

Eden Sustainable Ltd

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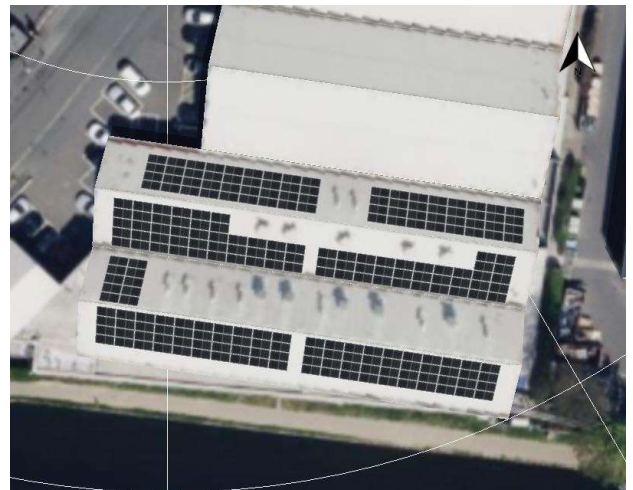
Project Name: Reliance Worldwide Company

30/11/2022

Your PV system from Eden Sustainable Ltd

Address of Installation

west drayton
UB7 8JL



Project Overview

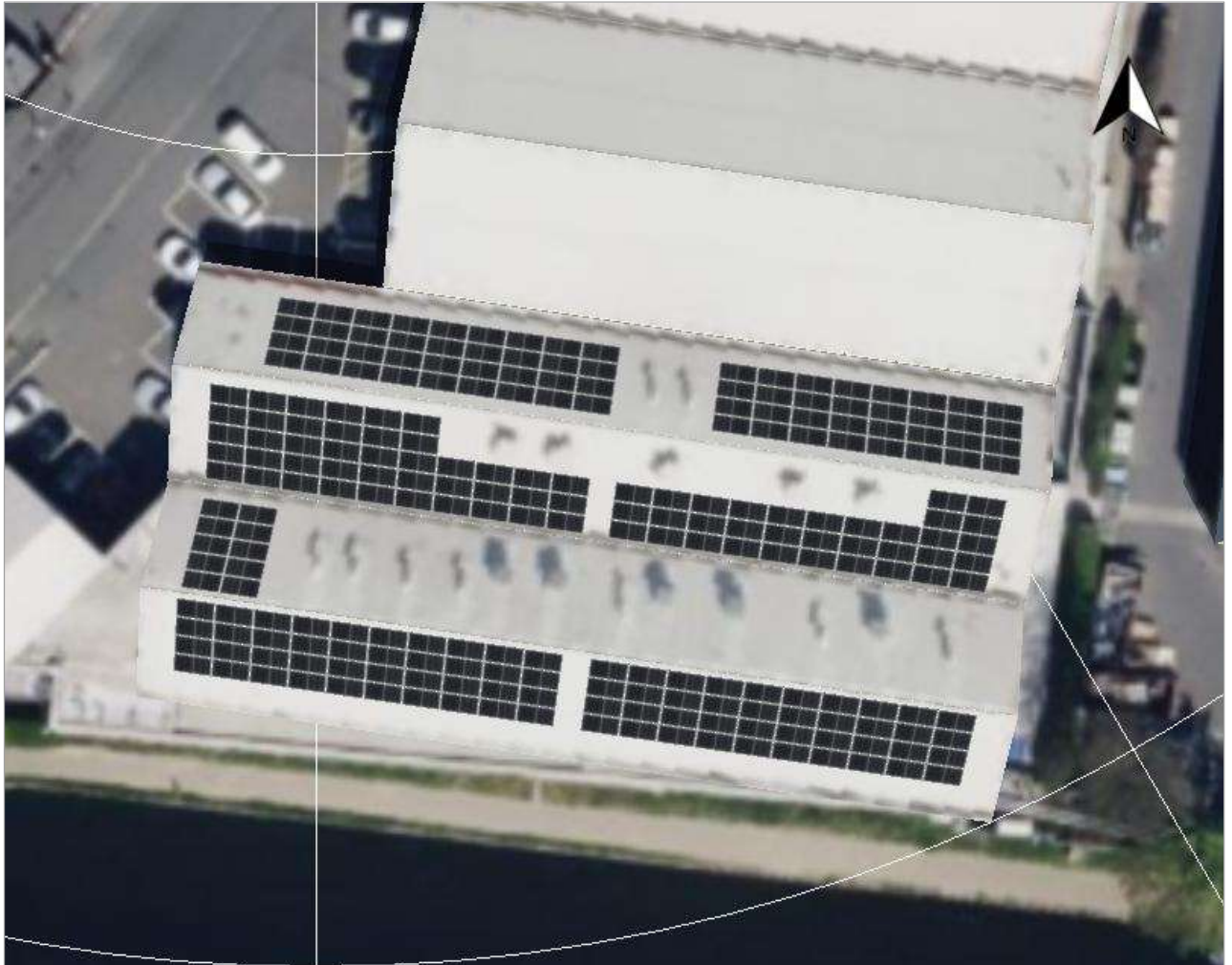


Figure: Overview Image, 3D Design

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	107.64 kWp
PV Generator Surface	521.9 m ²
Number of PV Modules	234
Number of Inverters	2

