



RIBBLE VALLEY
BOROUGH COUNCIL

07 MAR 2012

THE
CATION OF

For office use only

Application No 320120220P

Date received

Fee paid £

Receipt No:

Council Offices, Church Walk, Clitheroe, Lancashire. BB7 2RA Tel: 01200 425111 www.ribblevalley.gov.uk

Application for Planning Permission.
Town and Country Planning Act 1990

Publication of applications on planning authority websites.

Please note that the information provided on this application form and in supporting documents may be published on the Authority's website. If you require any further clarification, please contact the Authority's planning department.

1. Applicant Name, Address and Contact Details

Title:	Mr	First name:	Trevor	Surname:	Davies	
Company name:						
Street address:	Dugdales Barn			Country Code	National Number	Extension Number
	Worston			Telephone number:		
				Mobile number:		
Town/City:	Clitheroe			Fax number:		
County:	Lancashire			Email address:		
Country:	UK					
Postcode:	BB8 1QA					

Are you an agent acting on behalf of the applicant? ☒ Yes ☐ No

2. Agent Name, Address and Contact Details

Title:	Mr	First Name:	Peter	Surname:	Lord	
Company name:	Calder Design Associates					
Street address:	2 Top row			Country Code	National Number	Extension Number
	Sabden			Telephone number:	01282-771907	
				Mobile number:		
Town/City:	Clitheroe			Fax number:		
County:	Lancashire			Email address:		
Country:	United Kingdom					
Postcode:	BB7 9HL			mail@calder-design.com		

3. Description of the Proposal

Please describe the proposed development including any change of use:

GROUND MOUNTED PHOTOVOLTAIC SOLAR PANEL IN GARDEN AREA

Has the building, work or change of use already started?

☐ Yes ☒ No

4. Site Address Details

Full postal address of the site (including full postcode where available)

House:		Suffix:	
House name:	DUGDALES BARN		
Street address:			
	WORSTON		
Town/City:	CLITHEROE		
County:			
Postcode:	BB7 1QA		

Description of location or a grid reference
(must be completed if postcode is not known):

Easting:	
Northing:	

Description:

5. Pre-application Advice

Has assistance or prior advice been sought from the local authority about this application?

☐ Yes ☒ No

6. Pedestrian and Vehicle Access, Roads and Rights of Way

Is a new or altered vehicle access proposed to or from the public highway?

☐ Yes ☒ No

Is a new or altered pedestrian access proposed to or from the public highway?

☐ Yes ☒ No

Are there any new public roads to be provided within the site?

☐ Yes ☒ No

Are there any new public rights of way to be provided within or adjacent to the site?

☐ Yes ☒ No

Do the proposals require any diversions/extinguishments and/or creation of rights of way?

☐ Yes ☒ No

7. Waste Storage and Collection

Do the plans incorporate areas to store and aid the collection of waste?

☐ Yes ☒ No

Have arrangements been made for the separate storage and collection of recyclable waste?

☐ Yes ☒ No

8. Authority Employee/Member

With respect to the Authority, I am:

- (a) a member of staff
- (b) an elected member
- (c) related to a member of staff
- (d) related to an elected member

Do any of these statements apply to you?

☐ Yes ☒ No

9. Materials

Please state what materials (including type, colour and name) are to be used externally (if applicable):

Others - description:

Type of other material:

PHOTO VOLTAIC PANELS

Description of existing materials and finishes:

NONE

Description of proposed materials and finishes:

BLUE-BLACK GLAZED TOP SCREEN WITH ALUMINIUM TRIM MOUNTED ON DARK GREY UPVC CASSETTE

Are you supplying additional information on submitted plan(s)/drawing(s)/design and access statement?

☒ Yes ☐ No

If Yes, please state references for the plan(s)/drawing(s)/design and access statement:

66-17-0 Location plan 1-1250
66-17-1 Site plan 1-500
66-17-2 Details
Design and Access Statement 1
phono-solar-panels-210-240-w
Renusol - ConSole

Vehicle Parking

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Please provide information on the existing and proposed number of on-site parking spaces:

Type of vehicle	Existing number of spaces	Total proposed (including spaces retained)	Difference in spaces
Cars	0	0	0
Light goods vehicles/public carrier vehicles	0	0	0
Motorcycles	0	0	0
Disability spaces	0	0	0
Cycle spaces	0	0	0
Other (e.g. Bus)	0	0	0
Short description of Other	NO CHANGES PROPOSED		

11. Foul Sewage

Please state how foul sewage is to be disposed of:

Mains sewer ☐ Package treatment plant ☐ Unknown ☐
Septic tank ☐ Cess pit ☐

Other

NONE

Are you proposing to connect to the existing drainage system?

☐ Yes ☒ No ☐ Unknown**12. Assessment of Flood Risk**

Is the site within an area at risk of flooding? (Refer to the Environment Agency's Flood Map showing flood zones 2 and 3 and consult Environment Agency standing advice and your local planning authority requirements for information as necessary)

☐ Yes ☒ No

If Yes, you will need to submit an appropriate flood risk assessment to consider the risk to the proposed site.

Is your proposal within 20 metres of a watercourse (e.g. river stream or beck)?

☐ Yes ☒ No

Will the proposal increase the flood risk elsewhere?

☐ Yes ☒ No

How will surface water be disposed of?

☒ Sustainable drainage system☐ Main sewer☐ Pond/lake☐ Soakaway☐ Existing watercourse**13. Biodiversity and Geological Conservation**

To assist in answering the following questions refer to the guidance notes for further information on when there is a reasonable likelihood that any important biodiversity or geological conservation features may be present or nearby and whether they are likely to be affected by your proposals.

Having referred to the guidance notes, is there a reasonable likelihood of the following being affected adversely or conserved and enhanced within the application site OR on land adjacent to or near the application site:

a) Protected and priority species

☐ Yes, on the development site ☒ Yes, on land adjacent to or near the proposed development ☐ No

b) Designated sites, important habitats or other biodiversity features

☐ Yes, on the development site ☐ Yes, on land adjacent to or near the proposed development ☒ No

c) Features of geological conservation importance

☐ Yes, on the development site ☐ Yes on land adjacent to or near the proposed development ☒ No**14. Existing Use**

Please describe the current use of the site:

DOMESTIC GARDEN OF A CONVERTED BARN

Is the site currently vacant?

☐ Yes ☒ No

Does the proposal involve any of the following?

If yes, you will need to submit an appropriate contamination assessment with your application.

Land which is known to be contaminated?

☐ Yes ☒ No

Land where contamination is suspected for all or part of the site?

☐ Yes ☒ No

A proposed use that would be particularly vulnerable to the presence of contamination?

☐ Yes ☒ No

15. Trees and Hedges

Are there trees or hedges on the proposed development site?

☐ Yes ☒ No

And/or: Are there trees or hedges on land adjacent to the proposed development site that could influence the development or might be important as part of the local landscape character?

☐ Yes ☒ No

If Yes to either or both of the above you may need to provide a full Tree Survey, at the discretion of your local planning authority. If a Tree Survey is required this and the accompanying plan should be submitted alongside your application. Your local planning authority should make clear on its website what the survey should contain, in accordance with the current 'BS5837: Trees in relation to construction - Recommendations'.

16. Trade Effluent

Does the proposal involve the need to dispose of trade effluents or waste?

☐ Yes ☒ No

17. Residential Units

Does your proposal include the gain or loss of residential units?

☐ Yes ☒ No

18. All Types of Development: Non-residential Floorspace

Does your proposal involve the loss, gain or change of use of non-residential floorspace?

☐ Yes ☒ No

19. Employment

If known, please complete the following information regarding employees:

	Full-time	Part-time	Equivalent number of full-time
Existing employees	0	0	0
Proposed employees	0	0	0

20. Hours of Opening

If known, please state the hours of opening for each non-residential use proposed:

Use	Monday to Friday		Saturday		Sunday and Bank Holidays		Not Known
	Start Time	End Time	Start Time	End Time	Start Time	End Time	
A1							☒
A2							☒
A3							☒
A4							☒
A5							☒
B1A							☒
B1B							☒
B1C							☒
B2							☒
B8							☒
C1							☒
C2							☒
D1							☒
D2							☒
Other							☒

21. Site Area

What is the site area?

