

Eden Sustainable Ltd

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London
EC4R 1BB

Contact person:

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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	287.5 kWp
PV Generator Surface	1,393.9 m ²
Number of PV Modules	625
Number of Inverters	6

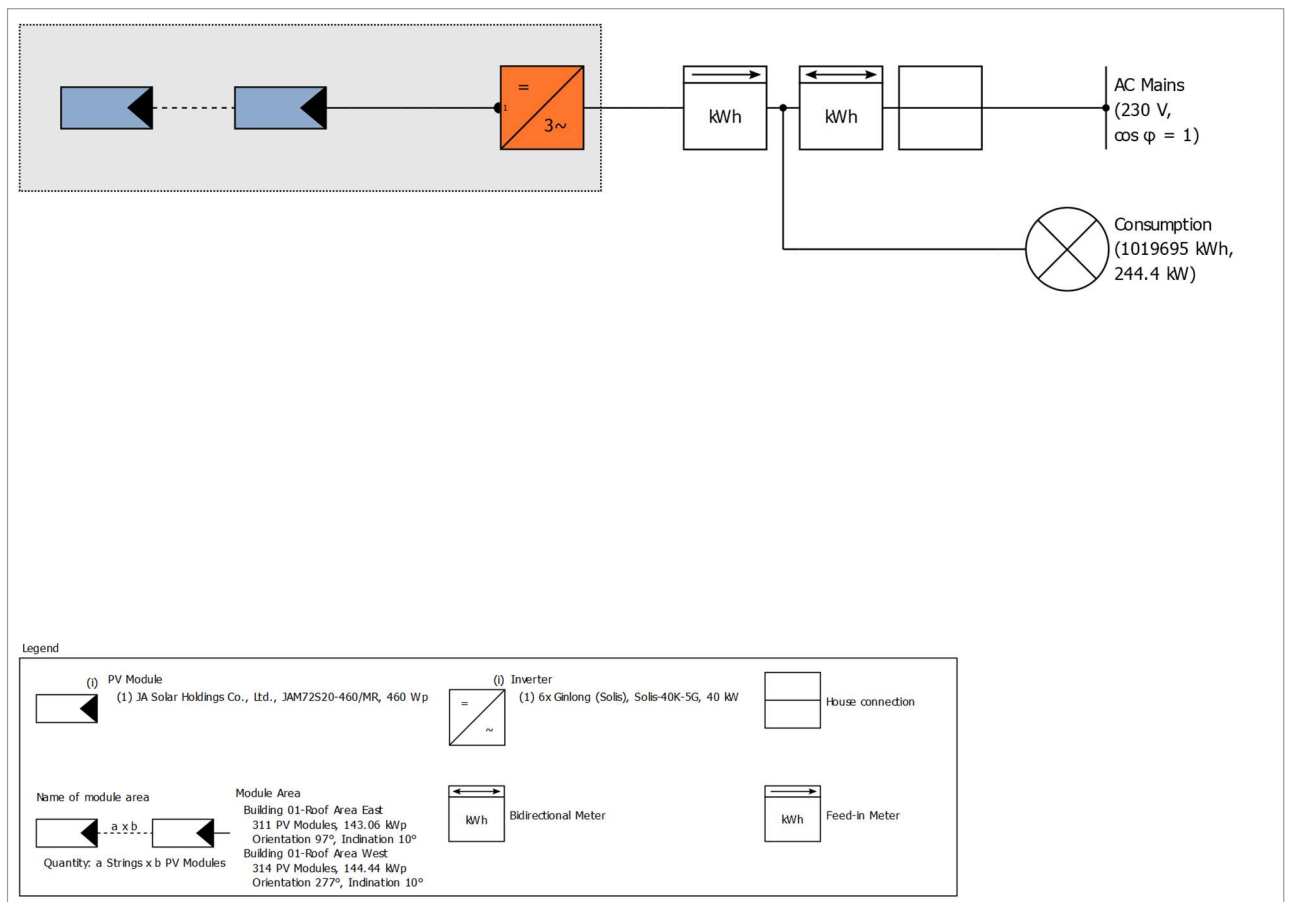


Figure: Schematic diagram

Production Forecast

Production Forecast

PV Generator Output	287.50 kWp
Spec. Annual Yield	864.43 kWh/kWp
Performance Ratio (PR)	86.33 %
Yield Reduction due to Shading	0.0 %/Year
PV Generator Energy (AC grid)	248,664 kWh/Year
Own Consumption	220,862 kWh/Year
Down-regulation at Feed-in Point	0 kWh/Year
Grid Feed-in	27,801 kWh/Year
Own Power Consumption	88.8 %
CO ₂ Emissions avoided	48,214 kg / year
Level of Self-sufficiency	21.7 %

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	1019695 kWh
RWC MPAN 2000052387760 YE 31-10-2022 CSV	1019695 kWh
Load Peak	244.4 kW