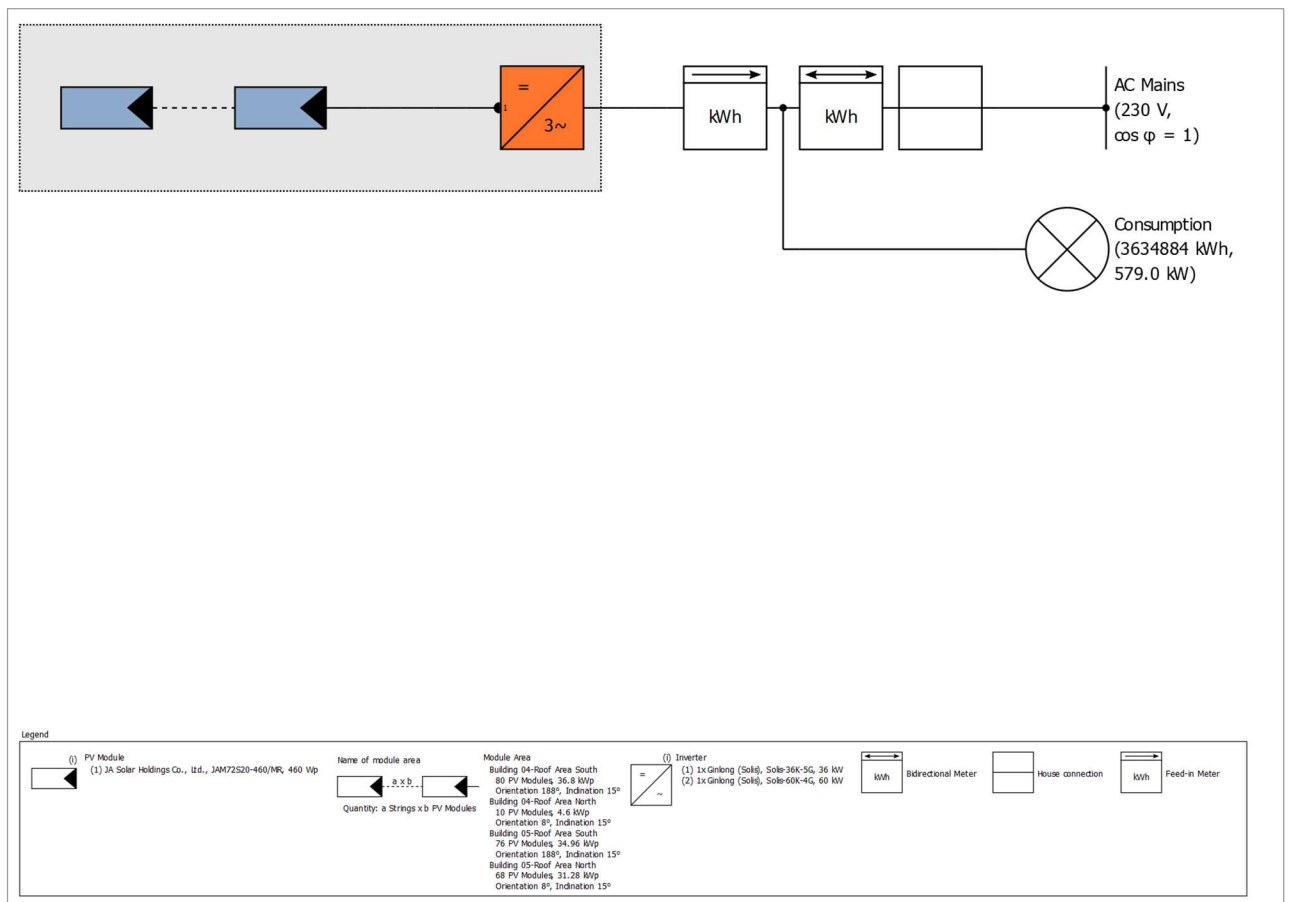


Figure: Schematic diagram

Production Forecast

Production Forecast

PV Generator Output	107.64 kWp
Spec. Annual Yield	877.15 kWh/kWp
Performance Ratio (PR)	85.35 %
Yield Reduction due to Shading	1.1 %/Year
PV Generator Energy (AC grid)	94,453 kWh/Year
Own Consumption	94,453 kWh/Year
Down-regulation at Feed-in Point	0 kWh/Year
Grid Feed-in	0 kWh/Year
Own Power Consumption	100.0 %
CO ₂ Emissions avoided	18,317 kg / year
Level of Self-sufficiency	2.6 %

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	3634884 kWh
RWC MPAN 2000027285147 YE 31-10-2022 CSV	3634884 kWh
Load Peak	579 kW

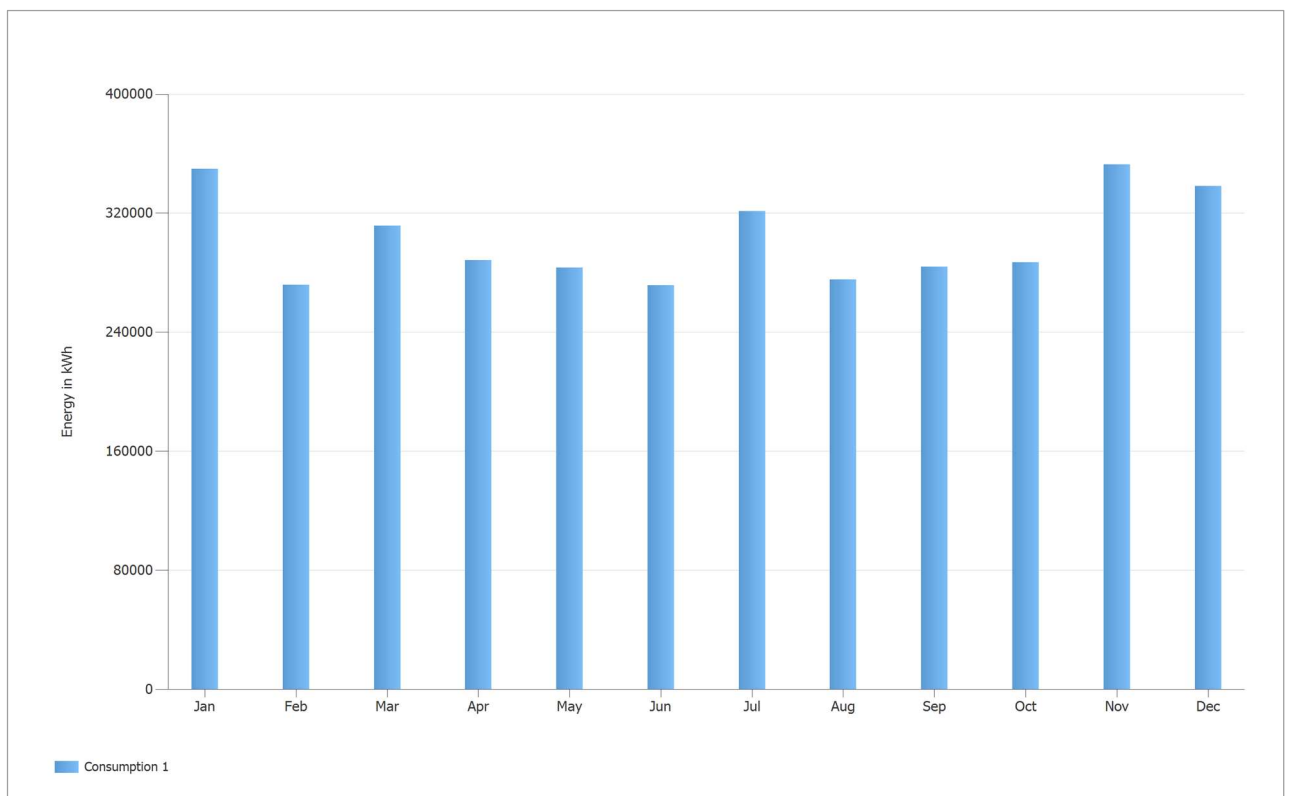


Figure: Consumption

Module Areas

1. Module Area - Building 04-Roof Area South

PV Generator, 1. Module Area - Building 04-Roof Area South

Name	Building 04-Roof Area South
PV Modules	80 x JAM72S20-460/MR (v5)
Manufacturer	JA Solar Holdings Co., Ltd.
Inclination	15 °
Orientation	South 188 °
Installation Type	Roof parallel
PV Generator Surface	178.4 m ²

