


ENGIE INEO UK LTD	TECHNICAL SUBMISSION AND APPROVAL PTS no 39		
Project No 22069	Project: Parker Tower	<input type="checkbox"/> Material(s) <input checked="" type="checkbox"/> Equipment(s) <input type="checkbox"/> Sample(s)	
Purpose		TO BE COMPLETED BY INEO EI UK LTD	
<input checked="" type="checkbox"/> Approval <input type="checkbox"/> Review <input type="checkbox"/> Comments			
The Materials comply with: <input checked="" type="checkbox"/> Employer's requirements <input type="checkbox"/> Contractor's Proposals <input type="checkbox"/> Client's Confirmation of Instruction <input type="checkbox"/> Other: _____			
Supplier: <u>MYRIAD SOLAR</u>	Description:		Model:
Manufacturer: <u>MYRIAD SOLAR</u>	PV PANEL		Vikram Eldora Ultima 250 W
Attachments:			
<input checked="" type="checkbox"/> Data sheet(s) <input type="checkbox"/> Catalogue(s) <input type="checkbox"/> Manual(s) <input checked="" type="checkbox"/> Other: <u>Drawing</u>			
Order and delivery dates:		Submitted by:	
Order: _____ Delivery: 6 weeks		Name: <u>C.Dugua</u> Date: 31/03/2017 Signature: <u>C.Dugua</u>	
Engineer in Charge:	Manager Responsible:	Reviewed by Design Engineer:	
Name: _____ Date: _____	Name: _____ Date: _____	Name: _____ Date: _____	
Signature: _____	Signature: _____	Signature: _____	
Internal Transmission: For comment		External Transmission: For approval	
_____ <input type="checkbox"/> _____ <input type="checkbox"/> _____ <input type="checkbox"/> _____ <input type="checkbox"/> _____ <input type="checkbox"/> _____ <input type="checkbox"/>		_____ <input type="checkbox"/> _____ <input type="checkbox"/> _____ <input type="checkbox"/> _____ <input type="checkbox"/> _____ <input type="checkbox"/> _____ <input type="checkbox"/>	
Approval/Rejected/Comments		Approved/Rejected/Commented by:	
a) Approved Without comments <input type="checkbox"/> With Comments ⁽¹⁾ <input type="checkbox"/> b) Rejected <input type="checkbox"/>		Name: _____ Date: _____ Signature: _____	
⁽¹⁾ Comments:		Purchasing data reviewed by relevant Manager:	
_____ _____ _____		Name: _____ Date: _____ Signature: _____	
Receiving inspections should be carried out against the Purchase Order Form and this Technical Submission using the Materials Receiving Inspection (MRI) Form			

PV Panel

System Description (As per Foreman Roberts specifications)

Reference shall be made to the Project Specification and drawings for the particular renewable technology requirements for hot water services pre-heating and/or heating, where details of the solutions, whether solar, air source heat pumps, ground source heat pumps, CHP units or other alternative technologies shall be indicated.

Where specified in the particular specification, renewable technologies shall be designed by a specialist contractor and installed fully in accordance with their recommendations and all applicable regulations in place at the time of installation.

Facilities MUST be provided within any such system to prevent the stagnation of water within the system and also to allow pasteurisation of the system for legionella prevention purposes.

Technical Submittal

Parker Tower

Author: Francky Leray

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Document Control

Version Control

Version	Date	Comments
001	27/03/2016	First issue

Distribution List

Name	Company
Bogdan Dragomirescu/ Clement Dugua/Nathan Paice	Engie

Related Documents

Document	Version
Energy Regulations G83/2	September 2003
Energy Regulations G59/3	June 2010
ESC Microgeneration System Domestic Electrical Installation good practice guide	June 2007
BRE Digest 489 and 495	
IEE Guidance Note 7 – Special Locations (2 nd Edition).	ISBN 0-85296-995-3
MIS 3002	Version 3.1
BS 5534 “Code of Practice for slating & Tiling”	-
BS 7671 “17 th Edition IEE Wiring Regulations2	
CITB - CDM 2007 Industry Guidance for Designers	ISBN 978-1-85751-236-6

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1. System Requirements

The Scope of the Sub-Contract Works is to carry out and complete the design , fabrication, delivery to site, supply, Installation of the Photovoltaic System including testing & commissioning and correction of Defects.

The system is described in the Foreman Roberts M&E specifications as per below extract:

4.3 Photovoltaics

The contractor shall allow for the installation of a full and complete photovoltaic system to the main and raised roof areas on the tower block. This shall equate to approximately 50m² as proposed within the energy strategy.

