

Eden Sustainable Ltd

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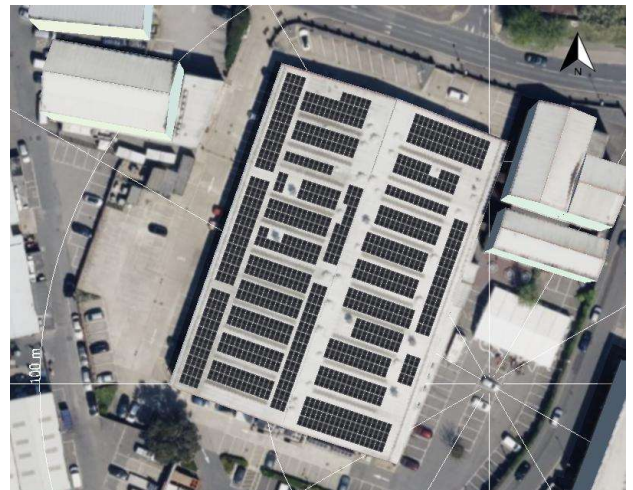
Project Name: Reliance Worldwide Company

30/11/2022

Your PV system from Eden Sustainable Ltd

Address of Installation

west drayton
UB7 8JL



Project Overview

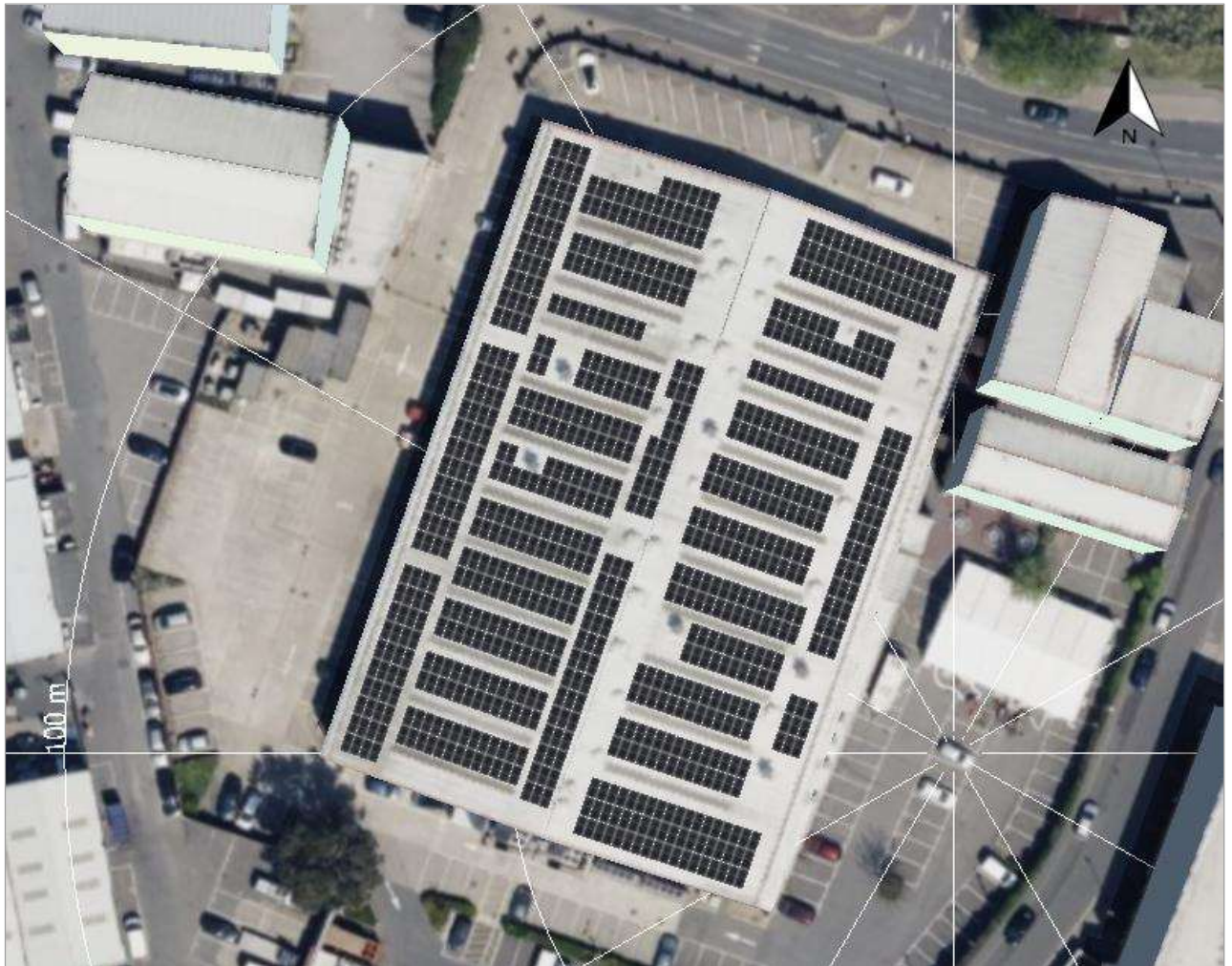


Figure: Overview Image, 3D Design

PV System

3D, Grid-connected PV System with Electrical Appliances

Climate Data	Uxbridge, GBR (1996 - 2015)
Values source	Meteonorm 8.1(i)
PV Generator Output	375.36 kWp
PV Generator Surface	1,819.9 m ²
Number of PV Modules	816
Number of Inverters	4

