



RIBBLE VALLEY
BOROUGH COUNCIL

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

FOR THE
ATTENTION OF

For office use only

Application No 320110637 P

Date received

Fee paid £

Receipt No:

Application for Planning Permission. Town and Country Planning Act 1990

Publication of planning applications on council websites

Please note that with the exception of applicant contact details and Certificates of Ownership, the information provided on this application form and in supporting documents may be published on the council's website

If you have provided any other information as part of your application which falls within the definition of personal data under the Data Protection Act which you do not wish to be published on the council's website, please contact the council's planning department.

Please complete using block capitals and black ink.

It is important that you read the accompanying guidance notes as incorrect completion will delay the processing of your application.

1. Applicant Name and Address

Title: MR First name: STEVEN
Last name: NEESON
Company (optional):
Unit: House number: House suffix:
House name: FIELDS HOUSE FARM
Address 1: SAWLEY ROAD
Address 2:
Address 3:
Town: GRINDLETON
County: CLITHEROE
Country: LANC
Postcode: BB7 4QS

2. Agent Name and Address

Title: MISS First name: JESSICA
Last name: TOWNSON
Company (optional): AJH ASSOCIATED
Unit: 21 House number: House suffix:
House name:
Address 1: DEANFIELD COURT
Address 2: CLITHEROE
Address 3:
Town:
County: LANCAIRE
Country:
Postcode: BB7 4LL

3. Description of the Proposal

Please describe the proposed development, including any change of use:

INSTALLATION OF SOLAR PHOTOVOLTAIC PANELS
TO THE CURTIAGE OF THE DWELLING.

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

☐ Yes

☒ No

If Yes, please state the date when building,
work or use were started (DD/MM/YYYY):

(date must be pre-application submission)

Has the building, work or change of use been completed?

☐ Yes

☒ No

If Yes, please state the date when the building, work
or change of use was completed: (DD/MM/YYYY):

(date must be pre-application submission)

4. Site Address Details

Please provide the full postal address of the application site.

Unit: House number: House suffix: House name: FIELDS HOUSE FARMAddress 1: SAULEY ROADAddress 2: GRINDLETONAddress 3: Town: CLITHEROECounty: LANCASHIREPostcode (optional): B37 4QSDescription of location or a grid reference.
(must be completed if postcode is not known):Easting: Northing:

Description:

5. Pre-application AdviceHas assistance or prior advice been sought from the local authority about this application? ☒ Yes ☐ No

If Yes, please complete the following information about the advice you were given. (This will help the authority to deal with this application more efficiently)

Please tick if the full contact details are not known, and then complete as much as possible: ☐

Officer name:

CRANE THORPE

Reference:

RV 2011 / ENQ / 00097Date (DD/MM/YYYY):
(must be pre-application submission)21-04-11

Details of pre-application advice received?

No significant impact posed.
No obvious objections in principle.

6. Pedestrian and Vehicle Access, Roads and Rights of WayIs a new or altered vehicle access proposed to or from the public highway? ☐ Yes ☒ NoIs a new or altered pedestrian access proposed to or from the public highway? ☐ Yes ☒ NoAre there any new public roads to be provided within the site? ☐ Yes ☒ NoAre there any new public rights of way to be provided within or adjacent to the site? ☐ Yes ☒ NoDo the proposals require any diversions /extinguishments and/or creation of rights of way? ☐ Yes ☒ No

If you answered Yes to any of the above questions, please show details on your plans/drawings and state the reference of the plan(s)/drawings(s)

7. Waste Storage and CollectionDo the plans incorporate areas to store and aid the collection of waste? ☐ Yes ☒ No

If Yes, please provide details:

Have arrangements been made for the separate storage and collection of recyclable waste? ☐ Yes ☒ No

If Yes, please provide details:

8. Neighbour and Community ConsultationHave you consulted your neighbours or the local community about the proposal? ☐ Yes ☒ No

If Yes, please provide details:

No, immediate neighbours

9. Council Employee / MemberIs the applicant or agent related to any member of staff or elected member of the council? ☐ Yes ☒ No

If Yes, please provide details:

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10. Materials

If applicable, please state what materials are to be used externally. Include type, colour and name for each material:

	Existing (where applicable)	Proposed	Not applicable	Don't Know	Drawing references if applicable
Walls			☒	☐	
Roof			☒	☐	
Windows			☒	☐	
Doors			☒	☐	
Boundary treatments (e.g. fences, walls)	STONE WALLS HOOGES	AS EXISTING	☐	☐	
Vehicle access and hard-standing			☒	☐	
Lighting			☒	☐	
Others (please specify)			☒	☐	

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:

--

11. Vehicle Parking

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

Type of Vehicle	Total Existing	Total proposed (including spaces retained)	Difference in spaces
Cars			
Light goods vehicles/ public carrier vehicles			
Motorcycles			
Disability spaces			
Cycle spaces			
Other (e.g. Bus)			
Other (e.g. Bus)			

12. Foul Sewage

Please state how foul sewage is to be disposed of:

- ☐ Mains sewer ☐ Cess pit
☐ Septic tank ☐ Other
☐ Package treatment plant

Are you proposing to connect to the existing drainage system? ☐ Yes ☒ No

If Yes, please include the details of the existing system on the application drawings and state references for the plan(s)/drawing(s):

N/A

13. 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 a 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 ☒ NoWill the proposal increase the flood risk elsewhere? ☐ Yes ☒ No

How will surface water be disposed of?

- ☐ Sustainable drainage system ☐ Existing watercourse
☐ Soakaway ☐ Pond/lake
☐ Main sewer

14. Biodiversity and Geological Conservation

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

15. Existing Use

Please describe the current use of the site:

GARDEN AREA

Is the site currently vacant? ☒ Yes ☐ No

If Yes, please describe the last use of the site:

When did this use end (if known)?
DD/MM/YYYY

(date where known may be approximate)

Does the proposal involve any of the following:

Land which is known to be contaminated? ☐ Yes ☒ NoLand where contamination is suspected for all or part of the site? ☐ Yes ☒ NoA proposed use that would be particularly vulnerable to the presence of contamination? ☐ Yes ☒ No

If you have answered Yes to any of the above, you will need to submit an appropriate contamination assessment

16. Trees and HedgesAre there trees or hedges on the proposed development site? ☐ Yes ☒ NoAnd/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 will need to provide a full Tree Survey, with accompanying plan before your application can be determined. 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'

17. Trade EffluentDoes the proposal involve the need to dispose of trade effluents or waste? ☐ Yes ☒ No

If Yes, please describe the nature, volume and means of disposal of trade effluents or waste

18. Residential Units (Including Conversion)

Does your proposal include the gain, loss or change of use of residential units?
 If Yes, please complete details of the changes in the tables below:

☐ Yes☐ No**Proposed Housing**

Market Housing	Not known	Number of Bedrooms					Total
		1	2	3	4+	Unknown	
Houses	☐						
Flats and maisonettes	☐						
Live-work units	☐						
Cluster flats	☐						
Sheltered housing	☐						
Bedsit/studios	☐						
Unknown type	☐						
Totals (a+b+c+d+e+f+g)=							

Existing Housing

Market Housing	Not known	Number of Bedrooms					Total
		1	2	3	4+	Unknown	
Houses	☐						
Flats and maisonettes	☐						
Live-work units	☐						
Cluster flats	☐						
Sheltered housing	☐						
Bedsit/studios	☐						
Unknown type	☐						
Totals (a+b+c+d+e+f+g)=							

Social Rented

Social Rented	Not known	Number of Bedrooms					Total
		1	2	3	4+	Unknown	
Houses	☐						
Flats and maisonettes	☐						
Live-work units	☐						
Cluster flats	☐						
Sheltered housing	☐						
Bedsit/studios	☐						
Unknown type	☐						
Totals (a+b+c+d+e+f+g)=							

Social Rented

Social Rented	Not known	Number of Bedrooms					Total
		1	2	3	4+	Unknown	
Houses	☐						
Flats and maisonettes	☐						
Live-work units	☐						
Cluster flats	☐						
Sheltered housing	☐						
Bedsit/studios	☐						
Unknown type	☐						
Totals (a+b+c+d+e+f+g)=							

Intermediate

Intermediate	Not known	Number of Bedrooms					Total
		1	2	3	4+	Unknown	
Houses	☐						
Flats and maisonettes	☐						
Live-work units	☐						
Cluster flats	☐						
Sheltered housing	☐						
Bedsit/studios	☐						
Unknown type	☐						
Totals (a+b+c+d+e+f+g)=							

Intermediate

Intermediate	Not known	Number of Bedrooms					Total
		1	2	3	4+	Unknown	
Houses	☐						
Flats and maisonettes	☐						
Live-work units	☐						
Cluster flats	☐						
Sheltered housing	☐						
Bedsit/studios	☐						
Unknown type	☐						
Totals (a+b+c+d+e+f+g)=							

Key worker

Key worker	Not known	Number of Bedrooms					Total
		1	2	3	4+	Unknown	
Houses	☐						
Flats and maisonettes	☐						
Live-work units	☐						
Cluster flats	☐						
Sheltered housing	☐						
Bedsit/studios	☐						
Unknown type	☐						
Totals (a+b+c+d+e+f+g)=							

Key worker

Key worker	Not known	Number of Bedrooms					Total
		1	2	3	4+	Unknown	
Houses	☐						
Flats and maisonettes	☐						
Live-work units	☐						
Cluster flats	☐						
Sheltered housing	☐						
Bedsit/studios	☐						
Unknown type	☐						
Totals (a+b+c+d+e+f+g)=							

Total proposed residential units (A+B+C+D)=

Total existing residential units (E+F+G+H)=

TOTAL NET GAIN or LOSS of RESIDENTIAL UNITS (Proposed Housing Grand Total - Existing Housing Grand Total):

W/A

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19. All Types of Development: Non-residential FloorspaceDoes your proposal involve the loss, gain or change of use of non-residential floorspace? ☐ Yes ☐ No

If you have answered Yes to the question above please add details in the following table:

