Manchester Central Convention Complex

Solar Installer Planning Application Deliverables

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Project Description



Project Name: Manchester Central Convention Complex (MCCC)

Site Address: Manchester Central Convention Complex, Windmill St, Manchester, M2 3GX

Solar PV Installer: Atlantic Renewables

Prepared by: Jack Atherton - Solar Design Engineer / Associate Director

Solar Project Specifications

Solar Panels System Size: 249.6kWp

Inverter Capacity: 233kW

Expected Annual Generation: 177,016kWh

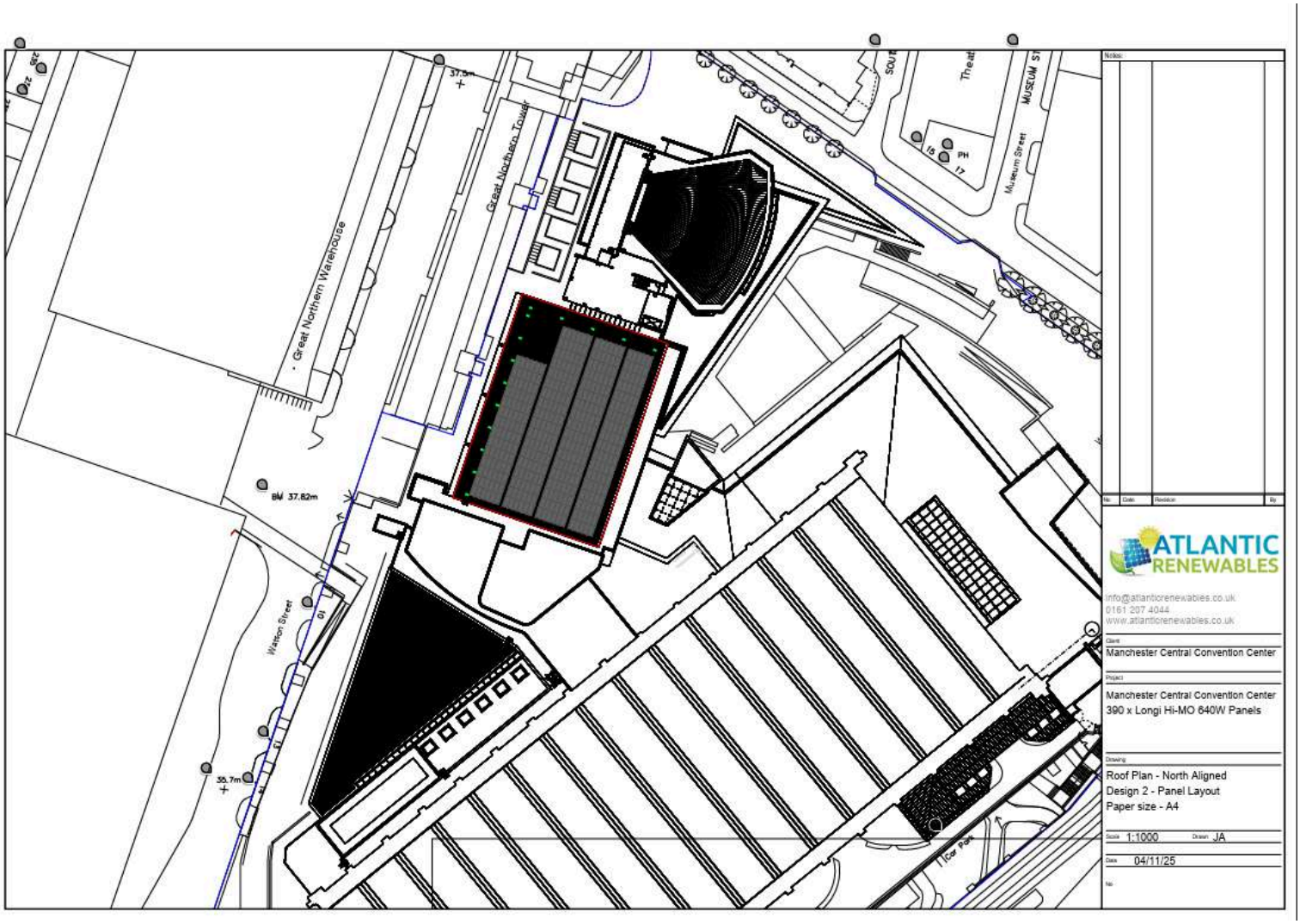
Expected 100% Self Utilisation of Solar PV Energy.