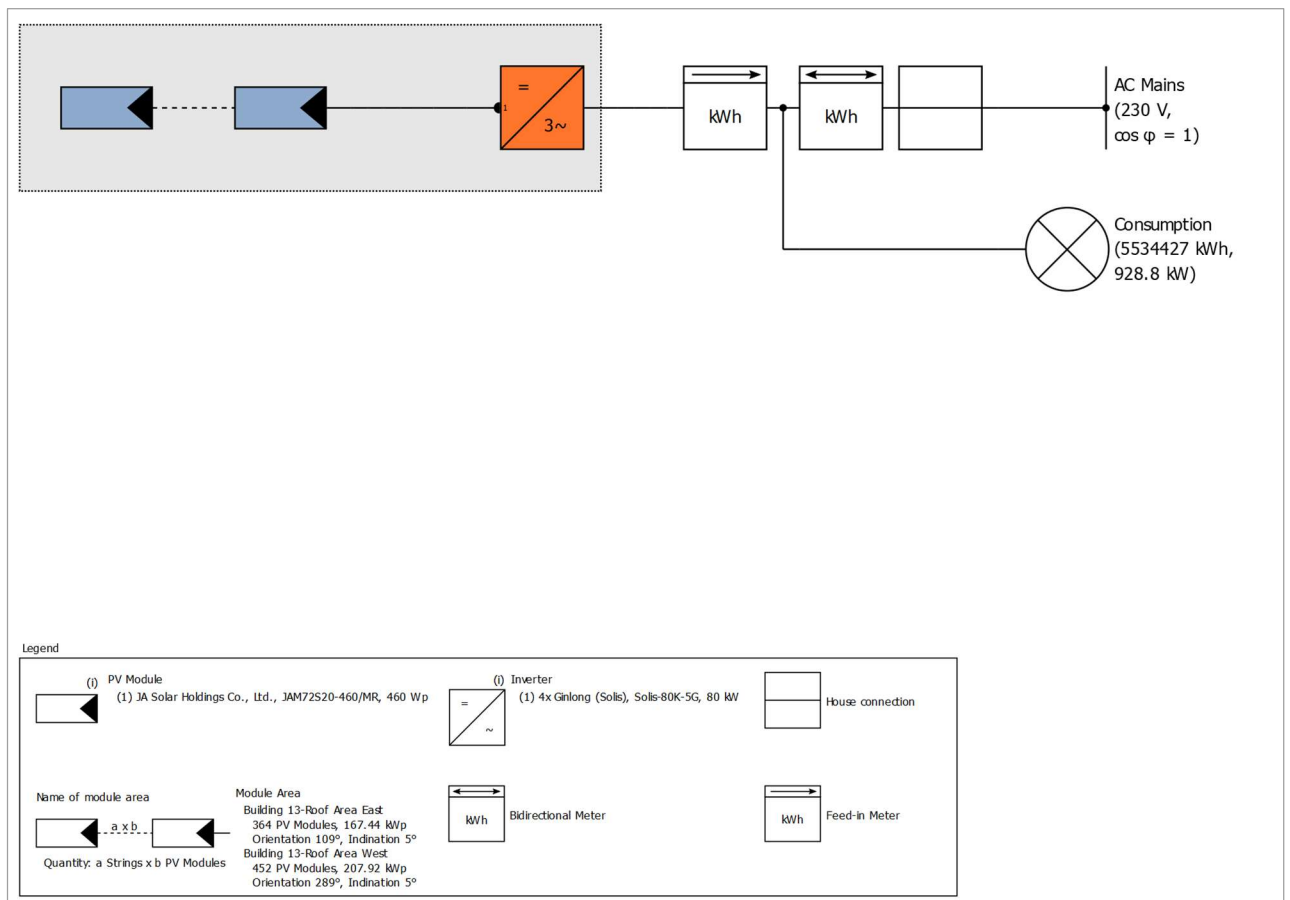


Figure: Schematic diagram

Production Forecast

Production Forecast

PV Generator Output	375.36 kWp
Spec. Annual Yield	868.54 kWh/kWp
Performance Ratio (PR)	86.18 %
Yield Reduction due to Shading	0.1 %/Year
PV Generator Energy (AC grid)	326,064 kWh/Year
Own Consumption	325,979 kWh/Year
Down-regulation at Feed-in Point	0 kWh/Year
Grid Feed-in	86 kWh/Year
Own Power Consumption	100.0 %
CO ₂ Emissions avoided	63,247 kg / year
Level of Self-sufficiency	5.9 %

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 with Electrical Appliances
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Climate Data

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

Consumption

Total Consumption	5534427 kWh
RWC MPAN 2000051719295 YE 31-10-2022 CSV	1917116 kWh
RWC MPAN 2000055105934 YE 31-10-2022 CSV	2493093 kWh
RWC MPAN 2000027285129 YE 31-10-2022 CSV	1124218 kWh
Load Peak	928.8 kW

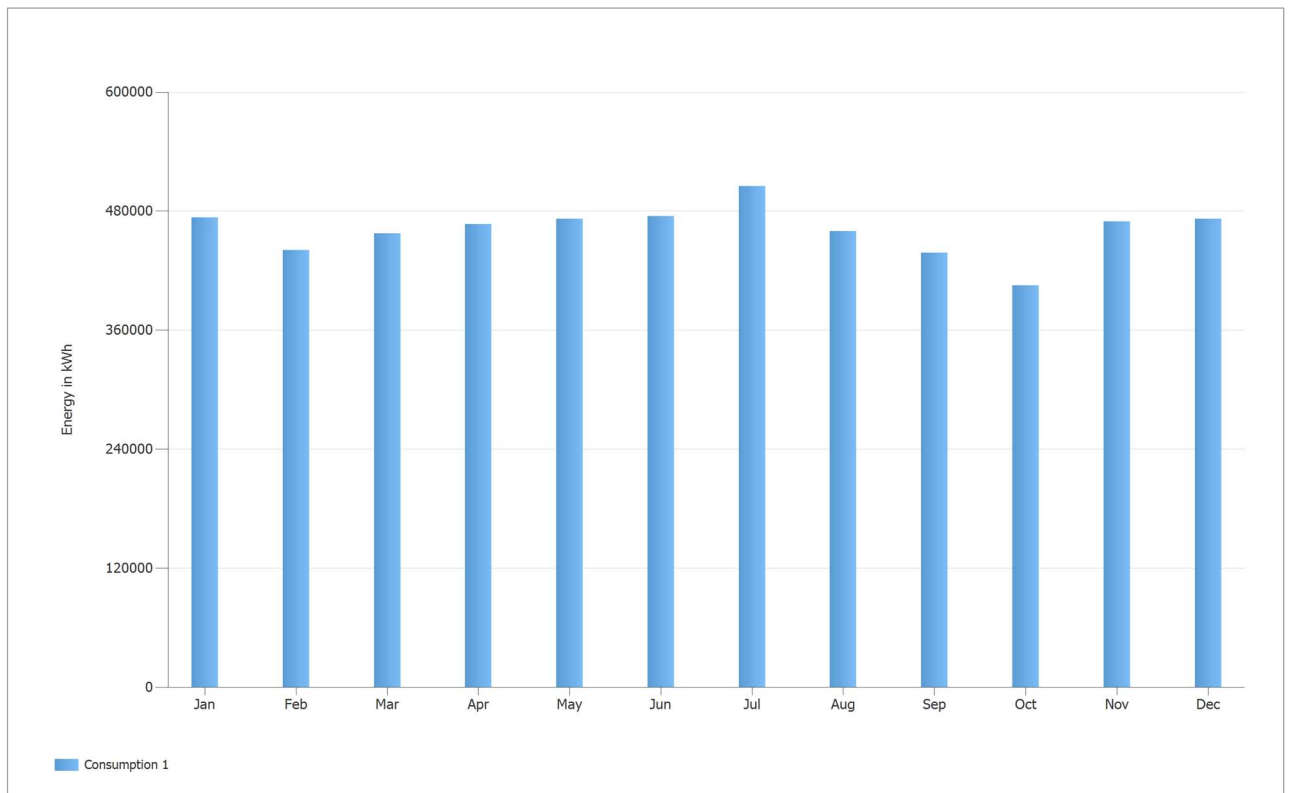


Figure: Consumption

Module Areas

1. Module Area - Building 13-Roof Area East

PV Generator, 1. Module Area - Building 13-Roof Area East

Name	Building 13-Roof Area East
PV Modules	364 x JAM72S20-460/MR (v5)
Manufacturer	JA Solar Holdings Co., Ltd.
Inclination	5 °
Orientation	East 109 °
Installation Type	Roof parallel
PV Generator Surface	811.8 m ²



