

ValkPVplanner

Project report



UT Power

Project name : International Hall_COPY
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▶ Overview total project	
• Location information / Project overview	03
• Bill of materials total project	04
• Drawing total project	05
▶ International Hall - Area 1 - Default Subarea 1	
• Information International Hall - Area 1 - Default Subarea 1	07
• Strength calculations International Hall - Area 1 - Default Subarea 1	08
• Bill of materials International Hall - Area 1 - Default Subarea 1	09
• Drawing International Hall - Area 1 - Default Subarea 1	10
▶ Building 2 - Area 1 - Default Subarea 1	
• Information Building 2 - Area 1 - Default Subarea 1	11
• Strength calculations Building 2 - Area 1 - Default Subarea 1	12
• Bill of materials Building 2 - Area 1 - Default Subarea 1	13
• Drawing Building 2 - Area 1 - Default Subarea 1	14
▶ Building 3 - Area 1 - Default Subarea 1	
• Information Building 3 - Area 1 - Default Subarea 1	15
• Strength calculations Building 3 - Area 1 - Default Subarea 1	16
• Bill of materials Building 3 - Area 1 - Default Subarea 1	17
• Drawing Building 3 - Area 1 - Default Subarea 1	18
▶ Regulations	19
▶ Safety instructions Guarantee	20

► Location information

Project	: International Hall_COPY
Project location	: Lansdowne Terrace, Bloomsbury, London WC1N 1DJ, UK
Terrain category	: Town
High neighbouring	: no
Wind area	: 22 m/s
Snow zone	: 0.5 kN/m ²
Altitude above sea	: 22 m
Distance to shore	: 40 km
Distance to edge of the city	: 9 km

► Project overview

Building	No. of Power panels [kWp]		System type	No. of tiles (30x30x4,5cm; 9 kg)*	No. of tiles (30x15x4,5cm; 4,5 kg)*	weight of mounting system [kg]	Weight of the ballast [kg]
International Hall	132	38,94				879	2.390
International Hall - Area 1 - Default Subarea 1	132	38,94	ValkPro+ East-West	264	3	879	2.390
Building 2	12	3,54				119	311
Building 2 - Area 1 - Default Subarea 1	12	3,54	ValkPro+	29	11	119	311
Building 3	8	2,36				145	360
Building 3 - Area 1 - Default Subarea 1	8	2,36	ValkPro+	40	0	145	360
Total project	152	44,84		333	14	1143	673.39

Tiles are included in all flat roof systems for this project

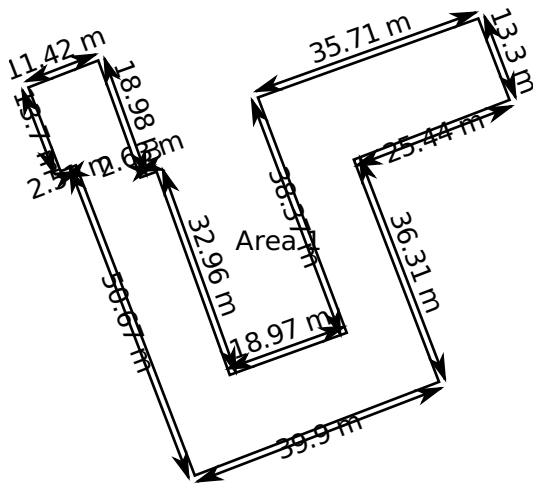
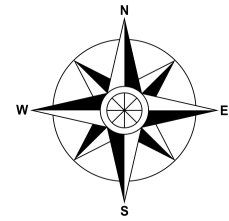
Note: the results in this project report can be based on default values. So please check if all values are correct.

