

Green Light

The Joint, 1-6 Field Street & 14-16 Leeke Street,
London, WC1X 9DG

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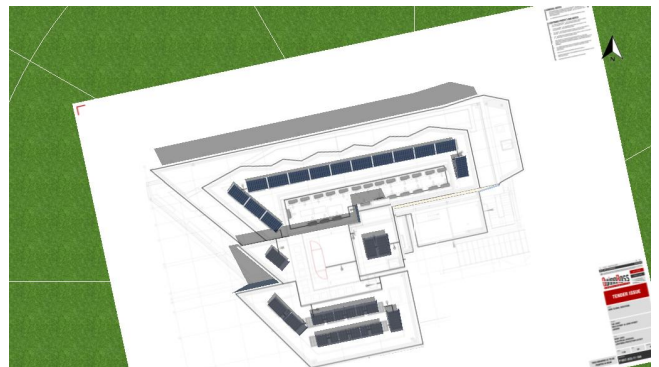
Project Name: The Joint, 1-6 Field Street - Solar Install
Offer no.: GL33676

01/03/2023

Your PV system from Green Light

Address of Installation

The Joint, 1-6 Field Street & 14-16 Leeke Street,
London, WC1X 9DG



The Joint, 1-6 Field Street - Solar Install

Green Light
Offer Number: GL33676

Project Overview

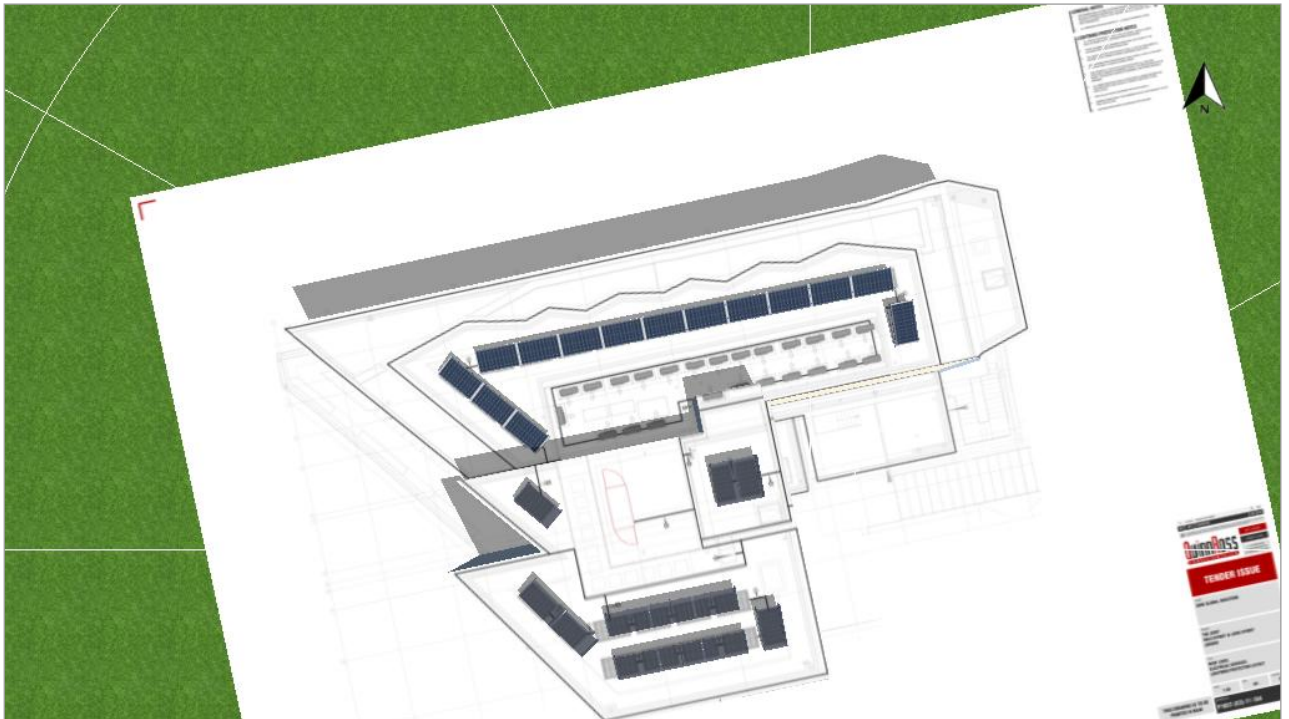


Figure: Overview Image, 3D Design

PV System

3D, Grid-connected PV System

Climate Data	Willenhall South, GBR (1996 - 2015)
Values source	Meteonorm 8.1(i)
PV Generator Output	13 kWp
PV Generator Surface	61.7 m ²
Number of PV Modules	26
Number of Inverters	1

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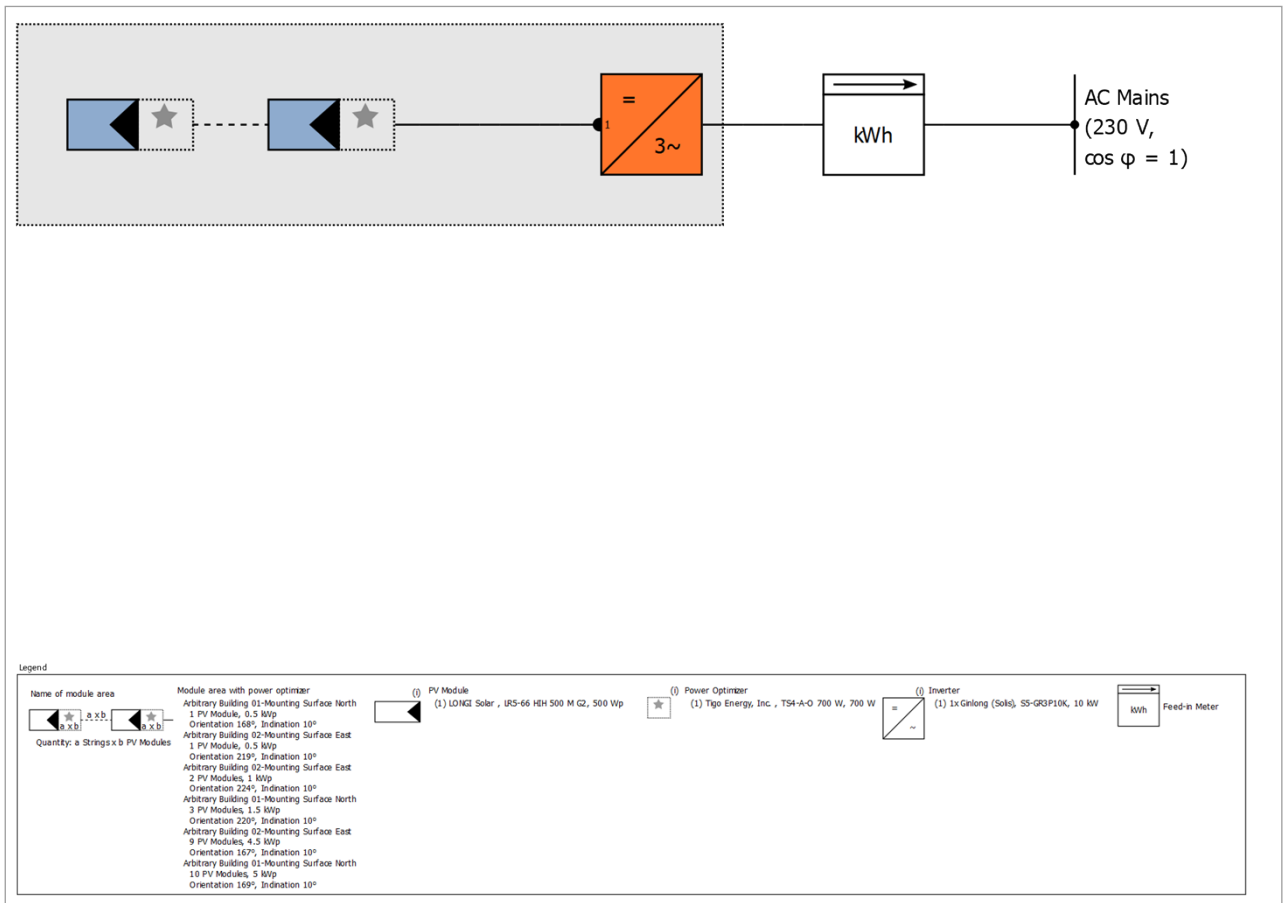


Figure: Schematic diagram

Production Forecast

Production Forecast

PV Generator Output	13.00 kWp
Spec. Annual Yield	969.20 kWh/kWp
Performance Ratio (PR)	91.46 %
Yield Reduction due to Shading	3.7 %/Year
Grid Feed-in	12,612 kWh/Year
Grid Feed-in in the first year (incl. module degradation)	12,502 kWh/Year
Standby Consumption (Inverter)	12 kWh/Year
CO ₂ Emissions avoided	2,520 kg / year

Financial Analysis

Your Gain

Total investment costs	18,294.48 £
Internal Rate of Return (IRR)	10.84 %
Amortization Period	9.6 Years
Electricity Production Costs	0.0637 £/kWh
Energy Balance/Feed-in Concept	Full Feed-in

The results have been calculated with a mathematical model calculation from Valentin Software GmbH (PV*SOL algorithms). The actual yields from the solar power system may differ as a result of weather variations, the efficiency of the modules and inverter, and other factors.