Figure: 1. Module Area - Building 13-Roof Area East

2. Module Area - Building 13-Roof Area West

PV Generator, 2. Module Area - Building 13-Roof Area West

Name	Building 13-Roof Area West
PV Modules	452 x JAM72S20-460/MR (v5)
Manufacturer	JA Solar Holdings Co., Ltd.
Inclination	5 °
Orientation	West 289 °
Installation Type	Roof parallel
PV Generator Surface	1,008.1 m ²

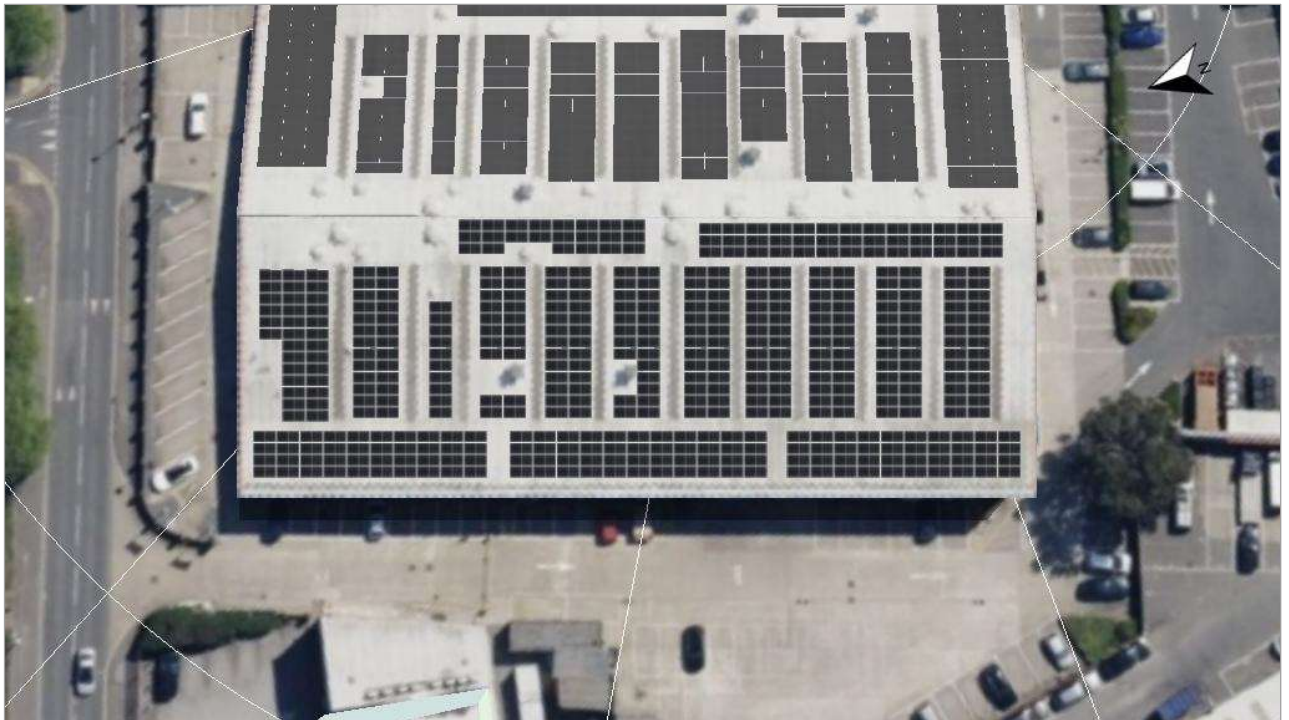


Figure: 2. Module Area - Building 13-Roof Area West

Horizon Line, 3D Design

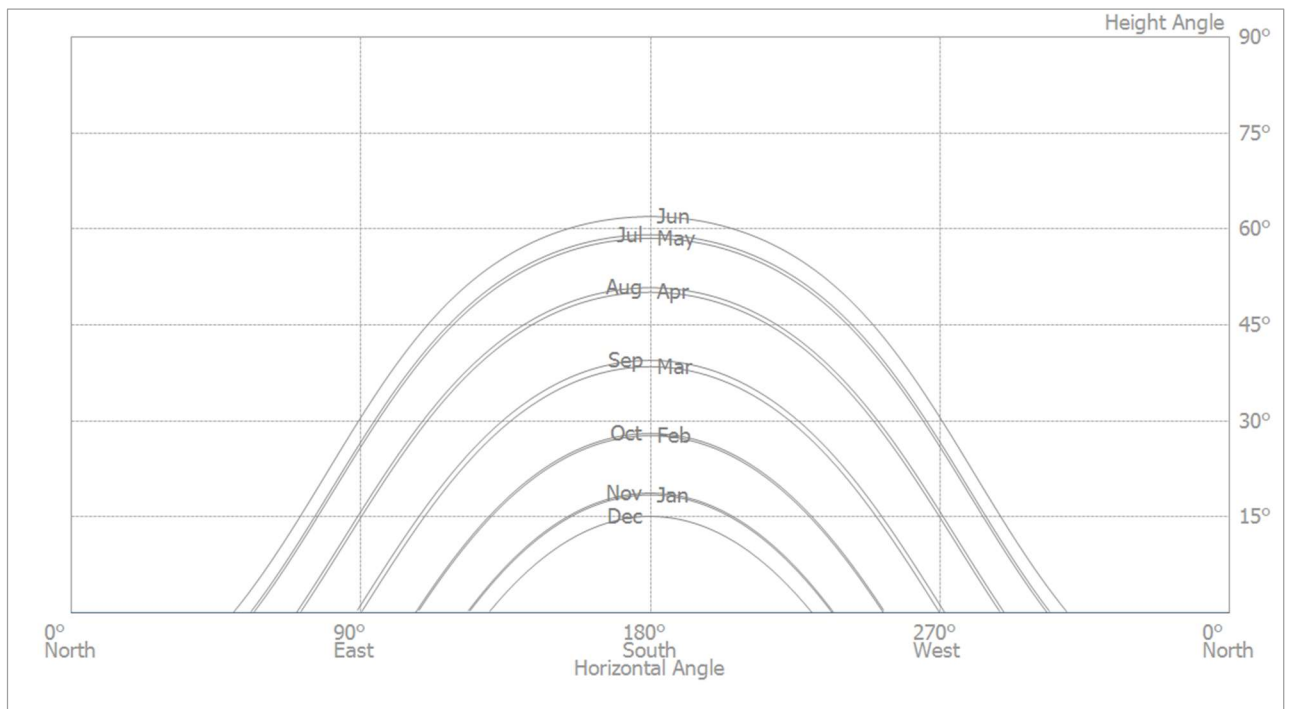


Figure: Horizon (3D Design)