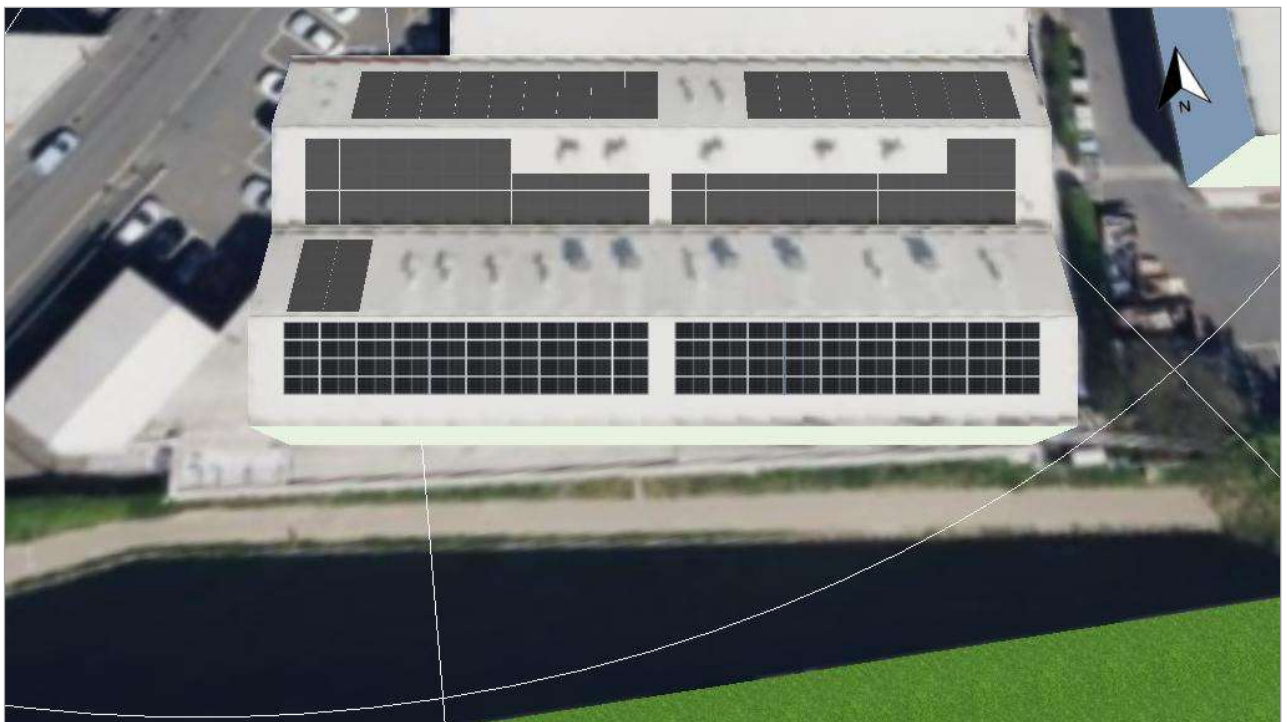


Figure: 1. Module Area - Building 04-Roof Area South

2. Module Area - Building 04-Roof Area North

PV Generator, 2. Module Area - Building 04-Roof Area North

Name	Building 04-Roof Area North
PV Modules	10 x JAM72S20-460/MR (v5)
Manufacturer	JA Solar Holdings Co., Ltd.
Inclination	15 °
Orientation	North 8 °
Installation Type	Roof parallel
PV Generator Surface	22.3 m²

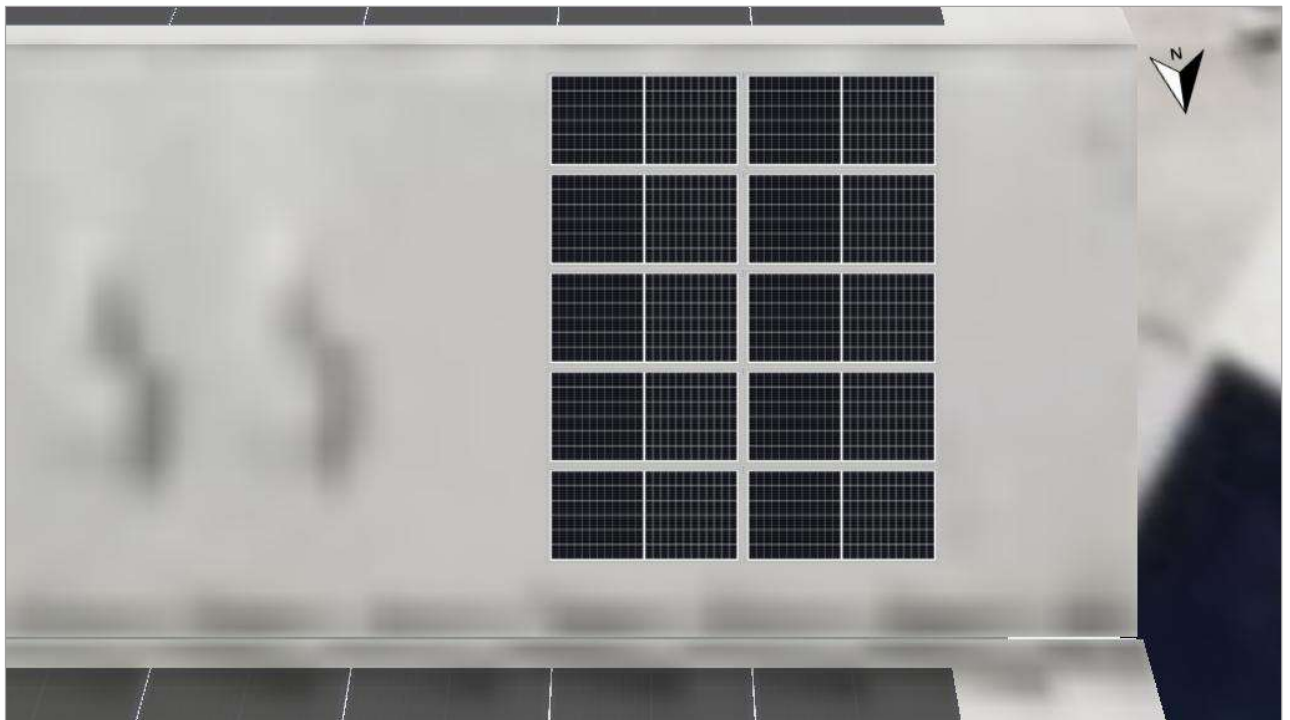


Figure: 2. Module Area - Building 04-Roof Area North

3. Module Area - Building 05-Roof Area South

PV Generator, 3. Module Area - Building 05-Roof Area South

Name	Building 05-Roof Area South
PV Modules	76 x JAM72S20-460/MR (v5)
Manufacturer	JA Solar Holdings Co., Ltd.
Inclination	15 °
Orientation	South 188 °
Installation Type	Roof parallel
PV Generator Surface	169.5 m²



Figure: 3. Module Area - Building 05-Roof Area South

4. Module Area - Building 05-Roof Area North

PV Generator, 4. Module Area - Building 05-Roof Area North

Name	Building 05-Roof Area North
PV Modules	68 x JAM72S20-460/MR (v5)
Manufacturer	JA Solar Holdings Co., Ltd.
Inclination	15 °
Orientation	North 8 °
Installation Type	Roof parallel
PV Generator Surface	151.7 m²