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Set-up of the System

Overview

System Data

Type of System	3D, Grid-connected PV System
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Climate Data

Location	Willenhall South, GBR (1996 - 2015)
Values source	Meteonorm 8.1(i)
Resolution of the data	1 h
Simulation models used:	
- Diffuse Irradiation onto Horizontal Plane	Reindl reduced
- Irradiance onto tilted surface	Hay & Davies

Module Areas

1. Module Area - Arbitrary Building 01-Mounting Surface North

PV Generator, 1. Module Area - Arbitrary Building 01-Mounting Surface North

Name	Arbitrary Building 01-Mounting Surface North
PV Modules	1 x LR5-66 HIH 500 M G2 (v1)
Manufacturer	LONGI Solar
Inclination	10 °
Orientation	South 168 °
Installation Type	Mounted - Roof
PV Generator Surface	2.4 m ²

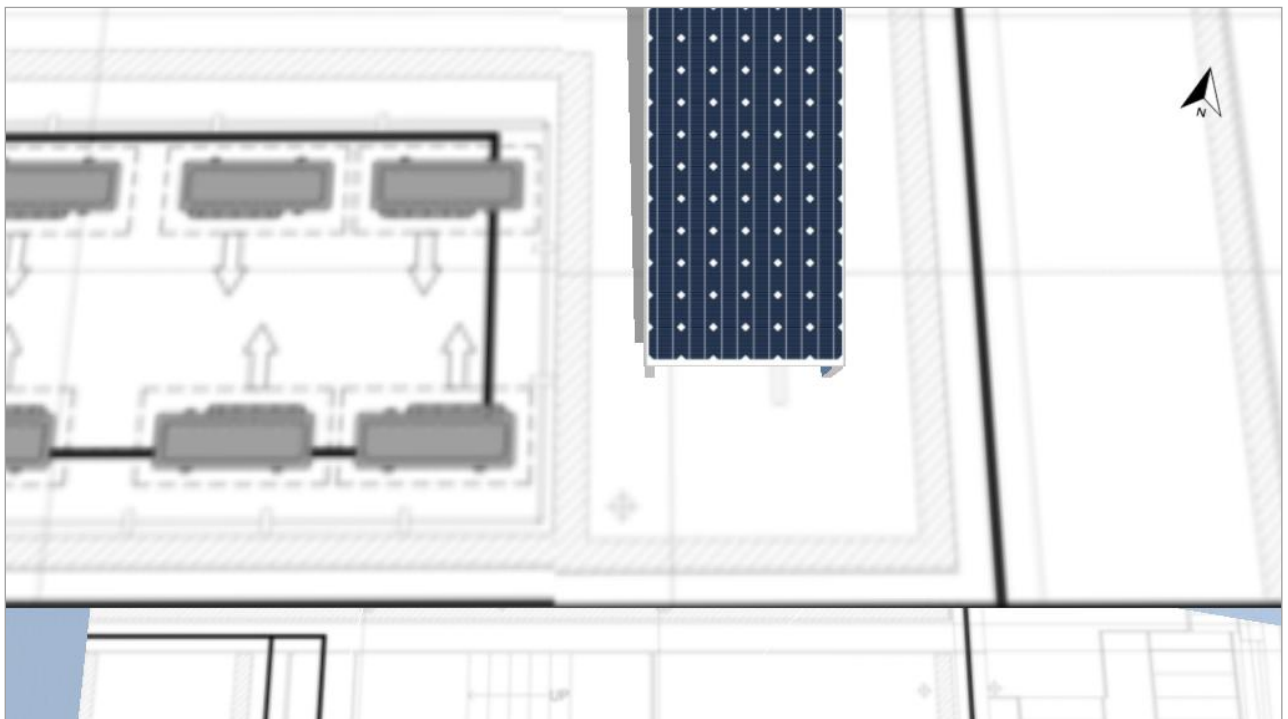


Figure: 1. Module Area - Arbitrary Building 01-Mounting Surface North

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2. Module Area - Arbitrary Building 02-Mounting Surface East

PV Generator, 2. Module Area - Arbitrary Building 02-Mounting Surface East

Name	Arbitrary Building 02-Mounting Surface East
PV Modules	1 x LR5-66 HIH 500 M G2 (v1)
Manufacturer	LONGI Solar
Inclination	10 °
Orientation	Southwest 219 °
Installation Type	Mounted - Roof
PV Generator Surface	2.4 m ²

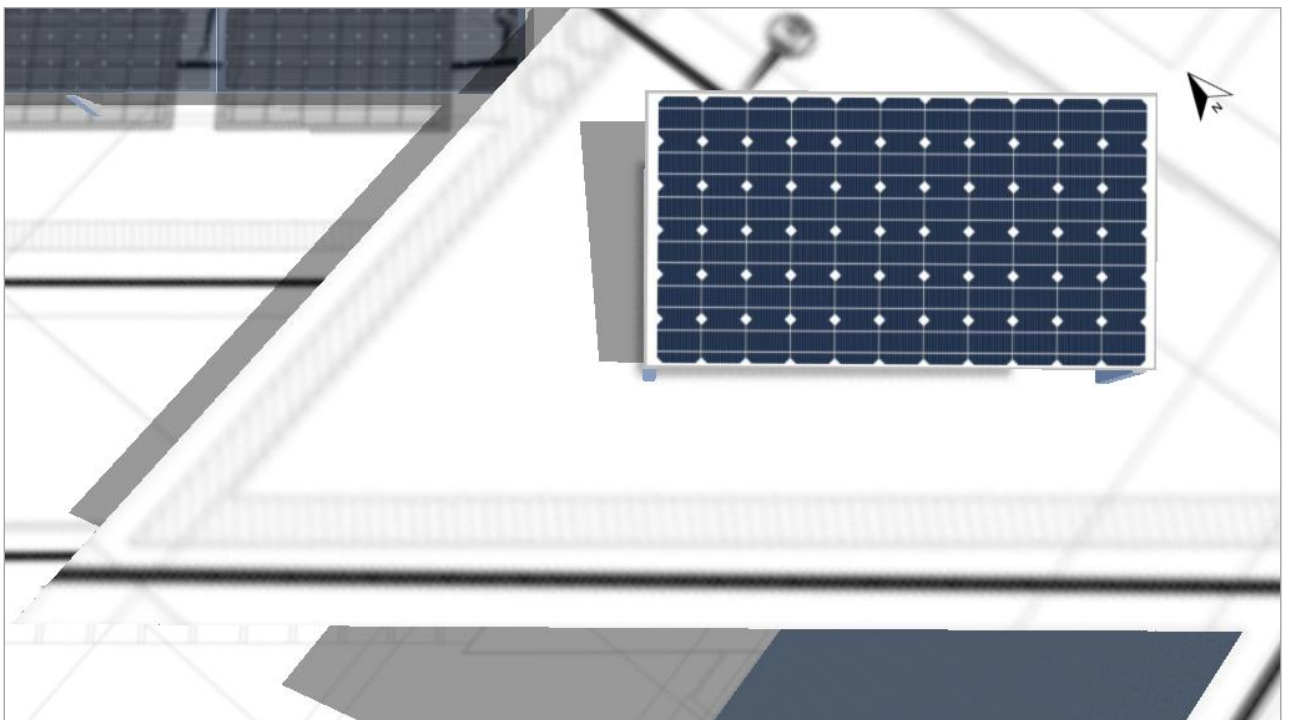


Figure: 2. Module Area - Arbitrary Building 02-Mounting Surface East

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3. Module Area - Arbitrary Building 02-Mounting Surface East