Use class/type of use	Not applicable	Existing gross internal floorspace (square metres)	Gross internal floorspace to be lost by change of use or demolition (square metres)	Total gross internal floorspace proposed (including change of use) (square metres)	Net additional gross internal floorspace following development (square metres)
A1	☐				
Shops	☐				
Net tradable area:	☐				
A2	☐				
Financial and professional services	☐				
A3	☐				
Restaurants and cafes	☐				
A4	☐				
Drinking establishments	☐				
A5	☐				
Hot food takeaways	☐				
B1 (a)	☐				
Office (other than A2)	☐				
B1 (b)	☐				
Research and development	☐				
B1 (c)	☐				
Light industrial	☐				
B2	☐				
General industrial	☐				
B8	☐				
Storage or distribution	☐				
C1	☐				
Hotels and halls of residence	☐				
C2	☐				
Residential institutions	☐				
D1	☐				
Non-residential institutions	☐				
D2	☐				
Assembly and leisure	☐				
OTHER	☐				
Please specify	☐				
	☐				
Total					

In addition, for hotels, residential institutions and hostels, please additionally indicate the loss or gain of rooms

Use class	Type of use	Not applicable	Existing rooms to be lost by change of use or demolition	Total rooms proposed (including changes of use)	Net additional rooms
C1	Hotels	☐			
C2	Residential institutions	☐			
Other	Hostels	☐			

20. Employment

Please complete the following information regarding employees:

	Full-time	Part-time	Total full-time equivalent	Not known
Existing employees				
Proposed employees				

21. Hours of Opening

Please state the hours of opening for each non-residential use proposed:

Use	Monday to Friday	Saturday	Sunday and Bank Holidays	Not known

22. Site Area

Please state the site area in hectares (ha)

0.000

23. 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:

Is the proposal a waste management development? ☐ Yes ☐ No

If the answer is Yes, please complete the following table:

	Not applicable	The total capacity of the void in cubic metres, including engineering surcharge and making no allowance for cover or restoration material (or tonnes if solid waste or litres if liquid waste)	Maximum annual operational throughput in tonnes (or litres if liquid waste)
Inert landfill	☐		
Non-hazardous landfill	☐		
Hazardous landfill	☐		
Energy from waste incineration	☐		
Other incineration	☐		
Landfill gas generation plant	☐		
Pyrolysis/gasification	☐		
Metal recycling site	☐		
Transfer stations	☐		
Material recovery/recycling facilities (MRFs)	☐		
Household civic amenity sites	☐		
Open windrow composting	☐		
In-vessel composting	☐		
Anaerobic digestion	☐		
Any combined mechanical, biological and/or thermal treatment (MBT)	☐		
Sewage treatment works	☐		
Other treatment	☐		
Recycling facilities construction, demolition and excavation waste	☐		
Storage of waste	☒		
Other waste management	☐		
Other developments	☐		

Please provide the maximum annual operational throughput of the following waste streams:

Municipal	
Construction, demolition and excavation	
Commercial and industrial	
Hazardous	

If this is a landfill application you will need to provide further information before your application can be determined. Your waste planning authority should make clear what information it requires on its website.

24. Hazardous Substances

Does the proposal involve the use or storage of any of the following materials in the quantities stated below? ☐ Yes ☐ No ☐ Not applicable

If Yes, please provide the amount of each substance that is involved:

Acrylonitrile (tonnes)	Ethylene oxide (tonnes)	Phosgene (tonnes)
Ammonia (tonnes)	Hydrogen cyanide (tonnes)	Sulphur dioxide (tonnes)
Bromine (tonnes)	Liquid oxygen (tonnes)	Flour (tonnes)
Chlorine (tonnes)	Liquid petroleum gas (tonnes)	Refined white sugar (tonnes)

Other:

Other:

Amount (tonnes):

Amount (tonnes):

25. Certificates

One Certificate A, B, C, or D, must be completed, together with the Agricultural Holdings Certificate with this application form

CERTIFICATE OF OWNERSHIP - CERTIFICATE A

Town and Country Planning (General Development Procedure) Order 1995 Certificate under Article 7

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

Signed - Applicant:

Or signed - Agent:

Date (DD/MM/YYYY):

CERTIFICATE OF OWNERSHIP - CERTIFICATE B

Town and Country Planning (General Development Procedure) Order 1995 Certificate under Article 7

I certify/ The applicant certifies that I have/ the applicant has given the requisite notice to everyone else (as listed below) who, on the day 21 days before the date of this application, 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 this application relates

Name of Owner	Address	Date Notice Served
MR G.W. WHITFIELD	SKIN HOUSE FARM, BROW BOTTOM, GRINOLETON	01.03.11

Signed - Applicant:

Or signed - Agent:

Date (DD/MM/YYYY):

CERTIFICATE OF OWNERSHIP - CERTIFICATE C

Town and Country Planning (General Development Procedure) Order 1995 Certificate under Article 7

I certify/ The applicant certifies that:

§ Neither Certificate A or B can be issued for this application

§ All reasonable steps have been taken to find out the names and addresses of the other owners (owner is a person with a freehold interest or leasehold interest with at least 7 years left to run) of the land or building, or of a part of it, but I have/ the applicant has been unable to do so

The steps taken were:

Name of Owner	Address	Date Notice Served

Notice of the application has been published in the following newspaper (circulating in the area where the land is situated):

On the following date (which must not be earlier than 21 days before the date of the application):

Signed - Applicant:

Or signed - Agent:

Date (DD/MM/YYYY):

25. Certificates (continued)

CERTIFICATE OF OWNERSHIP - CERTIFICATE D

Town and Country Planning (General Development Procedure) Order 1995 Certificate under Article 7

I certify/ The applicant certifies that:

Certificate A cannot be issued for this application

All reasonable steps have been taken to find out the names and addresses of everyone else who, on the day 21 days before the date of this application, 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 to which this application relates, but I have/ the applicant has been unable to do so

The steps taken were:

Notice of the application has been published in the following newspaper (circulating in the area where the land is situated):

On the following date (which must not be earlier than 21 days before the date of the application):

Signed - Applicant:

Or signed - Agent:

Date (DD/MM/YYYY):

AGRICULTURAL HOLDINGS CERTIFICATE

Town and Country Planning (General Development Procedure) Order 1995 Certificate under Article 7

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

Signed - Applicant:

Or signed - Agent:

Date (DD/MM/YYYY):

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:

Name of Tenant	Address	Date Notice Served

Signed - Applicant:

Or signed - Agent:

Date (DD/MM/YYYY):

26. Planning Application Requirements - Checklist

Please read the following checklist to make sure you have sent all the information in support of your proposal. Failure to submit all information required will result in your application being deemed invalid. It will not be considered valid until all information required by the Local Planning Authority has been submitted

3 copies of a completed and dated application form:



The correct fee:



3 copies of the plan which identifies the land to which the application relates drawn to an identified scale and showing the direction of North:



3 copies of a design and access statement:



3 copies of the completed, dated Article 7 Certificate (Agricultural Holdings):



3 copies of other plans and drawings or information necessary to describe the subject of the application:



3 copies of the completed, dated Ownership Certificate (A, B, C, or D - as applicable):



27. Declaration

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

Signed - Applicant:

Or signed - Agent:

Date (DD/MM/YYYY):

03 08 11

(date cannot be pre-application)

28. Applicant Contact Details

Telephone numbers

Country code:

National number:

Extension number:

Country code:

Mobile number (optional):

Country code:

Fax number (optional):

Email address (optional):

29. Agent Contact Details

Telephone numbers

Country code:

National number:

Extension number:

Country code:

Mobile number (optional):

Country code:

Fax number (optional):

Email address (optional):

jessica@ajh-associates.co.uk

30. 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)

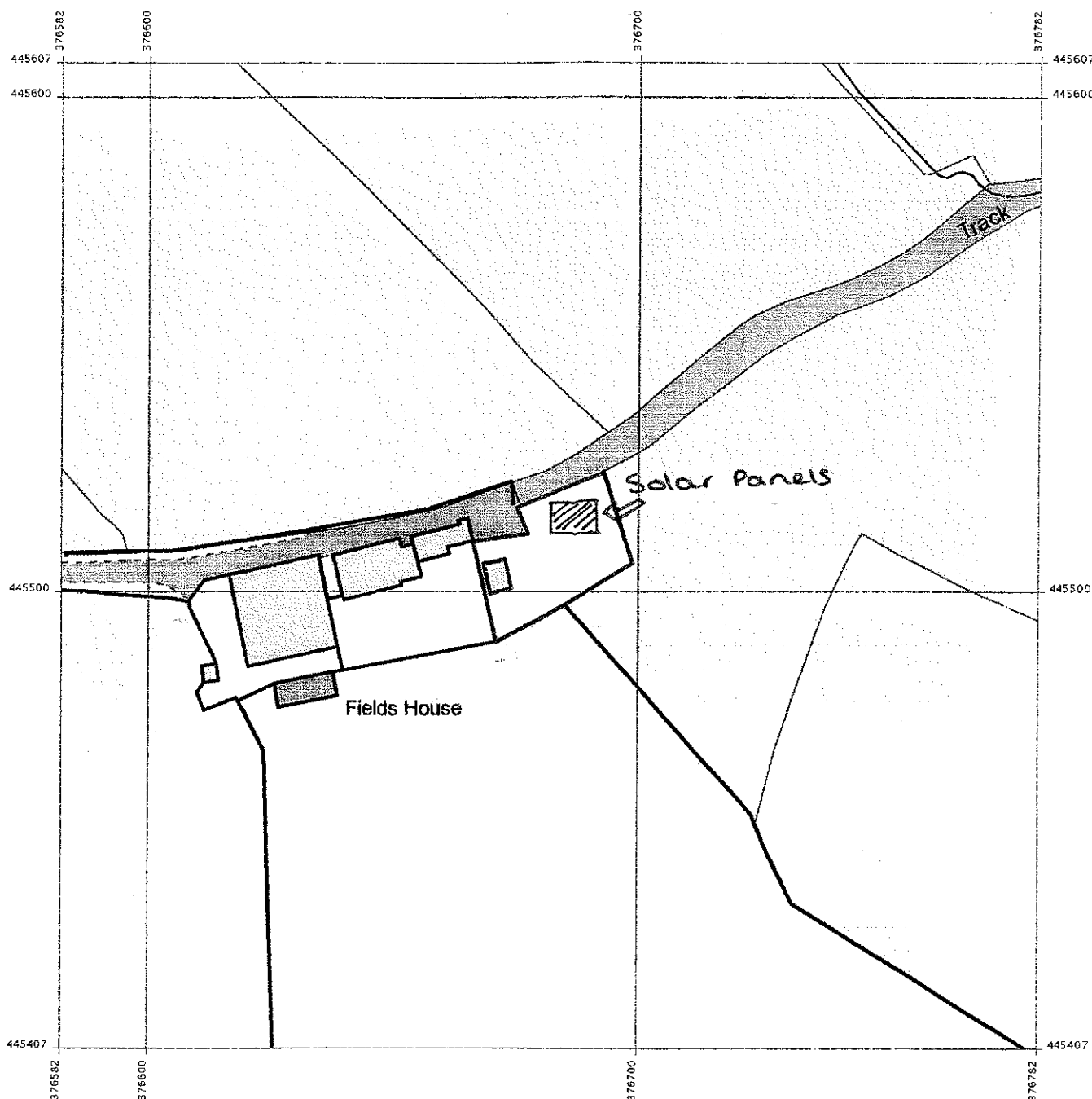
☒ Agent☐ Applicant☐ Other (if different from the agent/applicant's details)