On Site Electrical Consumption: 3,843,705kWh

Roof Plans

Roof plans as 1:100 or 1:200 demonstrating panel positions and access provisions were requested.

These will be attached as ancillary documents.



Method Statement

Scope of Works

This method statement covers the safe and proper installation of a solar photovoltaic (PV) system on a standing seam metal roof, using the SFlex mounting system with aluminium mounting rails, and the installation of associated metal trunking carrying DC and AC cabling back to the main electrical incomer.

Works include:

- Setting out and fixing SFlex clamps and mounting rails
- Installation of PV modules onto the rails
- DC cabling between strings and inverters
- Installation of inverters, isolators, and AC cabling
- Installation of metal trunking and containment to the mains incomer
- Testing, commissioning, and documentation

Responsibilities

Role	Responsibility
Project Manager	Overall coordination and quality control
Site Supervisor	Daily supervision, safety compliance, toolbox talks
Electricians	Electrical installation, testing, and commissioning
Roof Installers	Mechanical installation of mounting system and PV panels
H&S Officer	Site inspections, risk assessments, incident reporting

Materials and Equipment

Mounting System: SFlex standing seam clamps and aluminium mounting rails

PV Modules: Longi Hi-MO X10 640W

Inverters: 2 x SolarEdge SE100K + 1 x SolarEdge SE33K

Cabling: DC solar cable, AC SWA cable

Containment: Metal trunking (powder-coated steel or galvanised), cable tray and glands

Tools/Equipment:

Cordless drills, impact drivers, angle grinders.

Multimeter and insulation resistance tester.

MEWP / scaffold access equipment.

PPE: safety harness, gloves, hard hat, boots, eye protection.

Sequence of Works

The below is the suggested method for proceeding with work.

Atlantic Renewables are happy to discuss and where possible accommodate any revisions to the below.

Pre-Installation

1. Review roof drawings, structural survey, and layout plan.
2. Mark out module rows in accordance with design drawings.
3. Verify roof condition and ensure standing seams are free from damage or corrosion.
4. Set up exclusion zones and fall protection measures (safety lines, edge rails, mansafe).

Installation of PV Modules - Non-Invasive Fixing Approach

1. Lift PV modules to the roof using MEWP or hoist — no manual carrying on ladders.
2. The SFlex standing seam mounting system provides a completely non-penetrative installation method, ensuring the roof cladding remains watertight and undamaged.
3. Specially engineered seam clamps are secured directly onto the raised seams of the metal roofing using set screws that grip the seam material without penetrating or compromising the sheet.
4. Aluminium mounting rails are then fixed to these clamps to form a continuous support structure for the solar modules.
5. This approach eliminates the need for drilling or mechanical fixings into the roof deck, preserving existing warranties, preventing potential water ingress, and maintaining the structural and weatherproof integrity of the roof.
6. We will then test the polarity and open-circuit voltage per string before final connection.
7. Manufacturers assembly instructions will be provided as additional material to this document - see ‘Datasheets and Material/Product Photos’ in this document for reference.

Electrical Installation (DC Side)

1. Connect the Panels DC directly into the SolarEdge Optimiser, then chain the optimisers together along the designated string.
2. These strings will be located across the roof either along the rail, or on metal trunking mounted in identical fashion to the panel mounting.
3. All strings and isolators will be clearly labelled.
4. External Cable tray will be used to span between the roof the solar is mounted to, and the inverter location room.
5. An ingress point will be made at an appropriate location for the cabling to enter the inverter location, ideally located to minimise DC Cabling.
6. Test insulation resistance and continuity before connecting to inverters.