The Photovoltaic system is to be designed and installed by a specialist sub contractor.

The Photovoltaic system is to feed into the landlord electrical infrastructure via synchronisation systems including inverters etc and full protection at the point of connection. The output of the photovoltaic shall be monitored where required with G59 metering.

The Sub-Contractor shall be responsible for the layout of the Photovoltaic switchgear including all necessary builders work and special fixings required.

The contractor shall provide a full set of drawings for the photovoltaic system to the consultant for sign off. This shall include the location of all of the invertors and associated panels.

The client has also confirmed that the roof will have a brown finish.

2. Energy Assessment (MCS 2012) and System Yield

MCS 2012 Estimated Output Calculations			
No. of Panels	30	m ² **	50
Panel Power	0.25	Overshading factor	1
kWp	7.5	kWh/kWp	894
Post Code	WC	kWh *	6705
MCS Zone	1	kg/kWh	0.529
Orientation of the PV system - Degrees from South	15°	Co ² saving (kg)	3547
Inclination of the PV system - Degrees from Horizontal	10°		

*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 estimate is based upon the standard MCS procedure is given as guidance only. It should not be considered as a guarantee of performance."

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

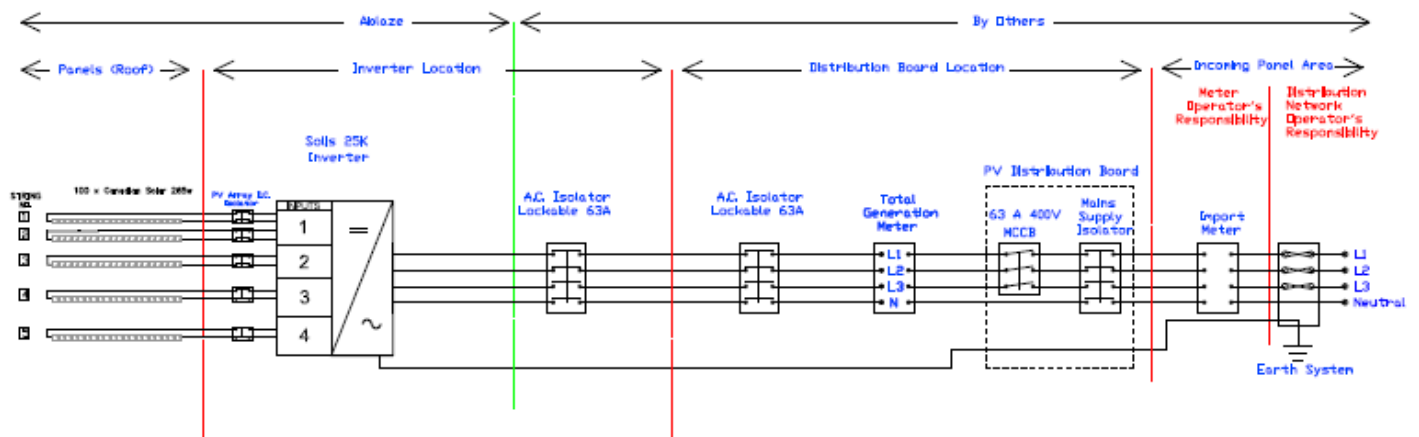
"This shade assessment has been undertaken using the standard MCS procedure - it is estimated that this method will yield results within 10% of the actual annual energy yield for most systems."

3. Equipment Description, data sheets and warranties

The system has been designed to accommodate the roof layout and comprises of 30 x 250W 15.4% efficient panels mounted on a proprietary Schletter flat roof system self ballasted on insulation, membrane or brown roof as per data sheet in Appendix 1. The frames, ballast and panels will weigh up to 52 kg/m² (see attached Schletter Planning Document). The system can be laid on or around a brown roof finish as per similar installation on Picture 1 below.



The DC cables (4 x4mm²) will be clipped under panels and will be strung together via MC4 plug&play connectors and run from each array on a cable tray to roof entry provided by MC/roofer above electrical riser/inverter room. The DC strings will be connected via DC isolators to a three phase Samil 8kW inverter. The inverter will require a three phase supply via an AC isolator and MCB to be supplied and fitted by the Main Contractor/Electrical contractor in location to be agreed. The Generation meter will be free issued and shall be connected next to LV board between board and inverter. A data logger will be installed in a central location to be agreed with client to monitor the generation of each inverter.