PV Generator, 3. Module Area - Arbitrary Building 02-Mounting Surface East

Name	Arbitrary Building 02-Mounting Surface East
PV Modules	2 x LR5-66 HIH 500 M G2 (v1)
Manufacturer	LONGI Solar
Inclination	10 °
Orientation	Southwest 224 °
Installation Type	Mounted - Roof
PV Generator Surface	4.7 m ²

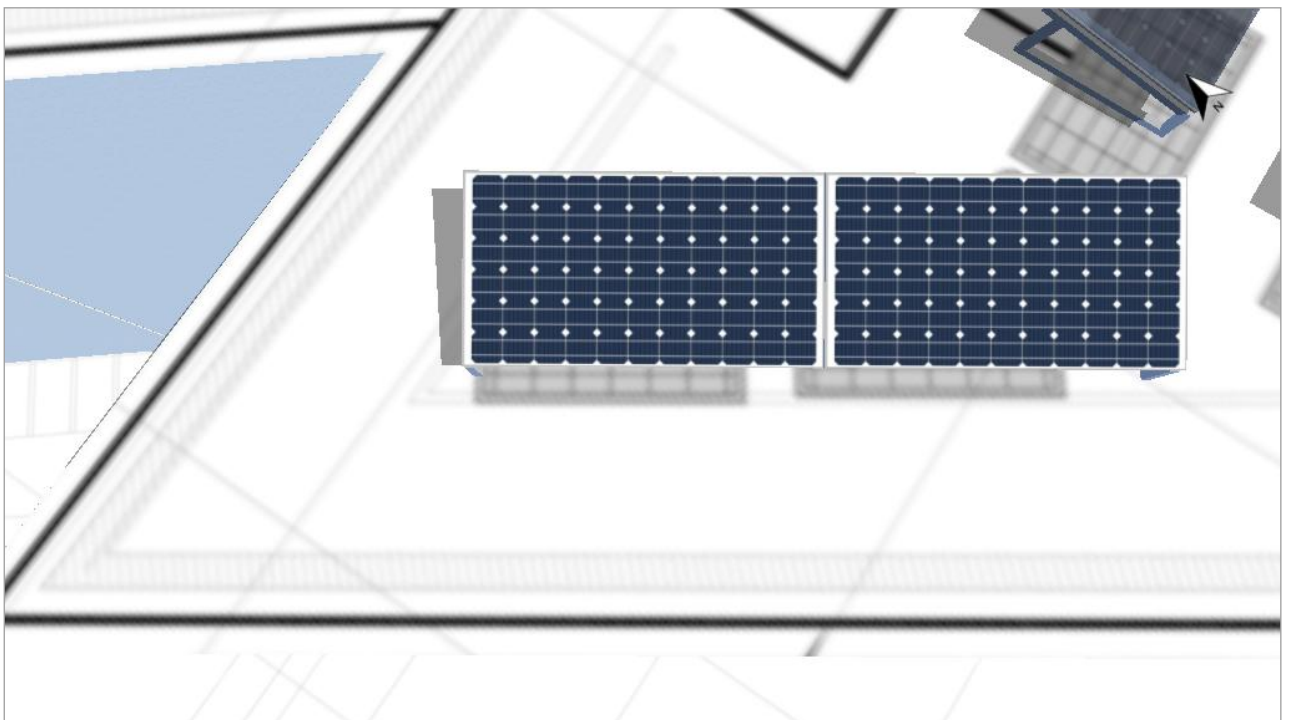


Figure: 3. Module Area - Arbitrary Building 02-Mounting Surface East

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4. Module Area - Arbitrary Building 01-Mounting Surface North

PV Generator, 4. Module Area - Arbitrary Building 01-Mounting Surface North

Name	Arbitrary Building 01-Mounting Surface North
PV Modules	3 x LR5-66 HIH 500 M G2 (v1)
Manufacturer	LONGI Solar
Inclination	10 °
Orientation	Southwest 220 °
Installation Type	Mounted - Roof
PV Generator Surface	7.1 m ²

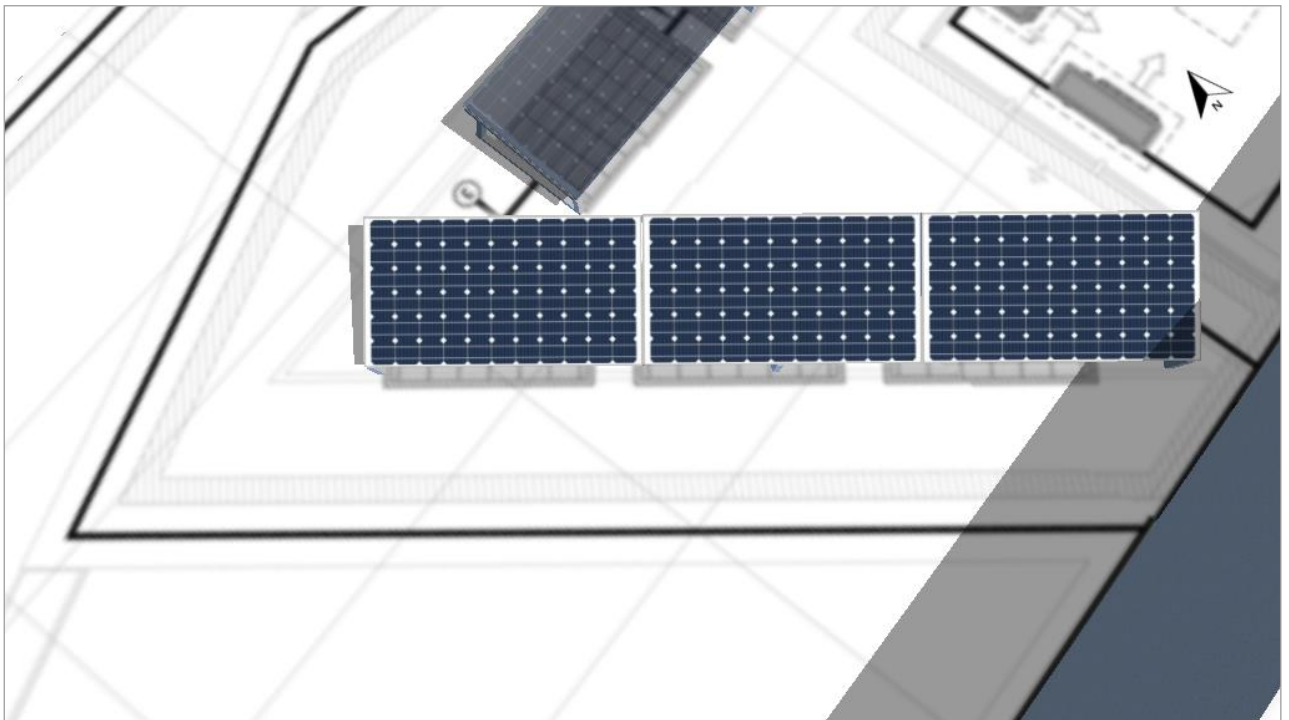


Figure: 4. Module Area - Arbitrary Building 01-Mounting Surface North

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5. Module Area - Arbitrary Building 02-Mounting Surface East

PV Generator, 5. Module Area - Arbitrary Building 02-Mounting Surface East

Name	Arbitrary Building 02-Mounting Surface East
PV Modules	9 x LR5-66 HIH 500 M G2 (v1)
Manufacturer	LONGI Solar
Inclination	10 °
Orientation	South 167 °
Installation Type	Mounted - Roof
PV Generator Surface	21.4 m ²