29.00

sq.metres

22. Industrial or Commercial Processes and Machinery

Please describe the activities and processes which would be carried out on the site and the end products including plant ventilation or air conditioning. Please include the type of machinery which may be installed on site:

NONE

Is the proposal for a waste management development?

☐ Yes ☒ No

3. Hazardous Substances

Is any hazardous waste involved in the proposal?

☐ Yes ☒ No

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24. Site Visit

Can the site be seen from a public road, public footpath, bridleway or other public land?

☐ Yes ☒ No

If the planning authority needs to make an appointment to carry out a site visit, whom should they contact? (Please select only one)

☐ The agent ☒ The applicant ☐ Other person

25. Certificates (Certificate A)

Certificate of Ownership - Certificate A

Town and Country Planning (Development Management Procedure) (England) Order 2010 Certificate under Article 12

I certify/The applicant certifies that on the day 21 days before the date of this application nobody except myself/ the applicant was the owner (owner is a person with a freehold interest or leasehold interest with at least 7 years left to run) of any part of the land or building to which the application relates.

Title: First name: Surname:

Person role:

Declaration date:

☒ Declaration made

25. Certificates (Agricultural Land Declaration)

Agricultural Land Declaration

Town and Country Planning (Development Management Procedure) (England) Order 2010 Certificate under Article 12

Agricultural Land Declaration - You Must Complete Either A or B

(A) None of the land to which the application relates is, or is part of an agricultural holding ☒

(B) I have/The applicant has given the requisite notice to every person other than myself/the applicant who, on the day 21 days before the date of this application was a tenant of an agricultural holding on all or part of the land to which this application relates, as listed below: ☐

If any part of the land is an agricultural holding, of which the applicant is the sole tenant, the applicant should complete part (B) of the form by writing 'sole tenant - not applicable' in the first column of the table below

Title: First Name: Surname:

Person role:

Declaration date:

☒ Declaration Made

26. Declaration

I/we hereby apply for planning permission/consent as described in this form and the accompanying plans/drawings and additional information



