

**Elco Group Ltd**

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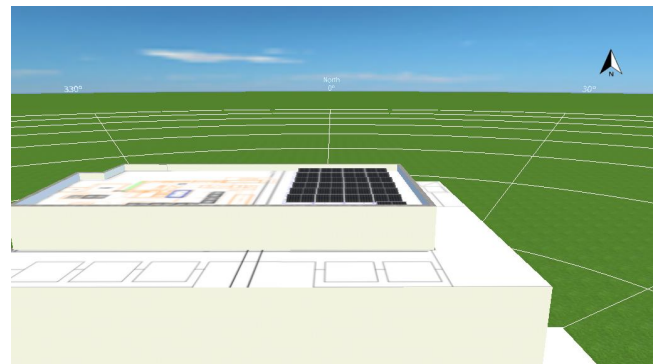
**Project Name:** Greville St. shading

07/06/2022

## Your PV system from Elco Group Ltd

**Address of Installation**

20-23 Greville St  
London EC1N 8SS



## Project Overview

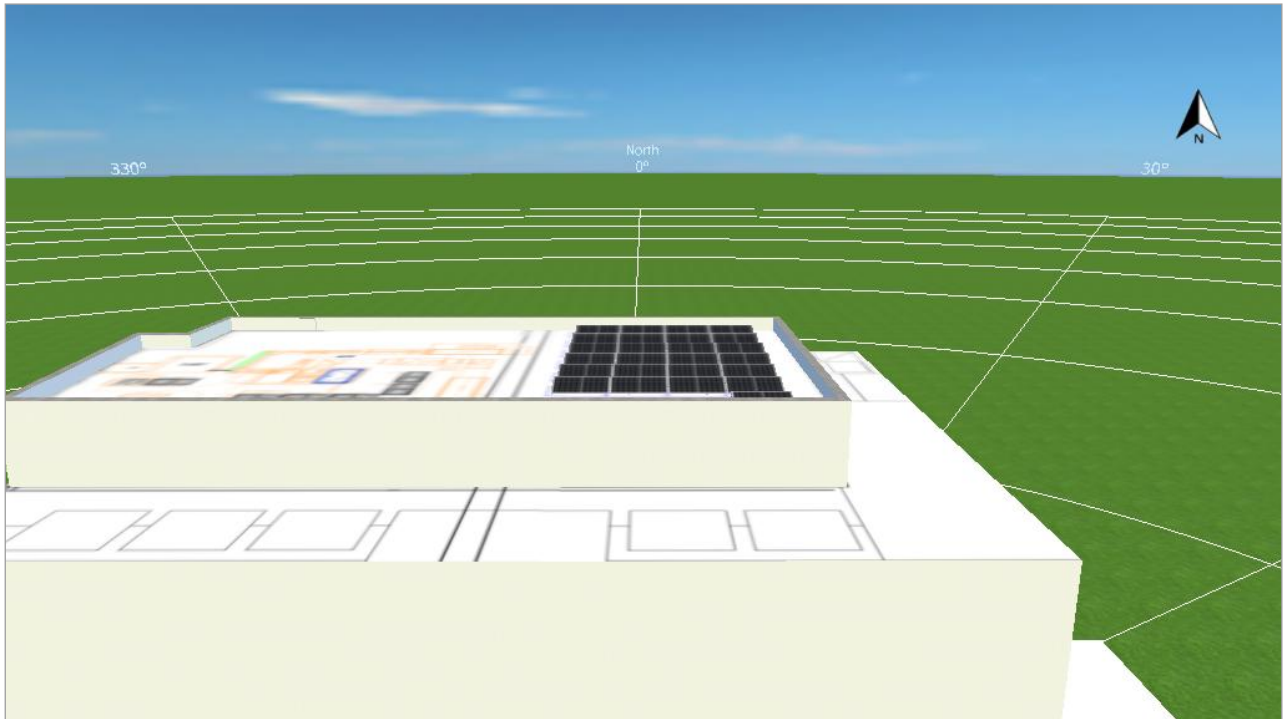


Figure: Overview Image, 3D Design

## PV System

### 3D, Grid-connected PV System

Climate Data	ABERDARON (AUT), GBR (1991 - 2010)
Values source	Meteonorm 7.3
PV Generator Output	9.38 kWp
PV Generator Surface	45.5 m <sup>2</sup>
Number of PV Modules	25
Number of Inverters	1

