

Planning Application Ref: PP-12800033

Rooftop Solar PV

**The Castlefield Hotel
Liverpool Road,
Manchester
M3 4JR**

Project Name	Manchester YMCA - Solar PV
Site Address	The Castlefield Hotel, Liverpool Road, Manchester, M3 4JR
Application Type	Full planning permission
Local Authority	Manchester City Council
Planning Reference	PP-12800033
Ineco Energy Ref:	IE-M502-YMCA

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1. Location

This planning application is for the installation of solar photovoltaic (PV) panels to be mounted on the existing roof at:

The Castlefield Hotel
Liverpool Road,
Manchester
M3 4JR

2. Introduction

Ineco Energy Ltd has been instructed to prepare a planning application for the installation of solar photovoltaic panels on the existing leisure centre roofs at The Castlefield Hotel, M3 4JR. The solar PV system is to enable the client to generate renewable energy to use on site and reduce the reliance on non-renewable energy sources, decreasing the carbon use of the client and reducing electricity costs.

The purpose of this document is to ensure that the application process leading to the final application decision clearly illustrates all significant information. The application illustrates careful selection and positioning of the development while considering the contextual surroundings, environment, preservation of neighbouring resident's amenity and visual impact to the public.

The development size is well suited to the Clients current business operation and makes good use of the existing roof to reduce the high on-site consumption of electricity from the National Grid. The Solar panels arrays will be sited on roof locations that benefit from parapet walls up to 3200mm in height.

This development supports Manchester City Councils, "Our Climate Change Action Plan 2020-25"

Furthermore, it supports the UK Governments approved net zero target for 2050 and interim targets for 2030.

3. System Design

The proposal is to install 160.95 kWp of solar PV panels on the existing roof of one of the buildings within the site boundary to deliver 17% of the site's annual electricity demand.

The solar PV system is estimated to generate 112.87 MWh of electricity annually, of which 99% will be consumed on site. This will provide 17% of the site's electricity demand.

Based on the 2020 Carbon Conversion Factors¹ (1 kWh = 0.23314 kgCO₂e), this will reduce the carbon by 243 tonnes per annum.

It is understood that fuel mix efficiencies and system degradation will reduce this over time.

¹ <https://www.gov.uk/government/collections/government-conversion-factors-for-company-reporting>

4. DNO & Structural Analysis

Electricity North West, who are the Distribution Network Operator (DNO) have approved connection to the existing electricity network under reference: 5500290691/A. This has been attached under reference: "IE-M502-YMCA-Acceptance Letter 005500290691A".

Structural analysis of the roof has been undertaken and the solar system has been approved for installation in accordance with all necessary building codes and structural assessment.

5. Planning – Design Considerations

The total ownership site boundary is 5,180 m² There are several buildings, service roads and other facilities (car parks etc.) within the total ownership site boundary.

The proposed solar PV installation will be installed on the existing roof of the buildings within the site. The solar PV system will cover 950m² on the existing roof.

The total area within the external edge of the solar panel installation and indicated by the red-line boundary on drawing "**IE-M502-YMCA-Site Drawings-2.5-Site plan**" 950m².

Except the location falling within a conservation area the proposed solar PV installation has been designed to satisfy all permitted 'development criteria' as outlined below:

All the following conditions have been observed in the design:

- Panels are be sited, to minimise the effect on the external appearance of the building and the amenity of the area.
- panels are sited, to minimise any impacts from glint or glare.

All the following limits have been met in the design:

- the solar panels are not within 3km of an airport or aerodrome.
- the solar panels are installed on a pitched roof and project no more than 200mm from the wall surface or roof slope.
- there are no panels installed on a flat roof.
- the equipment mounted on the roof is not within one metre of the external edge of the roof.
- the equipment mounted on the wall is not within one metre of a junction of that wall with another wall or with the roof of the building.
- the building is not a listed building or within the grounds of a listed building.
- the site is not designated as a scheduled monument.
- the building is not on designated land.

The panels are black in colour with a silver frame and non-reflective glass.

The following drawings are attached:

- IE-M502-YMCA-Site Drawings-2.1-Location plan
- IE-M502-YMCA-Site Drawings-2.2-Existing Roof Layout Plan

- IE-M502-YMCA-Site Drawings-2.3-Proposed Module Layout Plan
- IE-M502-YMCA-Site Drawings-2.4-Superimposed Module Layout Plan
- IE-M502-YMCA-Site Drawings-2.5-Site plan
- Datasheet PV module - Longi 440W-Scientist

6. Layout

The layout will be arranged as per the accompanying drawings:

- IE-M502-YMCA-Site Drawings-2.1-Location plan
- IE-M502-YMCA-Site Drawings-2.2-Existing Roof Layout Plan
- IE-M502-YMCA-Site Drawings-2.3-Proposed Module Layout Plan
- IE-M502-YMCA-Site Drawings-2.4-Superimposed Module Layout Plan
- IE-M502-YMCA-Site Drawings-2.5-Site plan

The solar panel layout is presented in fig 1.0 below:



fig 1.0

7. Landscaping

A visual survey of the site area was conducted to confirm that no trees or hedgerows surrounding the development site will be altered or affected by this installation.

8. Appearance

The Solar panels arrays will be sited on roof locations that benefit from parapet walls up to 3200mm in height. The solar panel area will not be visible from the adjoining highways.

9. Glint and Glare

It is often perceived that solar panels produce glint and glare that can affect nearby vehicular traffic and aircrafts, this is somewhat unfounded for the reasons below:

- The Solar panels arrays will be sited on roof locations that benefit from parapet walls up to 3200mm in height. The solar panel area will not be visible from the adjoining highways.
- The solar panels are not within 3km of an airport or aerodrome.
- The panels are black in appearance with and have anti-reflective glass.
- The principal technologies behind the solar panels are to absorb as much light as possible to convert to electricity and thus there is no discernible reflection or glare produced as a by-product.
- This when compared to other reflective materials such as metal roof sheeting, polytunnels and greenhouses gives confidence in any adverse effects of the solar panels being negated.

10. Access

The site is a self-contained site with controlled access.

During construction, all deliveries and works shall use existing public roads to reach site. They will then enter site where off-loading facilities are located.

As part of the on-going maintenance of the development, panels can be reached via the existing external access or via MWEP

11. Summary

Given the current economic situation and concerns about climate change, the move towards a greener and more sustainable form of energy usage is essential. The proposed system will be able to supply the site with 17% of their daytime energy requirements.

This proposal will decrease the sites reliance on electricity from non-renewable sources. Local and national policies aim to have more sustainable development and increase the production of renewable energy without impacting on the heritage or visual amenities of the area.

Taking the above into consideration it is thought that this proposal will not have a detrimental impact on the ecology and visual amenities of the area and in line with the current policy.

Careful consideration has been taken throughout the feasibility of the scheme and final location to ensure that the proposed development in term of design, scale, location and layout has been satisfied and appropriate in context of the site in question.