Date

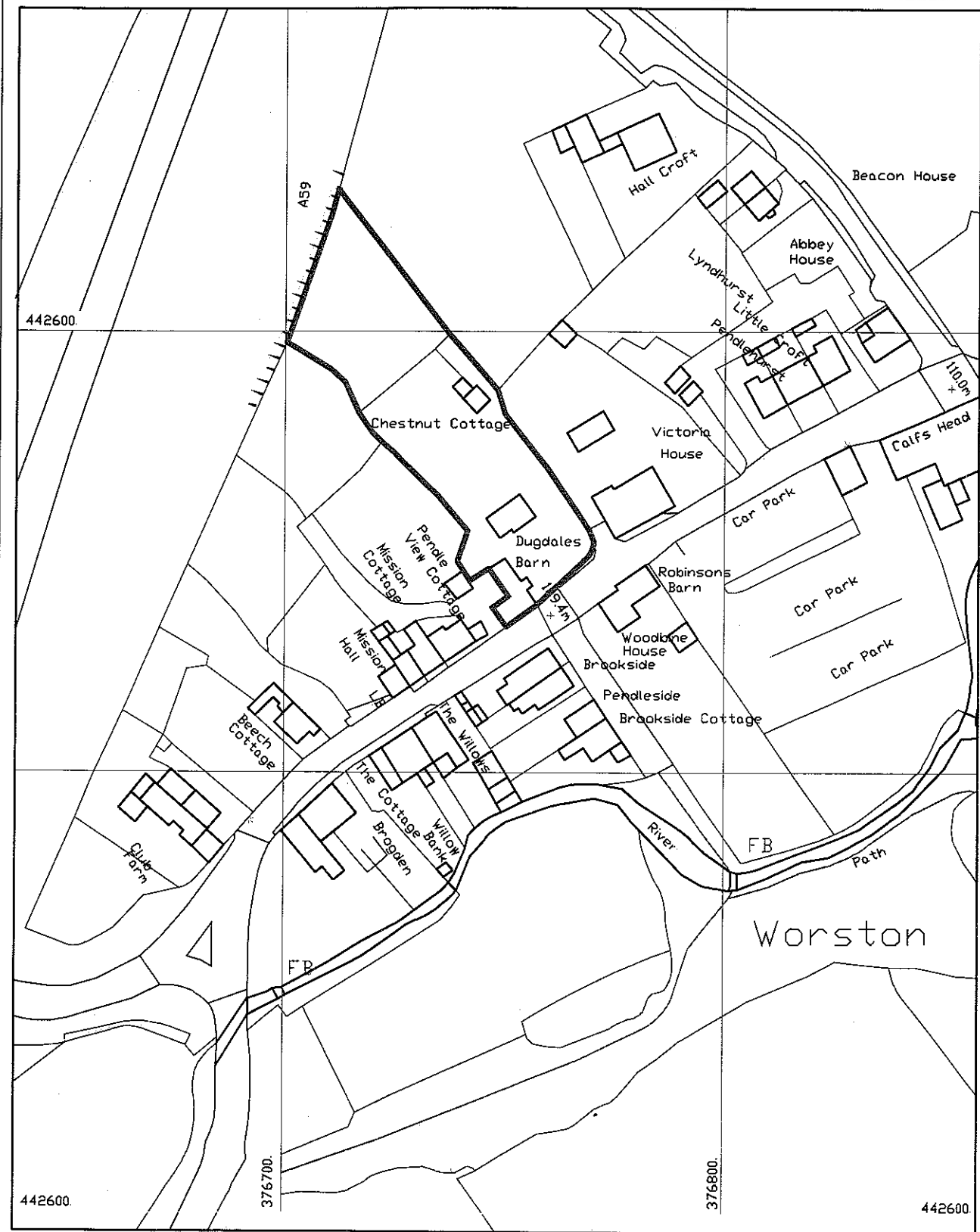
320120220P

Client Mr Trevor Davies
Site Dugdales Barn
Worston
Clitheroe BB7 1QA

Calder Design Associates

2 TOP ROW, SABDEN, CLITHEROE, LANCs. BB79HL
Tel 01282 771907, E mail@calder-design.com

TITLE Site Location
1:1250 Plan



10 0 20 40
Scale of Metres

Drawn	P.Lord	DWG No	Rev
Date	10.02.12	66/17/0	
Scale	1:1250@A4		

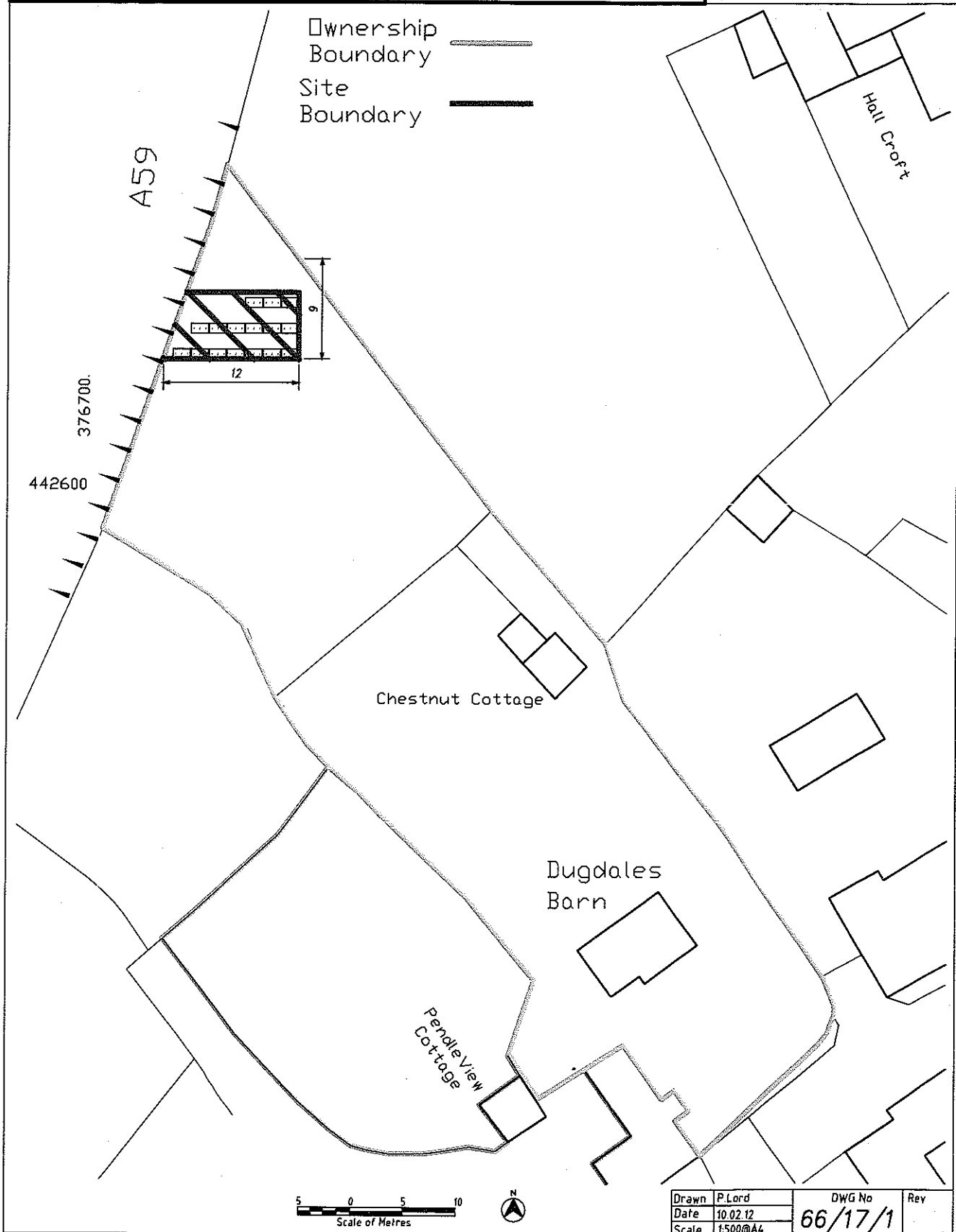
320120220P

Client Mr Trevor Davies
Site Dugdales Barn
Worston
Clitheroe BB7 1QA

Calder Design Associates

2 TOP ROW, SABDEN, CLITHEROE, LANCs. BB79HL
Tel 01282 771907, E mail@calder-design.com

TITLE Site Plan
1:500



Drawn	P.Lord	DWG No	Rev
Date	10.02.12	66/17/1	
Scale	1:500@A4		

Phono Solar

A Member of SUMEC

PS210M—20/U
PS215M—20/U
PS220M—20/U
PS225M—20/U
PS230M—20/U
PS235M—20/U
PS240M—20/U

HIGH PERFORMANCE PHOTOVOLTAIC MODULES SERIES

SPECIFICATION

Cells	Mono crystal Si 156mmx156mm pseudo square
Number of cells	6x10 pieces in series
Typical application	20V DC
Maximum voltage	1000V DC
Size	1640 (L) x 992(W) x 45(H) mm
Weight	19 Kg
Front glass	3.2 mm toughened glass

TOLERANCE

Parameter	Values	Unit
Operating temperature	-40 +85	°C
Hail diameter @80Km/h	Up to 25	mm
Continuous wind pressure	Up to 130	Km/h

CONNECTION TERMINALS

Connector type 0.90m wire (ϕ 4 mm²), same as MC connector
Diode's amount 3 pieces

ELECTRICAL TYPICAL VALUES

Model	Rated Power (W)	Tolerance	Rated Current (A)	Rated Voltage (V)	Short Circuit Current (A)	Open Circuit Voltage (Voc)
PS210M—20/U	210W	±3%	7.30A	28.8V	7.85A	36.7V
PS215M—20/U	215W	±3%	7.42A	29.0V	7.95A	36.9V
PS220M—20/U	220W	±3%	7.54A	29.2V	8.05A	37.0V
PS225M—20/U	225W	±3%	7.66A	29.4V	8.15A	37.1V
PS230M—20/U	230W	±3%	7.78A	29.6V	8.25A	37.3V
PS235M—20/U	235W	±3%	7.90A	29.8V	8.35A	37.5V
PS240M—20/U	240W	±3%	8.00A	30.0V	8.45A	37.6V

NOCT (Nominal Operation Cell Temperature) : 45°C±2°C

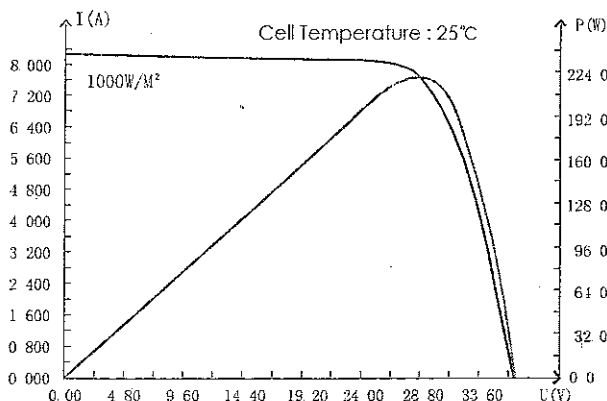
Voltage Temperature coefficient -0.35%/°C

Current Temperature coefficient 0.05%/°C

Power Temperature coefficient -0.48%/°C

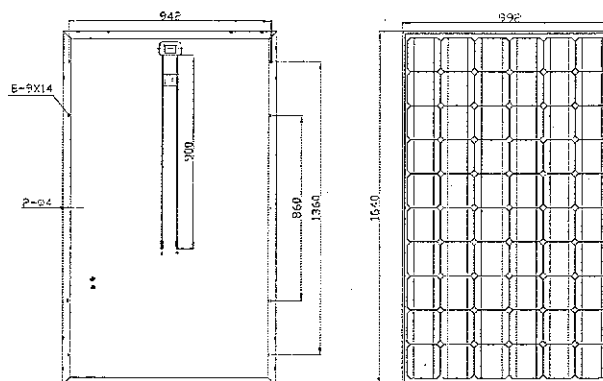
Note: defined as standard deviation of thousands measurements. Absolute power values depend on the measuring system. They can differ by +/- 5% from one measuring system to another.

CHARACTERISTIC CURVES



(Measurement conditions under irradiance level of 1000W/M², Air Mass 1.5 Spectrum, cell temperature of 25°C)

DIMENSIONS



Design Access & Heritage Statement

for the proposed ground mounted
Photovoltaic solar panels
at Dugdales Barn
Worston
Clitheroe
BB7 1QA

Prepared By :-
Calder Design Associates
2 Top Row Sabden BB79HL
For Mr Trevor Davies

issue A 16/2/12

1. Introduction

- 1.1 This design and access statement is written in line with "Design and Access Statement How to write, read and use them" (CABE 2007) as required by the circular "Guidance on Changes to the Development Control System".
- 1.2 The aim of this document is to appraise the context of the proposal in relation to the planning policy guidance, and the underlying influences of the policies on the design.
- 1.3 This document should be viewed in conjunction with the drawings submitted with the application.

2. Existing arrangements

- 2.1 The existing property is a 2 storey converted barn, probably built in the 18th century which was previously used as accommodation for the former farm
- 2.2 The existing land is used for ancillary domestic uses associated with residential use of Dugdales Barn
- 2.3 The north west site boundary fence runs parallel to A59 Trunk Rd and is not visible from the road due to the deep cutting of the road and the tree screening.