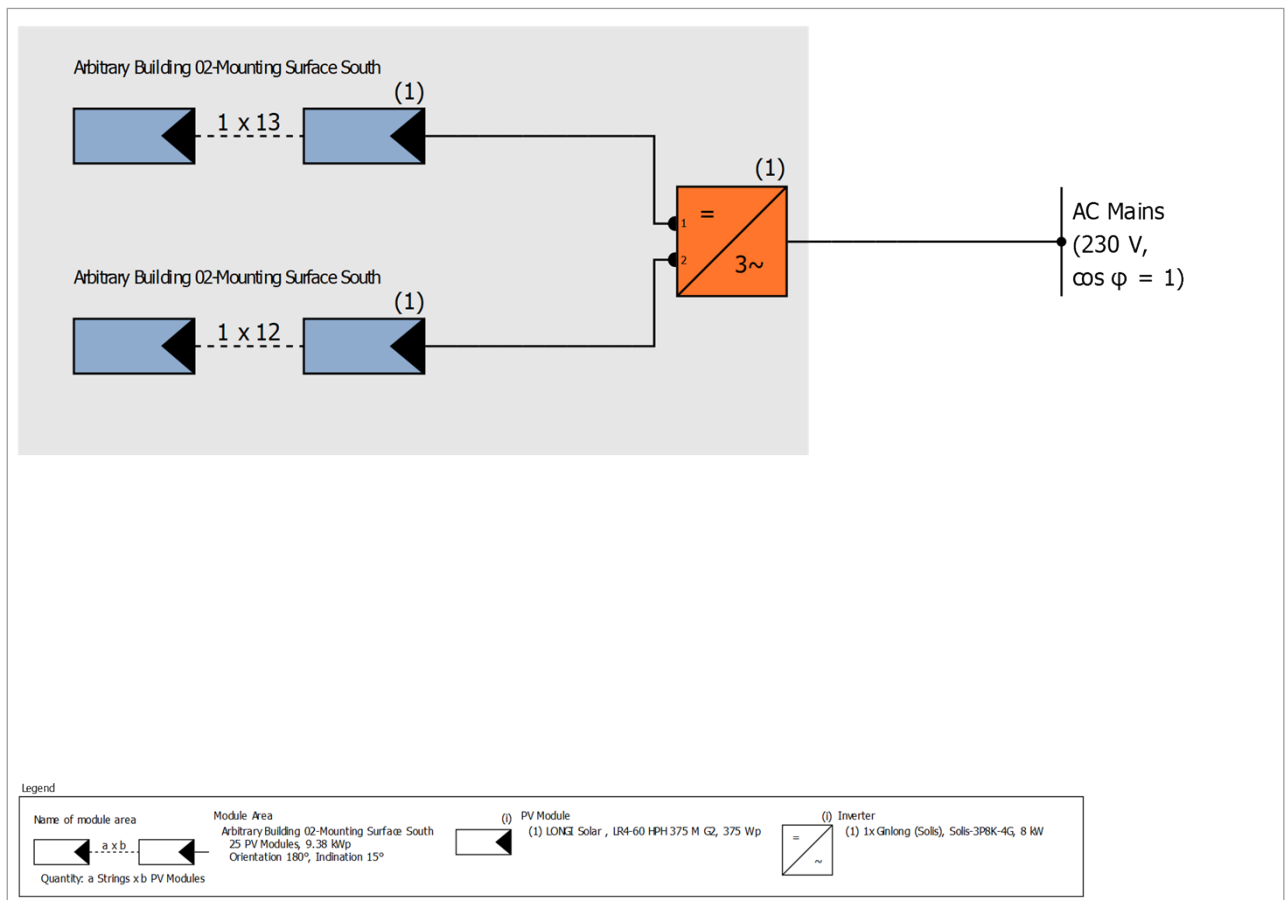


Figure: Schematic diagram

## Production Forecast

### Production Forecast

PV Generator Output	9.38 kWp
Spec. Annual Yield	1,034.84 kWh/kWp
Performance Ratio (PR)	88.93 %
Yield Reduction due to Shading	4.8 %/Year
Grid Feed-in	9,705 kWh/Year
Grid Feed-in in the first year (incl. module degradation)	9,705 kWh/Year
Standby Consumption (Inverter)	4 kWh/Year
CO <sub>2</sub> Emissions avoided	4,560 kg / year

## Financial Analysis

### Your Gain

Total investment costs	0.00 £
Internal Rate of Return (IRR)	267.77 %
Amortization Period	0.0 Years
Electricity Production Costs	0 £/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.

# Set-up of the System

## Overview

### System Data

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

Location	ABERDARON (AUT), GBR (1991 - 2010)
Values source	Meteonorm 7.3
Resolution of the data	1 h
Simulation models used:	
- Diffuse Irradiation onto Horizontal Plane	Hofmann
- Irradiance onto tilted surface	Hay & Davies

## Module Areas

### 1. Module Area - Arbitrary Building 02-Mounting Surface South

#### PV Generator, 1. Module Area - Arbitrary Building 02-Mounting Surface South

Name	Arbitrary Building 02-Mounting Surface South
PV Modules	25 x LR4-60 HPH 375 M G2 (v3)
Manufacturer	LONGI Solar
Inclination	15 °
Orientation	South 180 °
Installation Type	Mounted - Roof
PV Generator Surface	45.5 m <sup>2</sup>