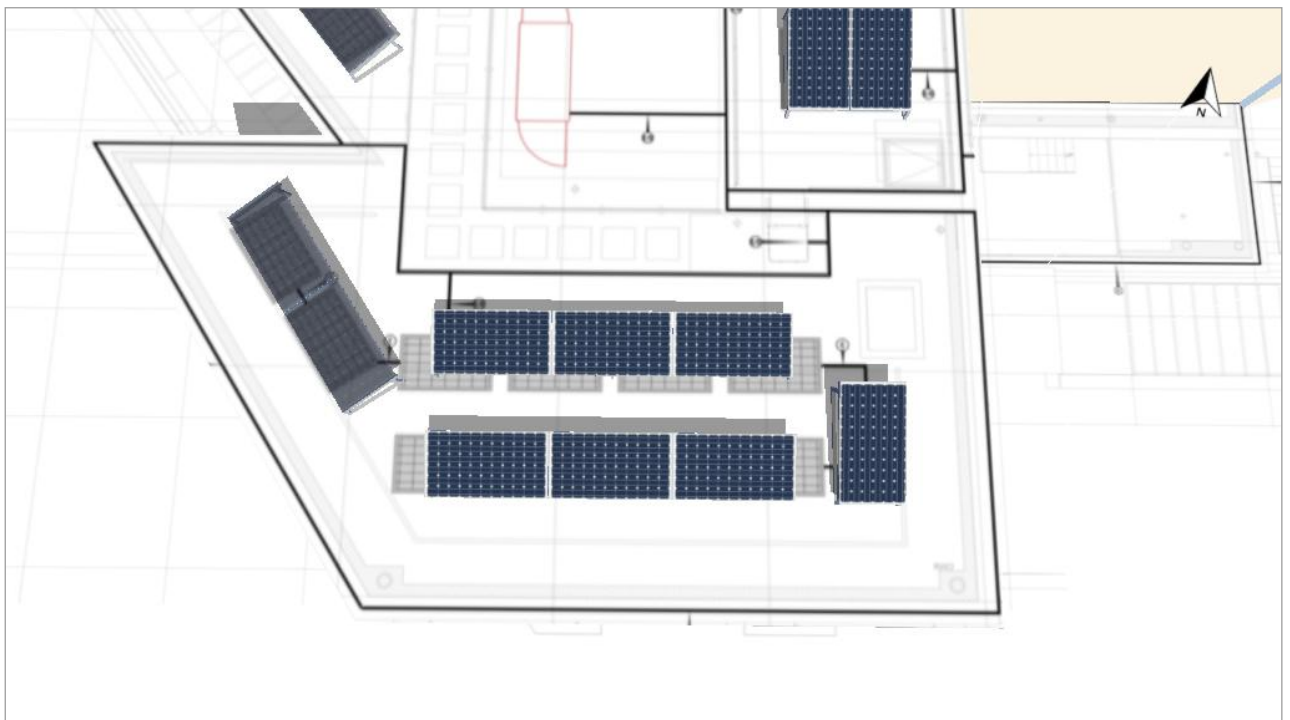


Figure: 5. Module Area - Arbitrary Building 02-Mounting Surface East

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6. Module Area - Arbitrary Building 01-Mounting Surface North

PV Generator, 6. Module Area - Arbitrary Building 01-Mounting Surface North

Name	Arbitrary Building 01-Mounting Surface North
PV Modules	10 x LR5-66 HIH 500 M G2 (v1)
Manufacturer	LONGI Solar
Inclination	10 °
Orientation	South 169 °
Installation Type	Mounted - Roof
PV Generator Surface	23.7 m ²

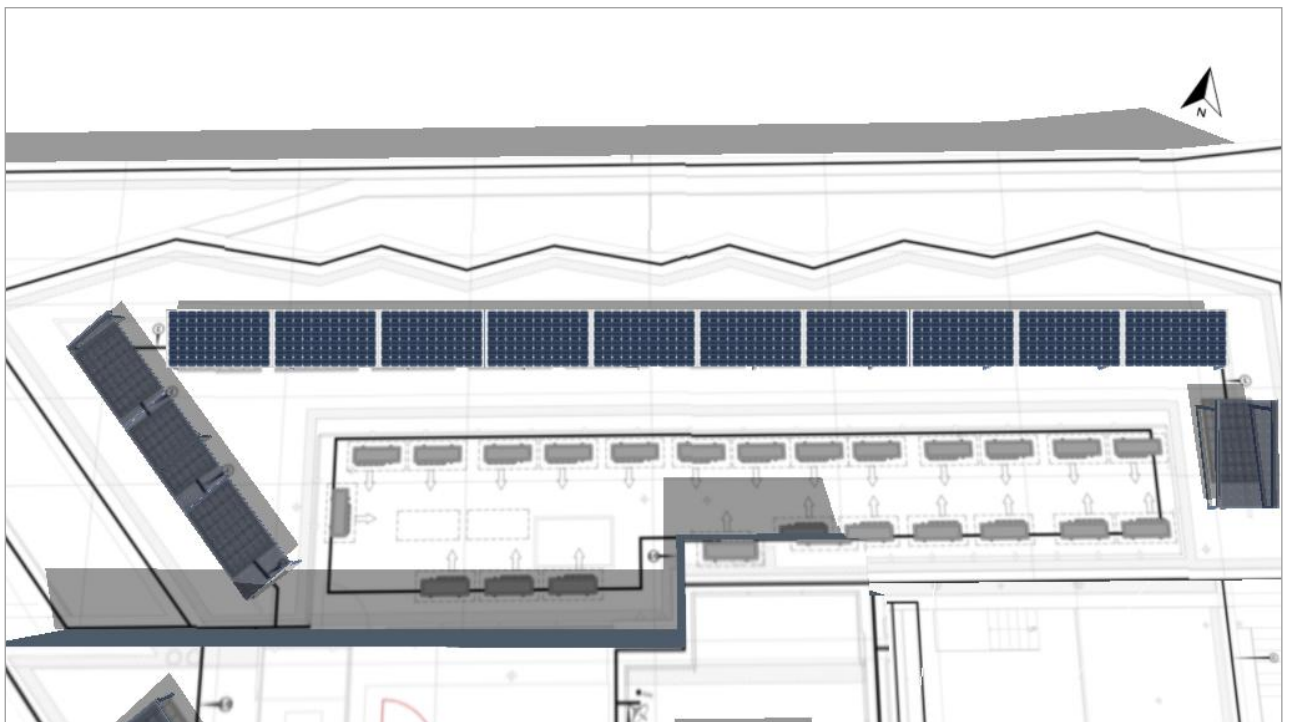


Figure: 6. Module Area - Arbitrary Building 01-Mounting Surface North

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Horizon Line, 3D Design

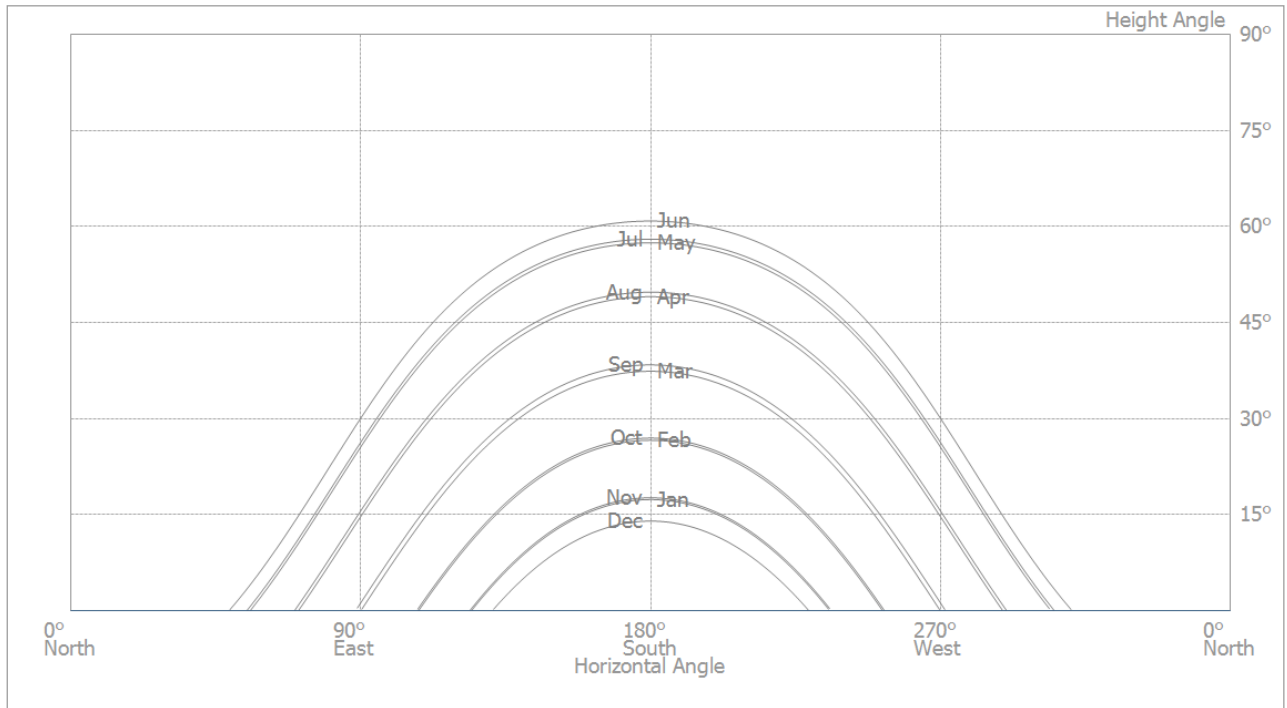


Figure: Horizon (3D Design)