If Other has been selected, please provide:

Contact name:

Telephone number:

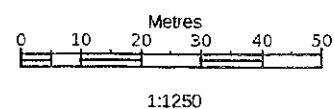
Email address:



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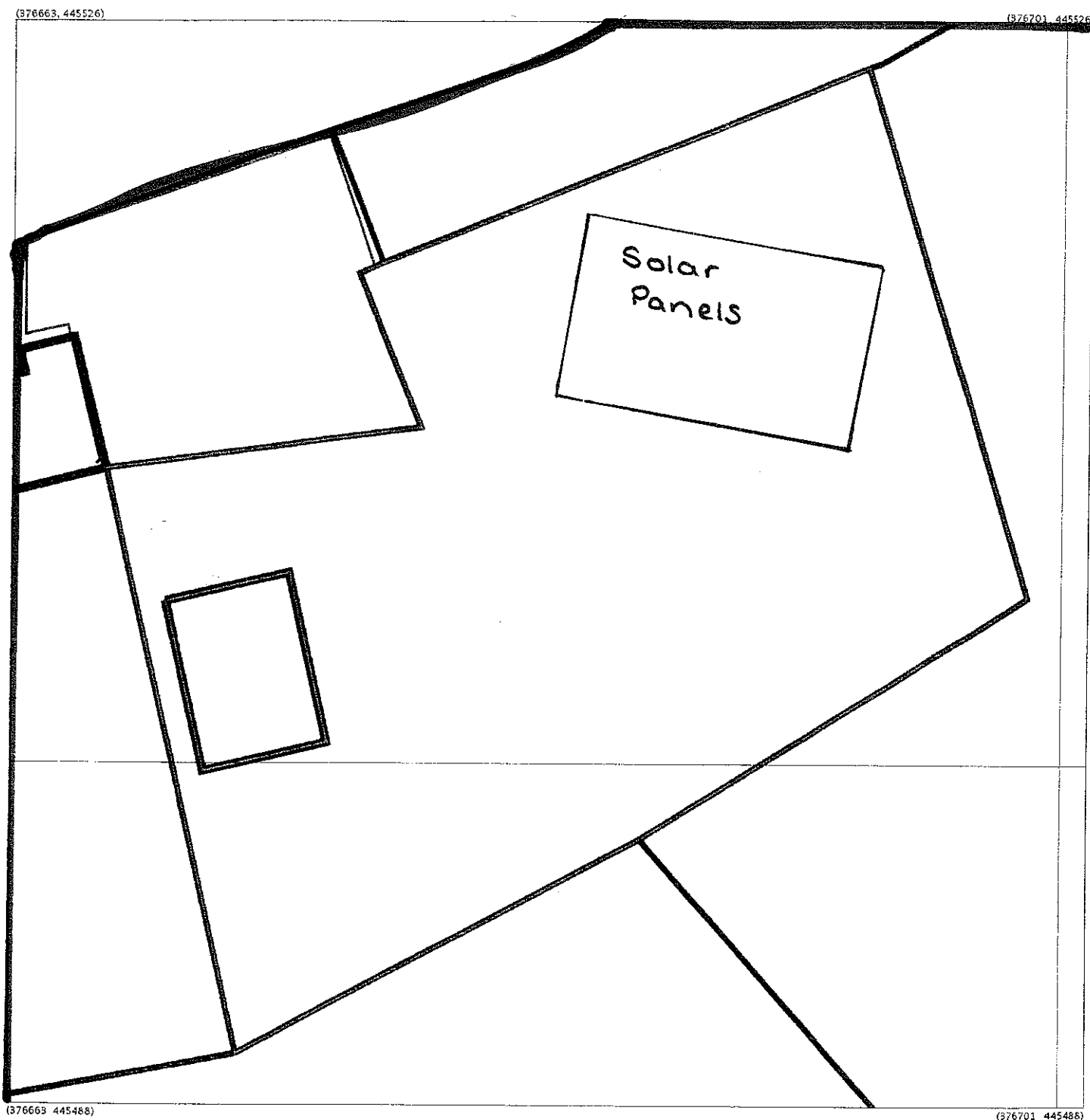
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The representation of a road, track or path is no evidence of a right of way. The representation of features as lines is no evidence of a property boundary.



Supplied by: **Stanfords**
Reference: OI287472
Centre coordinates: 376682 445507

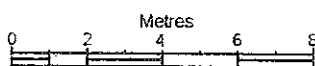
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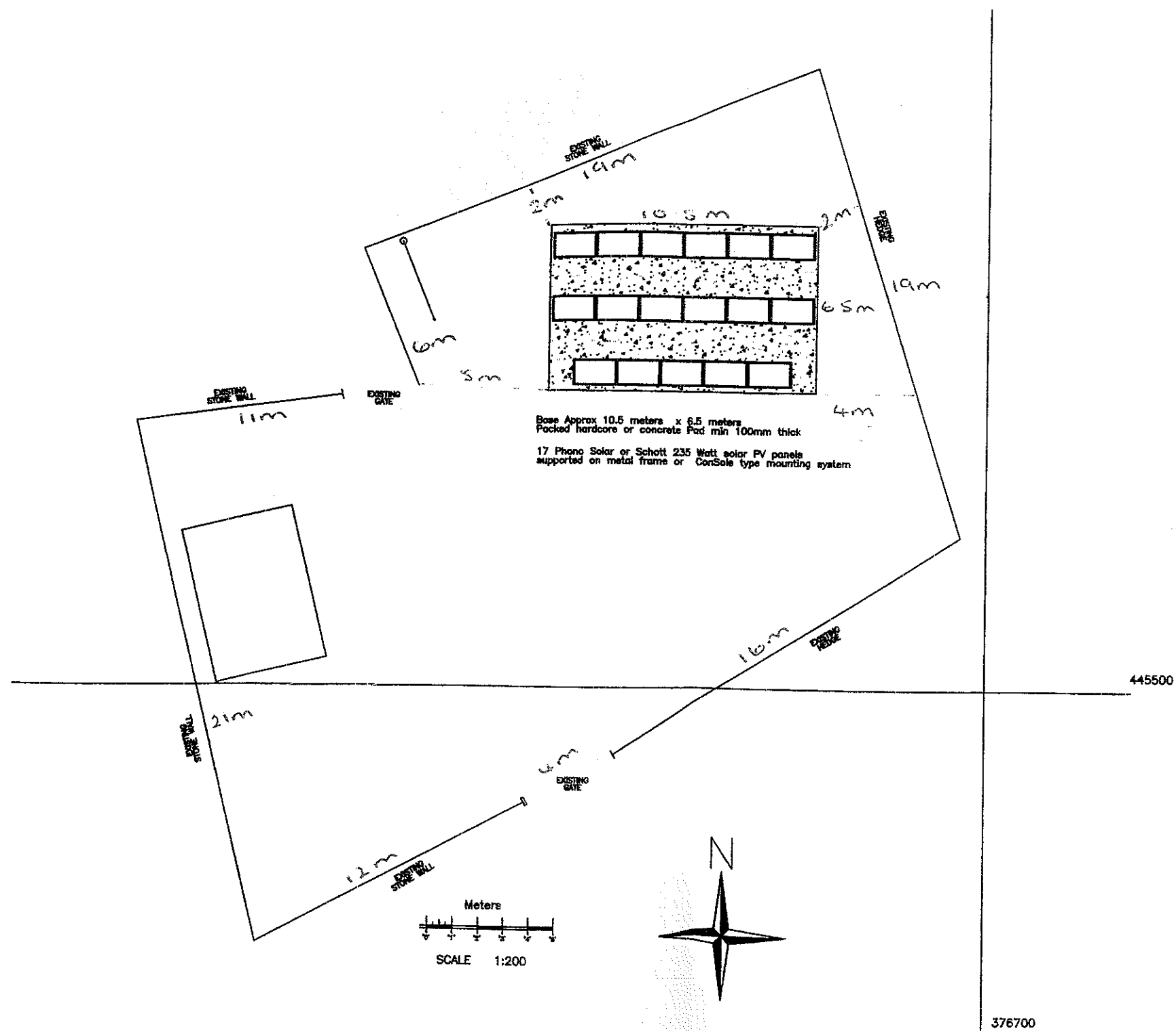
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Supplied by: **Stanfords**
Reference: OI287473
Centre coordinates: 376682 445507

320110637P



320110637P

Revision	Date	Name	Date	Name
a				
b			drawn	19.07.11
c			check	

FIELDS FARM
SAWLEY ROAD, GRINDLETON
BB7 4QS

DIMENSIONS APPROX.

Project
Solar PV Panel Installation

Order No.

Drawing No.
0002 A3

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of 1

320110637P

Historical Merit and Design and Access Statement

For
Fields House Farm
At
Grindleton

Statement Completed By

Jessica Townson
AJH Associates
21 Deanfield Court
Clitheroe
Lancashire
BB7 1QS

1 Introduction

- 1.1 This Heritage Statement has been written with the aim to evaluate the proposed alterations to Fields Farm, Grindleton; and its relation to the location within the heritage and curtilage of a listed building within Grindleton. Grindleton also lays in the Area of Outstanding Natural Beauty that is The Forrest of Bowland. The design of the proposal and the underlying influences on the submission. This document should be viewed in conjunction with the drawings submitted with the application.
- 1.2 Following the Pre-Application Advice received by our Client from Mr Graeme Thorpe stating that the application, in his opinion, would not "have significant or detrimental impact upon the setting of the Listed Building" and therefore does not pose any cause for objection in principle.