Figure: 4. Module Area - Building 05-Roof Area North

Horizon Line, 3D Design

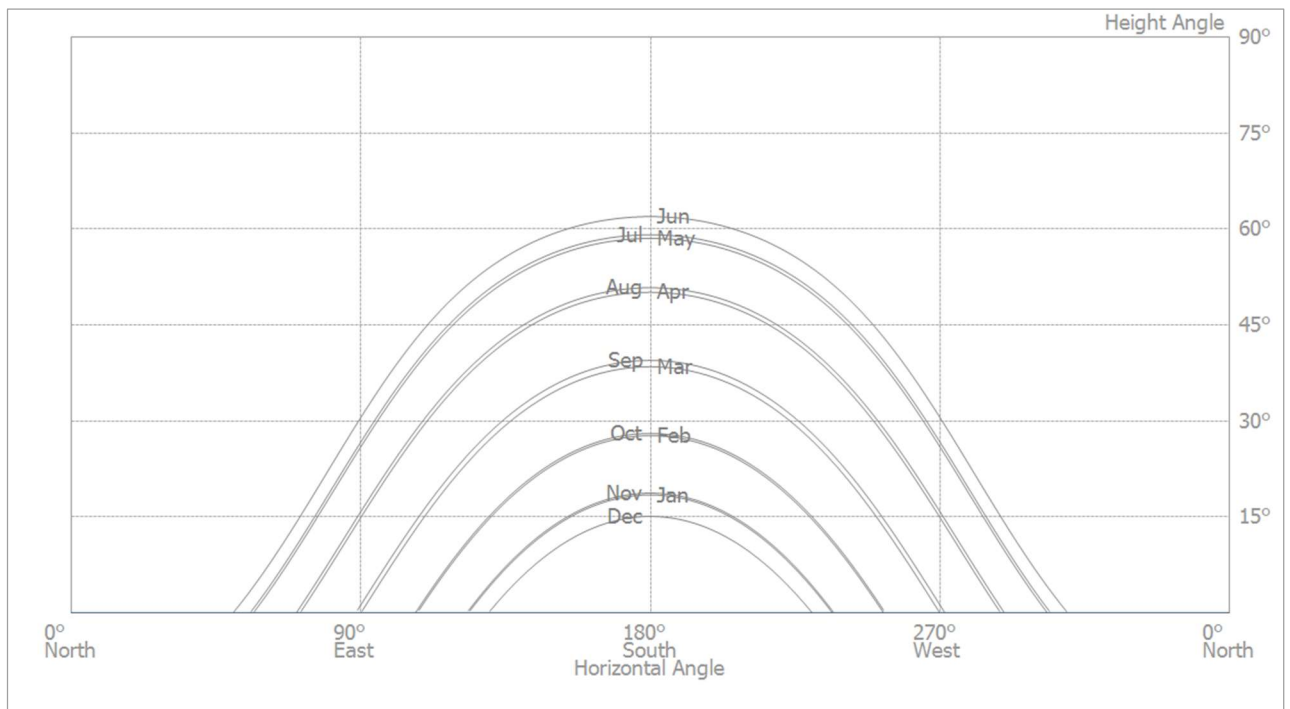


Figure: Horizon (3D Design)

Inverter configuration

Configuration 1

Module Areas	Building 04-Roof Area South + Building 04-Roof Area North
Inverter 1	
Model	Solis-36K-5G (v2)
Manufacturer	Ginlong (Solis)
Quantity	1
Sizing Factor	115 %
Configuration	MPP 1: 2 x 15
	MPP 2: 2 x 14
	MPP 3: 2 x 11
	MPP 4: 1 x 10

Configuration 2

Module Areas	Building 05-Roof Area South + Building 05-Roof Area North
Inverter 1	
Model	Solis-60K-4G (v2)
Manufacturer	Ginlong (Solis)
Quantity	1
Sizing Factor	110.4 %
Configuration	MPP 1: 2 x 20
	MPP 2: 2 x 18
	MPP 3: 2 x 18
	MPP 4: 2 x 16

AC Mains

AC Mains

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

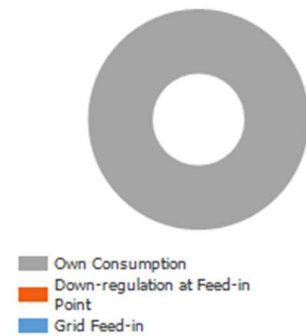
Simulation Results

Results Total System

PV System

PV Generator Output	107.64 kWp
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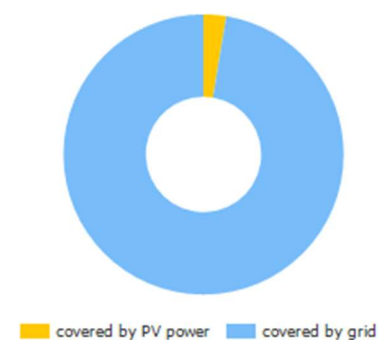
PV Generator Energy (AC grid)



Appliances

Appliances	3,634,884 kWh/Year
Standby Consumption (Inverter)	36 kWh/Year
Total Consumption	3,634,920 kWh/Year
covered by PV power	94,453 kWh/Year
covered by grid	3,540,467 kWh/Year
Solar Fraction	2.6 %

Total Consumption

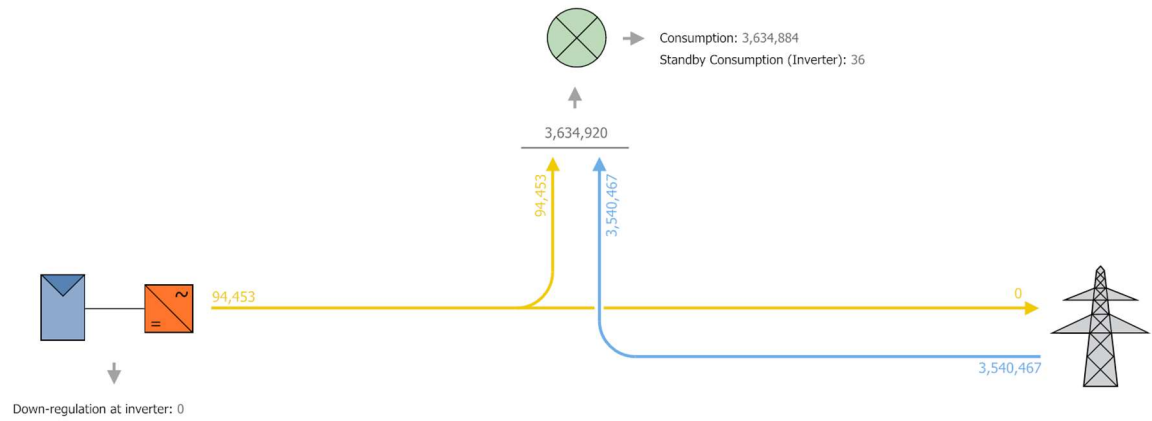


Level of Self-sufficiency

Total Consumption	3,634,920 kWh/Year
covered by grid	3,540,467 kWh/Year
Level of Self-sufficiency	2.6 %