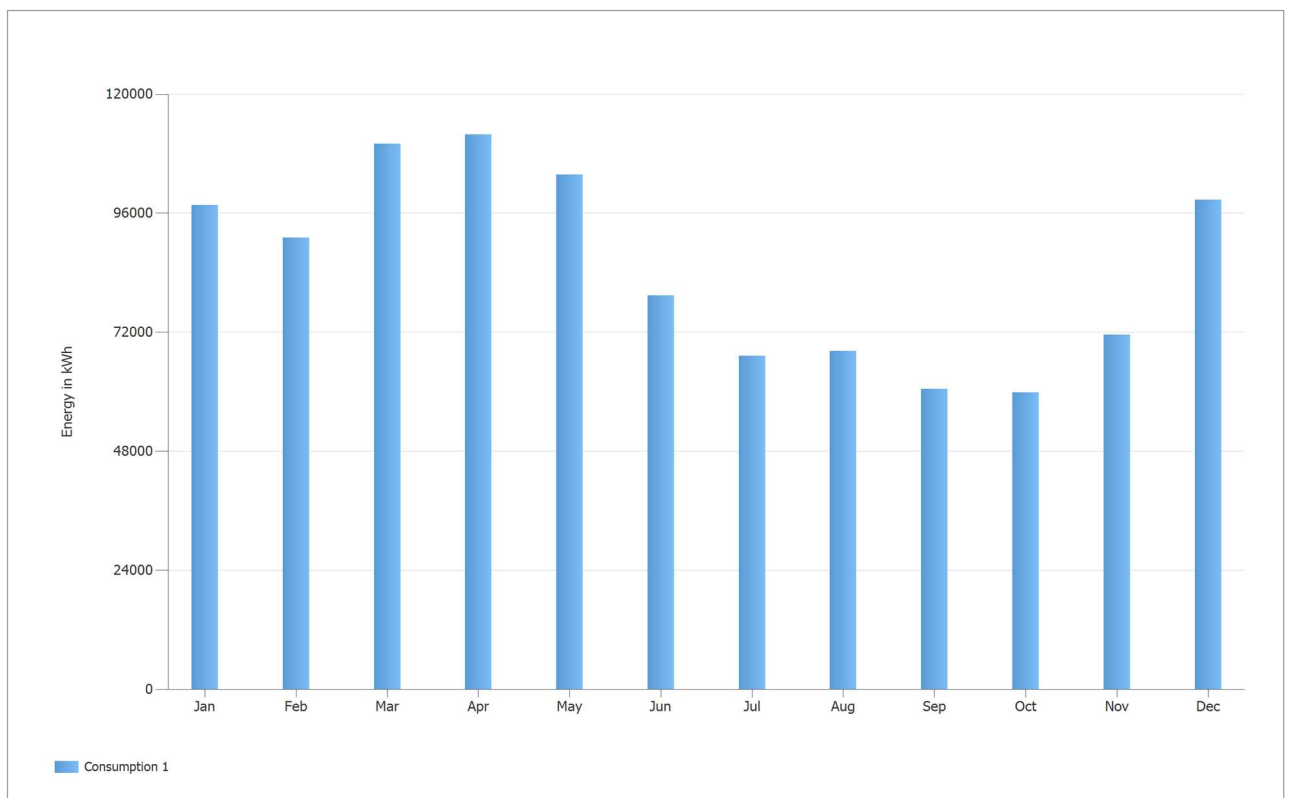


Figure: Consumption

Module Areas

1. Module Area - Building 01-Roof Area East

PV Generator, 1. Module Area - Building 01-Roof Area East

Name	Building 01-Roof Area East
PV Modules	311 x JAM72S20-460/MR (v5)
Manufacturer	JA Solar Holdings Co., Ltd.
Inclination	10 °
Orientation	East 97 °
Installation Type	Roof parallel
PV Generator Surface	693.6 m ²



Figure: 1. Module Area - Building 01-Roof Area East

2. Module Area - Building 01-Roof Area West

PV Generator, 2. Module Area - Building 01-Roof Area West

Name	Building 01-Roof Area West
PV Modules	314 x JAM72S20-460/MR (v5)
Manufacturer	JA Solar Holdings Co., Ltd.
Inclination	10 °
Orientation	West 277 °
Installation Type	Roof parallel
PV Generator Surface	700.3 m ²