Inverter configuration

Configuration 1

Module Areas	Arbitrary Building 01-Mounting Surface North + Arbitrary Building 02-Mounting Surface East + Arbitrary Building 02-Mounting Surface East + Arbitrary Building 01-Mounting Surface North + Arbitrary Building 02-Mounting Surface East + Arbitrary Building 01-Mounting Surface North
Inverter 1	
Model	S5-GR3P10K (v2)
Manufacturer	Ginlong (Solis)
Quantity	1
Sizing Factor	130 %
Configuration	MPP 1: 1 x 1☆ [1 x 1] + 1 x 1☆ [1 x 1] + 1 x 2☆ [1 x 1] + 1 x 3☆ [1 x 1] MPP 2: 1 x 9☆ [1 x 1] + 1 x 10☆ [1 x 1]
Power Optimizer	26x Tigo Energy, Inc. , TS4-A-O 700 W (v2)

AC Mains

AC Mains

Number of Phases	3
Mains voltage between phase and neutral	230 V
Displacement Power Factor (cos phi)	+/- 1

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Simulation Results

Results Total System

PV System

PV Generator Output	13.00 kWp
Spec. Annual Yield	969.20 kWh/kWp
Performance Ratio (PR)	91.46 %
Yield Reduction due to Shading	3.7 %/Year
Grid Feed-in	12,612 kWh/Year
Grid Feed-in in the first year (incl. module degradation)	12,502 kWh/Year
Standby Consumption (Inverter)	12 kWh/Year
CO ₂ Emissions avoided	2,520 kg / year

Energy Flow Graph

Project: The Joint, 1-6 Field Street - Solar Install



All values in kWh
Small deviations in the totals can occur due to rounding
created with PV*SOL

Figure: Energy flow

The Joint, 1-6 Field Street - Solar Install

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Financial Analysis

Overview

System Data

Grid Feed-in in the first year (incl. module degradation)	12,502 kWh/Year
PV Generator Output	13 kWp
Start of Operation of the System	01/03/2023
Assessment Period	25 Years
Interest on Capital	1 %

Economic Parameters

Internal Rate of Return (IRR)	10.84 %
Accrued Cash Flow (Cash Balance)	35,514.31 £
Amortization Period	9.6 Years
Electricity Production Costs	0.0637 £/kWh

Payment Overview

Specific Investment Costs	1,407.27 £/kWp
Investment Costs	18,294.48 £
One-off Payments	0.00 £
Incoming Subsidies	0.00 £
Annual Costs	0.00 £/Year
Other Revenue or Savings	0.00 £/Year

Remuneration and Savings

Total Payment from Utility in First Year	1,892.49 £/Year
Octopus Feed in at the 15p - Building System	
Validity	06/07/2022 - 05/07/2048
Specific feed-in / export Remuneration	0.15 £/kWh
Feed-in / Export Tariff	1892.4889 £/Year
Inflation Rate for Feed-in / Export Tariff	2.80 %/Year

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Cash flow

Cash flow

	Year 1	Year 2	Year 3	Year 4	Year 5
Investments	-£18,294.48	£0.00	£0.00	£0.00	£0.00
Feed-in / Export Tariff	£1,873.75	£1,870.28	£1,870.84	£1,875.06	£1,882.61
Annual Cash Flow	-£16,420.73	£1,870.28	£1,870.84	£1,875.06	£1,882.61
Accrued Cash Flow (Cash Balance)	-£16,420.73	-£14,550.45	-£12,679.60	-£10,804.54	-£8,921.93

Cash flow

	Year 6	Year 7	Year 8	Year 9	Year 10
Investments	£0.00	£0.00	£0.00	£0.00	£0.00
Feed-in / Export Tariff	£1,893.19	£1,906.54	£1,922.43	£1,940.66	£1,961.05
Annual Cash Flow	£1,893.19	£1,906.54	£1,922.43	£1,940.66	£1,961.05
Accrued Cash Flow (Cash Balance)	-£7,028.74	-£5,122.20	-£3,199.77	-£1,259.11	£701.94

Cash flow

	Year 11	Year 12	Year 13	Year 14	Year 15
Investments	£0.00	£0.00	£0.00	£0.00	£0.00
Feed-in / Export Tariff	£1,983.43	£2,007.66	£2,033.63	£2,061.21	£2,090.33
Annual Cash Flow	£1,983.43	£2,007.66	£2,033.63	£2,061.21	£2,090.33
Accrued Cash Flow (Cash Balance)	£2,685.36	£4,693.03	£6,726.65	£8,787.87	£10,878.20

Cash flow

	Year 16	Year 17	Year 18	Year 19	Year 20
Investments	£0.00	£0.00	£0.00	£0.00	£0.00
Feed-in / Export Tariff	£2,120.88	£2,152.80	£2,186.03	£2,220.50	£2,256.18
Annual Cash Flow	£2,120.88	£2,152.80	£2,186.03	£2,220.50	£2,256.18
Accrued Cash Flow (Cash Balance)	£12,999.08	£15,151.88	£17,337.91	£19,558.41	£21,814.60

Cash flow

	Year 21	Year 22	Year 23	Year 24	Year 25
Investments	£0.00	£0.00	£0.00	£0.00	£0.00
Feed-in / Export Tariff	£2,293.02	£2,330.98	£2,370.04	£2,410.17	£2,451.36
Annual Cash Flow	£2,293.02	£2,330.98	£2,370.04	£2,410.17	£2,451.36
Accrued Cash Flow (Cash Balance)	£24,107.61	£26,438.60	£28,808.64	£31,218.81	£33,670.17

Cash flow

	Year 26
Investments	£0.00
Feed-in / Export Tariff	£1,844.14
Annual Cash Flow	£1,844.14
Accrued Cash Flow (Cash Balance)	£35,514.31

Degradation and inflation rates are applied on a monthly basis over the entire observation period. This is done in the first year.