Electrical Installation (AC Side & Metal Trunking)

1. From inverter location(s), install metal trunking (e.g., 50x50mm or size to suit cable bundle) to provide containment for AC and communication cabling.
2. Route trunking to the switchboard found in the inverter location that will be prepared by the client.
3. Secure trunking at regular intervals per BS EN 50085-1 and manufacturer recommendations.
4. Ensure all bends, junctions, and penetrations are fitted with smooth edges and grommets to prevent cable damage.
5. Maintain segregation between DC, AC, and data cables within trunking.
6. Gland and terminate cables into the main isolator, AC isolator, and distribution board as per schematic.
7. Bond trunking and metalwork to earth.

Testing and Commissioning

1. Complete insulation resistance, continuity, and polarity tests for all DC and AC circuits.
2. Measure inverter output voltage and verify phase connections.
3. Commission system through inverter monitoring portal (e.g., SolarEdge Monitoring).
4. Record all test results and submit as part of handover documentation.

Health & Safety Considerations

- All work at height to comply with Work at Height Regulations 2005.
- Roof access only by trained personnel with appropriate PPE and fall protection.
- Lifting equipment to only be used by licensed drivers.
- Electrical safety per BS 7671:2018 and EAWR 1989.
- Hot works permit if trunking requires on-site cutting/grinding.
- Manual handling assessments for panel lifting.
- Weather conditions monitored — no work during high winds or heavy rain.

Waste Management

- All packaging and offcuts to be collected and recycled where possible.
- Metal waste (trunking offcuts, rails) segregated for scrap recycling/re-use at Atlantic Renewables.
- Site to be left clean and free from debris daily.

Maintenance/Replacement Method

Annual Solar Panel Cleaning & Fault Diagnosis:

Atlantic Renewables offer an in-depth Operations and Maintenance (O&M) check for your commercial or domestic solar panel system in Manchester, Cheshire and other areas.

As your system and solar panels age, the efficiency of individual modules of the system can decline, which in turn affects the overall output of your solar PV framework.

Using infrared imaging to provide a visual thermal map of your solar panels provides a comprehensive insight into defects in individual modules, allowing us to diagnose exactly where the system is underperforming, we can then replace or repair the individual faulty modules.

If you are unsure of the performance rate of your existing solar panel system, Atlantic Renewables can provide you with specific data regarding the yield and power levels of your PV system during operation.

Using this in-depth data, our expert solar team can repair any module defects, maximising the output of energy from your system for years to come.

The Maintenance visit from Atlantic Renewables comes with the following services as part of the cost below:

- Written DC Test Report - Full Schedule of tests for all DC Circuitry revealing any fault findings and IV curve findings.
- Cleaning of solar panels

Ongoing Maintenance

Whilst Solar requires very little maintenance, there may be occasions when a short notice callout will be required.

The initial visit will be firstly to confirm the safety of the system, and make it safe where necessary.

We will then diagnose the issue, and if suitable or possible at the time, provide the solution.

If the issue is more significant then we will create a remediation plan and specify any additional costs based on the severity of the issue.

Panel/Optimiser Replacement

In the event of a panel or optimiser breaking, the SolarEdge Monitoring platform provided as part of the commissioning of the installation contains a digital layout as seen below. This will allow Atlantic Renewables to identify which panel needs maintenance.

An ideal route can then be taken with minimal disruption to the operational array. With the relevant solar inverter made safe for work, we can then loosen the fixing of the panel in the designated location and replace the faulty equipment.



Renewable Energy Justification

Context

Manchester City Council has declared a city-wide target of becoming a zero-carbon city by 2038, well ahead of the UK's 2050 target.

The Council's new five-year action plan (2025-30) targets a 44 % reduction in its own emissions in that period, and will deploy measures such as large-scale solar procurement, fleet electrification, and building retrofit.

The project, being located at the Manchester Central Convention Complex in the city-centre civic quarter—where a low-carbon heat network is already under deployment—the proposed renewable energy installation aligns with the city's policy trajectory and augments the city's built-environment transition to net-zero.

This project would show intent to follow through on these commitments, and with such an iconic building adopting the future technology, both for fiscal and environmental reasons, it would demonstrate leadership in renewable adoption within the events sector and local environmental awareness.