Figure: 2. Module Area - Building 01-Roof Area West

Horizon Line, 3D Design

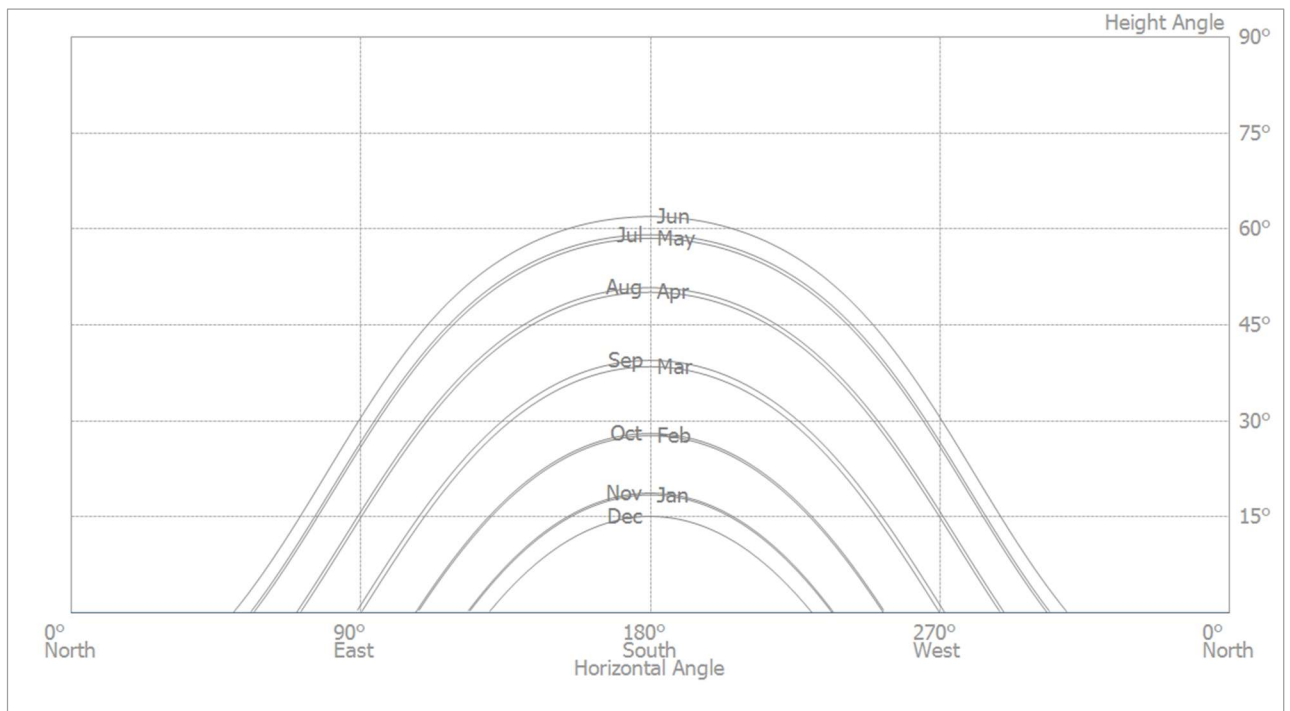


Figure: Horizon (3D Design)

Inverter configuration

Configuration 1

Module Areas	Building 01-Roof Area East + Building 01-Roof Area West
Inverter 1	
Model	Solis-40K-5G (v2)
Manufacturer	Ginlong (Solis)
Quantity	2
Sizing Factor	119.6 %
Configuration	MPP 1: 2 x 13
	MPP 2: 2 x 13
	MPP 3: 2 x 13
	MPP 4: 2 x 13
Inverter 2	
Model	Solis-40K-5G (v2)
Manufacturer	Ginlong (Solis)
Quantity	1
Sizing Factor	118.5 %
Configuration	MPP 1: 2 x 16
	MPP 2: 2 x 13
	MPP 3: 2 x 13
	MPP 4: 1 x 19
Inverter 3	
Model	Solis-40K-5G (v2)
Manufacturer	Ginlong (Solis)
Quantity	2
Sizing Factor	120.8 %
Configuration	MPP 1: 2 x 15
	MPP 2: 2 x 14
	MPP 3: 2 x 14
	MPP 4: 1 x 19
Inverter 4	
Model	Solis-40K-5G (v2)
Manufacturer	Ginlong (Solis)
Quantity	1
Sizing Factor	119.6 %
Configuration	MPP 1: 2 x 14
	MPP 2: 2 x 14
	MPP 3: 2 x 13
	MPP 4: 2 x 11

AC Mains

AC Mains

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

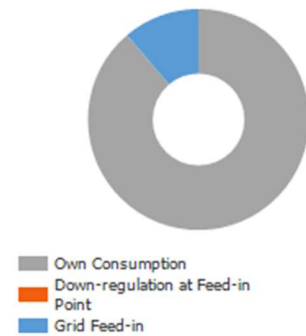
Simulation Results

Results Total System

PV System

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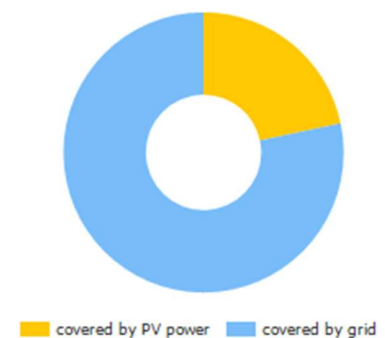
PV Generator Energy (AC grid)



Appliances

Appliances	1,019,695 kWh/Year
Standby Consumption (Inverter)	139 kWh/Year
Total Consumption	1,019,834 kWh/Year
covered by PV power	220,862 kWh/Year
covered by grid	798,972 kWh/Year
Solar Fraction	21.7 %

Total Consumption

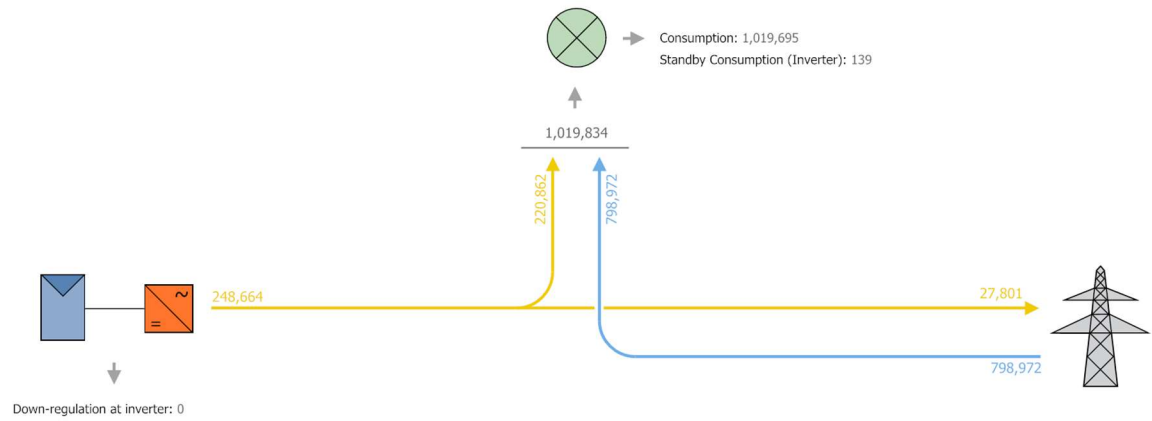


Level of Self-sufficiency

Total Consumption	1,019,834 kWh/Year
covered by grid	798,972 kWh/Year
Level of Self-sufficiency	21.7 %