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

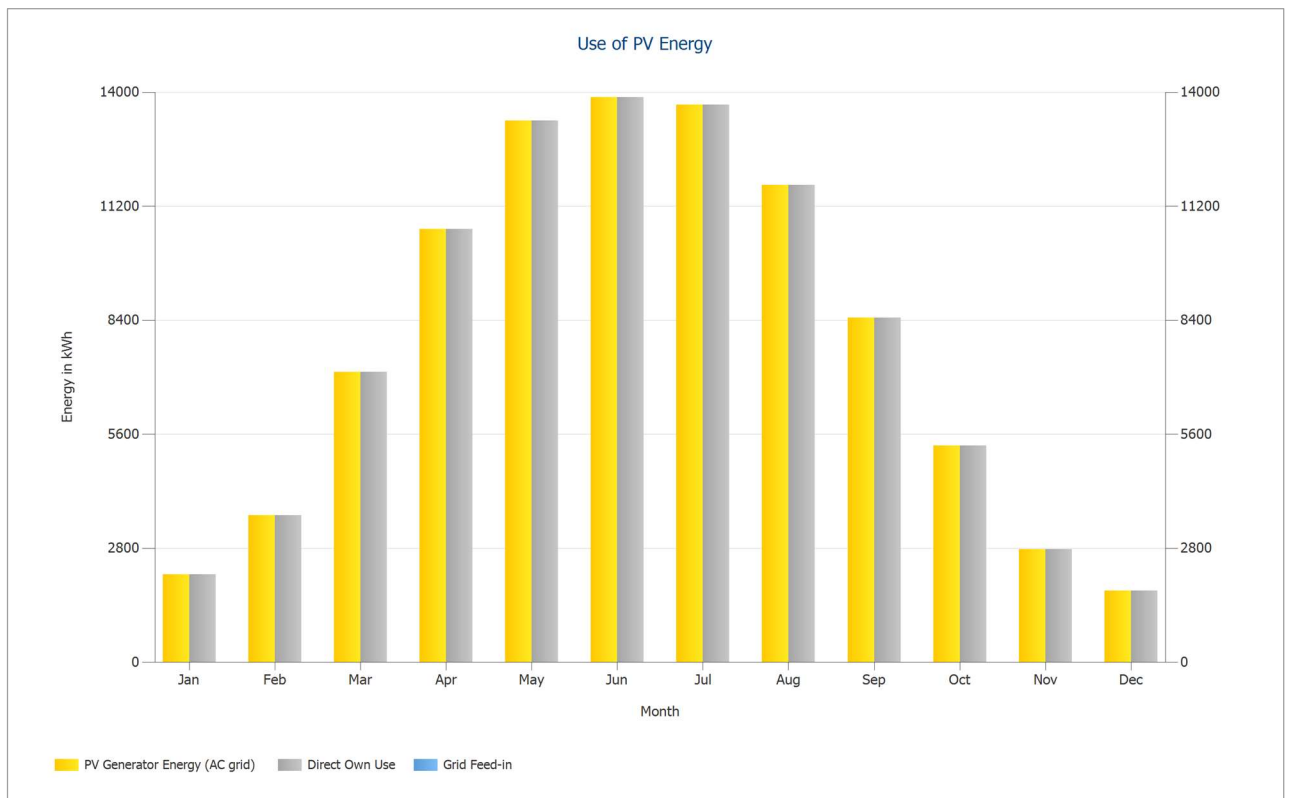


Figure: Use of PV Energy

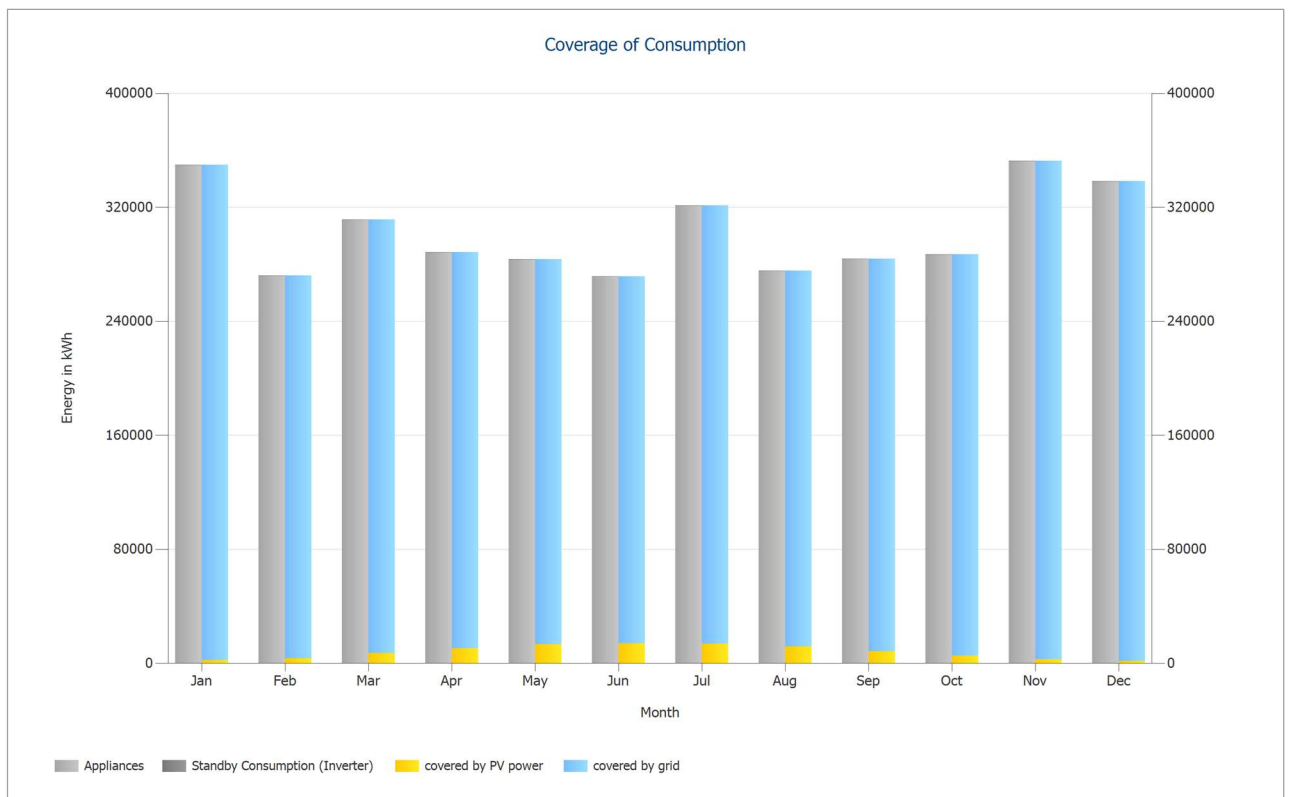


Figure: Coverage of Consumption