2 Proposal

- 2.1 The proposal is to install photovoltaic panels to the previously stated property. The proposed solar panels shall be mounted upon a metal frame within the curtilage of the existing dwelling. The panels shall be mounted as see on drawing 0001 A3 Title: Solar PV Panel Installation. This drawing details a wall and existing hedges that shall be maintained in order to disguise the PV Panels.
- 2.2 The installation shall be of 17 Solar PV Panels upon a base size 10.5 metres by 6.5 meters.

3 Description of the site

- 3.1 The dwelling is located in the outskirts of Grindleton and has no immediate neighbouring dwellings. The proposed site for the Solar PV Panels is to the east of the dwelling
- 3.2 The site is currently enclosed by stonewalls to the north and west and hedges to the east and south sides, these shall be maintained to the site.
- 3.3 The site is currently a grassed are and contains no trees.
- 3.4 The site shall be accessed by the track leading to the dwelling.

4 Historical Importance of the site

- 4.1 As can be seen from the maps in the appendix there have not been a great deal of alterations made to the site since the earliest map dated circa 1850. The maps dated 1972-1977 show the erection of an out building to the site and this remains

today. This is the only differentiation that can clearly be made between the site images between 1850 and present.

- 4.2 It is not clear from the photographs whether the boundaries to the site are walls or hedges but they remain in the same location as were.

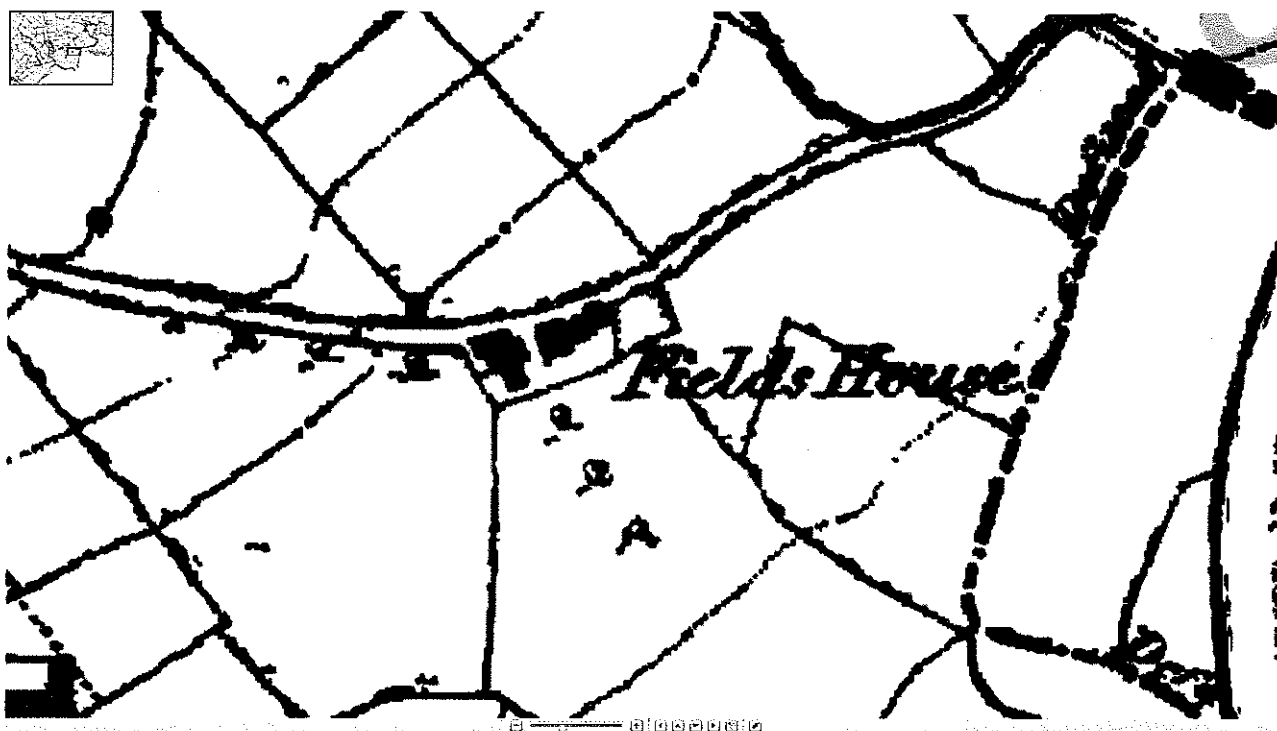
5 Historical Appraisal of the site

- 5.1 As stated the site remains much the same as it was in 1850, this shall continue to be the same as the current walls and hedges are to be retained.
- 5.2 The proposal shall not visually impose on any surrounding properties, nor should it be visible from any public highways.

Appendix List

- 1 Map circa 1850
- 2 Map circa 1886
- 3 Map circa 1890
- 4 Map circa 1910
- 5 Map circa 1914
- 6 Map circa 1930
- 7 Map circa 1932
- 8 Map circa 1955
- 9 Maps circa 1972-1977
- 10 Map Circa 1973
- 11 Aerial Photograph 2011
- 12 Map 2011
- 13 Drawing: 0001 A3 Title: Solar PV Panel Installation