Inverter configuration

Configuration 1

Module Areas	Building 13-Roof Area East + Building 13-Roof Area West
Inverter 1	
Model	Solis-80K-5G (v4)
Manufacturer	Ginlong (Solis)
Quantity	4
Sizing Factor	117.3 %
Configuration	MPP 1: 2 x 14
	MPP 2: 2 x 12
	MPP 3: 2 x 12
	MPP 4: 1 x 15
	MPP 5: 2 x 13
	MPP 6: 2 x 12
	MPP 7: 2 x 12
	MPP 8: 2 x 12
	MPP 9: 1 x 15

AC Mains

AC Mains

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

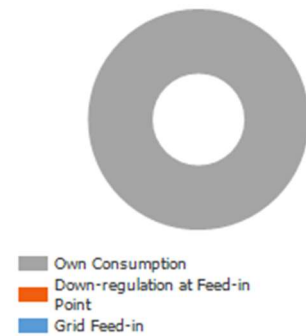
Simulation Results

Results Total System

PV System

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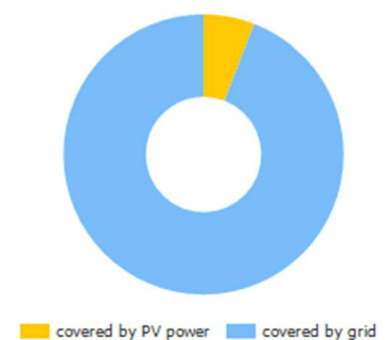
PV Generator Energy (AC grid)



Appliances

Appliances	5,534,427 kWh/Year
Standby Consumption (Inverter)	51 kWh/Year
Total Consumption	5,534,478 kWh/Year
covered by PV power	325,979 kWh/Year
covered by grid	5,208,499 kWh/Year
Solar Fraction	5.9 %

Total Consumption

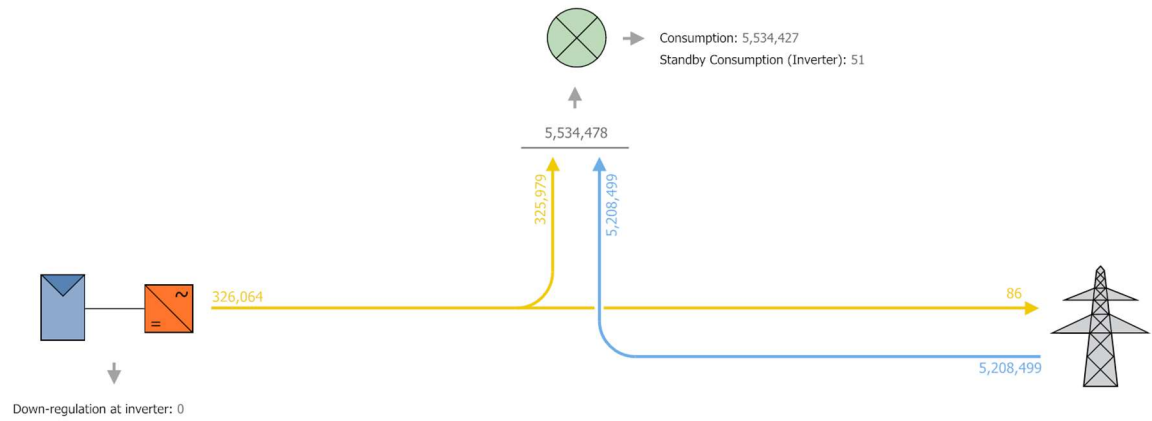


Level of Self-sufficiency

Total Consumption	5,534,478 kWh/Year
covered by grid	5,208,499 kWh/Year
Level of Self-sufficiency	5.9 %