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

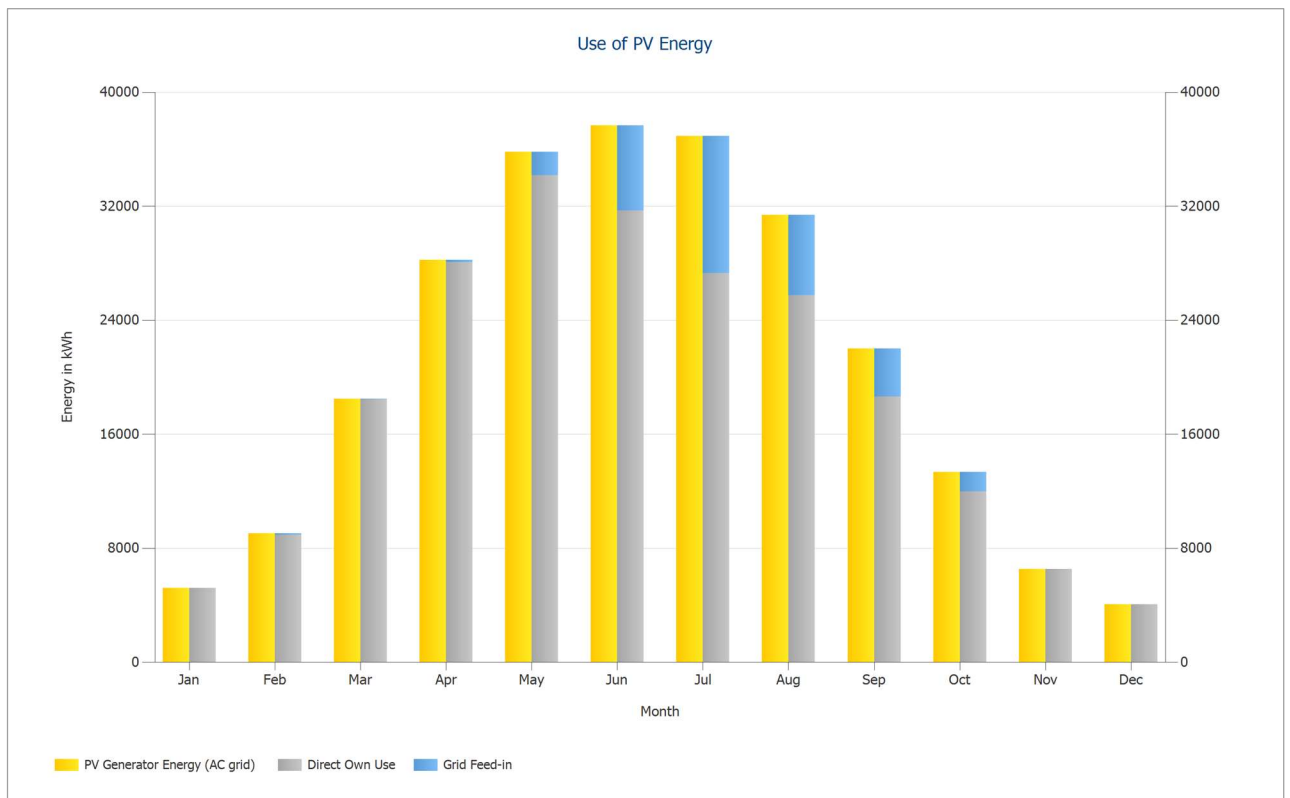


Figure: Use of PV Energy

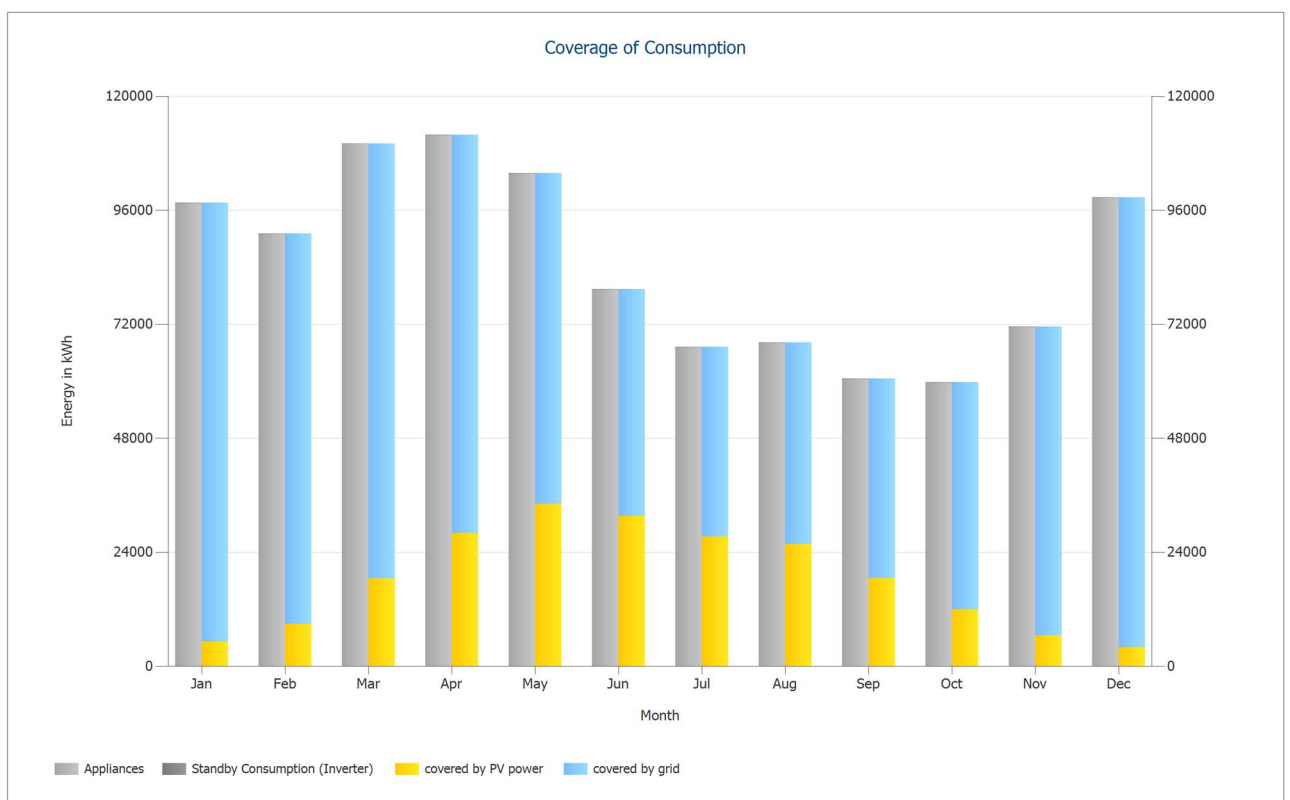


Figure: Coverage of Consumption

Company Eden Sustainable Ltd 28 Queen Street London EC4R 1BB	Type of System 3D / Grid-connected PV System with Electrical Appliances		System Output 287.5 kWp	Feed-in Phases 3-phase
	Created by J.S	Approved by	Part Number	
	Title Reliance Worldwide Company		System Address west drayton U87 8JL	Document Type Circuit Diagram Date of Issue 30/11/2022
				Sheet 1