Plans and parts list

Circuit Diagram

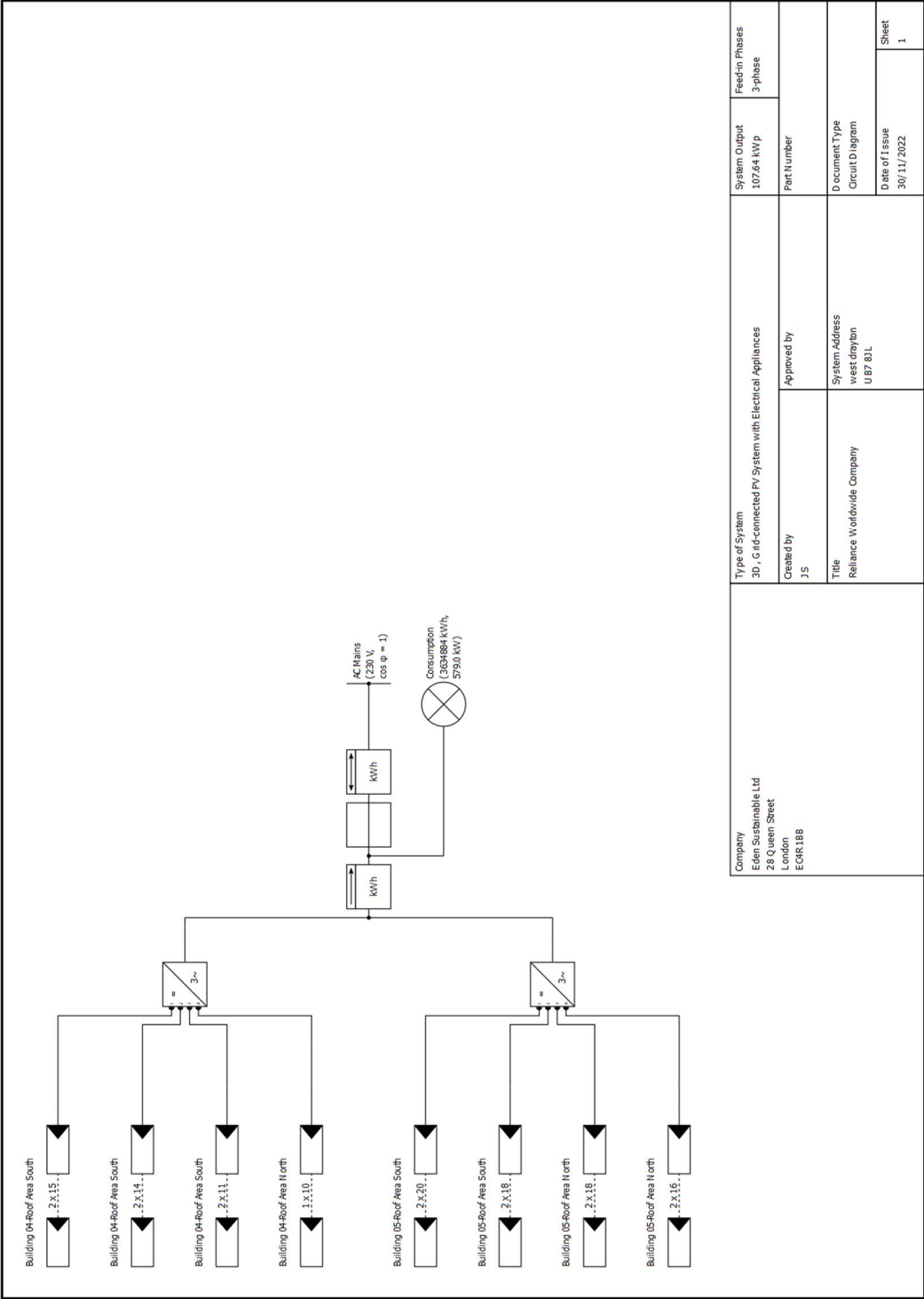


Figure: Circuit Diagram

Overview plan

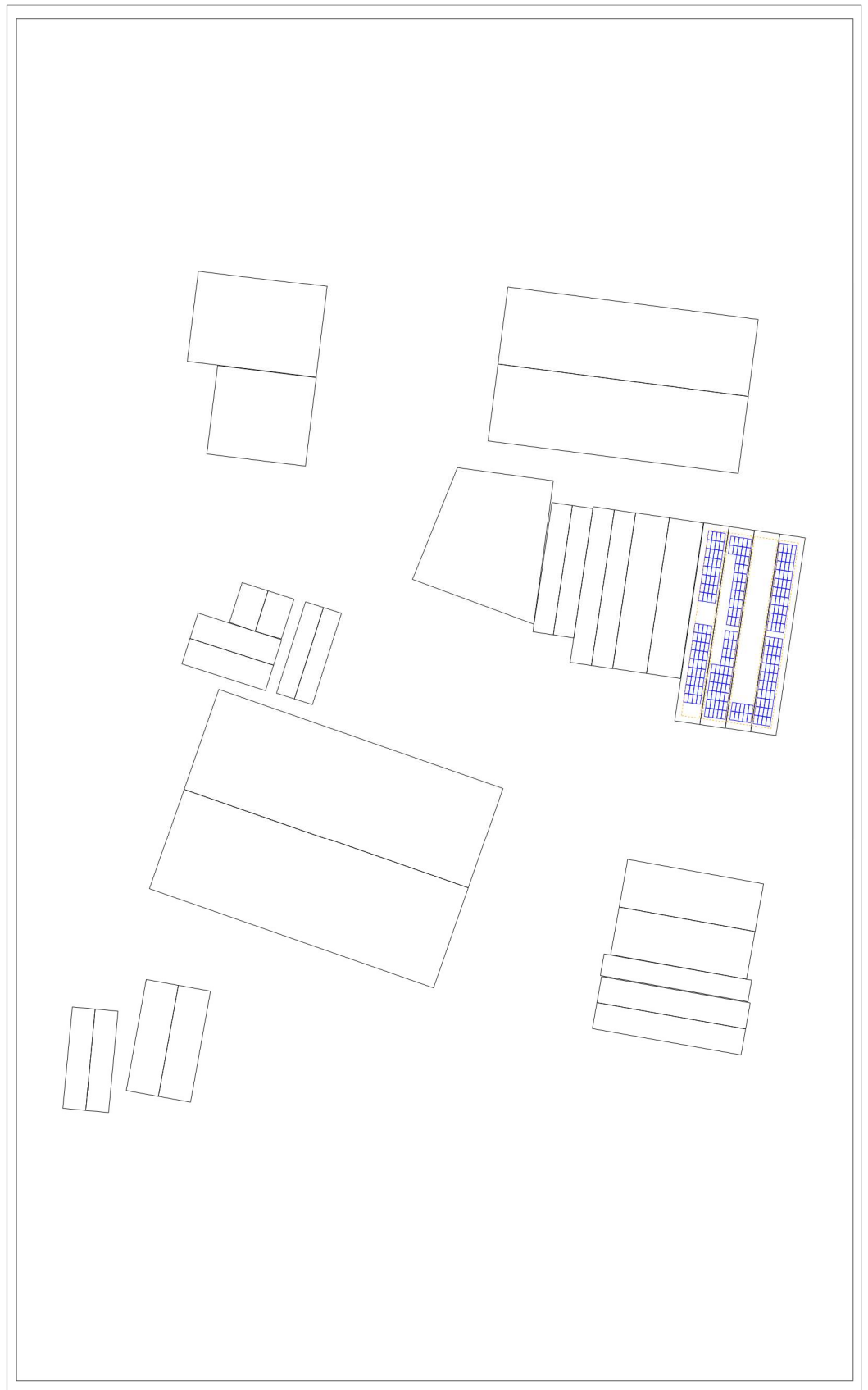