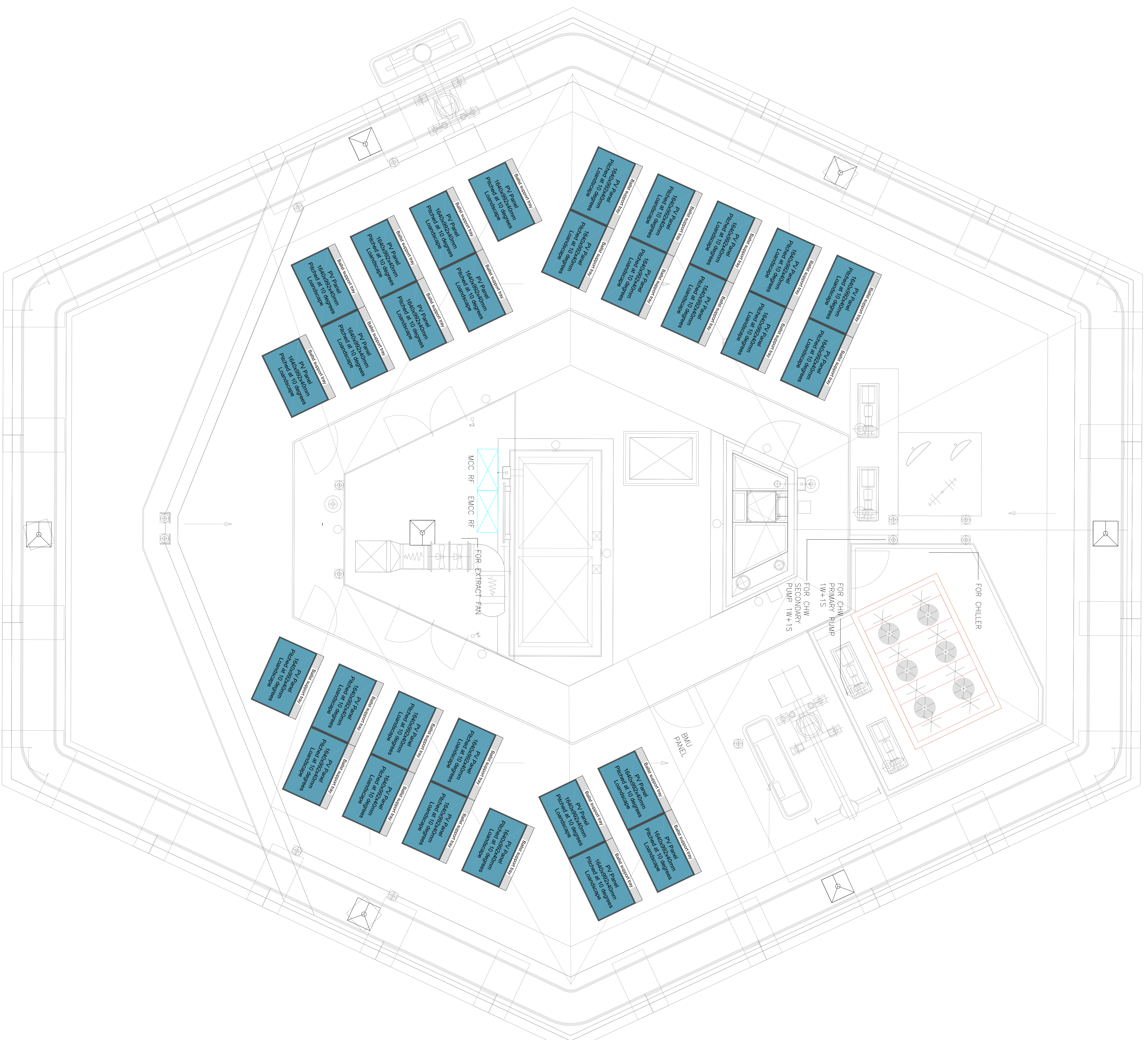


See Appendix 1 for data sheets and warranties.

4. Operation & Maintenance

Although the panels need minimum maintenance, it is strongly advised to provide a safe access for cleaning and one-off repairs/replacement.