3. The Proposal

The proposal seeks install domestic microgeneration equipment at ground level in the field area adjacent to the A59

3.1 Appraisal of the Planning context of the proposal.

3.1.1 Statutory Instruments. S.I. 2056 as amended 2011 part 40 Class B

"Installation of domestic microgeneration equipment" apply to this development. Part B.1. for ground mounted systems has been used for design guidance but all permitted development rights have been removed as a condition on developing the Barn and the solar voltaic array exceed the size and boundary conditions described in the S.I. and therefore planning permission is required for the proposal

3.2 Use.

3.2.1 The proposed alterations are intended to generate electricity from solar energy during the daylight hours for use of the occupants of the living accommodation with the surplus being sold to the national grid. Under the proposal, photovoltaic panel array will be mounted on ballasted cassette bases at ground level and will measure 650 high by 12m wide.

3.3 Siting

3.3.1 The panels are sited at ground level in the garden area facing in a southerly direction

3.3.2 The panels will not protrude above 650 mm above the existing ground level

3.3.3 Tree planting and the slope of the ground and the low height of the mounted panels will render them difficult to be seen from anywhere in the local area

3.4 Design

3.5 Size

3.5.1 The photovoltaic panel array will measure 12m long x 6m wide and will be mounted at 20 deg angle to give an overall height of 650mm above the ground

3.6 Colour

3.6.1 The proposed photovoltaic panels have a blue-black glazed appearance set in an aluminium and galvanised steel framework mounted on dark grey ballasted cassettes

3.7 Visual impact

3.7.1 The panels are sited at ground level in the garden area and will be difficult to be seen from the local area.

3.7.2 The existing tree and shrub planting will screen the installation and the remoteness of the site will minimise any visual impact.

3.8 Environmental impact

3.8.1 The proposed panels have no moving parts and emit no sound or radiation.

3.8.2 The electricity generated by the units is calculated to save over 5 tonnes of CO₂ being released into the atmosphere by a coal fired power station.

4. Access

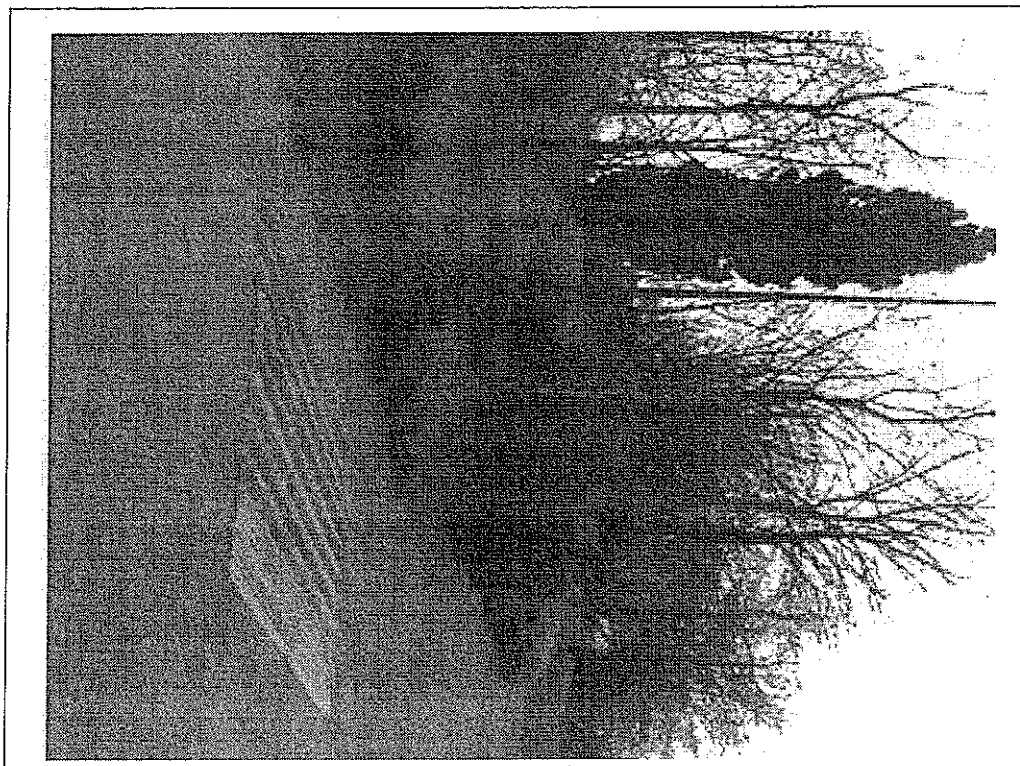
4.1 All existing access arrangements are to remain unaltered.

5. Parking.

5.1 Parking arrangements at the property are to remain unaltered.

6. Heritage Considerations

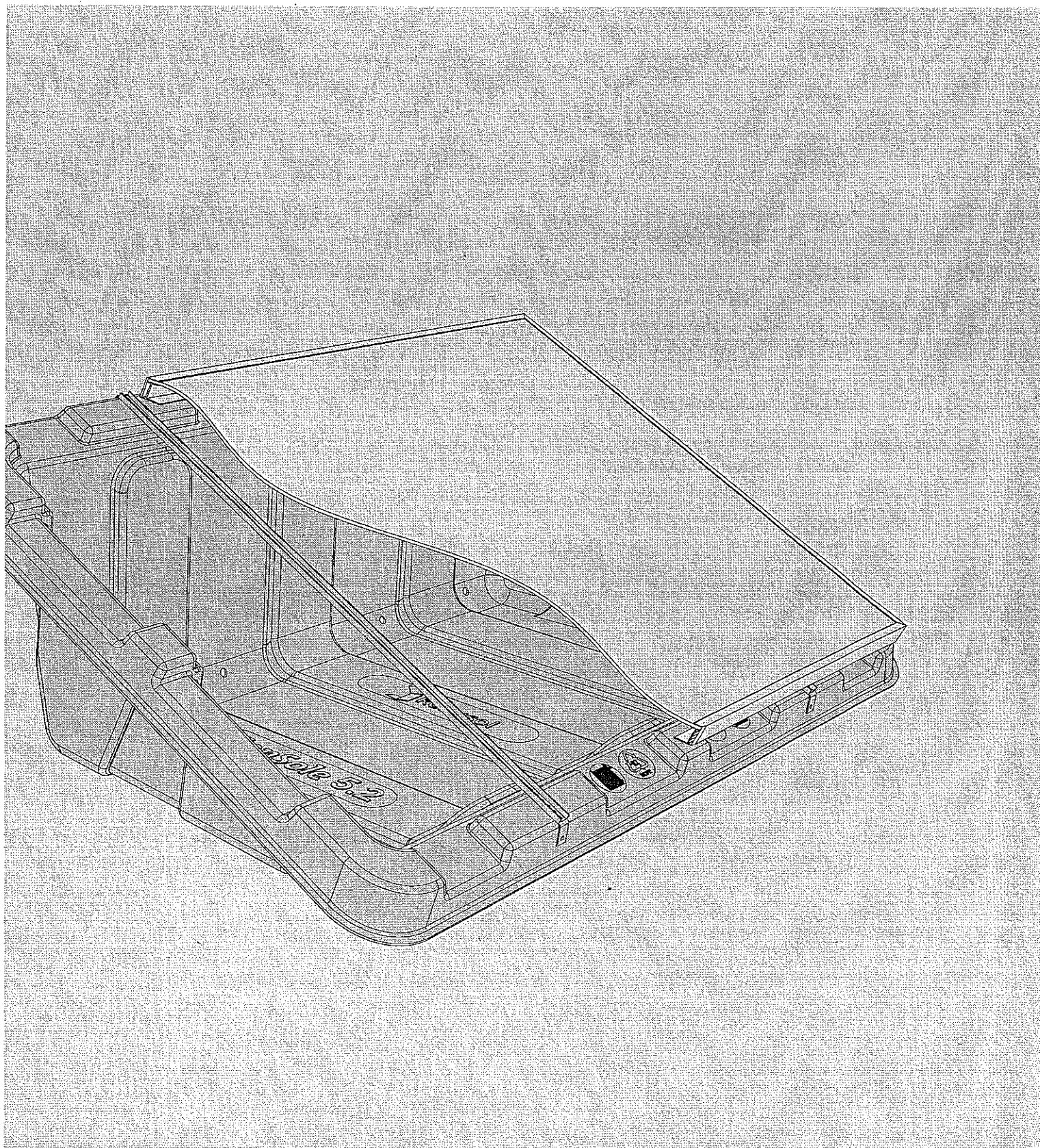
- 6.1 The village of Worston lies within a conservation area but as the proposal sits close to the ground, in an isolated place close to the conservation area boundary it will not be seen from the village and will therefore not present any heritage issues.
- 6.2 The proposed development complies with all applicable statutory instruments and local planning guidelines and will help reduce the commercial pressures on the property by reducing energy & operating cost whilst maintaining the character of the area.
- 6.3 The proposal will benefit the long term future of the building and the area in which it is situated.