Summary

The site has significant electrical energy consumption, which both elevates the Carbon cost of the building and the budget required to pay for the electricity consumed.

The project demonstrates excellent financial viability, with full payback within under four years and strong cumulative returns over its 25-year design life.

The proposed 249.6 kWp Solar PV installation for Manchester Central Convention Complex Delivers strong financial and carbon performance, reduces grid dependency by 4.6%, pays back within 3.6 years and supports long-term sustainability and operational resilience.

This system will contribute to Manchester Central's carbon reduction goals by offsetting approximately 35 tonnes of CO_2 annually, equivalent to planting ~1,600 trees per year.

Whilst this would not get the site to net zero, it would certainly remain a cost effective project, and could potentially be seen as a stepping stone to larger adoption of renewable energy on site and in the area.

Further details on the figures can be located in the ancillary document '*Atlantic Renewables - MCCC - SolarEdge Solar Report 06_11_25.pdf*'. This is a report generated from PVSol, an industry standard, 3D modelling, Solar PV software. It contains extensive details on system design, and output figures considering the shading of the local high rise buildings and adjusting for local weather conditions using historical weather data.

Headline Figures From The PV Report:

System Size:
249.6 kWp of Solar PV on 233kW Inverters
Estimated Generation:
175,042 kWh/year (4.6% of site usage)

CO_2 Savings: 34,972 kg/year
Estimated ROI: 28.46%
Payback Period: 3.6 year

Environmental Benefit:

This system will contribute to Manchester Central's carbon reduction goals by offsetting approximately 35 tonnes of CO_2 annually, equivalent to planting ~1,600 trees per year.

Compliance and Standards

System designed in accordance with:

- BS 7671:2018 (IET Wiring Regulations), ISO 9001:2015 (QMS) and ISO 14001:2015 (EMS)
- MCS Standards (MIS 3002)
- Building Regulations Part L
- Health and Safety at Work Act 1974
- Components are MCS-certified and installed by trained, accredited personnel.
- The DNO is currently being contacted regarding any implications on the associated grid connection with respect to this project. As the size of the project is minimal compared to the current ratings of the supply, there are no issues anticipated with this element.

Relevant Accompanying Documents

- PV*SOL Report Summary including a Financial model
- Site Layout & String Diagrams
- Manufacturer Datasheets (modules, inverters, optimizers)

Datasheets and Material/Product Photos

See list of the datasheets/ancillary documentation that will be supplied along with this document as part of the deliverables.

Document Type	Document Name
Roof Plan - Roof Aligned Panel Layout 1-100	MCCC - 04_11_25-Design 2 - Roof Layout 1-100 A2
Roof Plan - North Aligned Site Plan 1-1000	MCCC - 04_11_25-Design 2 - Roof Layout 1-1000 A4
SolarEdge SE100K 3 Phase Inverter Datasheet	DS-00008-1.0-EU Three Phase Inverter with synergy technology SE50K-SE100K
SolarEdge SE 33K 3 Phase Inverter Datasheet	se-three-phase-inverter-with-setapp-configuration-datasheet 25-33.3kW EN
SolarEdge S Series Power Optimiser Datasheet	se-power-optimizer-s-series-datasheet
SolarEdge Firefighter Gateway Datasheet	se_firefighter_gateway
SolarEdge Product Warranty	se-limited-product-warranty-december-2023
Longi Solar Panel Datasheet	Longi Hi-MO X10 Guardian 640_670m_Datasheet
Longi Solar Panel Warranty	Limited Warranty for LONGi Solar Modules
SFlex Mounting Kit Datasheet	sflex_datasheet_standingseamclamp_en
SFlex Mounting Kit Assembly Instructions	Sflex_assemblyinstructions_standingseamclamps_en
SFlex Mounting Kit Warranty	SFlex Warranty UK 06-2023.pdf
Product Photo - Longi 640Ws Installation Example	Product Photo - Longi 640W Panels 1.jpg
Product Photo - Longi 640Ws Installation Example	Product Photo - Longi 640W Panels 2.jpg
Product Photo - Longi 640Ws Installation Example	Product Photo - Longi 640W Panels 3.jpg