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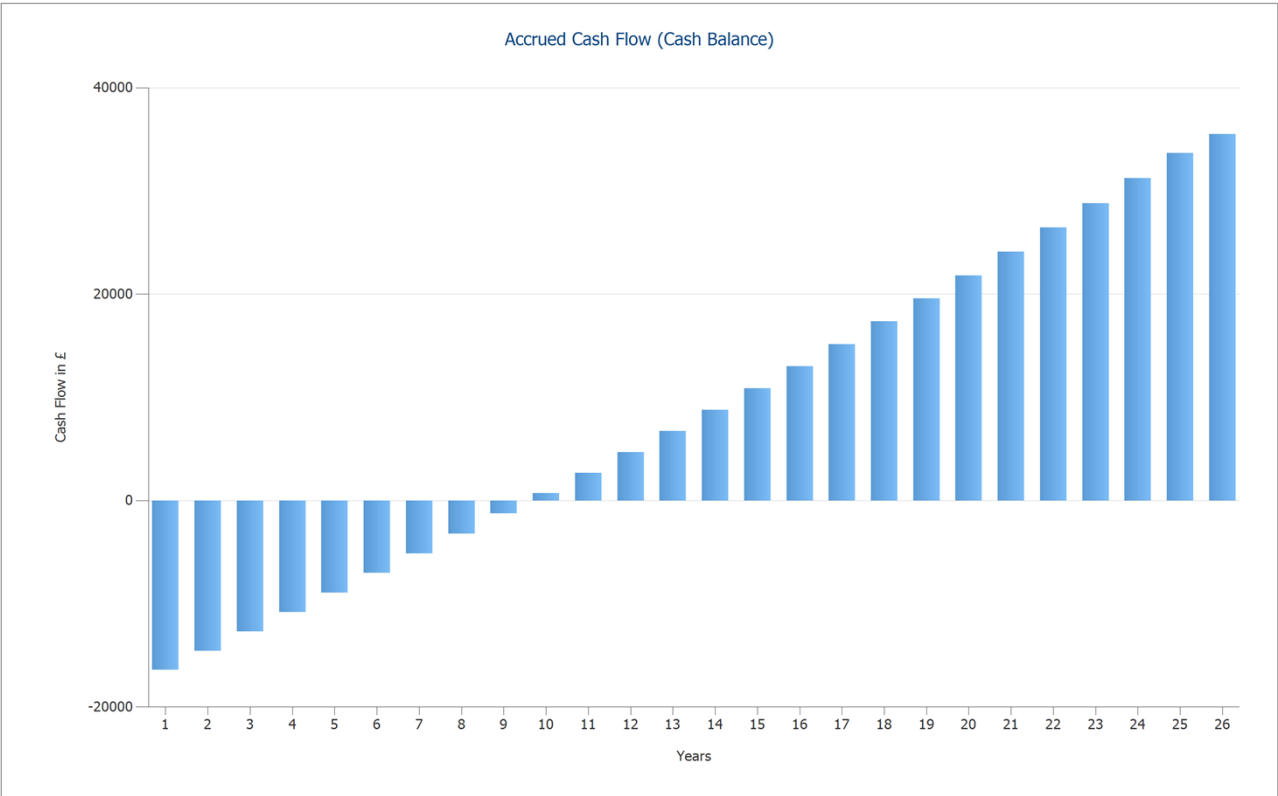
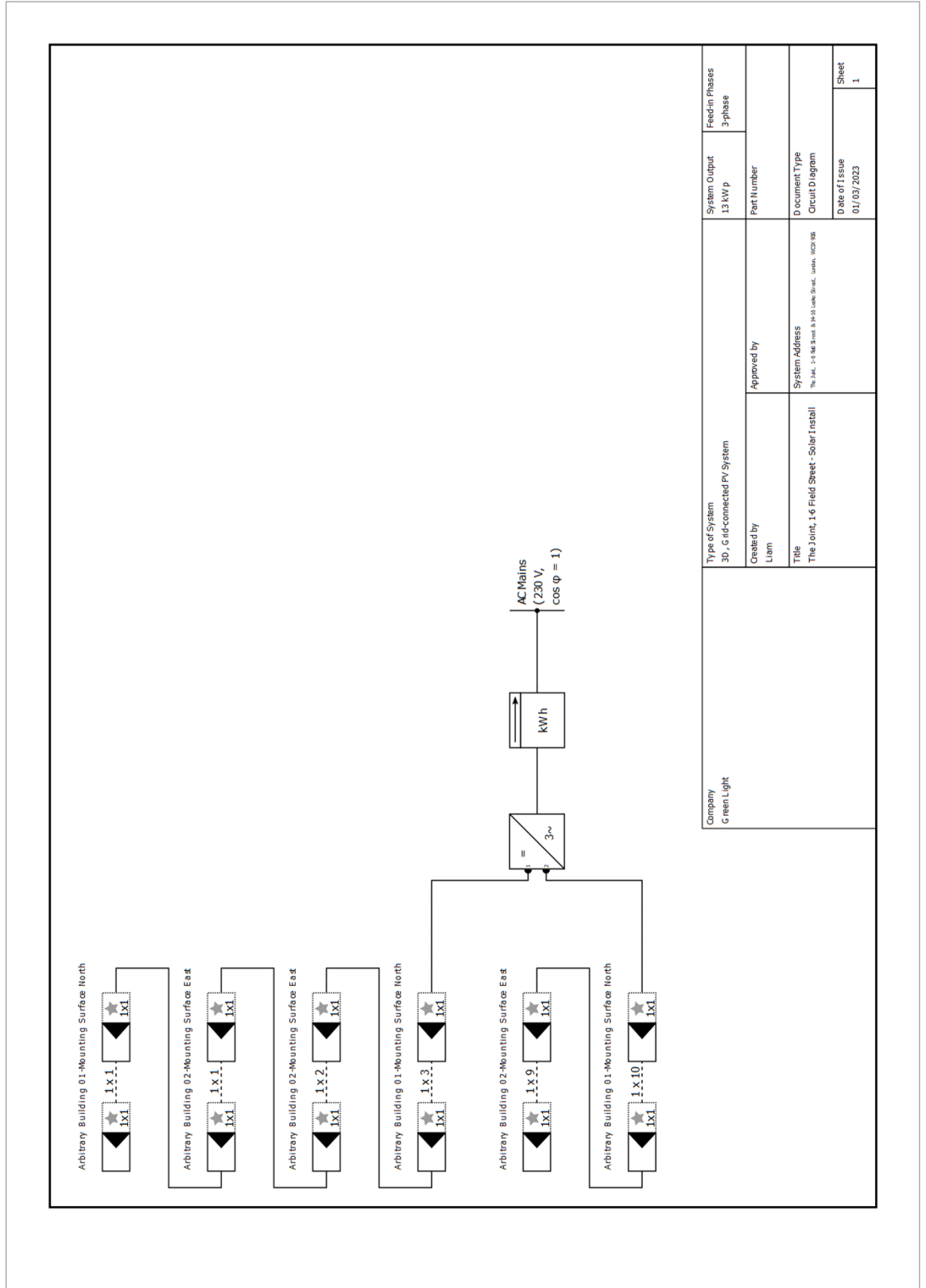


Figure: Accrued Cash Flow (Cash Balance)

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Plans and parts list Circuit Diagram



Company Green Light	Type of System 3D, Grid-connected PV System	System Output 13 kW p	Feed-in Phases 3-phase
Created by Liam	Approved by	Part Number	
Title The Joint, 1-6 Field Street - Solar Install	System Address The Joint, 1-6 Field Street, B 10-11 Lane, Limerick, COC 906	Document Type Circuit Diagram	
		Date of Issue 01/03/2023	Sheet 1