View of the proposed site looking east

ConSole

Installation instructions



Product Information

The ConSole assembly system is the ideal solution for installing PV modules on flat roofs with pitch of up to 5° without roof penetration. Most commercially available framed standard PV modules fit on the ConSole.

The ConSole is weighed down with ballast (gravel, paving slabs, etc.) in order to resist the wind loads. The necessary weight of the ballast depends on the height of the building, its location and condition of the ground and the wind and snow loads. Reference values for the necessary ballast are contained in "Preparing the assembly— point 2." in the table on page 5 above.

The ConSole is made from 100% recycled chlorine-free polyethylene (HDPE). The material of the ConSole satisfies the fire prevention measures of DIN 4102 class B2. The energy amortization time of the ConSole is shorter than one year.

A ConSole weighs 5 –72 kg depending on the type and can be stacked with up to 40 ConSoles per pallet. The circular assembly edge will facilitate a fast installation. Generously sized ventilation channels ensure efficient air circulation. The boreholes on the ground of the ConSole are conducive for drainage.

We wish to point out that work must be carried out according to current safety regulations (e.g., VBG37) in order to prevent accidents. Please carry out the respective safety measures.

Warranty

Our warranty only applies if an original ConSole complete system is used. In order to adjust the system optimally for the local conditions and to fulfil all applicable regulations, we recommend an expert report be prepared if in any doubt. The installation should be carried out by skilled and trained personnel. If you have questions concerning training, please contact Renusol.

Installation instruction

Please read these installation instructions carefully before starting installation. First, familiarize yourself with the system components. The ConSole can be stored and used at temperatures of between -30° C and +50° C. We recommend the ConSoles be assembled at plus temperatures. The roof area must in any case be free of snow and ice.

During the installation and, in particular, while working on the roof, be sure to observe the relevant health and safety provisions and please follow the current rules and regulations.

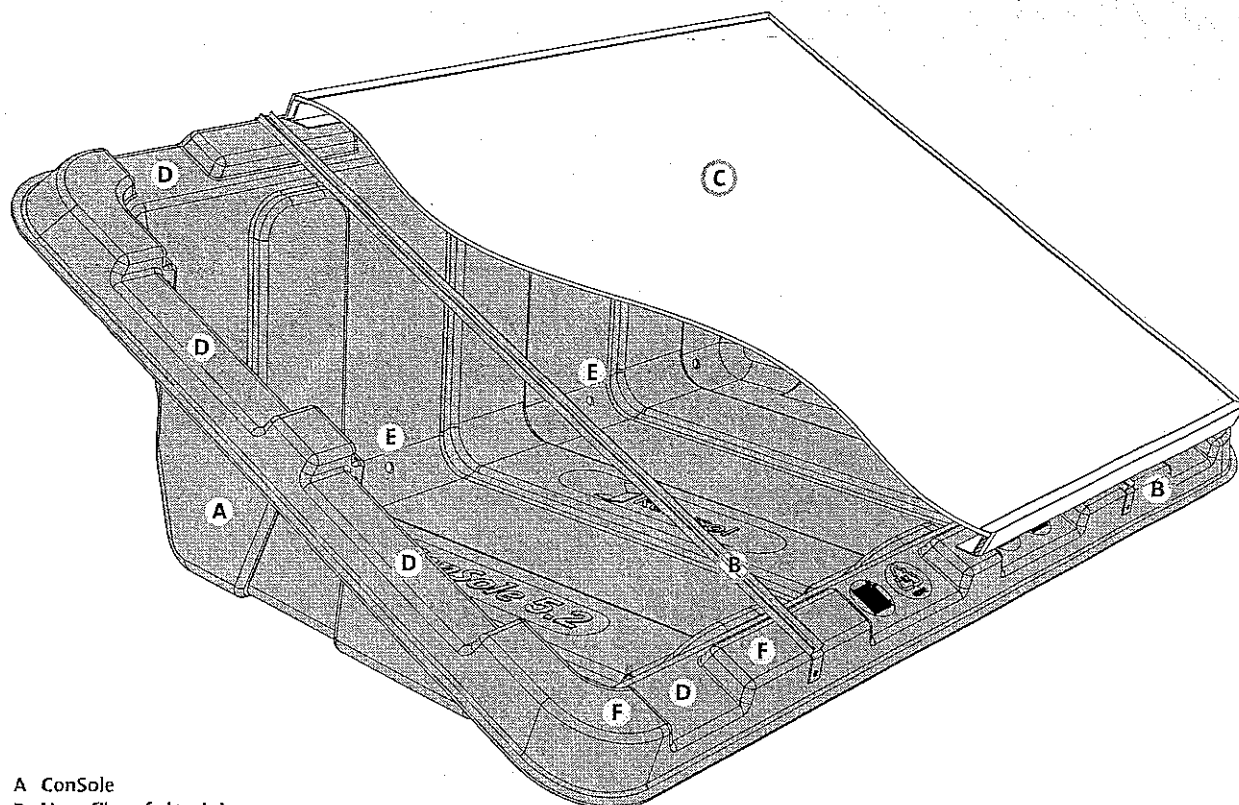
Please also check the current version of our installation instructions on our website at www.renusol.com. Here, you can also find instructions in other languages, if required. The figures and texts in the installation instructions correspond to current technology at the time of printing. We reserve the right to make changes.

The installation instructions merely contain recommendations in accordance with current technology and are based on the experience of how systems made by Renusol can be installed. If any roof or object-specific characteristics are to be considered, please, if necessary, involve specialists such as roofers or structural engineers for the purposes of explanation.

The Renusol team wishes you a successful installation

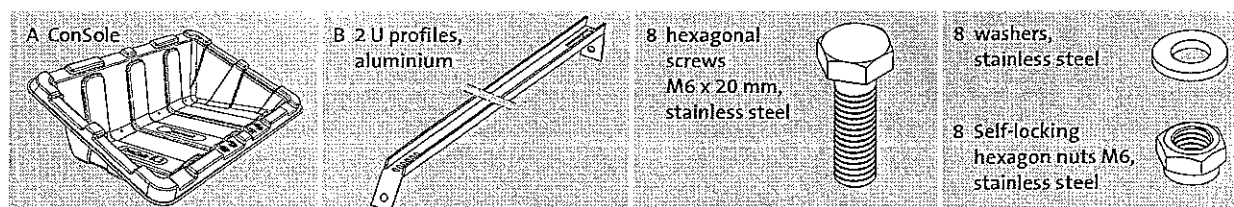


SYSTEM OVERVIEW



- A ConSole
- B U profiles of aluminium
- C PV module
- D Generously sized
Ventilation channels
- E Boreholes for draining
the ConSole
- F Circular assembly edge

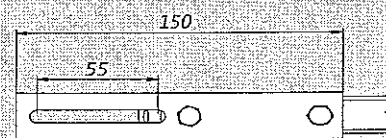
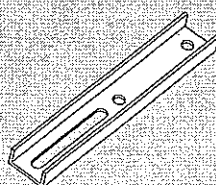
SYSTEM OVERVIEW OF COMPONENTS



OPTIONAL EXTENSION RAILS

ConSole set of extension rails
consisting of:

- 2 ConSole extension rails, aluminium
- 4 hexagonal screws M6 x 20 mm, stainless steel
- 4 washers, stainless steel
- 4 self-locking hexagon nuts M6, stainless steel



TOOLS REQUIRED (not included in delivery)

- Cordless screwdriver with hexagonal insert
for 10-mm screw
- 7-mm drill
- 10-mm open end or ring spanner

ASSEMBLY PREPARATION

1.