Map circa 1850



Map circa 1886



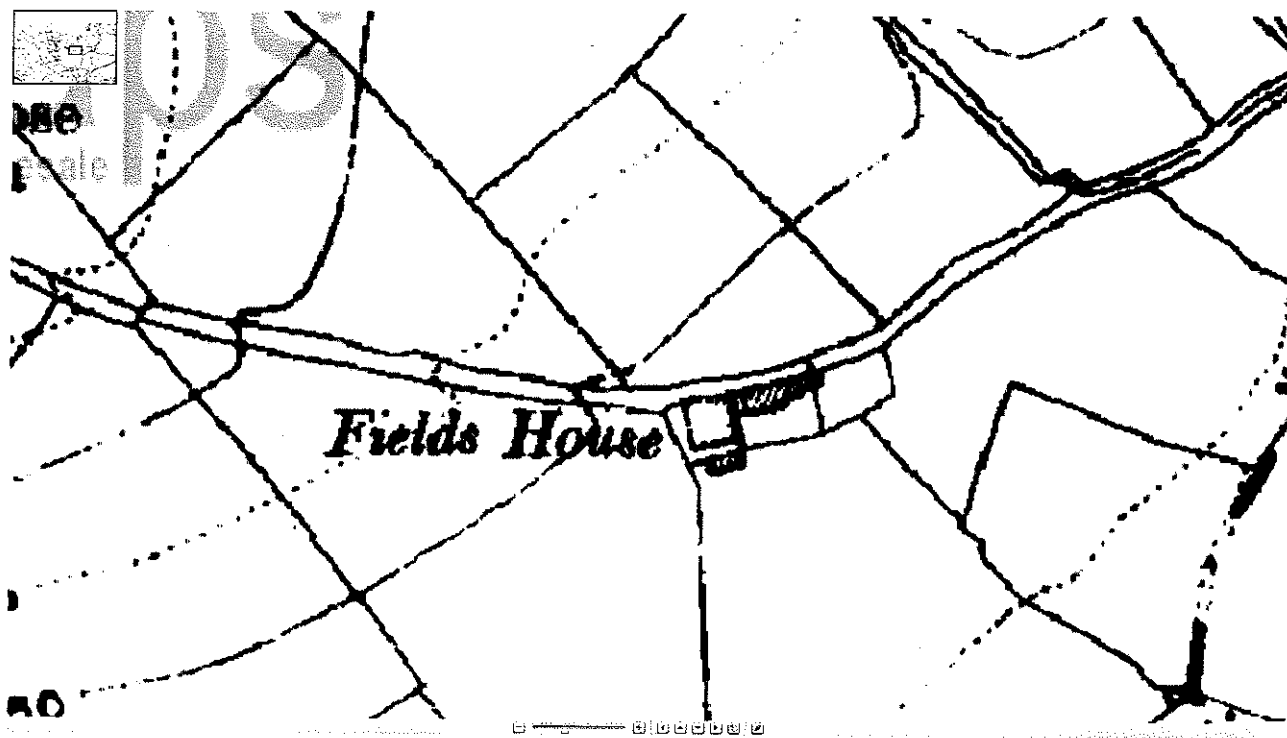
Map circa 1890



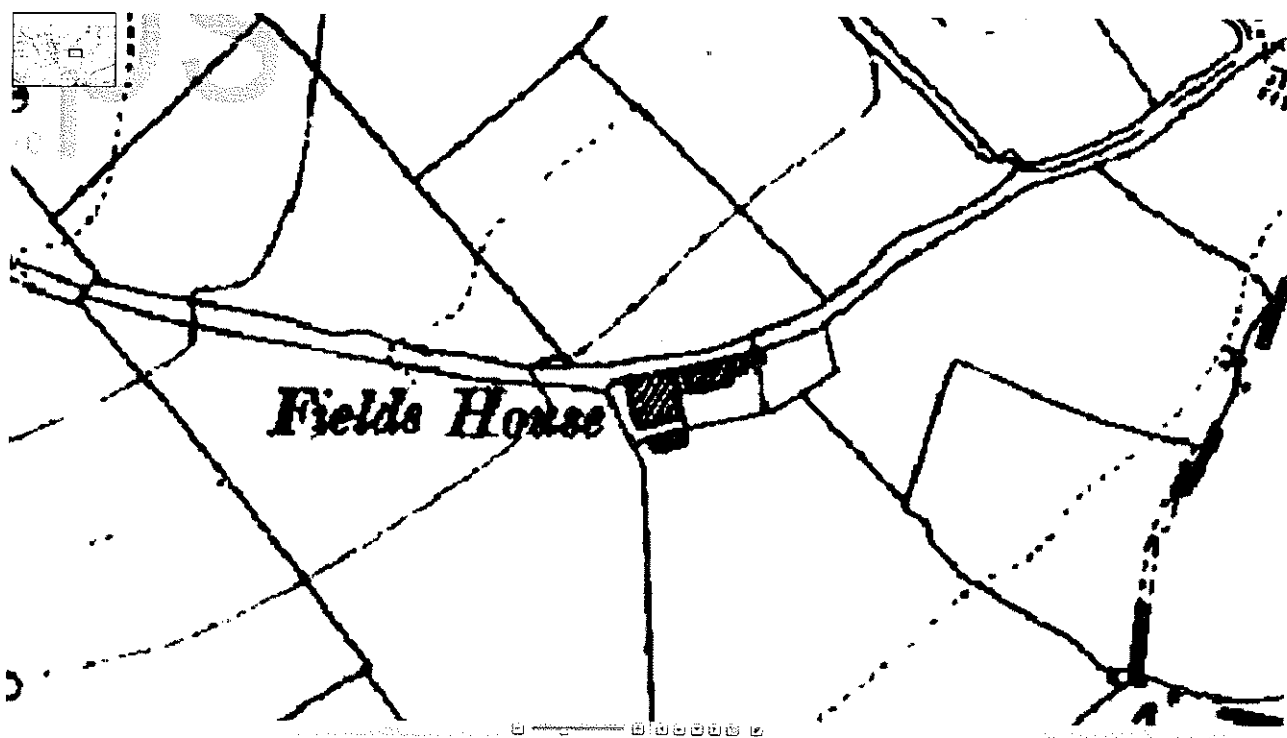
Map circa 1910



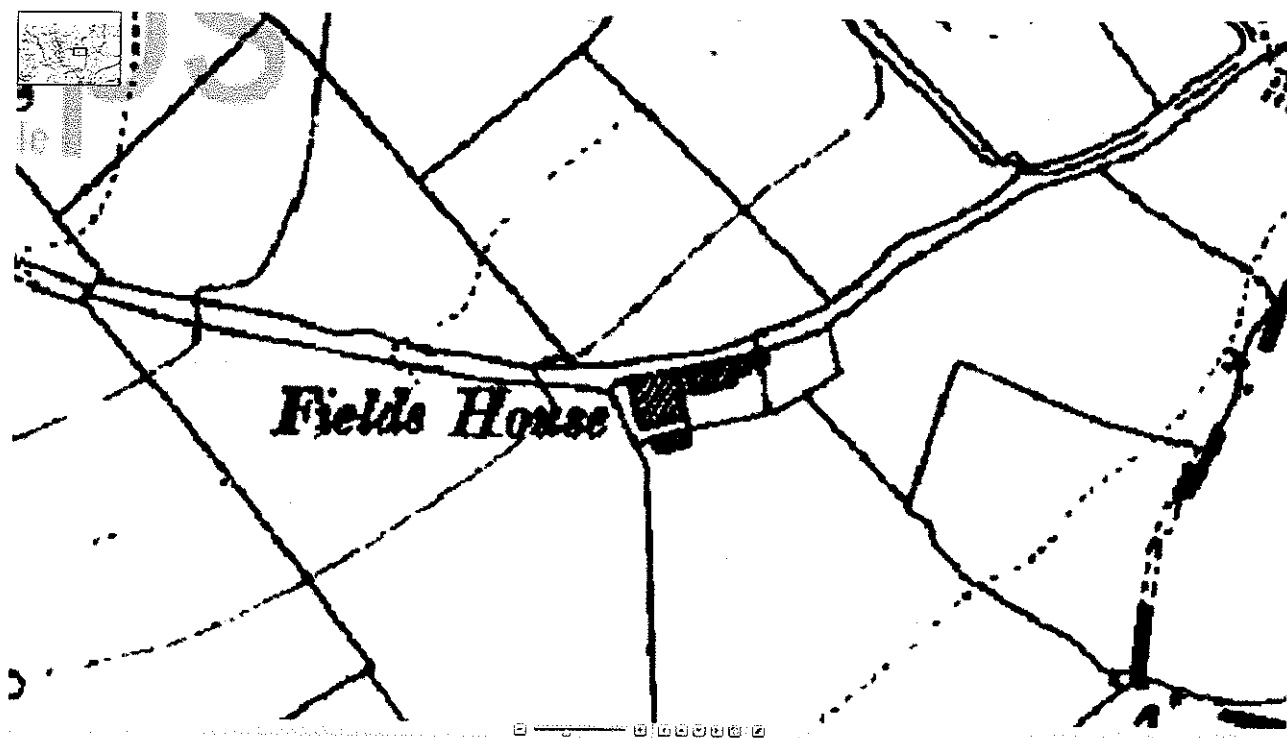
Map circa 1914



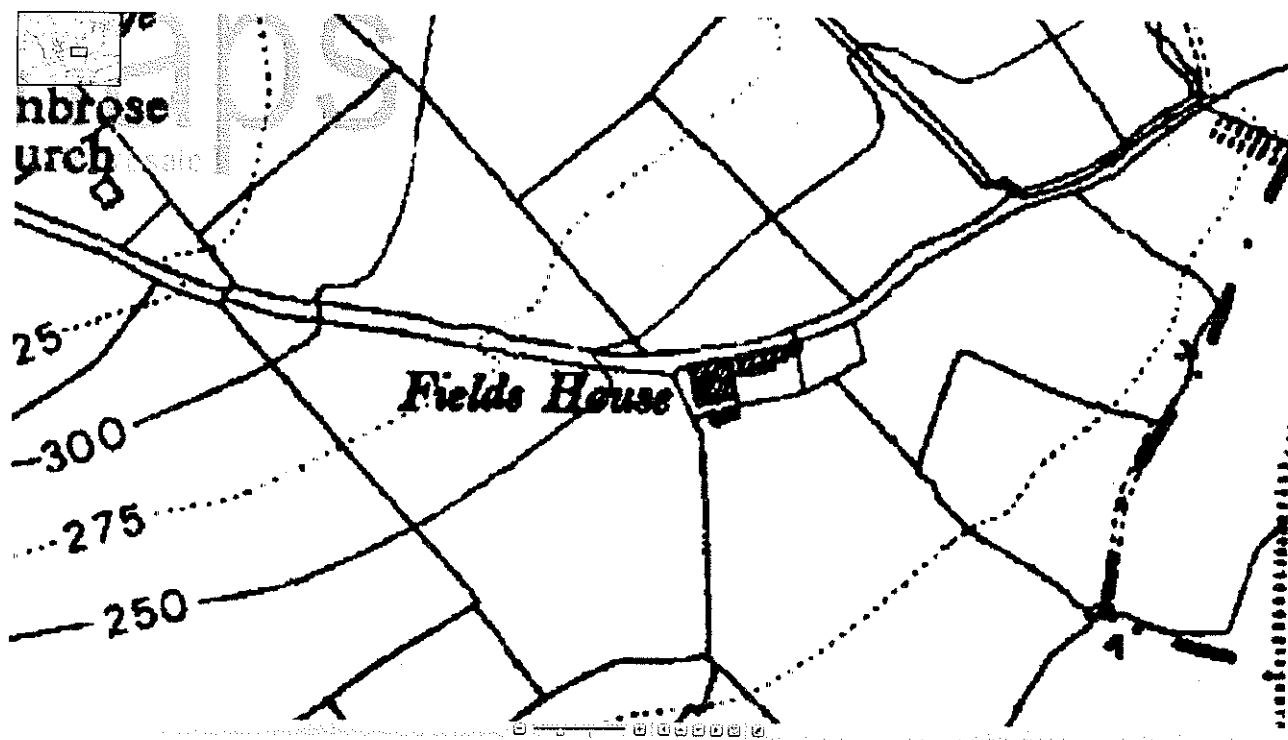
Map circa 1930



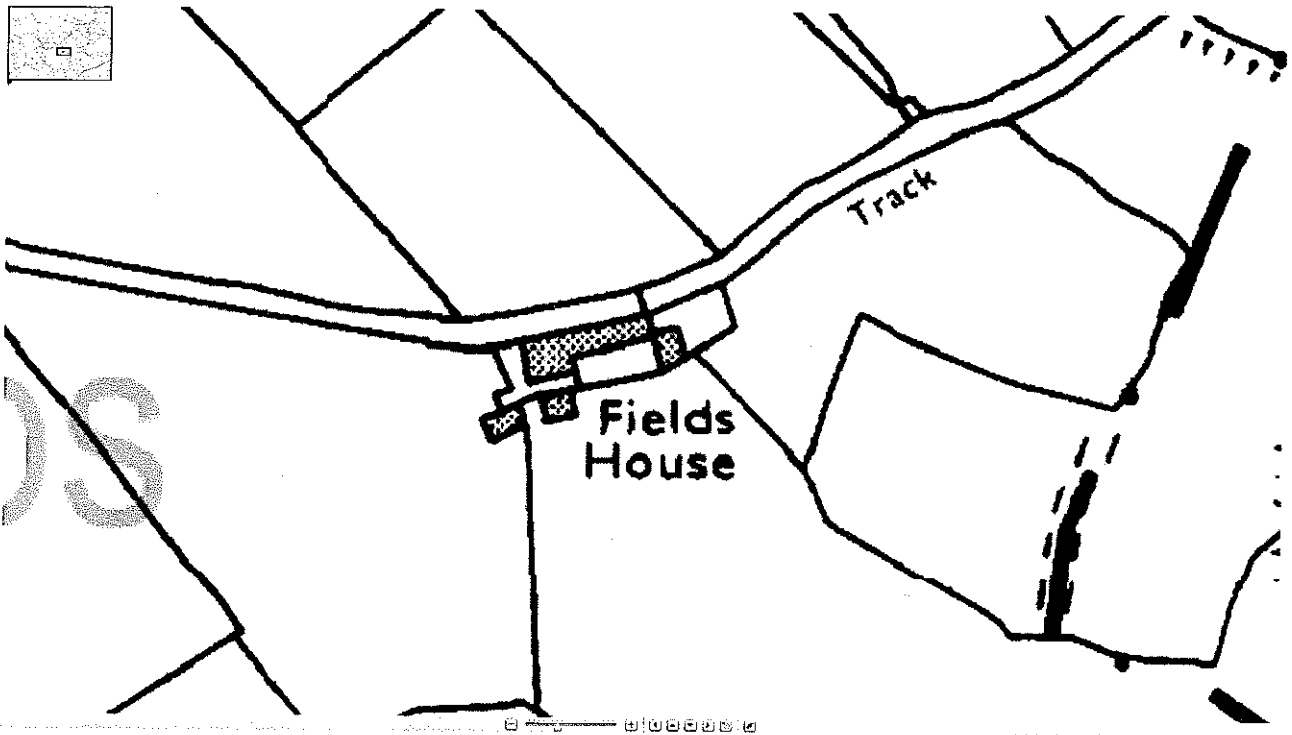
Map circa 1932



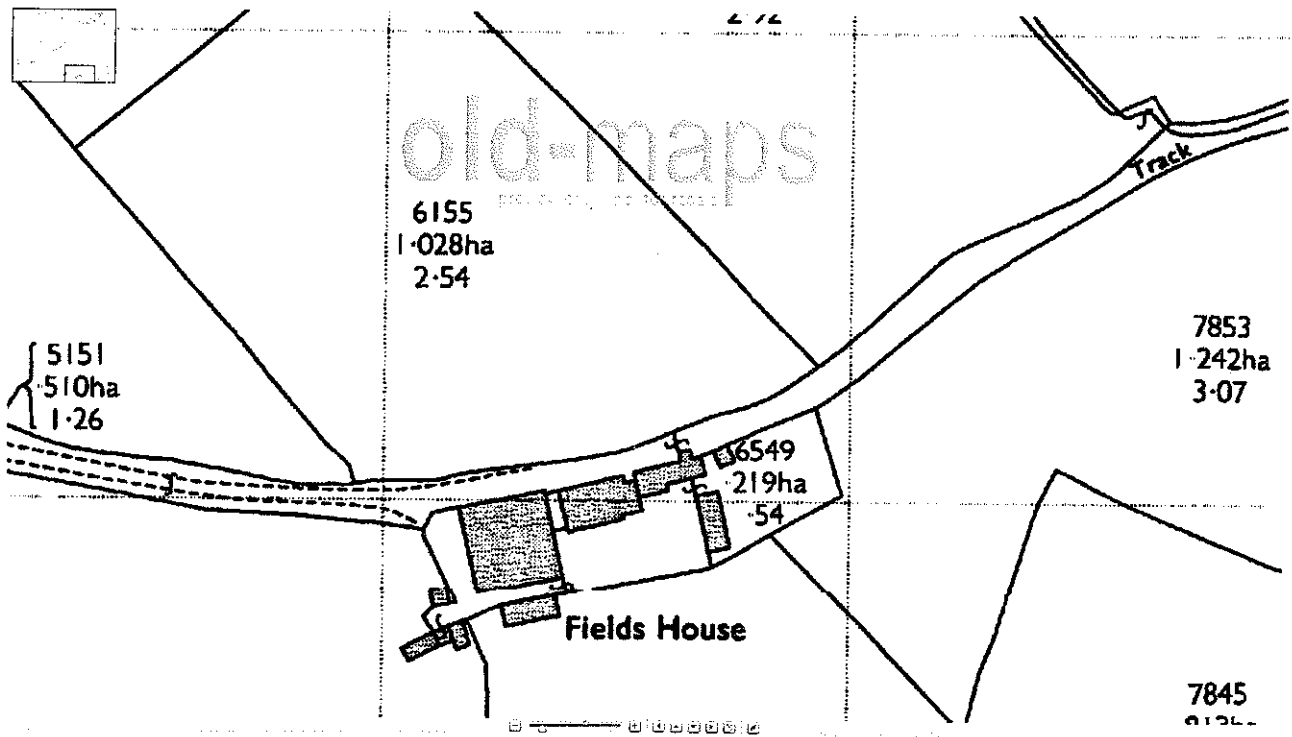
Map circa 1955



Maps circa 1972-1977



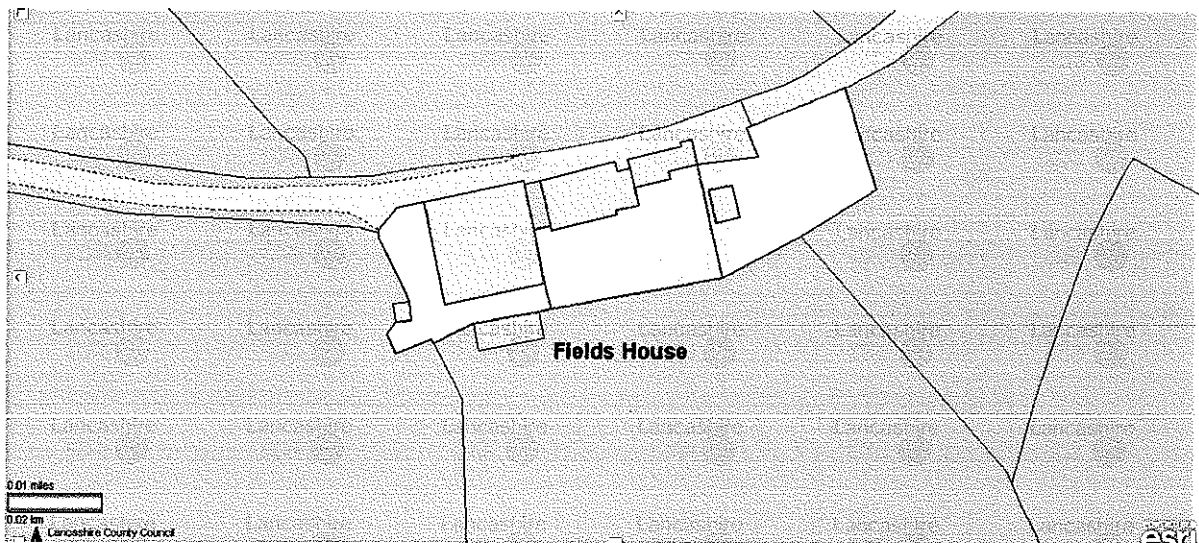
Map Circa 1973



Aerial Photo 2011

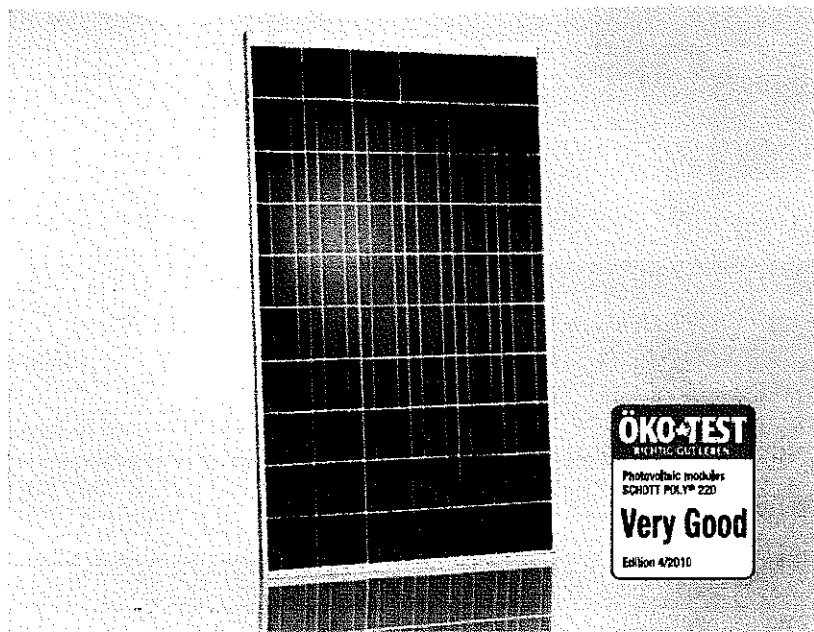


Map 2011



Crystalline module with POLY cells

320110637P



SCHOTT POLY™
220/225/230/235

At a glance

- Double of the required standard
- High resistance to mechanical loads
- High performance output
- Long-term reliability
- Increased resistance to reverse current
- Improved temperature coefficient

SCHOTT POLY™ 220/225/230/235

The long-established German company SCHOTT Solar operates worldwide and started with the development and manufacturing of components for the solar industry in 1958.

SCHOTT Solar polycrystalline modules are specifically designed for both roof- and ground-mounted applications. Due to strict internal quality standards, all modules benefit from exceptionally long durability, which results in maximised profitability. The polycrystalline cells within each module are sorted to particularly narrow performance tolerances, thereby allowing series interconnections with minimal mismatch losses.

Double of the required standard: SCHOTT Solar tests its modules for twice as long as is required by the IEC.

High resistance to mechanical loads: The solid anodised aluminium frame ensures superior torsional resistance. SCHOTT Solar polycrystalline modules are also tested to an extreme loading pressure and suction of 5,400 Pa – which equates to 550 kg per square metre and a reassuring level of security for your investment.