Article no.	Description	Package Qty.	International	Hall	Building 2	Building 3	Total
7506301545G	Tile 30 x 15 x 4,5cm - 4,5kg - English stock	120	3	11	0	14	
7506303045G	Tile 30 x 30 x 4,5cm - 9kg - English stock	60	264	29	40	333	
729625	Rubber tile carrier 250x75x90mm for ValkPro+	25	308	42	20	370	
741801200	Galv roof carrier L=1200x1,5mm + coupling 87mm	100	0	0	0	0	
741802300	Galv roof carrier L=2300x1,5mm + coupling 87mm	100	87	0	0	87	
774221	Ss hammerhead bolt M8x20mm + washer + lock nut	100	86	6	18	110	
724650	Alu rear foot ValkPro+ middle	25	90	10	0	100	
724651	Alu rear foot ValkPro+ side	25	84	4	16	104	
724660	Alu front foot ValkPro+ middle	25	90	10	0	100	
724661	Alu front foot ValkPro+ side	25	84	4	16	104	
742510	Galv back panel ValkPro+ L=1760mm (panel length 1559-1700mm)	50	0	12	8	20	
742550	Galv mass carrier ValkPro+ L=1759mm (panel length 1559-1700mm)	100	50	4	16	70	
773320	Ss thread-forming bolt M6x20mm - T30	100	216	20	64	300	
742531	Galv side panel right ValkPro+	100	36	1	8	45	
742530	Galv side panel left ValkPro+	100	36	1	8	45	
741801500	Galv roof carrier L=1500x1,5mm + coupling 87mm	100	0	14	16	30	

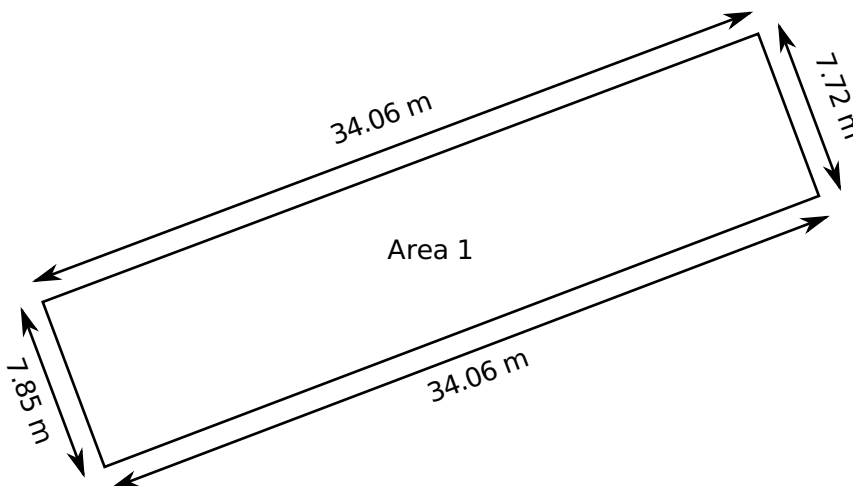
The bill of materials shown in this page apply to materials needed for the total project and is also divided per building. The bill of materials per roof area(s) can be found in the different chapters of this user manual.

This drawing shows all the buildings of the total project including the different roof areas.

► International Hall

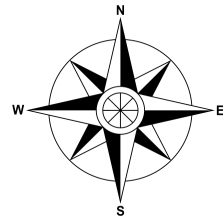
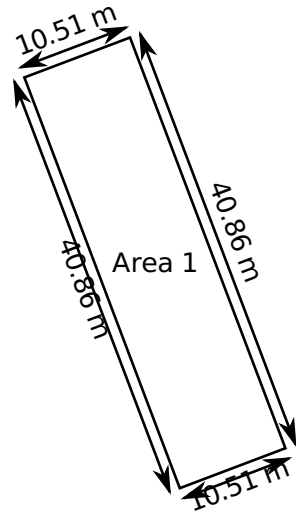


► Building 2



This drawing shows all the buildings of the total project including the different roof areas.

► Building 3



► Building information

Building name : International Hall
Gutter height : 17,00 m

► Roof information

Roof type : Flat
Roof material : Bitumen
Gravel present : No

► System information

No. of panels south wall : 132
Module : Hanwha Q Cells 1.670 x 1.000 x 0.032
Panel weight : 18,50 Kg
Module orientation : Landscape
Edge zone calculated : 3,40 m
Edge zone adjusted : 1,20 m
System choice : valkPro+
System color : aluminium
Panel inclination : 10
Azimuth : -111
Foundation type : tileCarrier
Include side panel : Yes