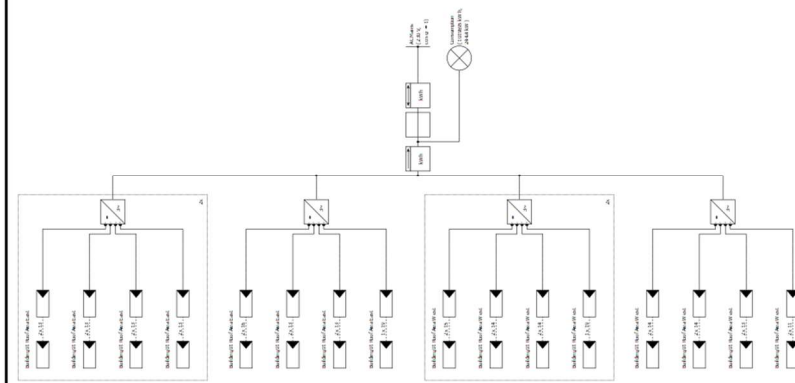


Figure: Circuit Diagram

Overview plan

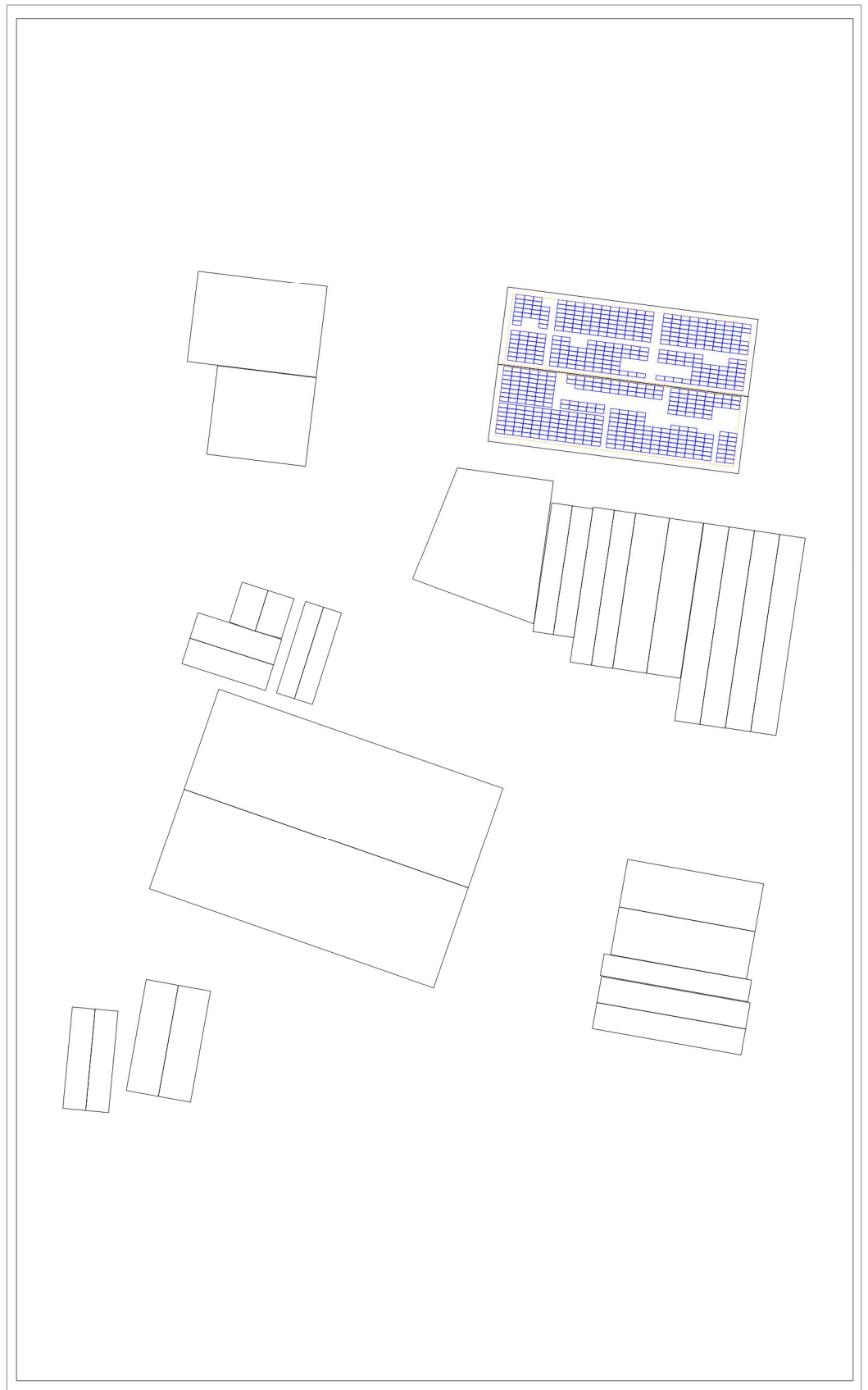


Figure: Overview plan

Dimensioning Plan