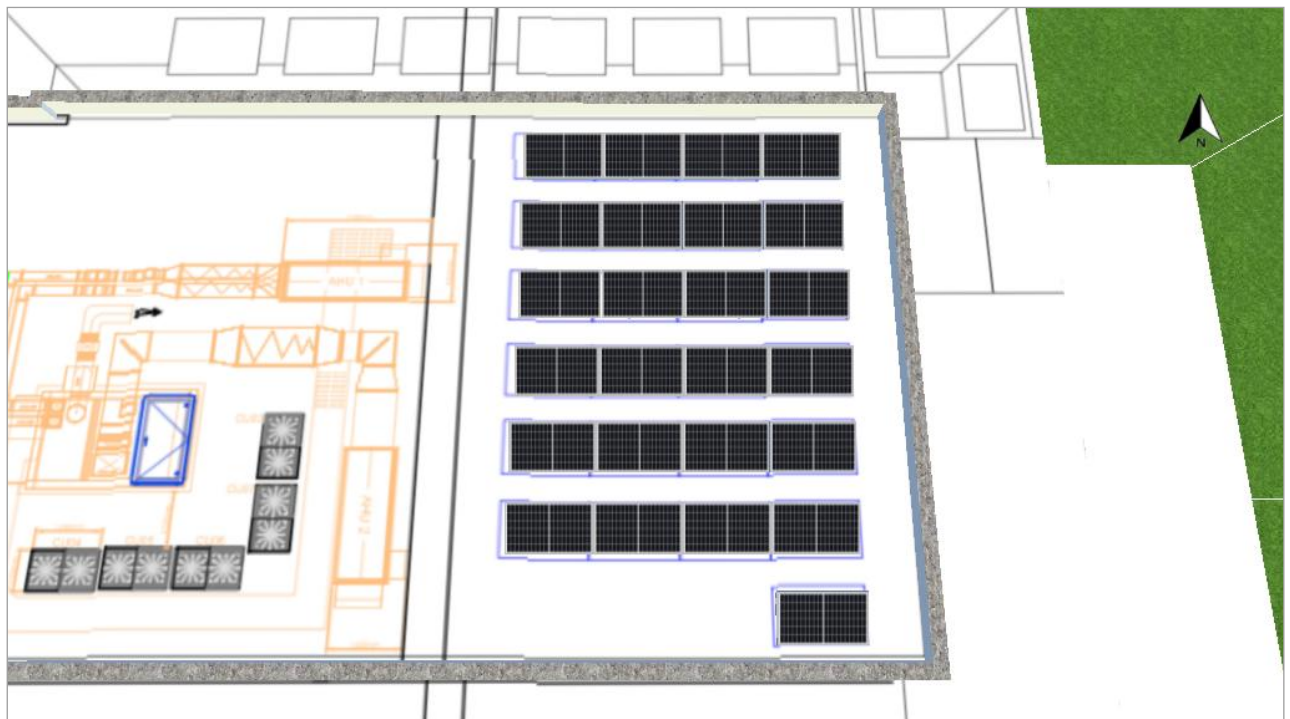


Figure: 1. Module Area - Arbitrary Building 02-Mounting Surface South

## Horizon Line, 3D Design

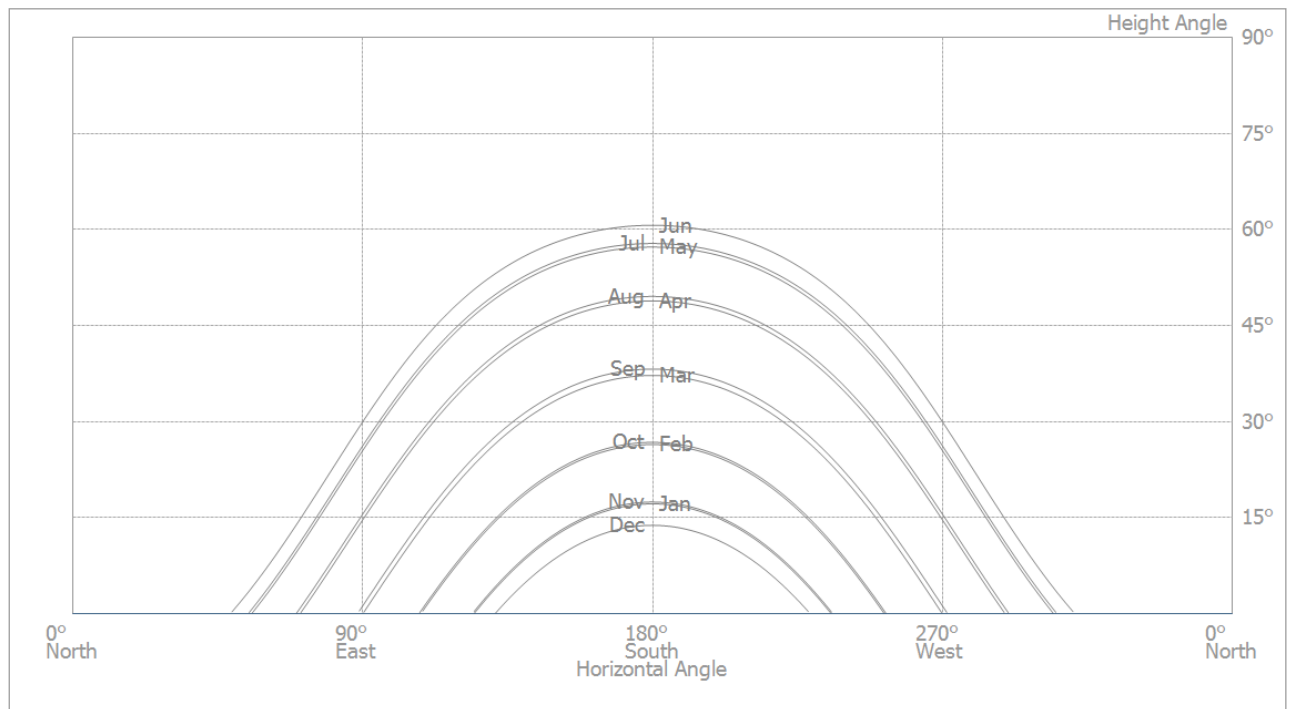


Figure: Horizon (3D Design)

