installed if the scaffolding subcontractor is not totally happy with the weather conditions.<br>The install supervisor will use his judgement as to whether work is halted if he is not content with the weather conditions. This includes low temperatures, high winds and rain fall. |
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| | ARRANGEMENTS FOR FIXING OF PV PANELS TO ROOF STRUCTURE | The panels are secured using brackets and clips using Schletter Rapid+ 45 system. The installation will be in accordance with the manufacturer's recommendations via the installation manual.<br><br>Operatives must have up-to-date asbestos awareness training. Asbestos containing materials must not be disturbed without a separate risk assessment and method statement. On finding any suspicious materials the operative must stop work and report it to the project manager who will seek specialist advice. |

| 12 | PROJECT *SAFETY MANAGEMENT AND INCIDENT PREVENTION CONTROL MEASURES* TO BE IMPLEMENTED AND APPLIED | |
|---|---|---|
| | ARRANGEMENTS FOR DISTRIBUTING AND FIXING THE CABLING AND INVERTOR/S | Inverters will be secured onto a solid wall in the electrical cupboard. The inverters are heavy and should be handled by two operatives minimum. A trolley or pump truck should be used to move inverters to point of installation. |
| | ARRANGEMENTS FOR PREVENTING CONTACT WITH ENERGISED ELECTRICAL SYSTEMS OR ASSOCIATED APPARATUS | The system will not go live until the system is commissioned.<br>Each string will be physically mounted on the roof. The modules are live in sunlight, but each 'live' end is terminated with a multi-contact connector, offering protection from electrical shock.<br>Cables connecting the panels to the inverters will not be physically connected until commissioning. Cables will be connected at the inverter first, and then to the modules which avoids any requirement to manage live cables in the plant room.<br>Voltage checks are made on the strings on the roof prior to commissioning. Voltage and short circuit current checks are made in the plant room, one string at a time, as part of the commissioning process. |
| | PERSONAL PROTECTIVE EQUIPMENT (PPE) | - Hi visibility vests must be worn EVERYWHERE on site, except inside the building when using facilities.<br>- Safety footwear at all times<br>- Cut-resistant gloves when handling panels<br>- Impact resistant eye protection when using high-speed cutting equipment (e.g. disc cutters)<br>- Hard hats to be worn when below scaffolding<br>- Safety glasses to protect from reflected roof glare |
| | *JOJU SOLAR LIMITED* RESTRICTIONS AND LIMITATIONS | N/a |
| **13** | APPENDICES AND OTHER SUPPLEMENTARY INFORMATION | - PV Layout<br>- Schematics (to be installed next to inverters)<br>- Risk Assessment |

# SAFETY METHOD STATEMENT

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| **Prepared by** | Ben Budding |
| **Responsibility** | Commercial Project Manager- Joju Solar |
| **Date** | 04/09/2016 |
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| **Approved by** | Joe Gabriel |
| **Responsibility** | Operations Director |
| **Date** | 04/09/16 |
| | |
| **Accepted by** | |
| **Responsibility** | |
| **Date** | |

This Safety Method Statement and Risk Assessment has been explained to the following individuals.

It is essential they fully understand the procedures and controls itemised.

If there is any doubt as to their understanding of the controls, they are to be stood-down pending instructions from HO.

**I have read or had this Task Safety Method Statement explained to me and I will work in accordance with the instructions.**

**I will report any unsafe situation of event to my supervisor on site.**

| Name | Employer/Job Description | Signature and Date |
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