► System type

ValkPro+ East-West



► Weight information

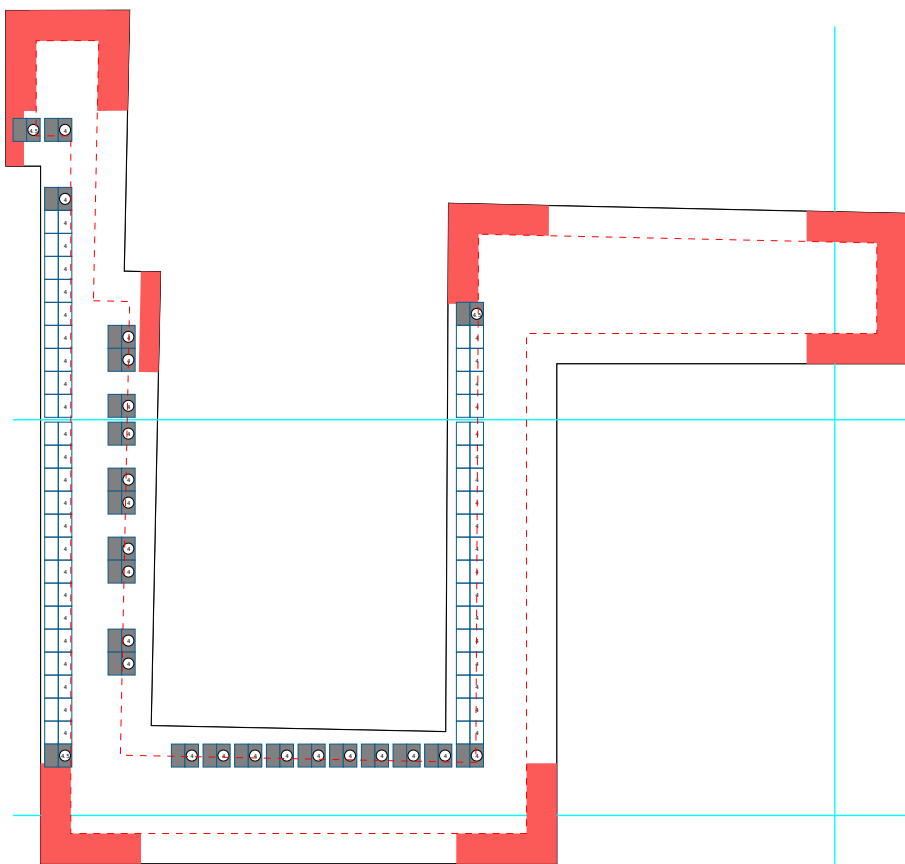
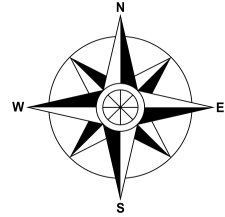
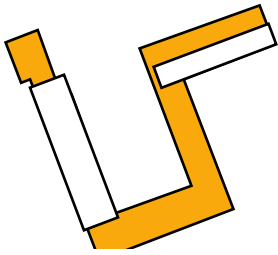
Weight of panels	: 2.442,00 kg
Weight of mounting system	: 878,52 kg
Weight of ballast	: 2.389,50 kg
Total weight	: 5.710,02 kg
Subarea dimension	: 1.382,68 m ²
System dimension	: 255,18 m ²




► Roof loadings

Roof load based on subarea dimension	: 4,13 kg/m ²
Roof load based on system dimension	: 22,38 kg/m ²
Point load max (max ballasted points)	: 25 kPa
Point load min (min ballasted points)	: 24 kPa

The bill of materials shown in this page apply to materials needed for International Hall - Area 1 - Default Subarea 1

Article no.	Description	Pack qty.	Calc qty.	Extra qty.	Total qty.	Total weight
7506301545G	Tile 30 x 15 x 4,5cm - 4,5kg - English stock	120	3	0	3	13,50
7506303045G	Tile 30 x 30 x 4,5cm - 9kg - English stock	60	264	0	264	2.376,00
729625	Rubber tile carrier 250x75x90mm for ValkPro+	25	308	0	308	215,60
741801200	Galv roof carrier L=1200x1,5mm + coupling 87mm	100	0	0	0	0,00
741802300	Galv roof carrier L=2300x1,5mm + coupling 87mm	100	87	0	87	336,43
774221	Ss hammerhead bolt M8x20mm + washer + lock nut	100	86	0	86	2,24
724650	Alu rear foot ValkPro+ middle	25	90	0	90	37,17
724651	Alu rear foot ValkPro+ side	25	84	0	84	37,04
724660	Alu front foot ValkPro+ middle	25	90	0	90	22,32
724661	Alu front foot ValkPro+ side	25	84	0	84	23,10
742510	Galv back panel ValkPro+ L=1760mm (panel length 1559-1700mm)	50	0	0	0	0,00
742550	Galv mass carrier ValkPro+ L=1759mm (panel length 1559-1700mm)	100	50	0	50	109,00
773320	Ss thread-forming bolt M6x20mm - T30	100	216	0	216	1,30
742531	Galv side panel right ValkPro+	100	36	0	36	47,16
742530	Galv side panel left ValkPro+	100	36	0	36	47,16
Total Weight						3.268,02 kg



No. of tiles	Type of foundation
	Panels with mass carriers Number represents FULL tiles.
	Panels with side panels and mass carriers Number represents FULL tiles.
	Panels with side panels Number represents HALF tiles. Use HALF tiles only.