## Inverter configuration

### Configuration 1

Module Area	Arbitrary Building 02-Mounting Surface South
Inverter 1	
Model	Solis-3P8K-4G (v1)
Manufacturer	Ginlong (Solis)
Quantity	1
Sizing Factor	117.2 %
Configuration	MPP 1: 1 x 13
	MPP 2: 1 x 12

## AC Mains

### AC Mains

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

# Simulation Results

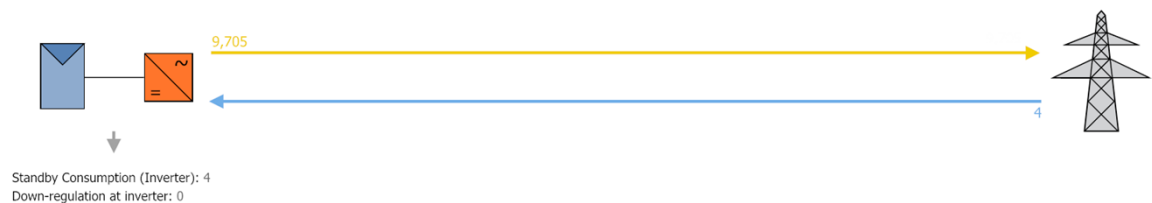
## Results Total System

### PV System

PV Generator Output	9.38 kWp
Spec. Annual Yield	1,034.84 kWh/kWp
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CO <sub>2</sub> Emissions avoided	4,560 kg / year