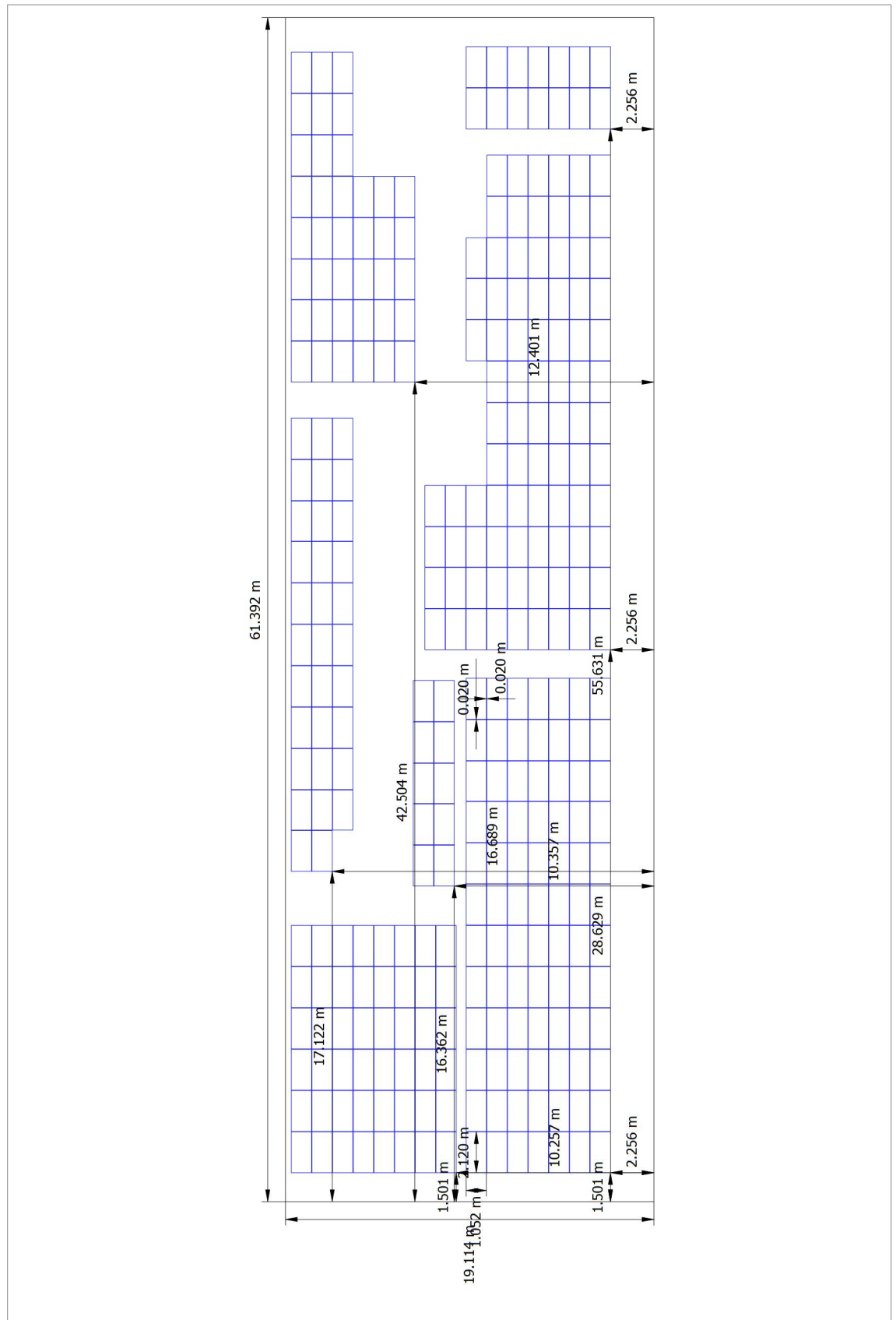


Figure: Building 01-Roof Area West

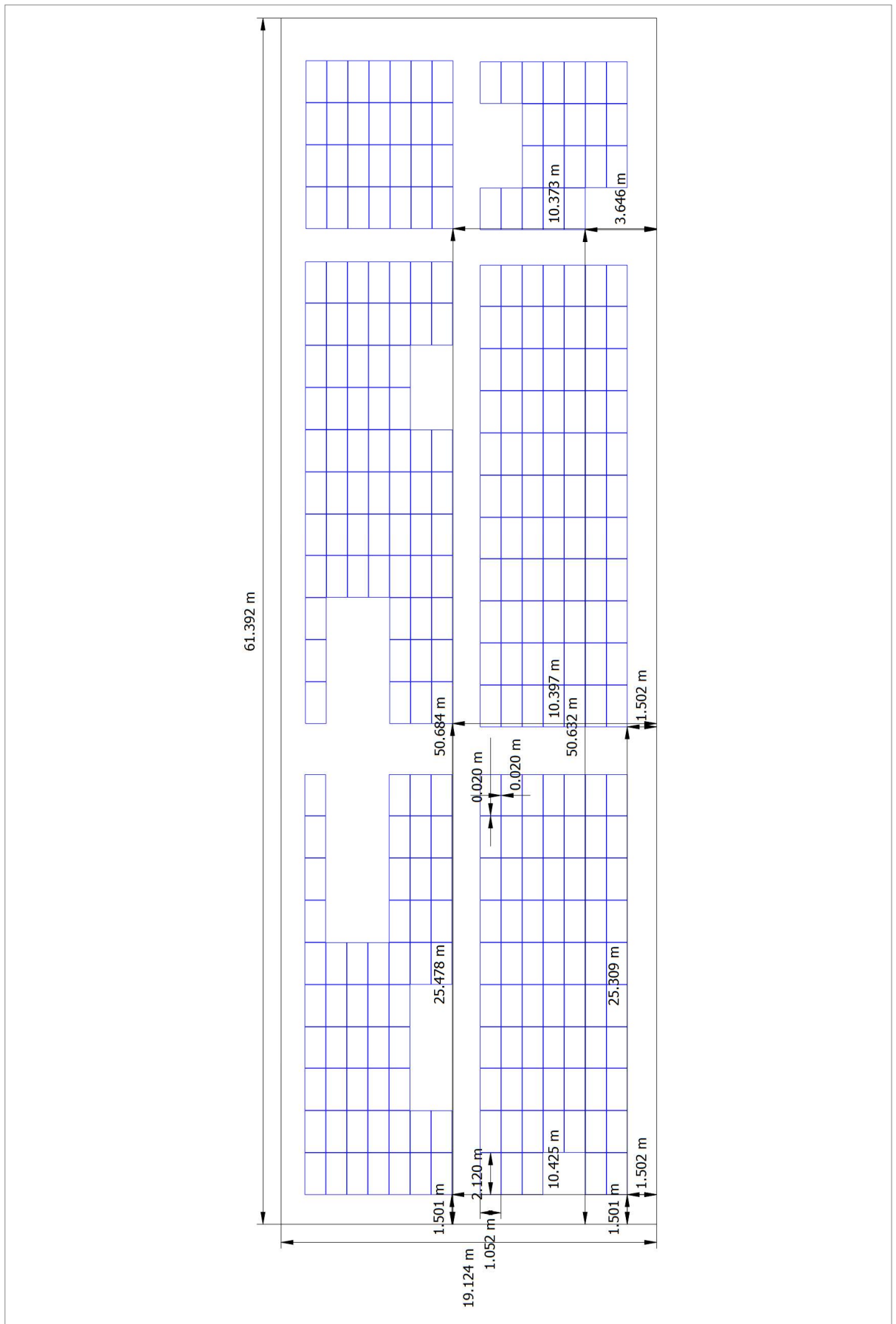


Figure: Building 01-Roof Area East

String Plan

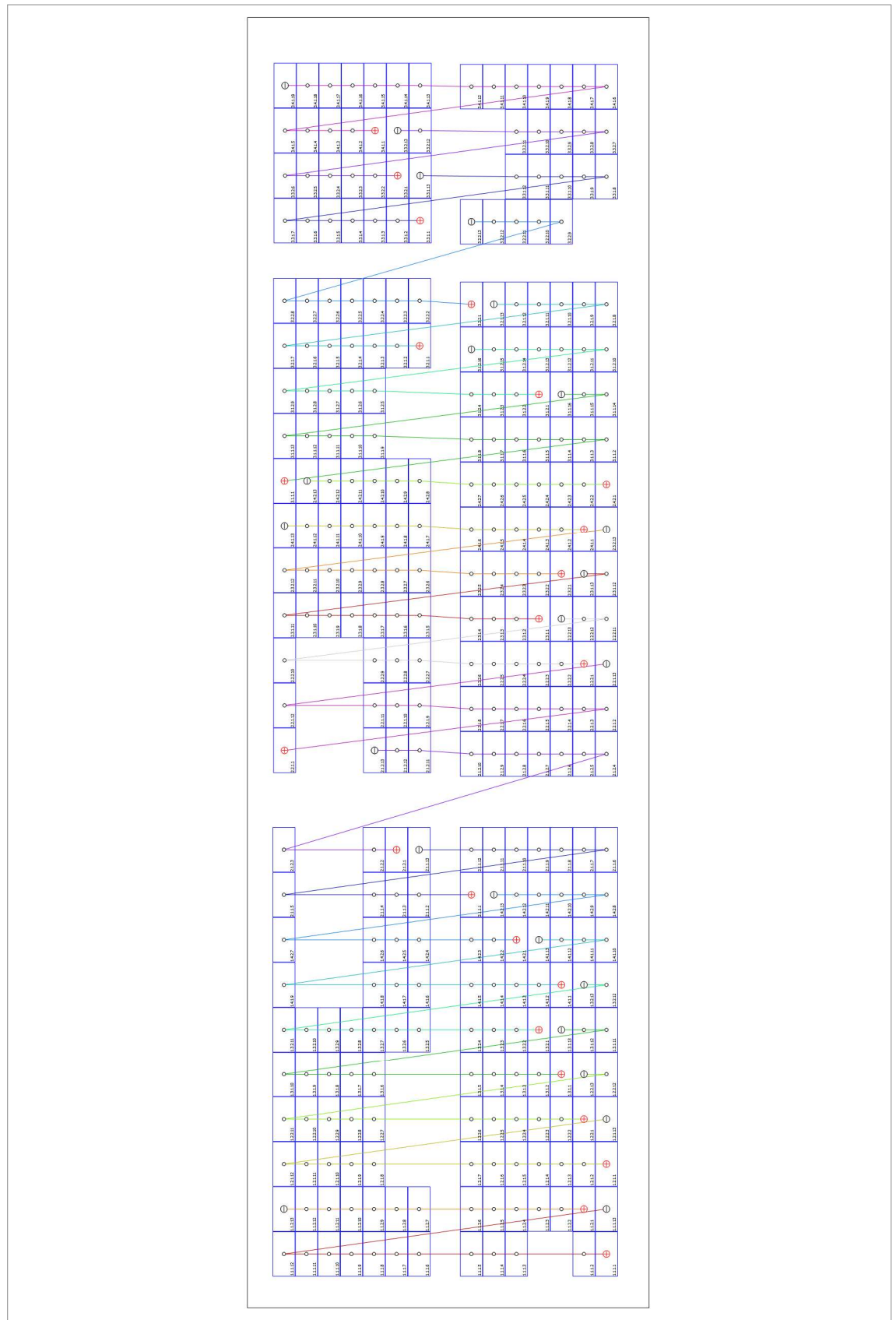