1 tile = 30 x 30 x 4.5 cm | 9 kg

0.5 tile = 30 x 15 x 4.5 | 4.5 kg

--- Edge zone calculated: 3,40 m

█ Edge zone adjusted: 1,20 m

Attention! When placing ballast work from the outside edges of a row towards the middle. It is possible for one roof carrier in the middle of the row to have no ballast on it.

► Building information

Building name : Building 2
Roof inclination : 0.00 degrees
Gutter height : 17,00 m

► Roof information

Roof type : Flat
Roof material : Bitumen
Gravel present : No

► System information

No. of panels south wall : 12
Module : Hanwha Q Cells 1.670 x 1.000 x 0.032
Panel weight : 18,50 Kg
Module orientation : Landscape
Edge zone calculated : 3,40 m
Edge zone adjusted : 1,00 m
System choice : valkPro+
System color : aluminium
Panel inclination : 10
Azimuth : 159
Foundation type : tileCarrier
Include side panel : Yes



► System type

ValkPro+



▶ **Weight information**

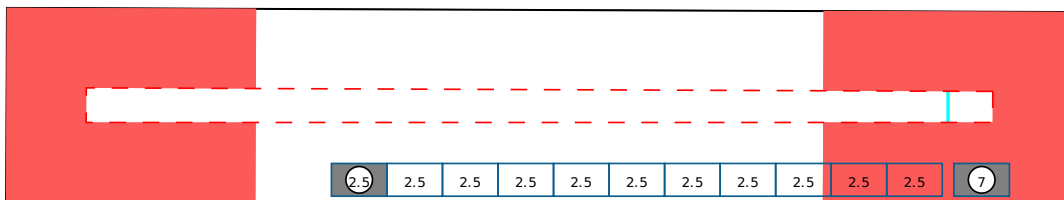
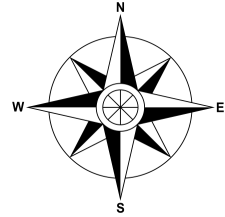
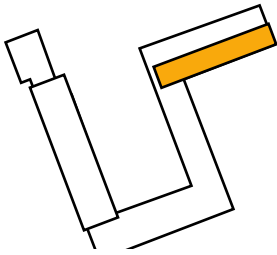
Weight of panels	: 222,00 kg
Weight of mounting system	: 118,16 kg
Weight of ballast	: 310,50 kg
Total weight	: 650,66 kg
Subarea dimension	: 185,57 m ²
System dimension	: 30,26 m ²

▶ **Roof loadings**

Roof load based on subarea dimension	: 3,51 kg/m ²
Roof load based on system dimension	: 21,50 kg/m ²
Point load max (max ballasted points)	: 51 kPa
Point load min (min ballasted points)	: 28 kPa

The bill of materials shown in this page apply to materials needed for Building 2 - Area 1 - Default Subarea 1

Article no.	Description	Pack qty.	Calc qty.	Extra qty.	Total qty.	Total weight
729625	Rubber tile carrier 250x75x90mm for ValkPro+	25	42	0	42	29,40
741801500	Galv roof carrier L=1500x1,5mm + coupling 87mm	100	14	0	14	35,98
7506301545G	Tile 30 x 15 x 4,5cm - 4,5kg - English stock	120	11	0	11	49,50
7506303045G	Tile 30 x 30 x 4,5cm - 9kg - English stock	60	29	0	29	261,00
774221	Ss hammerhead bolt M8x20mm + washer + lock nut	100	6	0	6	0,16
724650	Alu rear foot ValkPro+ middle	25	10	0	10	4,13
724651	Alu rear foot ValkPro+ side	25	4	0	4	1,76
724660	Alu front foot ValkPro+ middle	25	10	0	10	2,48
724661	Alu front foot ValkPro+ side	25	4	0	4	1,10
742510	Galv back panel ValkPro+ L=1760mm (panel length 1559-1700mm)	50	12	0	12	31,69
742550	Galv mass carrier ValkPro+ L=1759mm (panel length 1559-1700mm)	100	4	0	4	8,72
773320	Ss thread-forming bolt M6x20mm - T30	100	20	0	20	0,12
742531	Galv side panel right ValkPro+	100	1	0	1	1,31
742530	Galv side panel left ValkPro+	100	1	0	1	1,31
Total Weight						428,66 kg