High performance output: All SCHOTT Solar polycrystalline modules hold a positive tolerance of their nominal power rating. This ensures a stable high-energy output and a quick return on investment.

Long-term reliability: SCHOTT Solar offers a power output guarantee of 25 years and a product warranty of five years.

Increased resistance to reverse current: SCHOTT Solar polycrystalline modules have a high resistance to reverse current, minimising the wiring costs.

Improved temperature coefficient: The improved temperature coefficient of the modules lead to an increased module efficiency at high ambient temperature.

SCHOTT
solar

Technical Data

Data at standard test conditions (STC)

Module type		SCHOTT POLY™ 220	SCHOTT POLY™ 225	SCHOTT POLY™ 230	SCHOTT POLY™ 235
Nominal power [Wp]	P_{mpp}	≥ 220	≥ 225	≥ 230	≥ 235
Voltage at nominal power [V]	U_{mpp}	29.7	29.8	30.0	30.2
Current at nominal power [A]	I_{mpp}	7.41	7.55	7.66	7.78
Open-circuit voltage [V]	U_{oc}	36.5	36.7	36.9	37.1
Short-circuit current [A]	I_{sc}	8.15	8.24	8.33	8.42
Module efficiency (%)	η	13.1	13.4	13.7	14.0

STC (1000 W/m², AM 1.5, cell temperature 25°C)

Power tolerance (as measured by flasher): -0 W / +4.99 W

Data at normal operating cell temperature (NOCT)

Nominal power [Wp]	P_{mpp}	158	161	165	169
Voltage at nominal power [V]	U_{mpp}	26.7	26.9	27.1	27.2
Open-circuit voltage [V]	U_{oc}	33.3	33.5	33.7	33.9
Short-circuit current [A]	I_{sc}	6.53	6.60	6.67	6.75
Temperature [°C]	T_{NOCT}	47.2	47.2	47.2	47.2

NOCT (800 W/m², AM 1.5, windspeed 1 m/s, ambient temperature 20°C)

Data at low irradiation

At a low irradiation intensity of 200 W/m² (AM 1.5 and cell temperature 25°C) 97 % of the STC module efficiency (1000 W/m²) will be achieved

Temperature coefficients

Power [%/K]	P_{mpp}	-0.45
Open-circuit voltage [%/K]	U_{oc}	-0.33
Short-circuit current [%/K]	I_{sc}	+0.04