### Energy Flow Graph

Project: Greville St. shading



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

Figure: Energy flow

# Plans and parts list

## Circuit Diagram

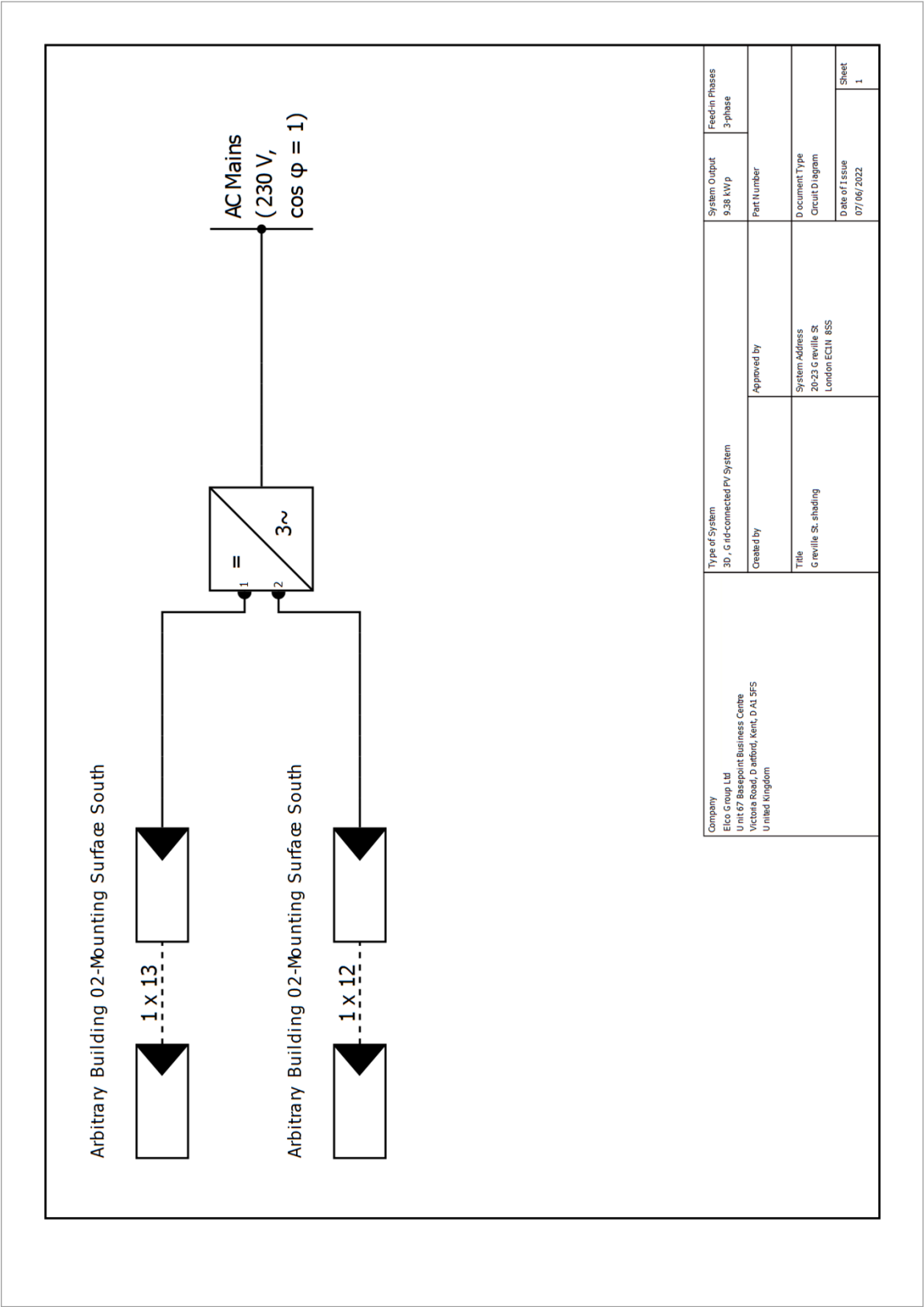


Figure: Circuit Diagram

## Overview plan

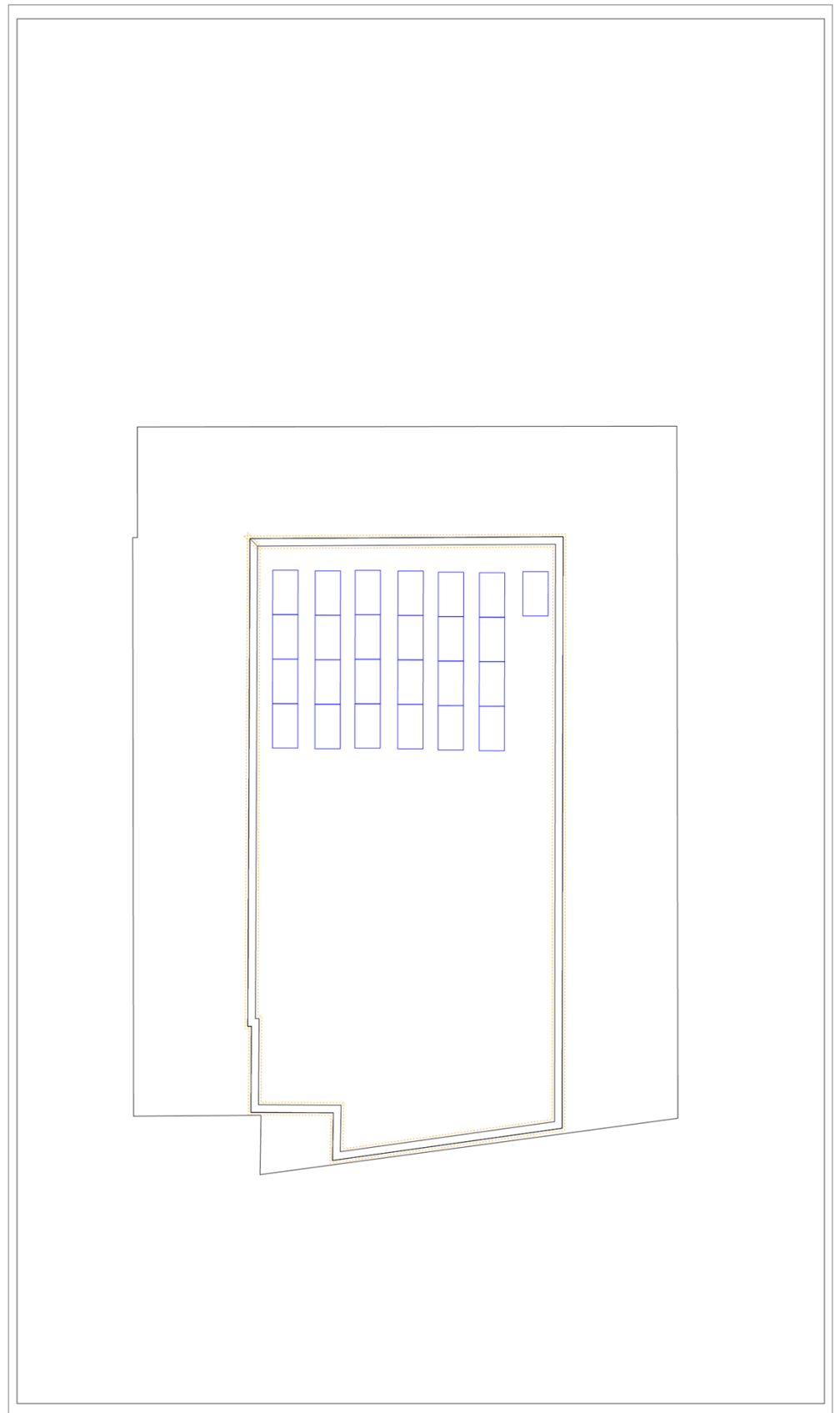


Figure: Overview plan



# Shading Frequency

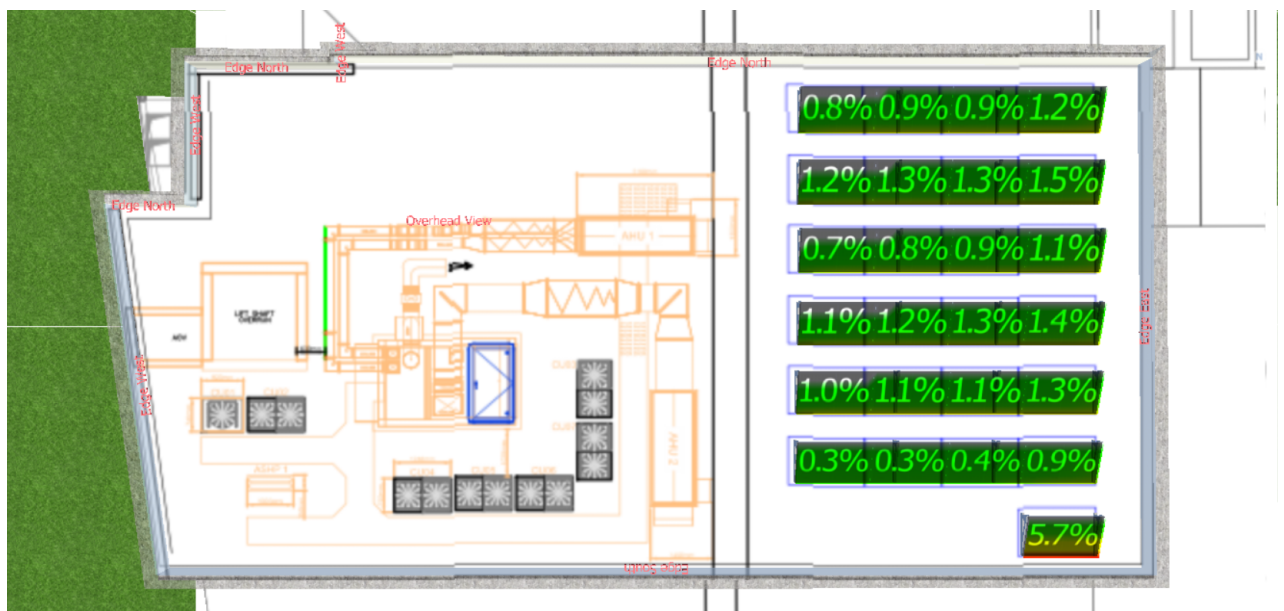