No. of tiles	Type of foundation
(X)	Panels with mass carriers Number represents FULL tiles.
(X)	Panels with side panels and mass carriers Number represents FULL tiles.
(X)	Panels with side panels Number represents HALF tiles. Use HALF tiles only.

1 tile = 30 x 30 x 4.5 cm | 9 kg

0.5 tile = 30 x 15 x 4.5 | 4.5 kg

--- Edge zone calculated: 3,40 m

█ Edge zone adjusted: 1,00 m

Attention! When placing ballast work from the outside edges of a row towards the middle. It is possible for one roof carrier in the middle of the row to have no ballast on it.

► Building information

Building name	: Building 3
Roof inclination	: 0.00 degrees
Gutter height	: 17,00 m

► Roof information

Roof type	: Flat
Roof material	: Bitumen
Gravel present	: No

► System information

No. of panels south wall	: 8
Module	: Hanwha Q Cells 1.670 x 1.000 x 0.032
Panel weight	: 18,50 Kg
Module orientation	: Landscape
Edge zone calculated	: 3,40 m
Edge zone adjusted	: 0,50 m
System choice	: valkPro+
System color	: aluminium
Panel inclination	: 10
Azimuth	: 159
Foundation type	: tileCarrier
Include side panel	: Yes



► System type

ValkPro+



▶ **Weight information**

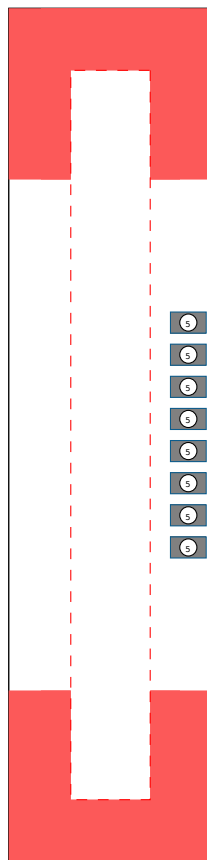
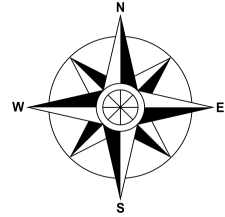
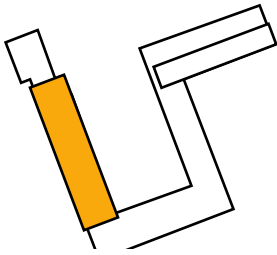
Weight of panels	: 148,00 kg
Weight of mounting system	: 144,40 kg
Weight of ballast	: 360,00 kg
Total weight	: 652,40 kg
Subarea dimension	: 379,01 m ²
System dimension	: 20,17 m ²

▶ **Roof loadings**

Roof load based on subarea dimension	: 1,72 kg/m ²
Roof load based on system dimension	: 32,34 kg/m ²
Point load max (max ballasted points)	: 41 kPa
Point load min (min ballasted points)	: 41 kPa

The bill of materials shown in this page apply to materials needed for Building 3 - Area 1 - Default Subarea 1

Article no.	Description	Pack qty.	Calc qty.	Extra qty.	Total qty.	Total weight
729625	Rubber tile carrier 250x75x90mm for ValkPro+	25	20	0	20	14,00
741801500	Galv roof carrier L=1500x1,5mm + coupling 87mm	100	16	0	16	41,12
7506301545G	Tile 30 x 15 x 4,5cm - 4,5kg - English stock	120	0	0	0	0,00
7506303045G	Tile 30 x 30 x 4,5cm - 9kg - English stock	60	40	0	40	360,00
774221	Ss hammerhead bolt M8x20mm + washer + lock nut	100	18	0	18	0,47
724650	Alu rear foot ValkPro+ middle	25	0	0	0	0,00
724651	Alu rear foot ValkPro+ side	25	16	0	16	7,06
724660	Alu front foot ValkPro+ middle	25	0	0	0	0,00
724661	Alu front foot ValkPro+ side	25	16	0	16	4,40
742510	Galv back panel ValkPro+ L=1760mm (panel length 1559-1700mm)	50	8	0	8	21,13
742550	Galv mass carrier ValkPro+ L=1759mm (panel length 1559-1700mm)	100	16	0	16	34,88
773320	Ss thread-forming bolt M6x20mm - T30	100	64	0	64	0,38
742531	Galv side panel right ValkPro+	100	8	0	8	10,48
742530	Galv side panel left ValkPro+	100	8	0	8	10,48
Total Weight						504,40 kg