Figure: Circuit Diagram

The Joint, 1-6 Field Street - Solar Install

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Overview plan

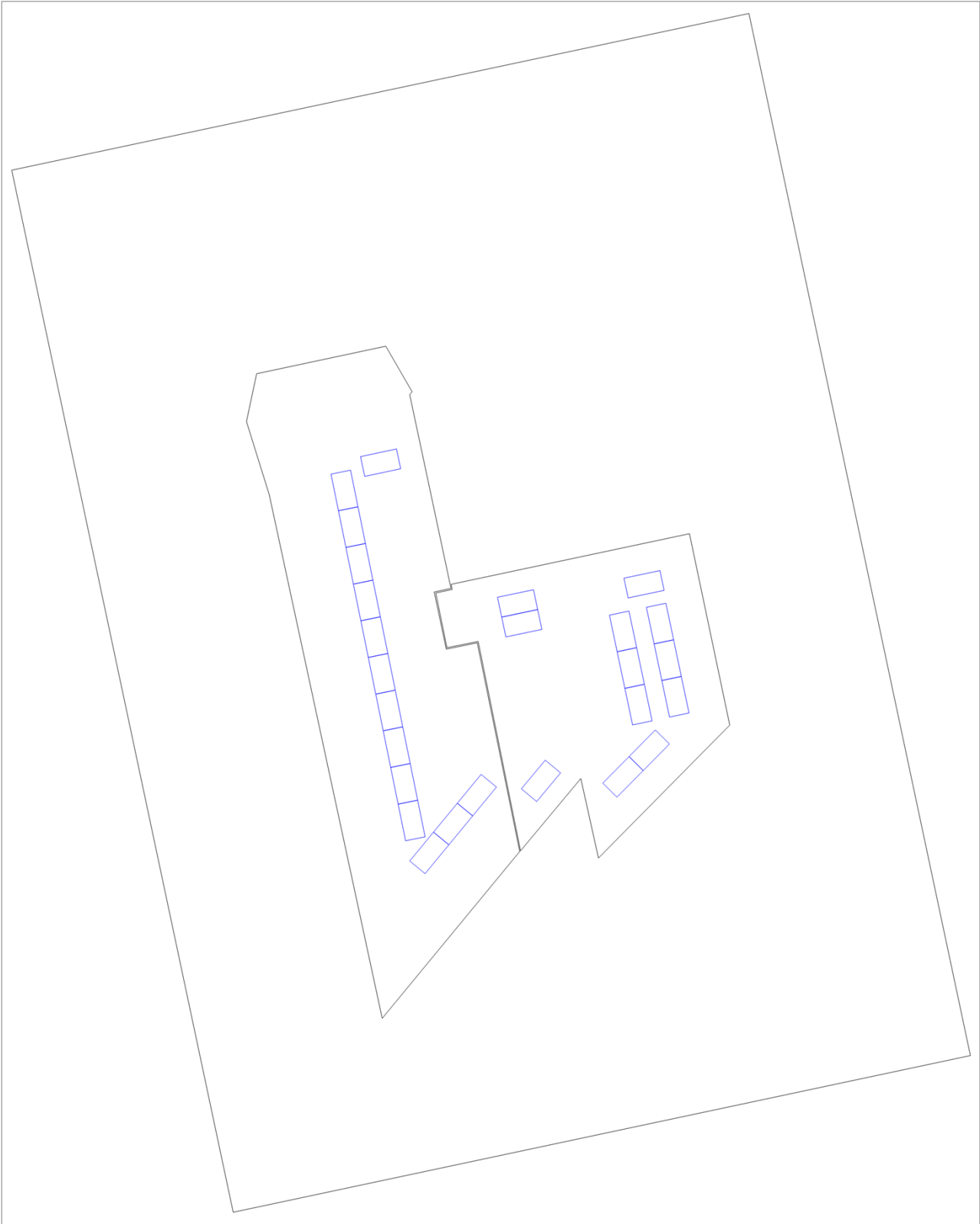


Figure: Overview plan

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Dimensioning Plan

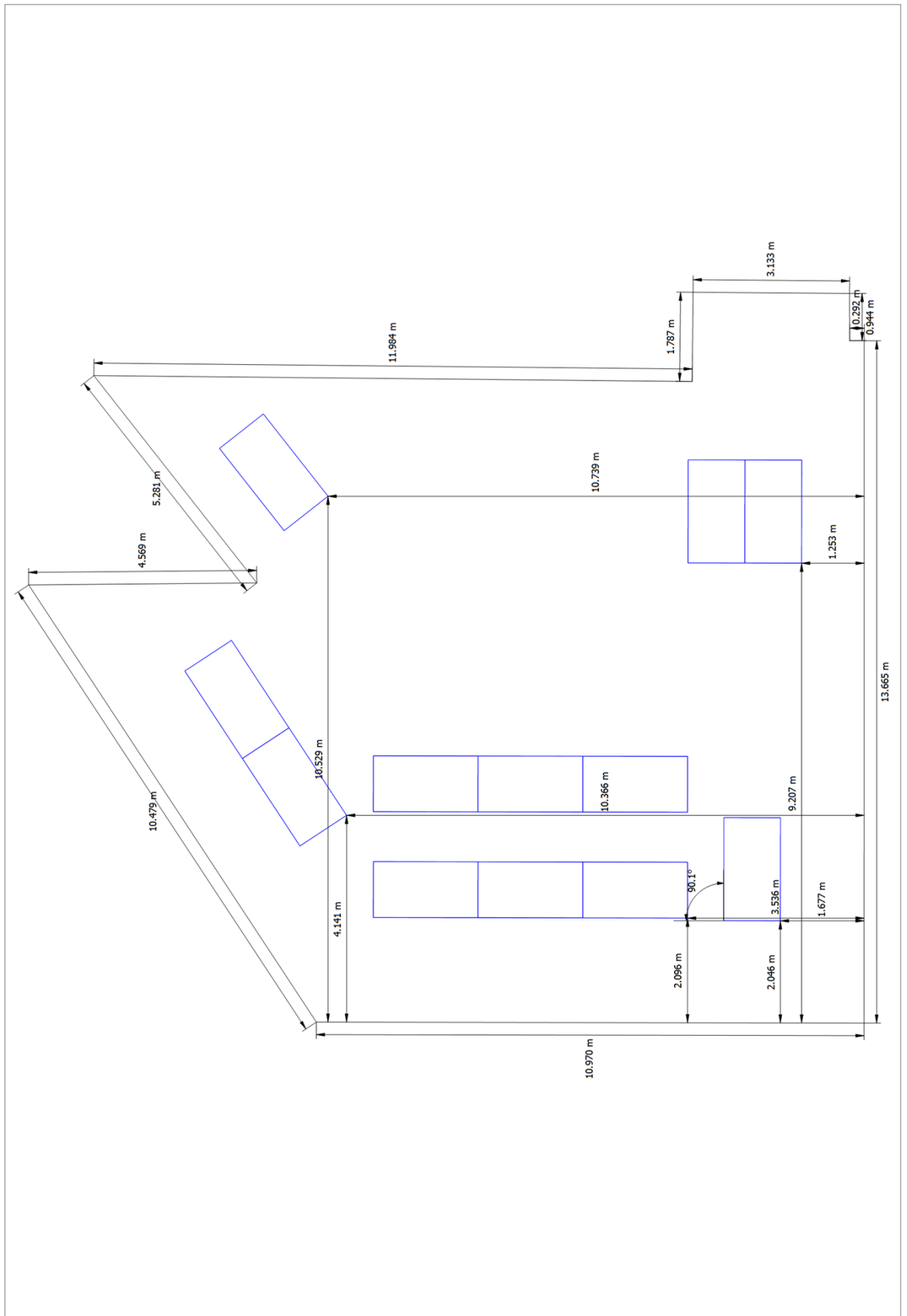


Figure: Arbitrary Building 02-Mounting Surface East

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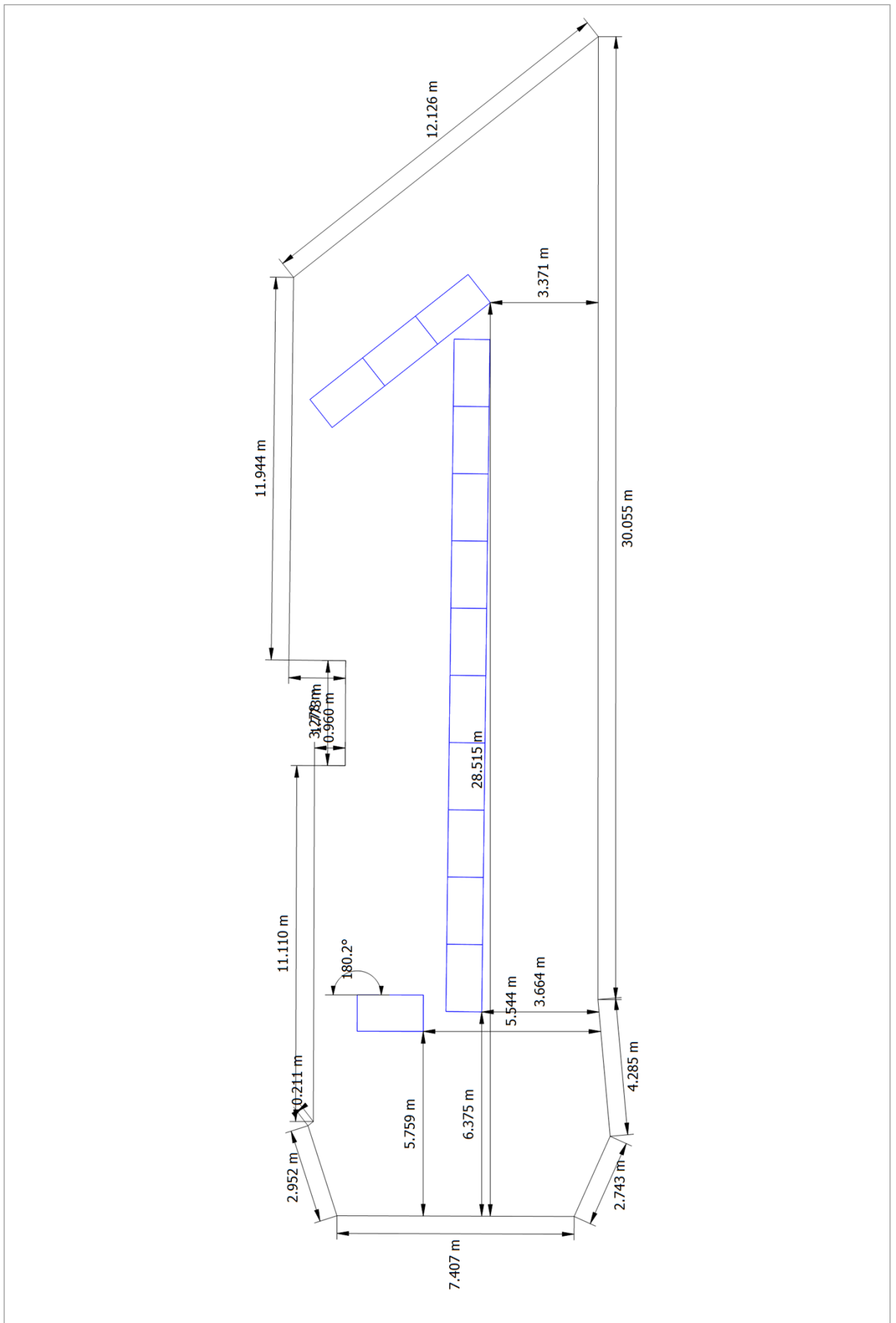