Characteristic data

Solar cells per module	60
Cell type	polycrystalline, 156 mm x 156 mm
Junction box	IP65 with three bypass diodes
Connector	Tyco-Connector IP67
Dimensions junction box [mm]	110 x 115 x 25
Front panel	low iron solar glass 4.0 mm
Backside panel	foil
Frame material	anodised aluminium

Dimensions and weight

Dimensions [mm]	1,685 x 993
Thickness [mm]	50
Weight [kg]	approx 23

Limits

Maximum system voltage [V _{DC}]	1000
Maximum reverse current I_R [A]*	20
Operating module temperature [°C]	-40 ... +85
Maximum load (to IEC 61215 ed. 2)	pressure: 5,400 N/m² or 550 kg/m² suction: 5,400 N/m² or 550 kg/m²

Application classification (to IEC 61730) A

Fire classification (to IEC 61730) C

* No external voltage in excess of U_{oc} shall be applied to the module

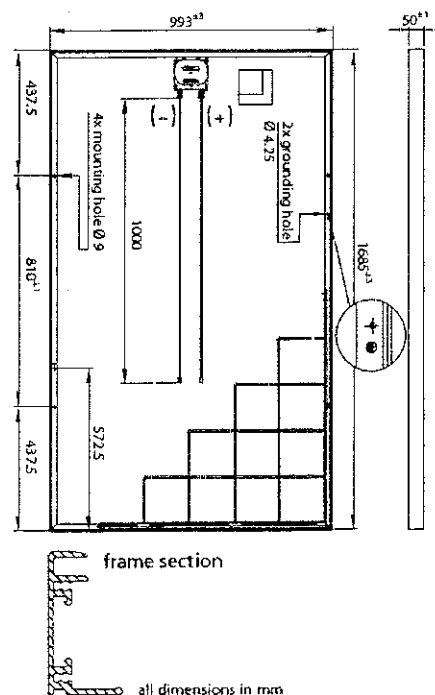
Permission and certificates

The modules are certified to IEC 61215 ed. 2 and IEC 61730, Electrical Protection Class II and the CE-guidelines. Moreover SCHOTT Solar is certified and registered to ISO 9001 and ISO 14001.

The installation manual contains additional information on installation and operation.

Power measurement accuracy: ± 4 %

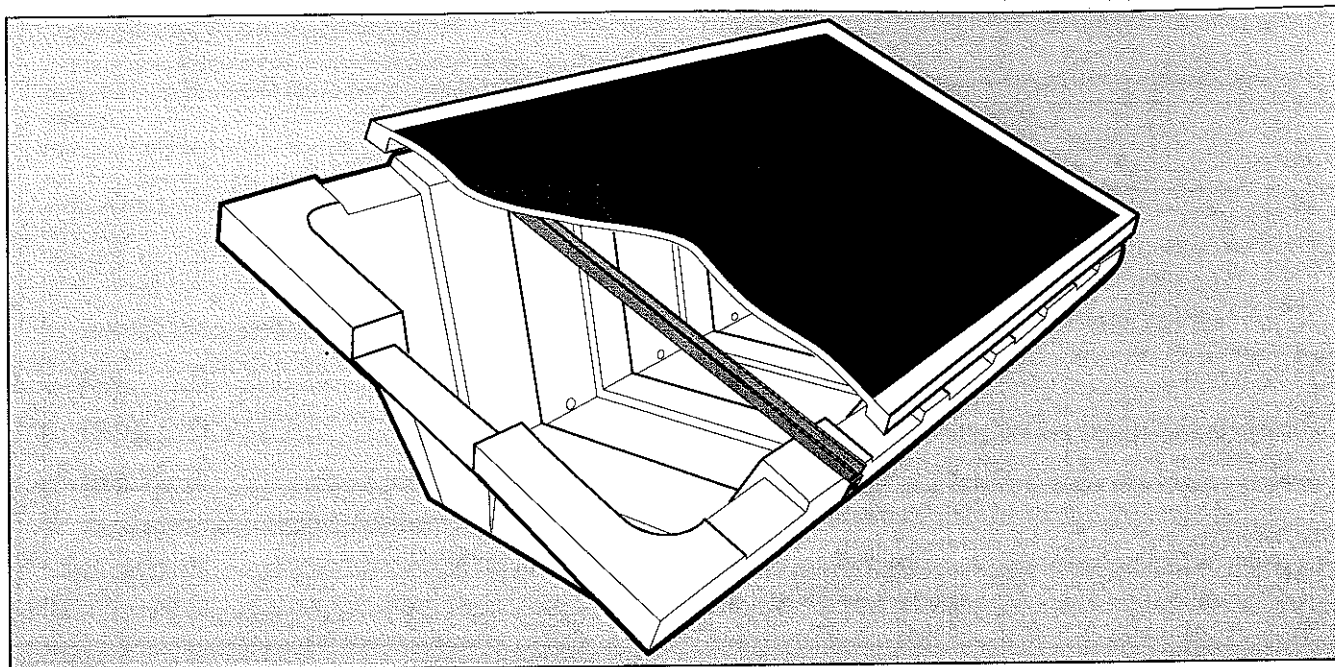
All information complies with the requirements of the standard EN 50380



SCHOTT Solar AG
Hattenbergstrasse 10
55122 Mainz
Germany

Phone: +49 (0)6131/66-14099
Fax: +49 (0)6023/91-1700
solar.sales@schottsolar.com
www.schottsolar.com

SCHOTT
solar



The ConSole is the ideal solution for mounting solar panels on flat roofs. Most common solar panels in the 70 to 260 range can be mounted on the ConSole.



The ConSole is filled with ballast (gravel, flagstones, etc.), in order to provide greater resistance to wind loading. The amount of ballast is determined according to the height of the building, its location and the nature of the installation surface. Please refer to the enclosed table for reference values with regard to the amount of ballast

The ConSole is made of 100 % recycled, chlorine-free high-density polyethylene (HDPE). The raw materials of the ConSole comply with fire protection standards in accordance with DIN 4102 Class B2. The energy payback time for the ConSole is less than one year.

The ConSole weighs between 3-6 kg, is stackable (40 ConSoles per pallet) and has a continuous mounting border.

We would like to point out that the valid safety provisions must be observed in order to avoid accidents.
Please take the necessary safety precautions.

Please check for any updated versions of the installation guide on www.renusol.com.

**We hope that you will enjoy using your ConSole
Your Renusol Solar Team.**

Renusol GmbH
Germany - Cologne
Tel.: +49-221-788 707-0
Fax.: +49-221-788 707-99
info@renusol.com
www.renusol.com

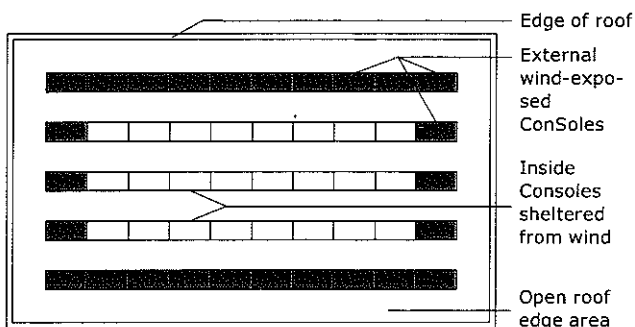
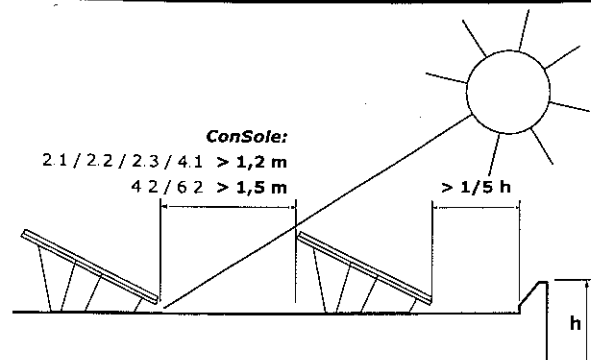
Installation Preparations

Scope of Supply

- 1 ConSole
- 2 Aluminium U Profiles
- 8 M6 x 20mm Stainless Steel Hexagonal Bolts
- 8 M6 Stainless Steel Self-Locking Nuts

Please check whether the installation surface (e.g. the roof) has been designed to sustain the required additional permanent ballast loading

Make sure the installation surface (e.g. the roof) is even, clean and not too slippery. In the case of slippery surfaces (e.g. PVC roofing membranes or suchlike), a non-slip mat should also be used



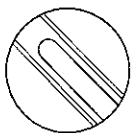
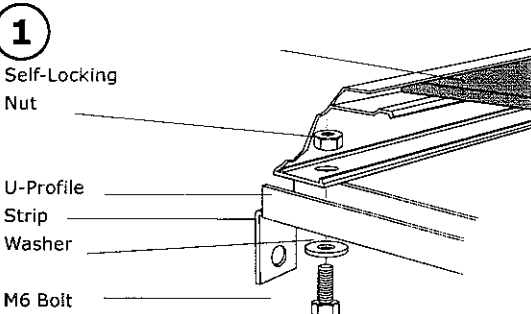
Required Tools

- Electric Screwdriver with a Hexagonal Bit for a 10 mm Bolt
- 7 mm Drill
- 10 mm Open-End or Ring Spanner

Position the ConSole with the opening in a southward direction. Maintain a distance from the edge of the roof of at least one fifth of the building height 'h' (e.g. building height of 10 metres => minimum distance of 2 metres)

The minimum distance between the ConSoles is illustrated in the diagram. Add the required amount of ballast (please refer to table on page 3 for reference values).

Installation



Slotted Hole

Round Hole

Mount U-profile solar onto the panel (please refer to drawing). Please make sure that the slotted hole is positioned on the higher side of the ConSole and that the small round holes are on the lower side. Please use the supplied mounting materials. Screw the bolts tight.

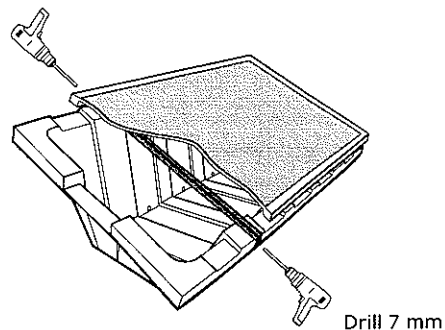
2

Connect the cables

3

Position the solar panel symmetrically onto the ConSole. If positioned correctly, the U-profile strips should prevent the solar panel from sliding away.