No. of tiles	Type of foundation
(X)	Panels with mass carriers Number represents FULL tiles.
(X)	Panels with side panels and mass carriers Number represents FULL tiles.
(X)	Panels with side panels Number represents HALF tiles. Use HALF tiles only.

1 tile = 30 x 30 x 4.5 cm | 9 kg

0.5 tile = 30 x 15 x 4.5 | 4.5 kg

--- Edge zone calculated: 3,40 m

█ Edge zone adjusted: 0,50 m

Attention! When placing ballast work from the outside edges of a row towards the middle. It is possible for one roof carrier in the middle of the row to have no ballast on it.

Calculations made by the ValkPVplanner are according the underneath codes and assure the right strength for pitched roof and flat roof mounting systems and sufficient ballast for flat roof systems.

The pitched roof clamp systems are MCS012 approved (MCS BBA 0159).

- NEN-EN 1990 (Structural desing)
- BS-EN 1990 (Structural design)
- IS-EN 1990 (Structural design)
- SFS-EN 1990 (Structural design)
- NBN-EN 1990 (Structural design)
- SS-EN 1990 (Structural design)
- NS-EN 1990 (Structural design)

- NEN-EN 1990-1-3 (Snowload)
- BS-EN 1990-1-3 (Snowload)
- IS-EN 1990-1-3 (Snowload)
- SFS-EN 1990-1-3 (Snowload)
- NBN-EN 1990-1-3 (Snowload)
- SS-EN 1990-1-3 (Snowload)
- NS-EN 1990-1-3 (Snowload)

- NEN-EN 1990-1-4 (Windload)
- BS-EN 1990-1-4 (Windload)
- IS-EN 1990-1-4 (Windload)
- SFS-EN 1990-1-4 (Windload)
- NBN-EN 1990-1-4 (Windload)
- SS-EN 1990-1-4 (Windload)
- NS-EN 1990-1-4 (Windload)

- NEN 7250 (Flat roof Solar systems)
- NVN 7250 (Flat roof Solar systems)
- NEN 7250 (Pitched roof solar systems)

► Default values

- The results in this project report can be based on default values. So please check if all values are correct.

► Safety instructions

- This user manual must be seen in addition to the installation manual which shows you how to install the solar mounting system.
- The instructions provided in this user manual must be observed at all times.
- All current structural, safety and building regulations must be observed.
- Van der Valk Solar Systems B.V. will never be liable for any direct and/or indirect intangible or consequential loss ensuing from connected to the failure to observe the instructions provided in this.
- Solar mounting systems installed on roofs will be exposed to wind and snow. The building in question will be subject to a load as a result of the PV system. A design calculation must be used to establish whether or not the building, will be able to withstand the extra load. Where necessary, modifications need to be made.
- Flat roof systems can be attached to the roof or need to be supported by ballast, to make sure that the system is unable to lift or tip over. The ballast specified in this user manual will be vital to ensure that the mounting system can be used
- Flat roof systems with an angle above 5 degrees must be attached to the roof.
- The calculations do not take into account obstacles in the near surrounding like high buildings, cliffs and mountains.
- Restrictions also apply for the position of the system on a roof. The solar panels must be installed at a certain distance from edge of the roof shown in this user manual.

► Guarantee

- Standard warranty for pitched roof, flat roof and ground mount systems is 10 years. This can be extended under certain conditions.
- The guarantee provided is subject to the guarantee conditions stated in the general terms and conditions supplied by Van der Solar Systems BV. Our terms and conditions can be found on our website: www.valksolarsystems.nl.

► Disclaimer

- For the disclaimer of the ValkPVplanner visit our website: www.valksolarsystems.nl.

► Contact

- If you have any questions about the ValkPVplanner, this project report or any other outcome don't hesitate to contact the Van der Valk Solar Systems team.