Figure: Overview plan

Dimensioning Plan

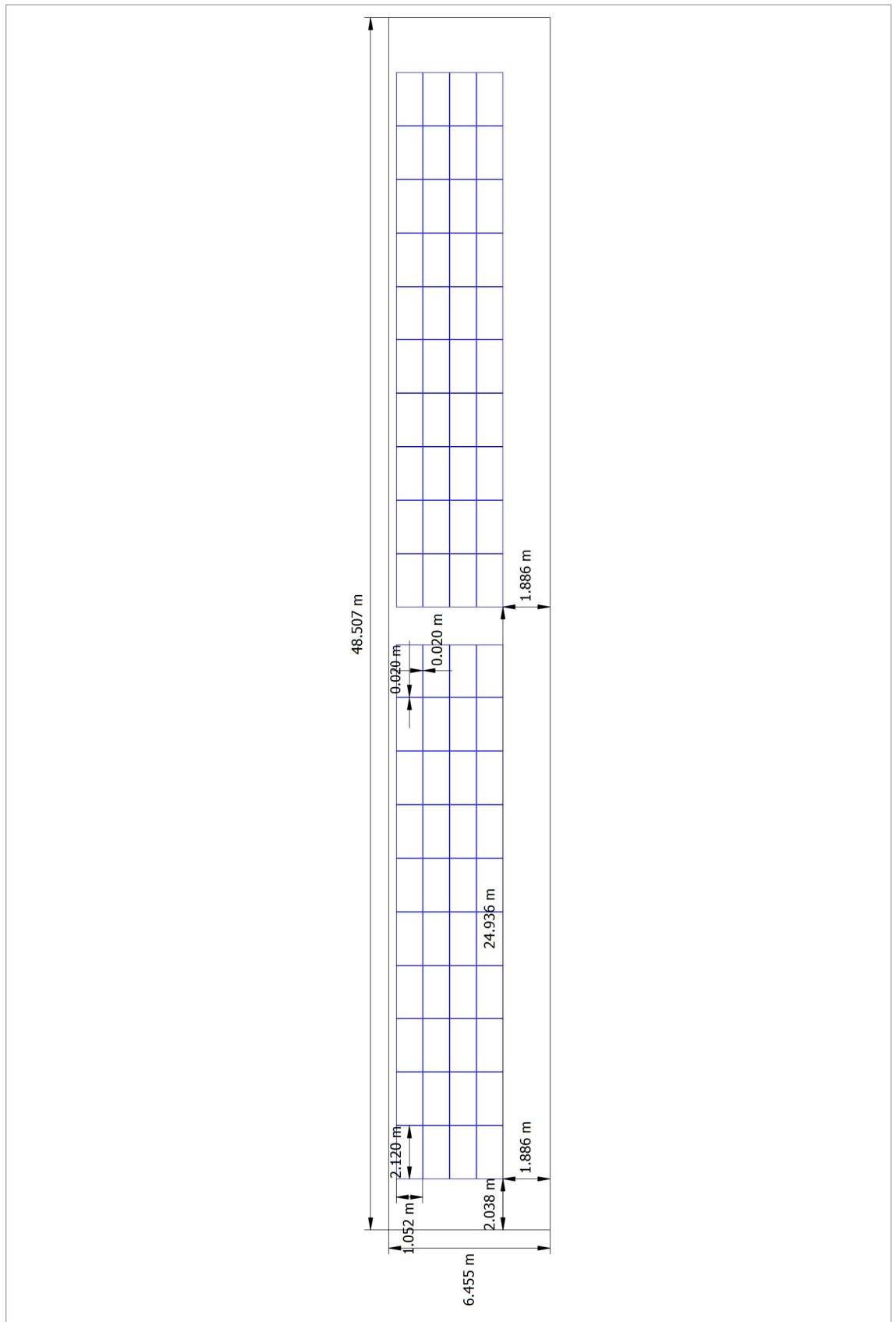


Figure: Building 04-Roof Area South

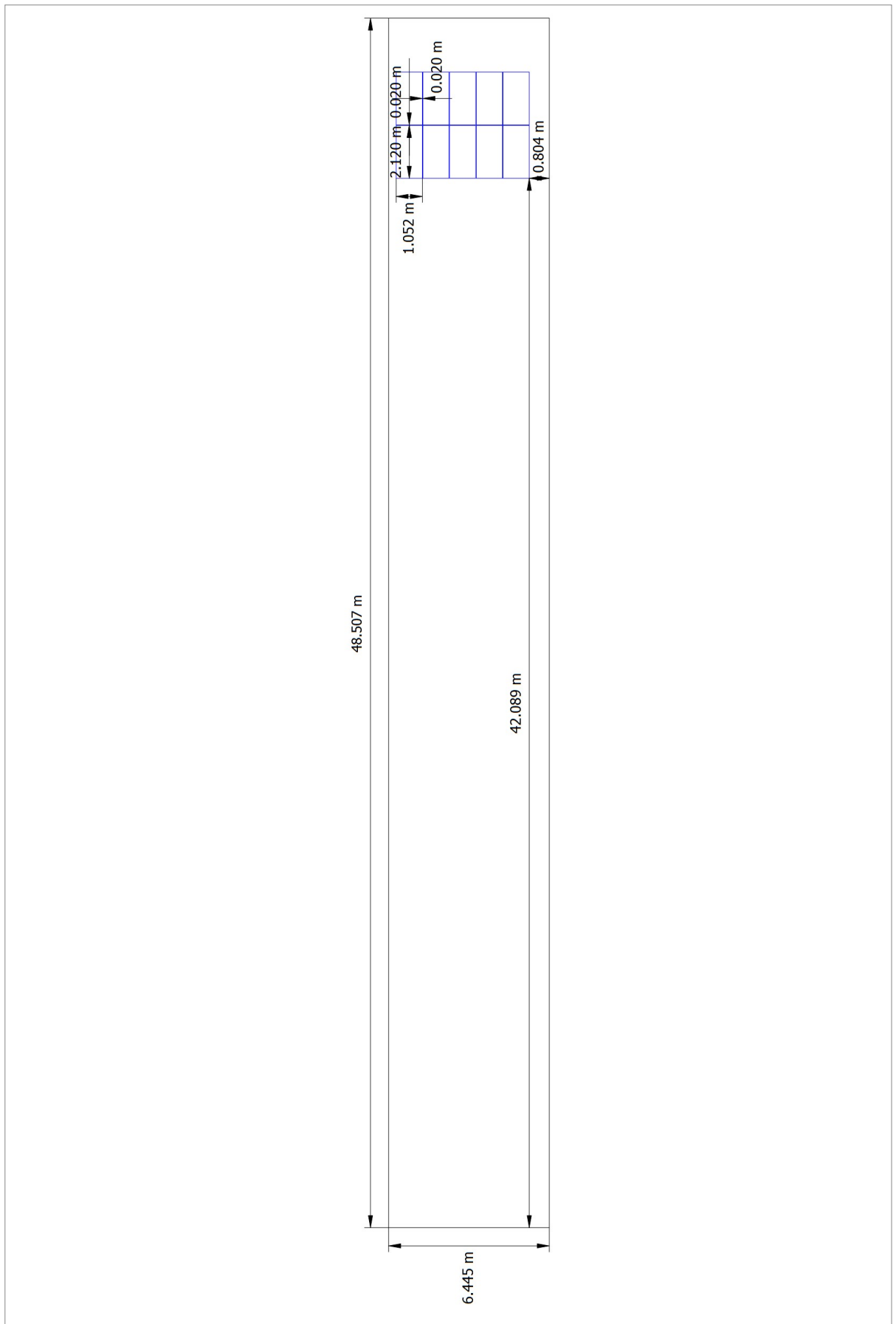


Figure: Building 04-Roof Area North