Energy Flow Graph

Project: Reliance Worldwide Company



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

Figure: Energy flow

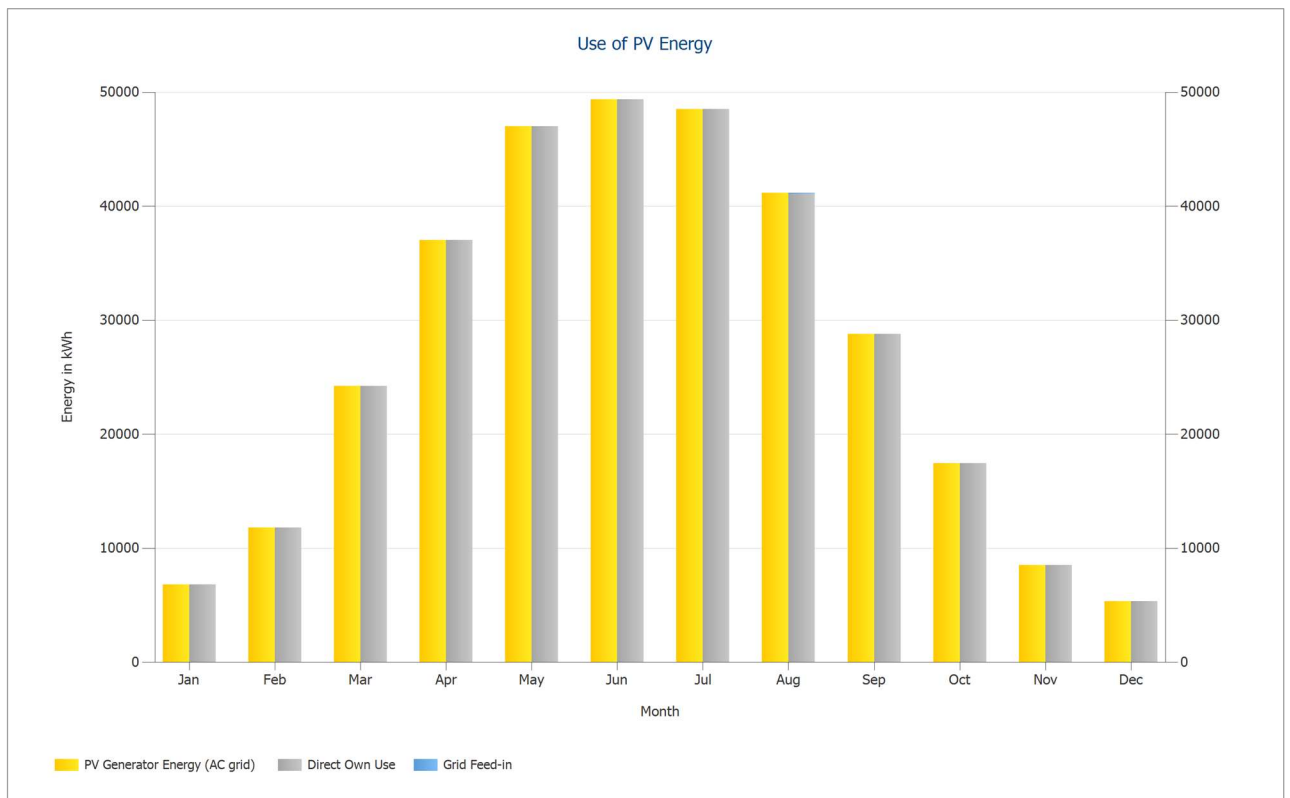


Figure: Use of PV Energy

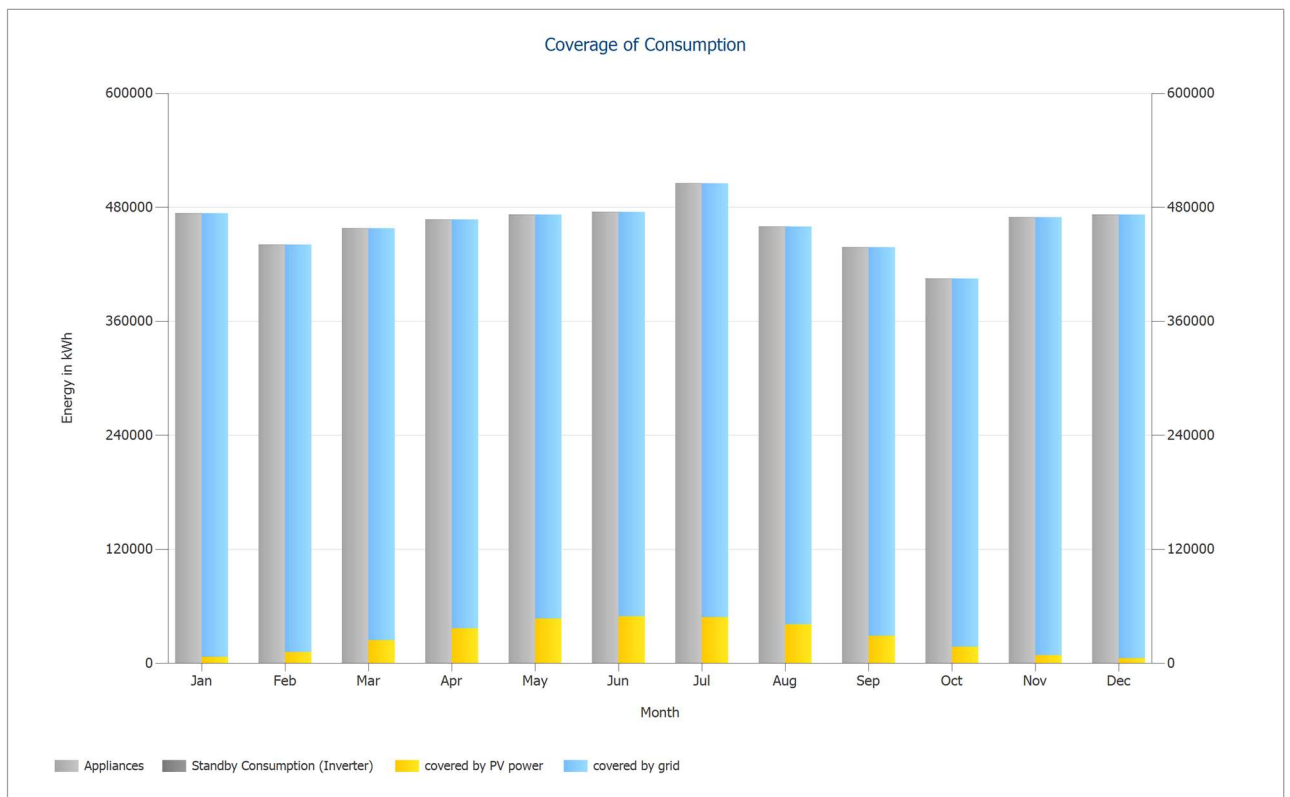


Figure: Coverage of Consumption

Plans and parts list