Figure: Building 01-Roof Area East

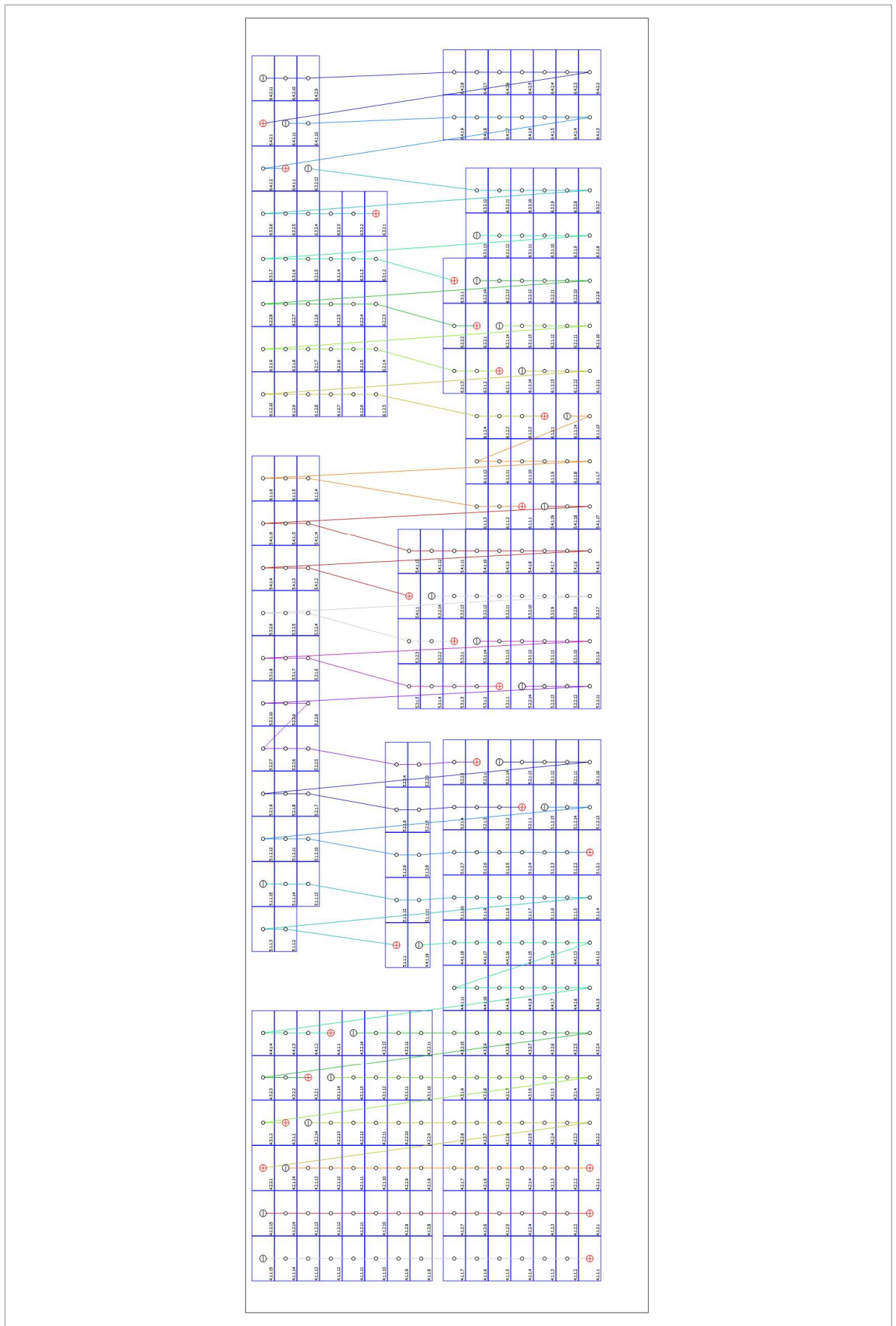


Figure: Building 01-Roof Area West

Parts list

Parts list

#	Type	Item number	Manufacturer	Name	Quantity	Unit
1	PV Module		JA Solar Holdings Co., Ltd.	JAM72S20-460/MR	625	Piece
2	Inverter		Ginlong (Solis)	Solis-40K-5G	6	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