PV module bottom view

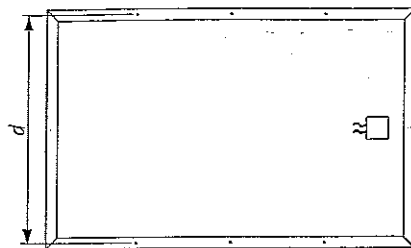


Table for calculating the suitable combination ConSole/PV module

Hole spacing d – mm	ConSole			
	4.1	4.2	5.2	6.2
661– 700	●			
701– 720	●			
721– 780	●			
781– 840	○			
841– 850	○			
851– 894				
895– 910		●	●	●
911–1014		●	●	●
1015–1085		○	○	○

○ = only with extension rail

Decide on the correct ConSole for the module

First measure the distance 'd' of the assembly boreholes on the rear of the module. Then calculate based on the table which ConSole fits the width of the module

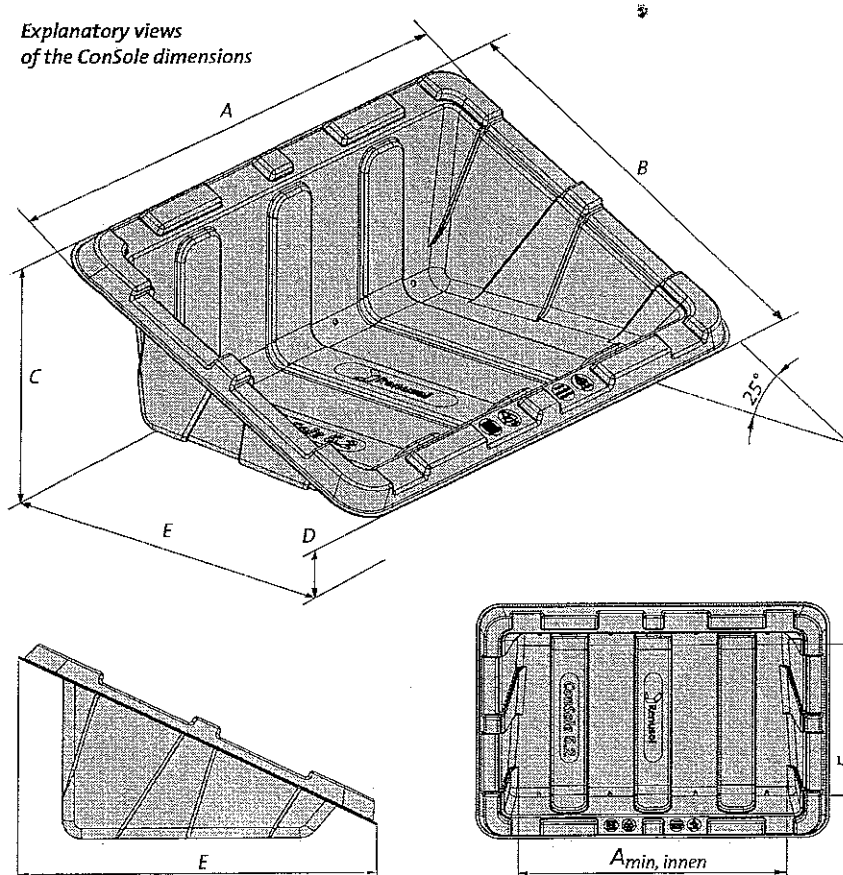
Indicate any extension rails required as a separate position in the order

If there are several possibilities, select the ConSole that best suits the length of the current module

Measurement 'A' of the ConSole should correspond roughly to the length of the module. Overlapping modules require more ballast due to the larger area exposed to the wind

Always select the ConSole on which the module surface overlaps the assembly edge of the ConSole as little as possible. The maximum overlap of length 'A' per side should not be over 12 cm

Explanatory views of the ConSole dimensions



Recommended measurement of ConSole/PV module

Measurement	A mm	B mm	C mm	D mm	E mm	A _{min, interior} x E _{min, interior} mm	Installation surface m²	Building protection mat mm
ConSole 4.1	1680	840	400	50	740	1300 x 400	0,62	cca. 1400 x 500
ConSole 4.2	1240	1090	530	50	960	890 x 490	0,47	cca. 1000 x 700
ConSole 5.2	1520	1080	500	40	960	1140 x 630	0,76	cca. 1300 x 700
ConSole 6.2	1740	1070	500	50	970	1380 x 630	0,84	cca. 1500 x 700

ASSEMBLY PREPARATION

2.

Recommended ballast values for ConSoles in kg in terrace systems*

	Up to 8 meters		Building height Up to 12 meters		Up to 16 meters	
	interior	exterior	interior	exterior	interior	exterior
ConSole 4.1	62	99	73	115	82	128
ConSole 4.2	58	94	68	110	77	122
ConSole 5.2	63	106	75	123	84	137
ConSole 6.2	83	134	98	156	110	173

Calculation basis

The ballast values are calculated for wind load zone 1 for Germany according to DIN 1055-4:2005-03 and for terrain category III: Suburbs, industrial or commercial zones and forests.

*The system weight is not included in the recommended ballast values

Additional ballast

In a higher wind load zone: 30% more ballast per level

When using extension rails: 10% more ballast

In case of excess length of the modules on the side:
additional ballast in proportion to the excess length.

Calculating the amount of ballast for the ConSole

The wind loads acting on the ConSole require it to be weighed down with ballast. Gravel, stones, plates and similar materials are suitable as ballast.

The table opposite can serve as a guide for the required ballast. These values are calculated according to DIN 1055-4:2005-03 and Eurocode. Several years experience confirm the reliability of the system.

The exterior module series and column require more ballast according to the table.

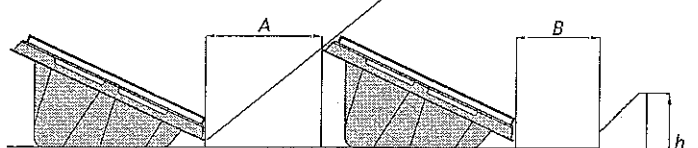
The values indicated prevent the ConSoles from tipping over, sliding or being lifted-ConSoles.

In order to ensure safety against sliding, the coefficient of friction between the roofing and the ConSole must be greater than 0.6.

This can be established using a spring scale. A ConSole filled with 100 kg of ballast should only move from the spring scale under a horizontal tensile force of over 60 kg.

3.

Distances between rows on the ConSole system



A = minimum distance of the ConSolen series:

ConSole 4.1 >1.2 m

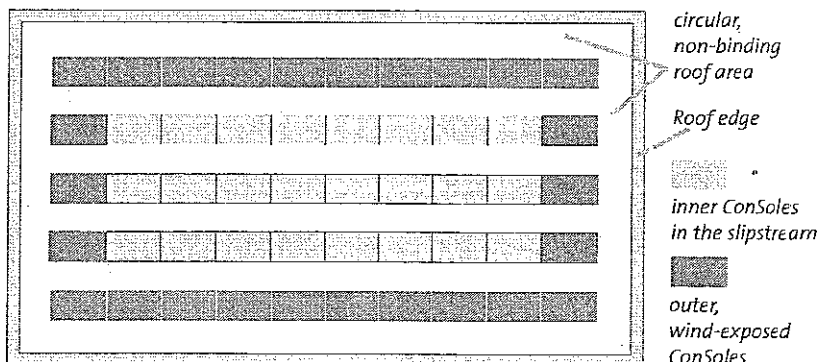
ConSole 4.2/5.2/6.2 >1.5 m

B = minimum

roof edge > 1/5 h

h = Building height

Schematic diagram of a ConSole terrace system



Positioning the ConSoles

Check whether the installation surface (e.g., the roof) is enough for the additional roof load.