Circuit Diagram

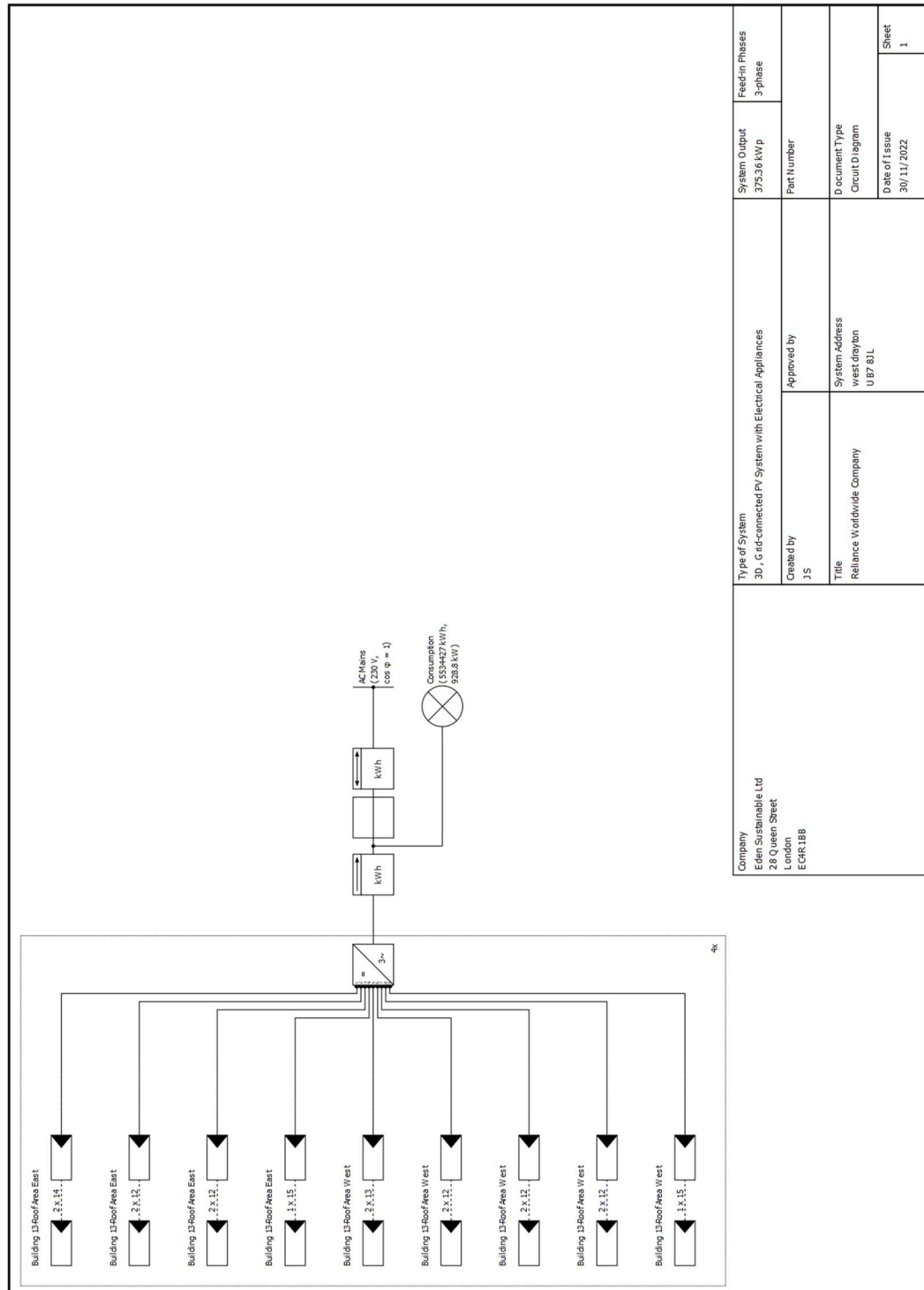


Figure: Circuit Diagram

Overview plan

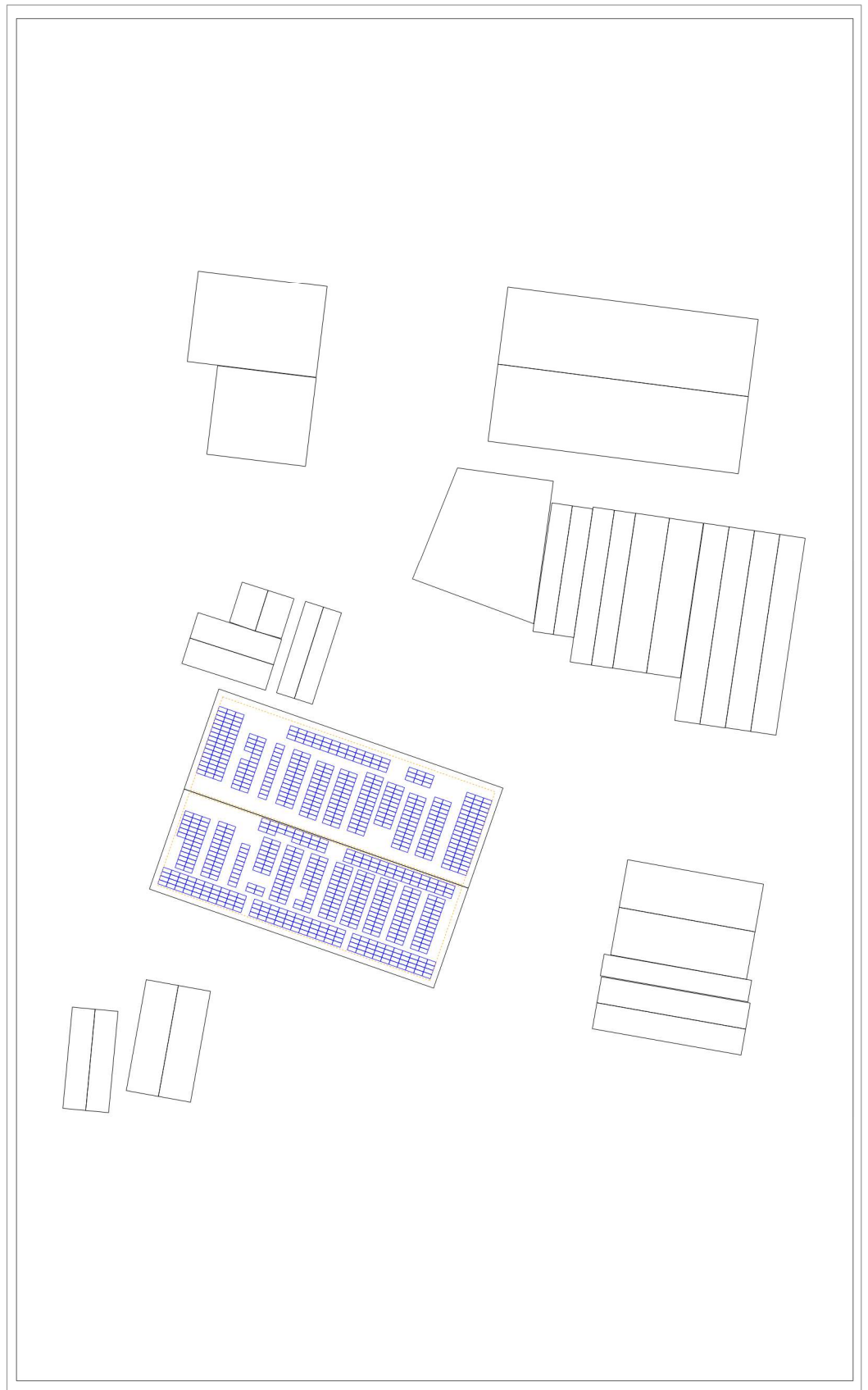


Figure: Overview plan

Dimensioning Plan

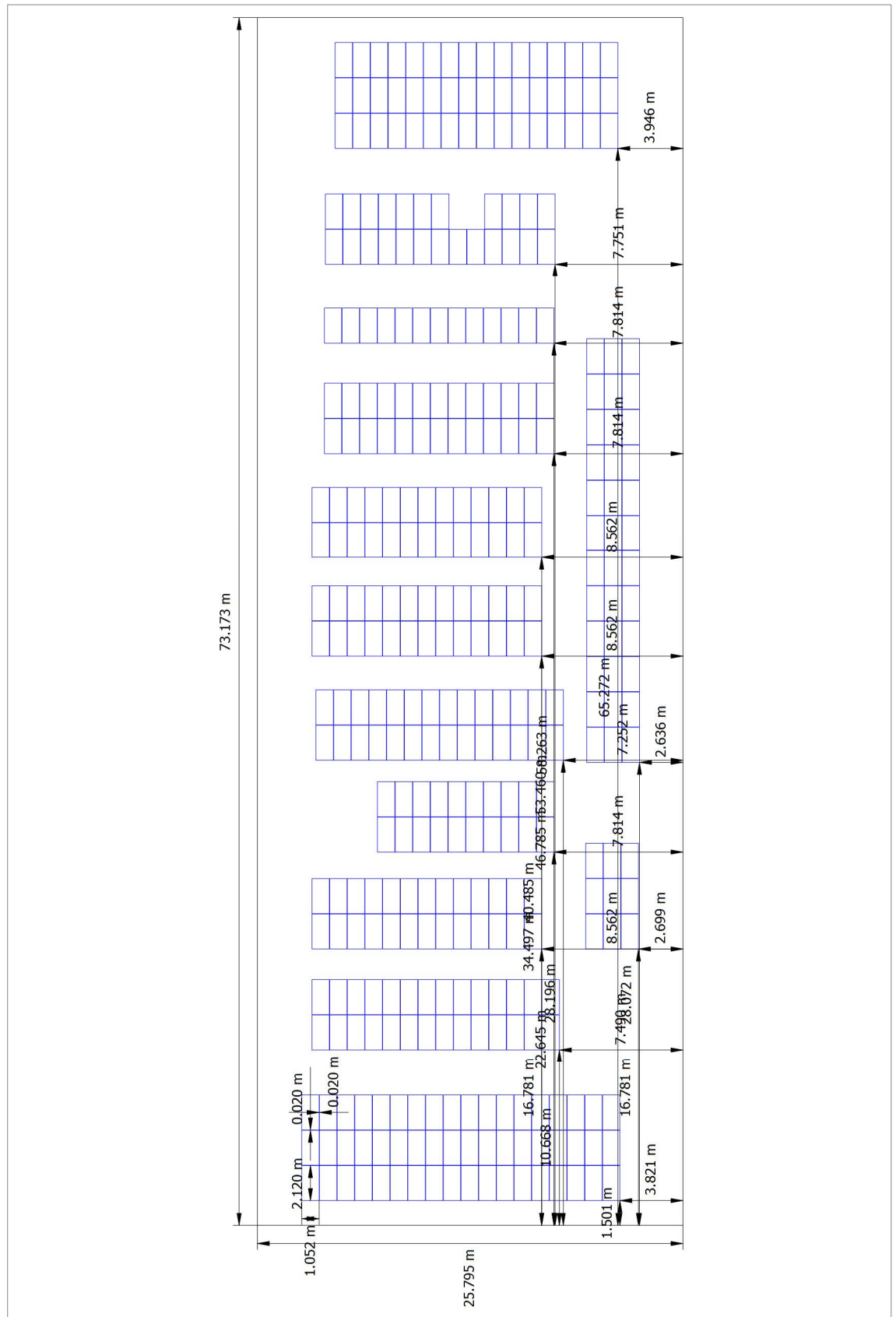


Figure: Building 13-Roof Area East

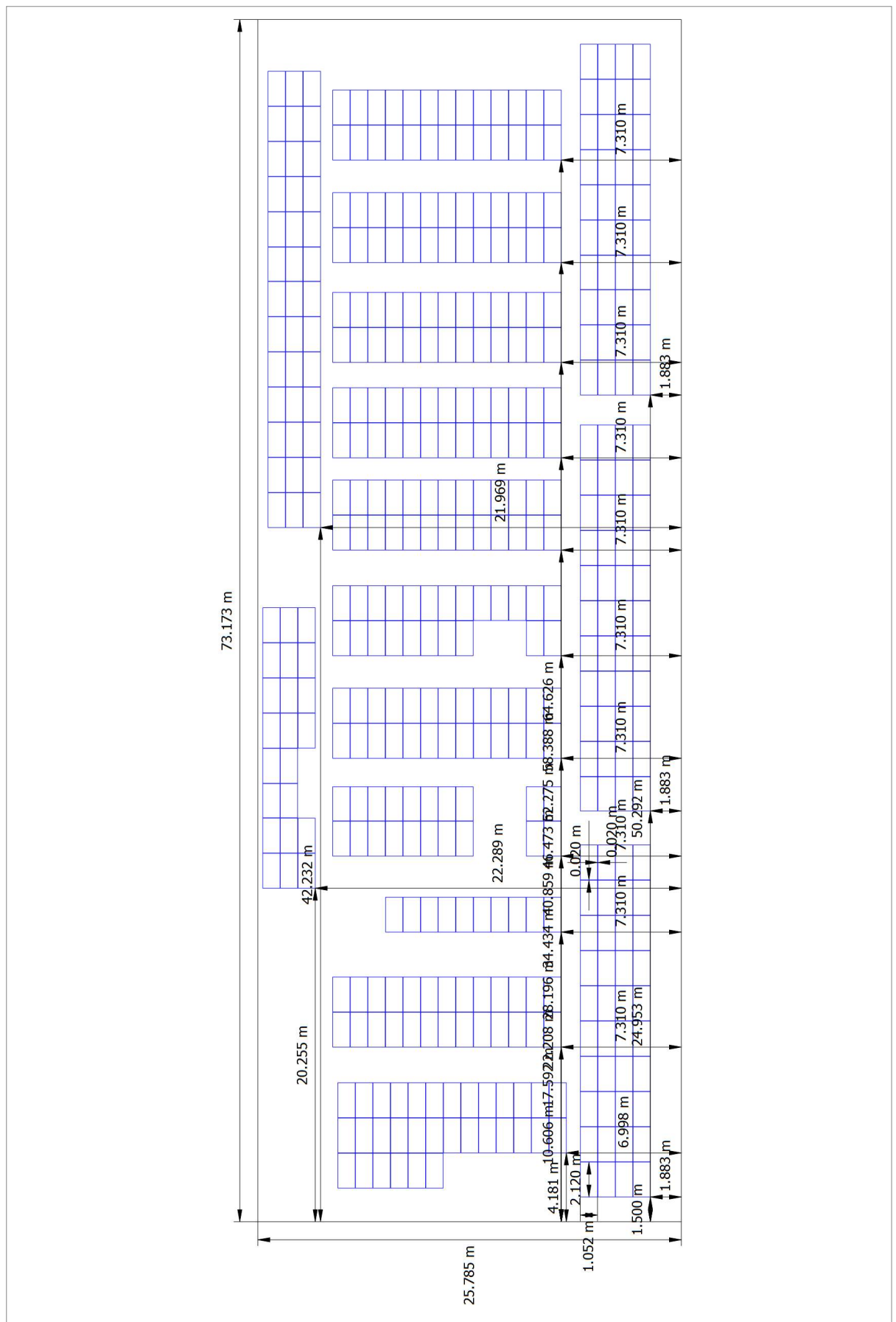