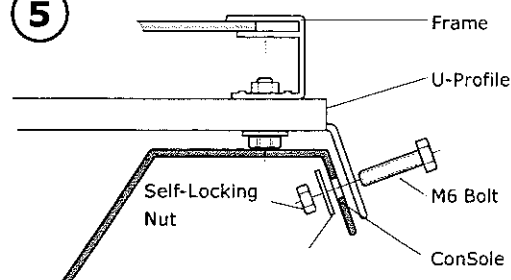
4



Drill 7 mm

Use the profiles to drill 4 holes (7 mm) in the edges of the ConSole (please refer to diagram)

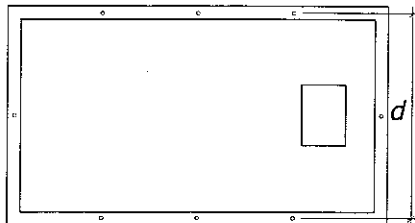
5



Mount the profiles onto the ConSole with the supplied mounting materials (please refer to drawing). Please make sure that the washer is placed between the nut and the ConSole.

Finding the Right ConSole for Your Solar Panel

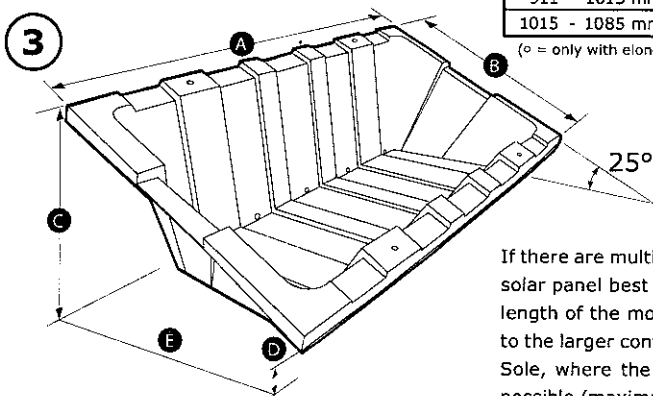
- 1** First measure the distance "d" for the mounting drill holes on the back of the solar panel!



- 2** Determine the required ConSole for the **width** of your solar panel using the table. Any elongation for rails that may be required should be listed as a separate item on the order.

Distance „d“	ConSole 2.1	ConSole 2.2	ConSole 2.3	ConSole 4.1	ConSole 4.2	ConSole 6.2
511 - 591 mm		•				
591 - 631 mm	•	•				
631 - 661 mm	•	•				
661 - 701 mm	•	•		•		
701 - 721 mm	•			•		
721 - 781 mm	•		•	•		
781 - 841 mm			•	•		
841 - 851 mm			•	•		
851 - 895 mm			•			
895 - 911 mm			•		•	•
911 - 1015 mm					•	•
1015 - 1085 mm					•	•

(• = only with elongation rail)



If there are multiple possibilities, then select the ConSole, which fits the **length** of your solar panel best. Dimension **A** of the ConSole should correspond approximately to the length of the module. Overhanging solar panels require larger amounts of ballast due to the larger contact surface that is exposed to the wind. Please always select the ConSole, where the surface area of the solar panel extends over the edges as little as possible (maximum 12 cm on either side of Length "A")

	Main dimensions (cm)					outside (cm)		m²	inside (cm)			heights (cm)	
	A	B	C	D	E	A _{Bottom, front}	E _{Bottom, rear}		A _{Bottom, front}	A _{Bottom, rear}	E _{Bottom}	Inside _{front}	Inside _{rear}
ConSole 2.1	135	73	43	13	68	107	39	0,43	110	102	39	19	36
ConSole 2.2	144	67	39	10	60	120	35	0,43	122	117	34	17,5	34
ConSole 2.3	125	86	47	11	80	98	48	0,52	110	94	48	19	38
ConSole 4.1	160	80	45	8,5	73	125	48	0,31	132	119	44	13,5	37,5
ConSole 4.2	120	105	55	10	98	94	51	0,48	97	89	50	19	42
ConSole 6.2	168	105	54	10	98	138	65	0,93	144	138	63	17,5	45,5

Determining the Amount of Ballast Required for ConSole

In order for the ConSole to withstand wind loads, it is necessary to fill the ConSole with ballast. Suitable ballast are gravel, stones, slabs or similar. Please refer to the table here for indicative ballast values. These values have been calculated according to DIN1055-4:2005-03 and Eurocode. Years of experience have proved the reliability of the system. The outer rows of Consoles have to be ballasted with higher loads according to the table. The specified values ensure that the ConSoles do not tip over, slide or lift off. In order to make sure that they do not slide away, one should ensure that the friction coefficient between the roof surface and the ConSole is higher than 0.6. This value can easily be determined using a spring balance (A ConSole filled with 100kg of ballast may only be moved with a horizontal tensile force of more than 60kg of the spring balance).

Ballast values for ConSole tubs (kg)

Wind load zone I for Germany according to DIN 1055-4: 2005-03

Terrain category III: Suburbs, industrial or commercial zones, forests

Building height	up to 8 meter		up to 12 meter		up to 16 meter	
	inside	outside	inside	outside	inside	outside
ConSole 2.1	50	78	59	91	66	101
ConSole 2.2	46	73	55	86	61	95
ConSole 2.3	51	82	60	96	68	106
ConSole 4.1	62	99	73	115	82	128
ConSole 4.2	58	94	68	110	77	122
ConSole 6.2	83	134	98	156	110	173

Additional ballast:

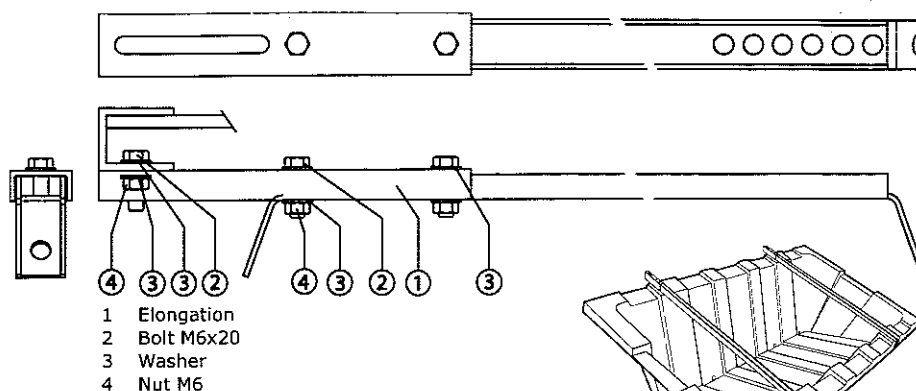
Higher wind load zone: 30% more ballast per level. When using extension rails: 10% more ballast. In case of excess length of the modules on the side: additional ballast in proportion to the excess length.

*Wind direction correction factor according to simulation model of the TNO Delft Institution

Optional elongation rails

Mount the elongation rails onto the ConSole system rails as per the diagram

Use the screws, washers and nuts which are supplied to tighten



Frequently Asked Questions

What is the maximum roof angle allowed for the ConSoles?

The ConSole has been designed only for flat roofs. An angle of up to 5° is acceptable.

Is it necessary to place roof protection between the roof and the ConSoles?

The ConSoles have no sharp edges, they spread the weight out over a large area of the roof and are made of relatively soft material. Based on these reasons, as well as our widespread experience, no roof protection is required, provided that the roof surface is flat and clean, unless it is to increase the friction coefficient.

Is earthing required?

The ConSole is made of HDPE, a non-conductive material. Therefore it is not necessary to earth the ConSole itself. However, if due to statutory regulations, the frame of the solar panel itself must be earthed, then these should be connected to each other so that they conduct electricity.

How much time is needed for the installation of the ConSole?

If the recommended installation method is applied (fasten the U-profile to the solar module, position the module onto the ConSole, tighten with self-locking nuts) then, in our experience, two minutes suffice per solar panel.

Can modules be placed in portrait orientation?

The ConSole is designed for installation in landscape orientation. Portrait orientation is not recommended. The top overhang must not exceed 7 cm.

How many modules fit on one ConSole?

The ConSole is designed to carry one module. In some exceptional cases, two smaller modules may fit on one large ConSole.

Which material can be used as ballast?

We recommend the use of gravel or flagstone. However, in principle, any material that has a high density and can be stored in the open air for many years without being or causing any damage may be used.

What is the operating temperature range for the ConSole?

The ConSole can be used or stored at temperatures ranging between -40 °C and 85 °C.

Does ConSole contain chemical substances that might react with the roofing?

The ConSole is made of 100% recycled HDPE (high-density polyethylene). To date no damaging reactions with the roof have been reported.

Is the material UV resistant?

The ConSole is made of blackened recycled HDPE (high-density polyethylene). This material has excellent UV-resistance characteristics. In addition extra UV-stabilisation agents have been added to the raw material. The UV-resistance characteristics have been tested according to ISO 4892.

How long is the warranty period?

The warranty period is 10 years. The expected lifetime of a ConSole is 30 years.

How many ConSoles have been installed to date?

By January 2008 more than 500,000 ConSoles had been installed. This is equivalent to an installed power of approximately 70 MWp.

Where and when was the first ConSole installed?

The first ConSole was installed in 1996 in The Netherlands.

What is the angle of the ConSole?

The irradiation angle is 25°. This is perfect for flat roofs and does not compromise unobstructed sunlight and exposure to light and wind.

How is the module ventilated?

There are unsparing ventilation slots along all sides of the ConSole, enabling free circulation of air. The temperature increase inside the ConSole is limited by the chimney-effect, which ensures the ventilation of the entire surface of the module by natural convection. This ventilation is even further improved by the extra air space of 1.5 cm provided by mounting the modules on the U-profiles. Due to its good ventilation tests have shown that there is no relevant reduction in the module performance with the use of ConSoles.

How are ConSoles manufactured?

The ConSole is a thermo-vacuum formed product manufactured using HDPE sheets with a thickness of approximately 3.5 to 4.5 mm.

Which fire protection class is applicable for the ConSole?

The material (HDPE) of the ConSole complies with fire protection standards in accordance with DIN 4102 Class B2.

What is the function of the holes at the base of the ConSole?

These are drainage holes.

What materials are the U-profiles made of and what are they for?

The U-profiles are made of aluminium. They enable customers a very simple and easy installation and provide mechanical stability for the module frame.