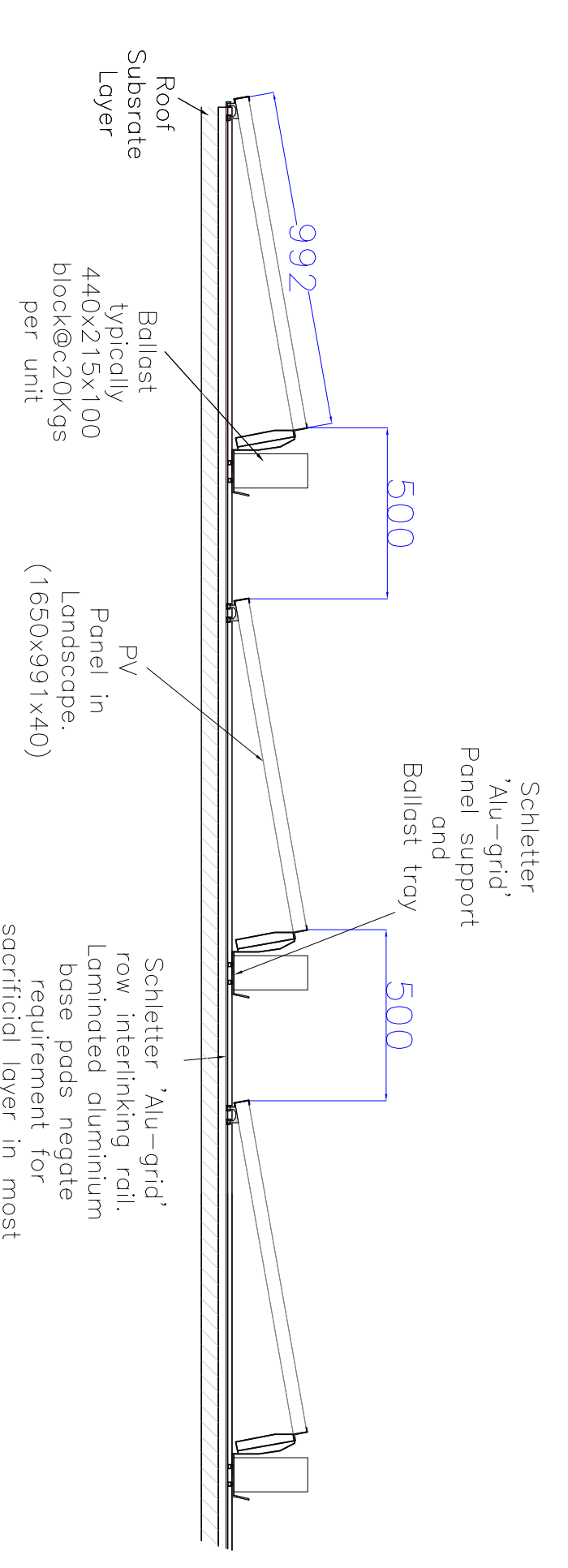
See Appendix 2 for maintenance regime and System instructions



- General Notes:
1. All Dimensions are in mm.
 2. All Dimensions in advance and subject to confirmation by Ablaze GES following design.
 3. Do Not Scale
 4. Images are for general information only
 5. Ablaze GES reserve the right to revise this drawing in the interests of system development.
 6. This drawing remains the intellectual property of Ablaze GES. Refer to manufacturers details for further product information.
 7. System requires 30No. 270w PV Panels (8.1kWp) pitched at 10°.
 8. It is the clients responsibility to notify Ablaze GES of any thing which may restrict the area available to the system or adjacent structures which would shade the system
 9. This drawing layout does not account for any mansafe, plant, penetrations or miscellaneous equipment not shown.
 10. Assumed North as the indicator below

- CDM Notes:
1. Safe access required for maintenance of panels.
 2. Edge protection will be required during construction and installation of panels
 3. PV panels generate "HIGH DC VOLTAGE" therefore a permit to work must be issued before access to the roof.
 4. No provision for mansafe made. Please inform Ablaze GES of mansafe requirements if applicable

REV	DESCRIPTION	DATE	BY	CHECKED
01	ISSUED FOR TENDER	20/03/2017	JM	SR
Project: The Parker Tower (Eggle)				
Drawing Title: PV General Arrangement				
Drawn by	Checked by	Page/s		
JM	SR	A1		
Drawing No.	Scale	Date		
AG1313400-R01	Do Not Scale	23/3/2017		
REV	REV			
Provisional	R01			



Typical section through PV Mounting

Notes:

Specification requires approximately 50sqm PV area
 PV system to be mounted on a proprietary ballasted, non-penetrative support system. (Van der Valk, Schletter or similar)
 Specific panel to be utilised subject to availability at time of procurement. This will likely be a panel of c270w resulting in a PV system of 8.1kWp.
 PV Inverter to be connected to a 16A TP&N supply, by others, local to inverter location, terminated in a lockable rotary isolator.
 ** Precise panel location and configuration on roof subject to survey at point of installation **