Figure: Arbitrary Building 01-Mounting Surface North

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String Plan

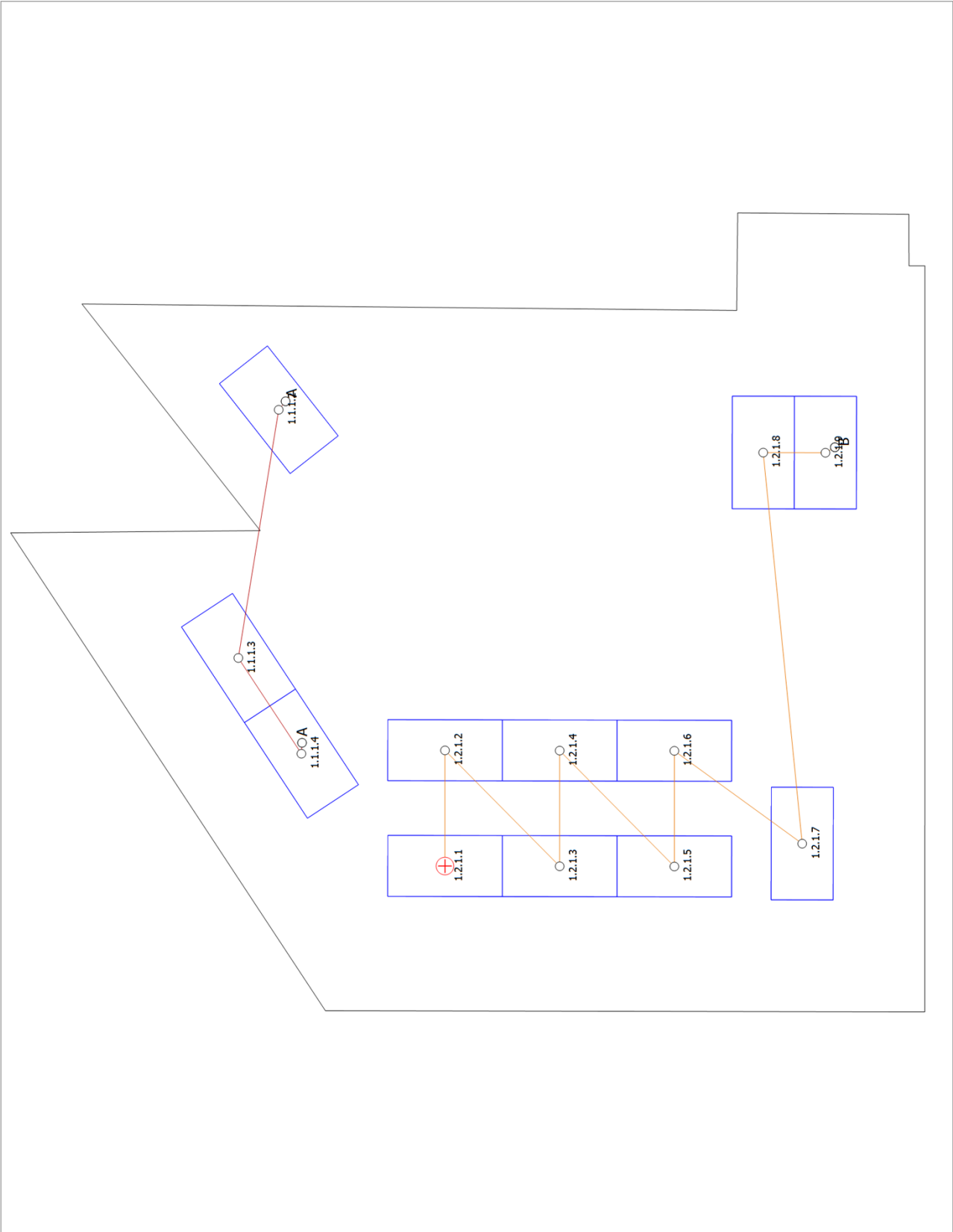


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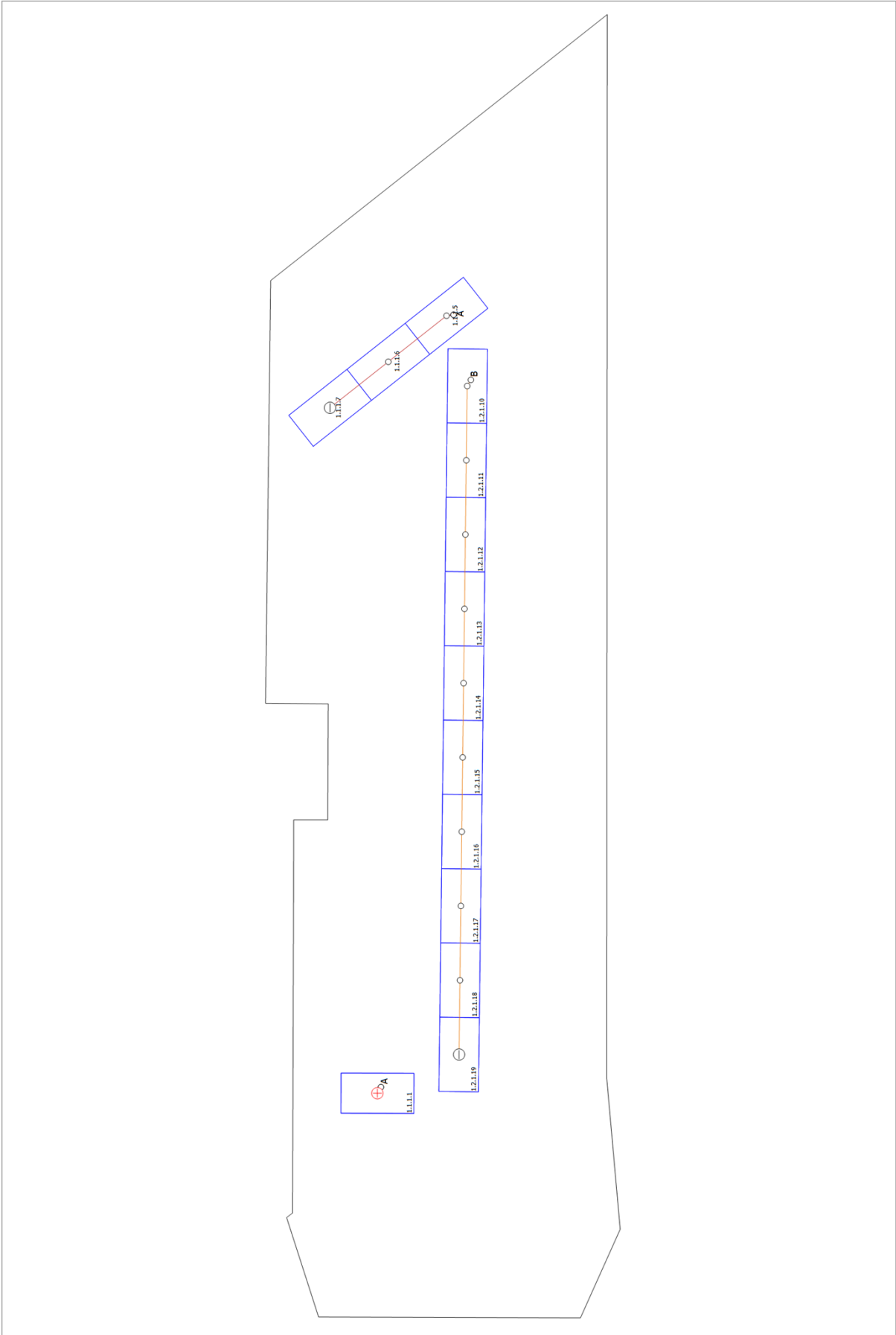


Figure: Arbitrary Building 01-Mounting Surface North

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Parts list

Parts list

#	Type	Item number	Manufacturer	Name	Quantity	Unit
1	PV Module		LONGI Solar	LR5-66 HIH 500 M G2	26	Piece
2	Inverter		Ginlong (Solis)	S5-GR3P10K	1	Piece
3	Power Optimizer		Tigo Energy, Inc.	TS4-A-O 700 W	26	Piece
4	Components			Feed-in Meter	1	Piece