The surface must be level, clean and not too slippery. With slippery surfaces, e.g. with PVC roof membranes, an anti-slip mat should be used, e.g. a building protection mat.

Place the ConSole with the opening facing south. A minimum distance of a fifth of the building height "h" should be maintained from the side of the roof. Building height 10 metres => minimum distance 2 metres.

The minimum distance between the ConSoles is clear from the schematic diagram.

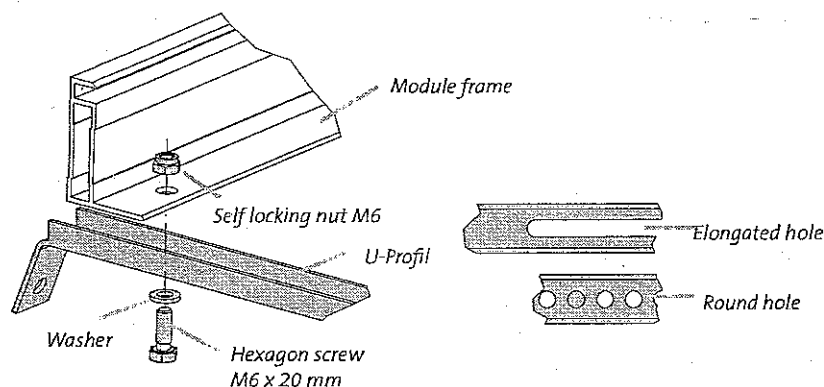
Filling ballast

Now fill in the correct ballast. Reference values here are contained in the table 'Recommended ballast values' at the top of this page.

Ballast diagrams for all ConSole types are available on our website www.renusal.com/download as a PDF file.

ASSEMBLY

4



Assembling the U profiles onto the PV module

Assembly step 1:

Now fasten the U profiles to the module. Ensure that the slotted hole is on the higher side of the ConSole and the smaller round holes are on lower side. Only ever use the fastening material supplied. Tighten the M6 screws with a maximum torque of 10 Nm.

Assembly step 2:

The cabling of the PV modules should be carried out by trained specialists.

Assembly step 3:

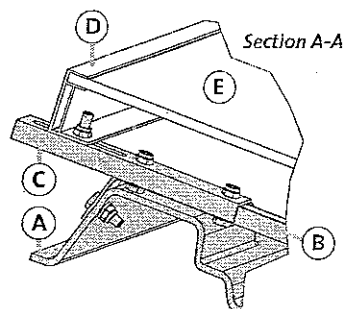
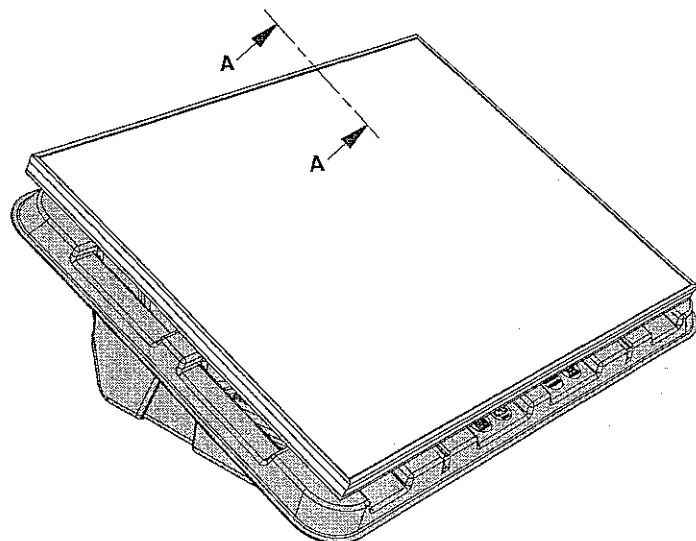
Lay the PV module symmetrically onto the ConSole. When seated correctly, the clips on the U profiles prevent from module from slipping.

Important!

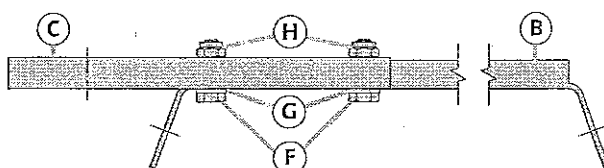
Regarding lightening, advice from specialist companies is generally recommended. It should be explained in the planning phase of the PV installation on a building as to what requirements are stipulated here by the property insurer on the subject of lightening and overvoltage protection.

The notes and regulations from the manufacturer of the modules and inverters should be observed when carrying out (functional) earthing.

5. OPTIONAL EXTENSION RAILS



- | | |
|------------------|----------------------------|
| A ConSole | E PV module |
| B U profile | F Hexagon screw M6 x 20 mm |
| C Extension rail | G Washer |
| D Module frame | H Self locking nut M6 |



Assembling optional extension rails end clamps

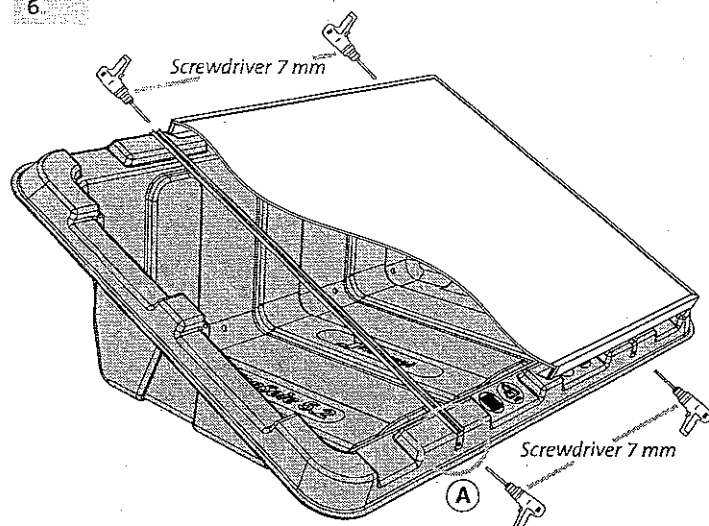
The optional extension rail should be assembled on the slotted hole of the U profile on the upper side of the ConSole. Only use the screws, washers and nuts supplied for fastening the installation.

Note:

The extension rail is only for optimal assembly of the PV module on the corresponding ConSoles.

ASSEMBLY

6.



Fasten the PV module with U profile on the ConSole mounting rails
Drill a hole 7 mm wide in the edge of the ConSole through the holes on the clips of the U profiles (fig. A)

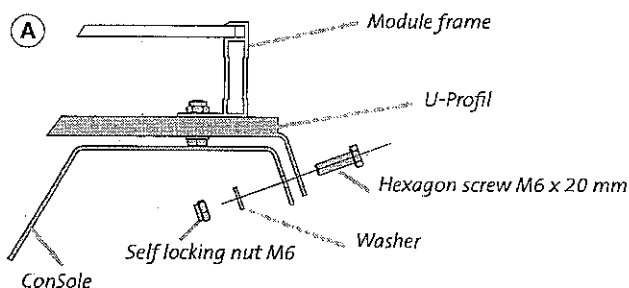
Now fasten the profiles using the supplied fastening material to the ConSole mounting rails. Ensure that the washer is between the nut and the ConSole

Note:

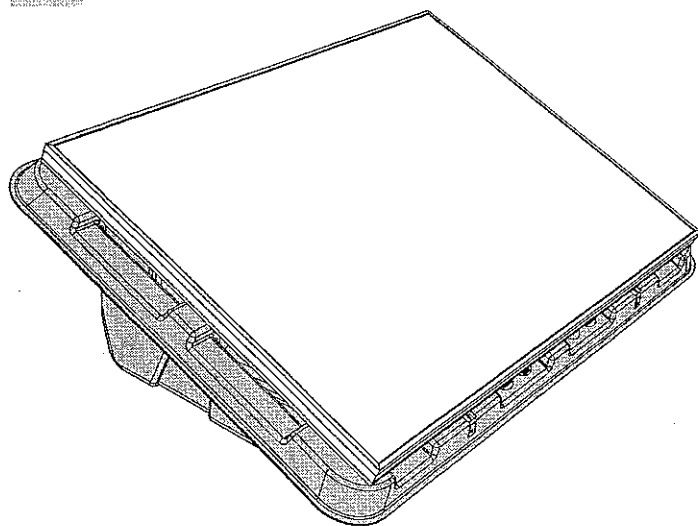
Start by fastening the U profiles to the lower side of the ConSole.