Figure: Arbitrary Building 02-Mounting Surface South

## String Plan

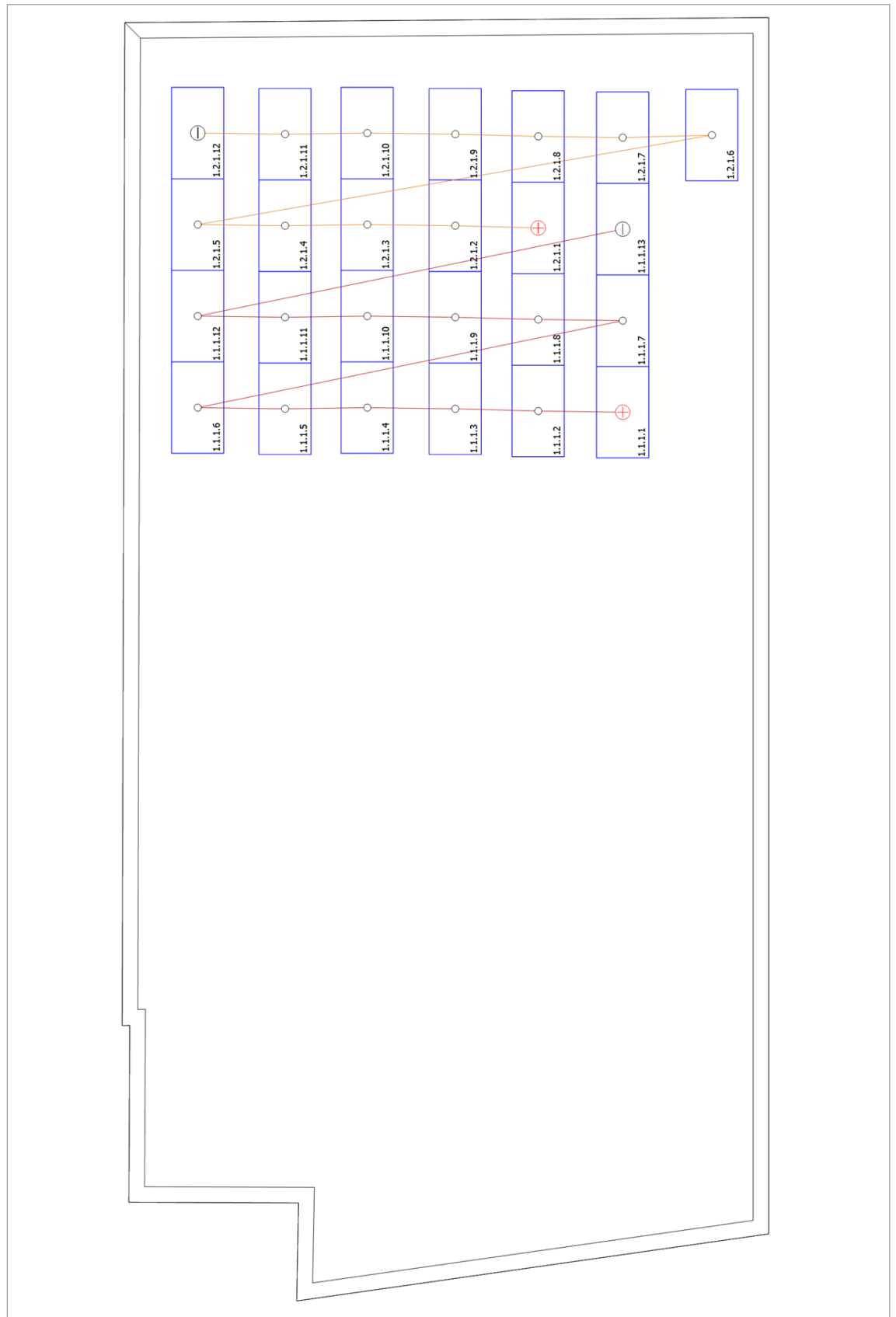


Figure: Arbitrary Building 02-Mounting Surface South

## Parts list

### Parts list

#	Type	Item number	Manufacturer	Name	Quantity	Unit
1	PV Module		LONGI Solar	LR4-60 HPH 375 M G2	25	Piece
2	Inverter		Ginlong (Solis)	Solis-3P8K-4G	1	Piece