Figure: Building 13-Roof Area West

String Plan

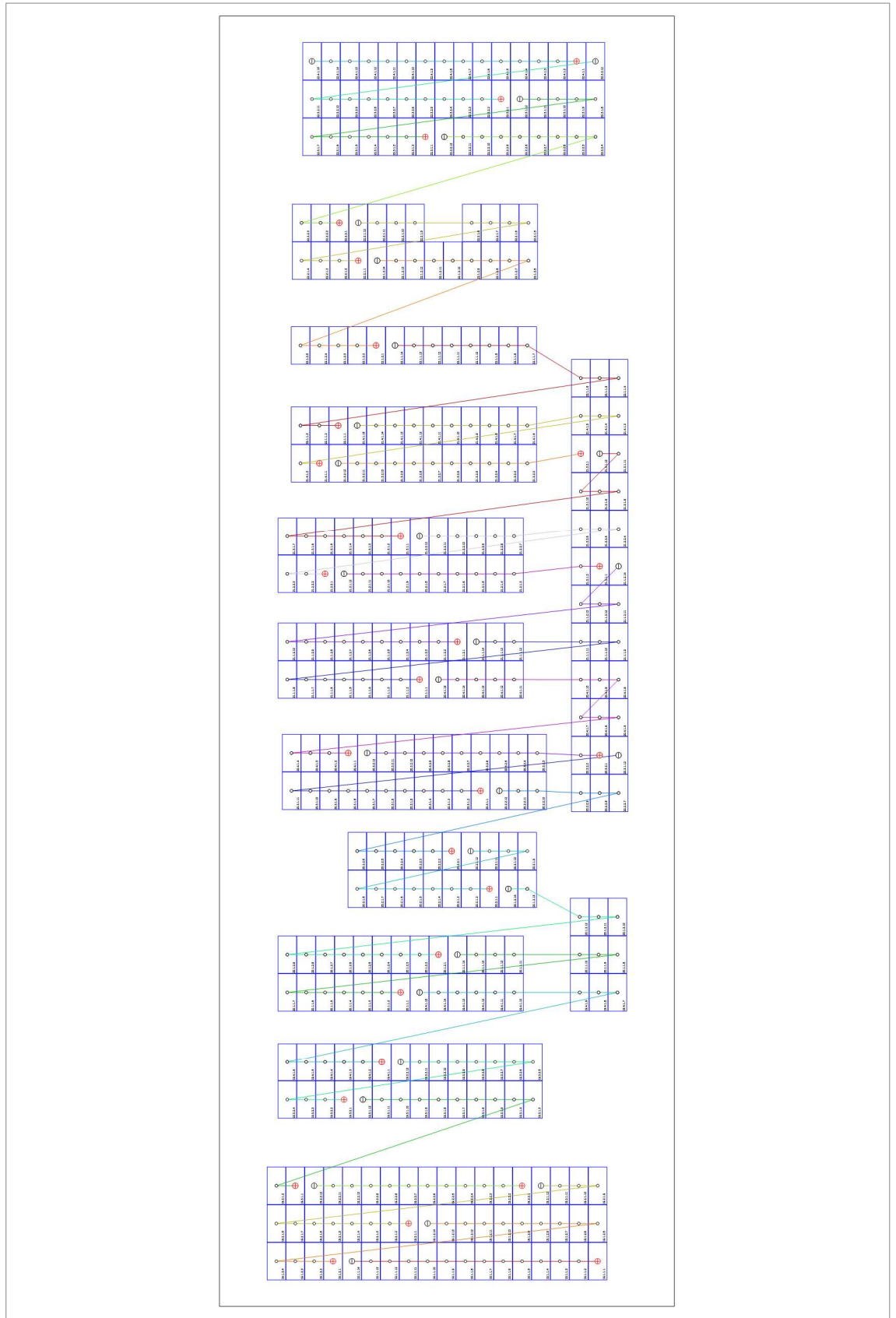


Figure: Building 13-Roof Area East

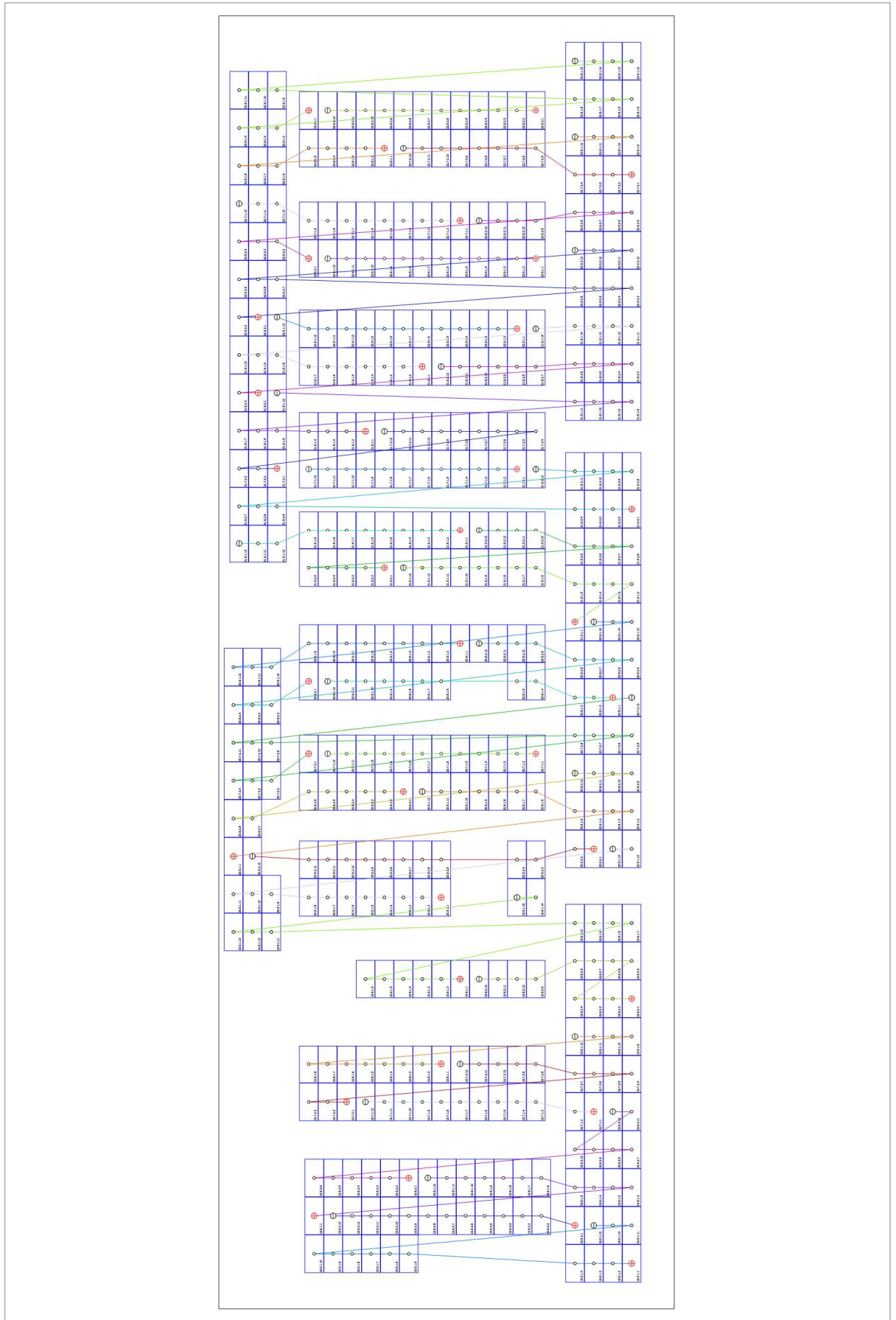


Figure: Building 13-Roof Area West

Parts list

Parts list

#	Type	Item number	Manufacturer	Name	Quantity	Unit
1	PV Module		JA Solar Holdings Co., Ltd.	JAM72S20-460/MR	816	Piece
2	Inverter		Ginlong (Solis)	Solis-80K-5G	4	Piece
3	Components			Feed-in Meter	1	Piece
4	Components			House connection	1	Piece
5	Components			Bidirectional Meter	1	Piece

Screenshots, 3D Design Environment



Figure: Screenshot02