Important!

Tighten the 4 M6 screws with a maximum torque of 10 Nm.



7.



Assembly completed

Installation result: PV module ready assembled on the ConSole

Congratulations,

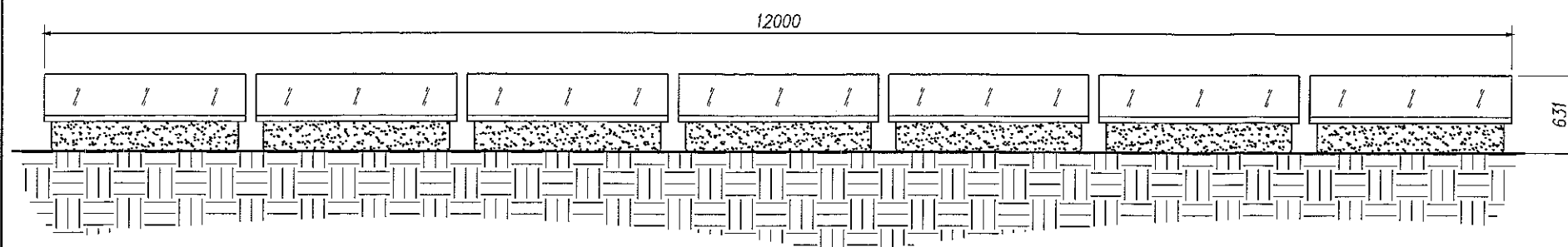
You have assembled ConSole, the ideal solution for an installation of PV modules on flat roofs as the perfect aesthetic solution, ready to use.

We are pleased that you have completed a beautiful reference object. If you have any photographs of the assembly and the result, please send us the digital reference photographs, the object data and the address of the property by e-mail to: info@renusol.com

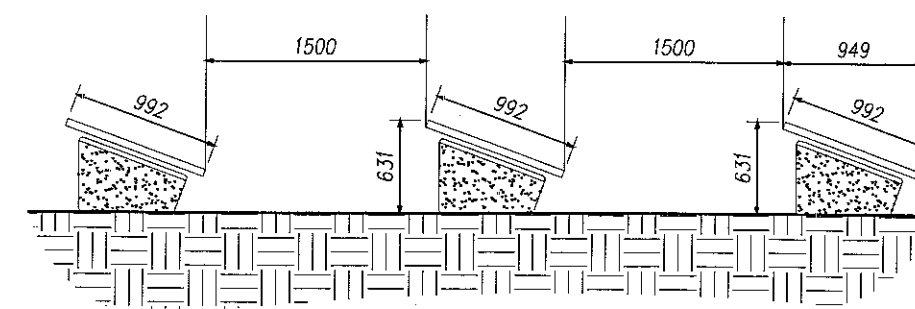
We regularly award prizes for the most beautiful reference photos and present them together with the company logo of the respective specialized company on our website.

Thank you very much for your trust in Renusol.

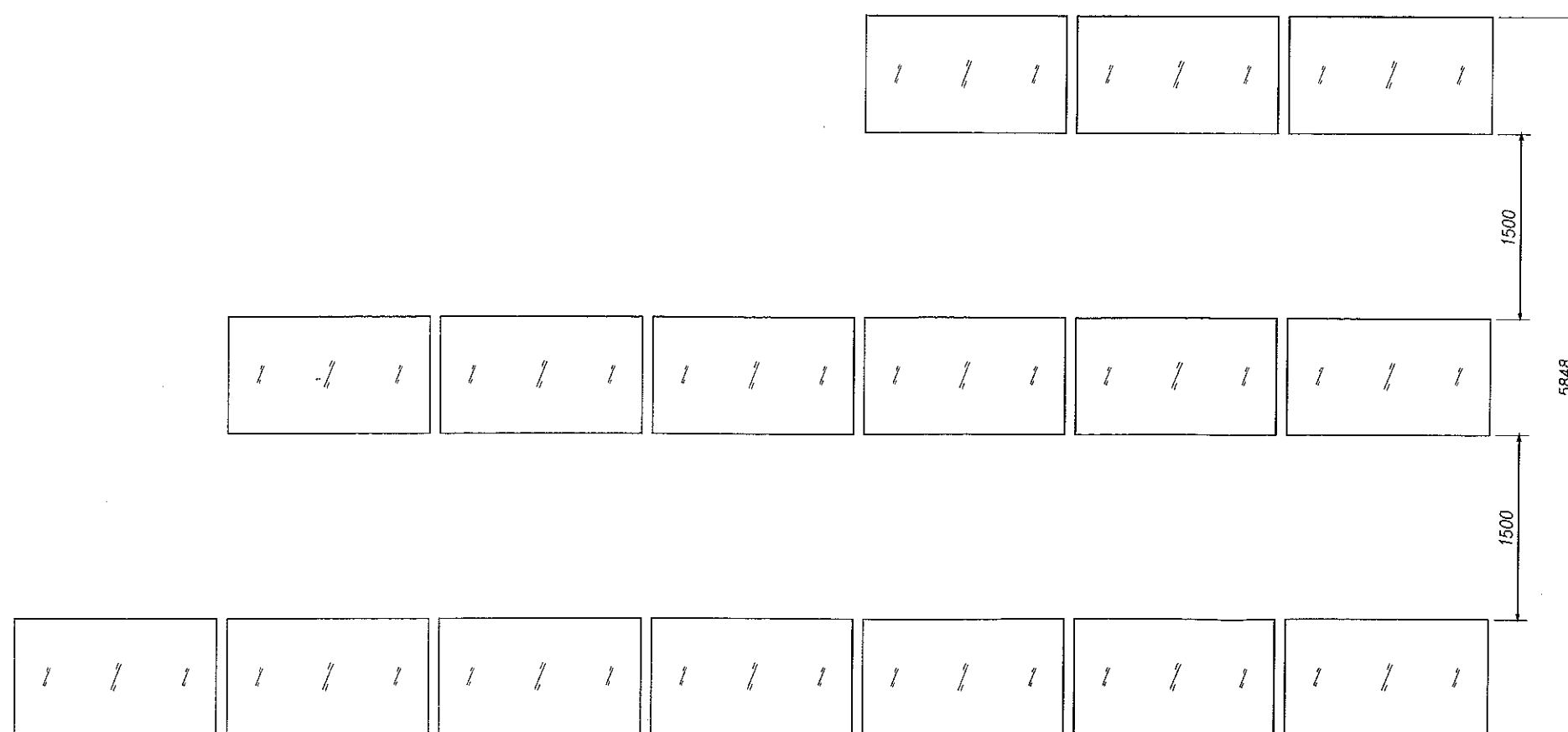
All dimensions are nominal to indicate design intent
& should be checked on site before any work commences



Proposed South Elevation



Proposed West Elevation



Proposed Plan

320120220P

Details
16 Mono Photovoltaic panels 992 x 1640 ground mounted
mounted on Rensol ballasted consoles
Panel colour:- Blue-black
Console colour:- Dark gray



Scale of Metres

Client Mr Trevor Davies			
Site Dugdales Barn Worston BB7 1QA			
Project Ground Mounted Photovoltaic Solar Panels			
Calder Design Associates			
2 TOP ROW, SABDEN, CLITHEROE, LANCs. BB79HL			
Tel 01282 771907, E-mail mail@calder-design.com			
TITLE Proposed Details	Drawn P.Lord	Drawing No	Rev
of Photo voltaic Panels	Date 10.02.12	17/1/02	
	Scale 1: 50@A3		