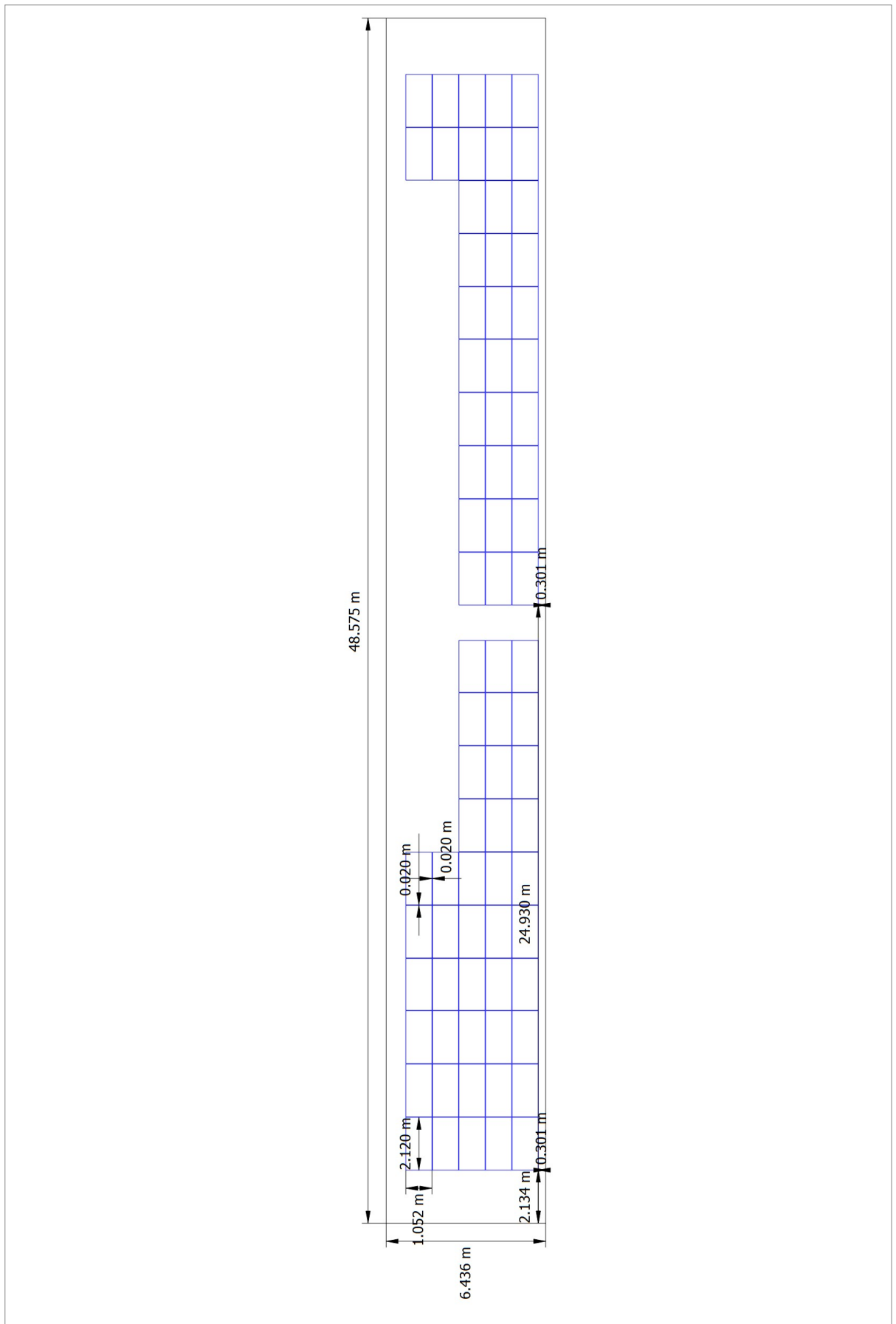


Figure: Building 05-Roof Area South

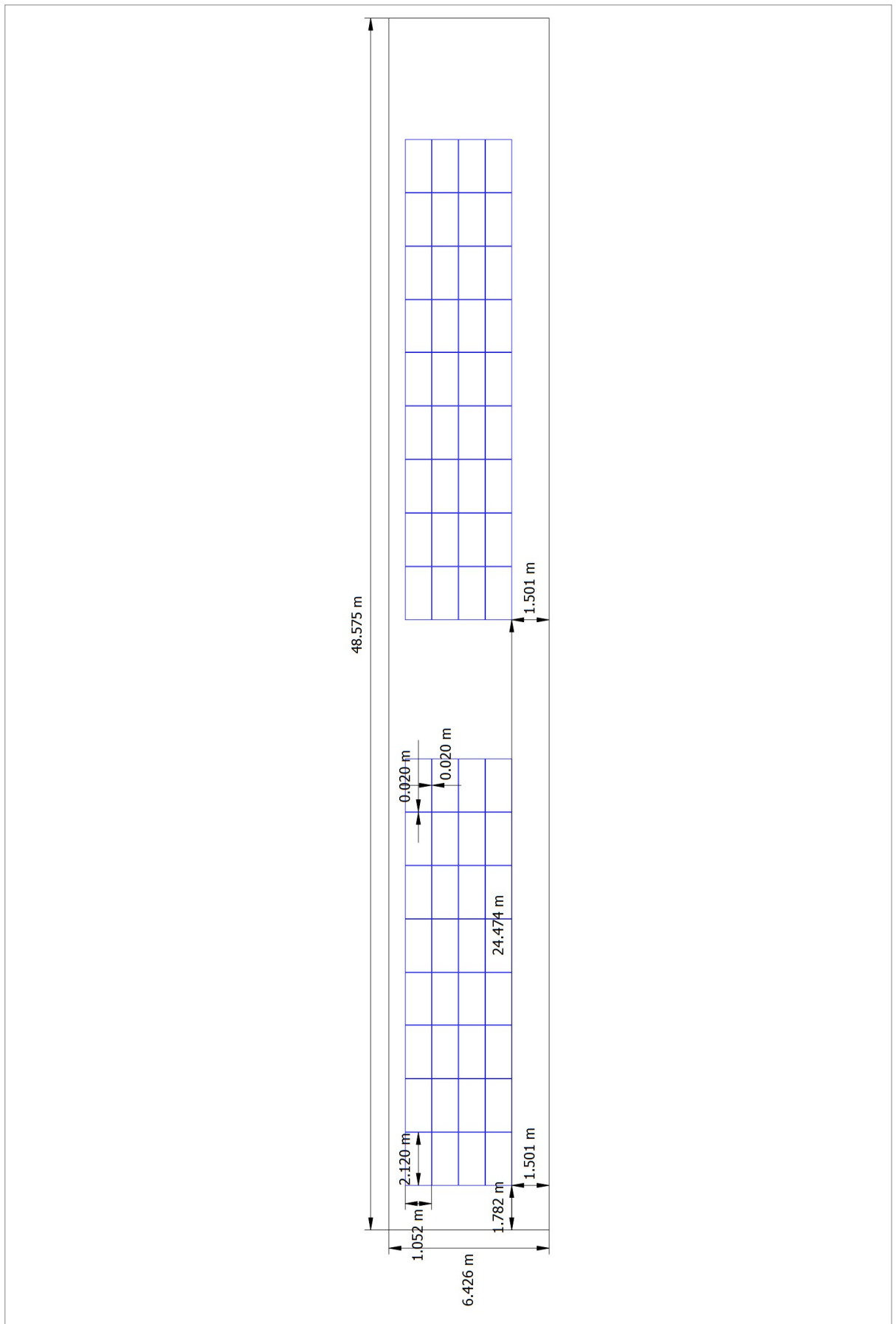


Figure: Building 05-Roof Area North

String Plan

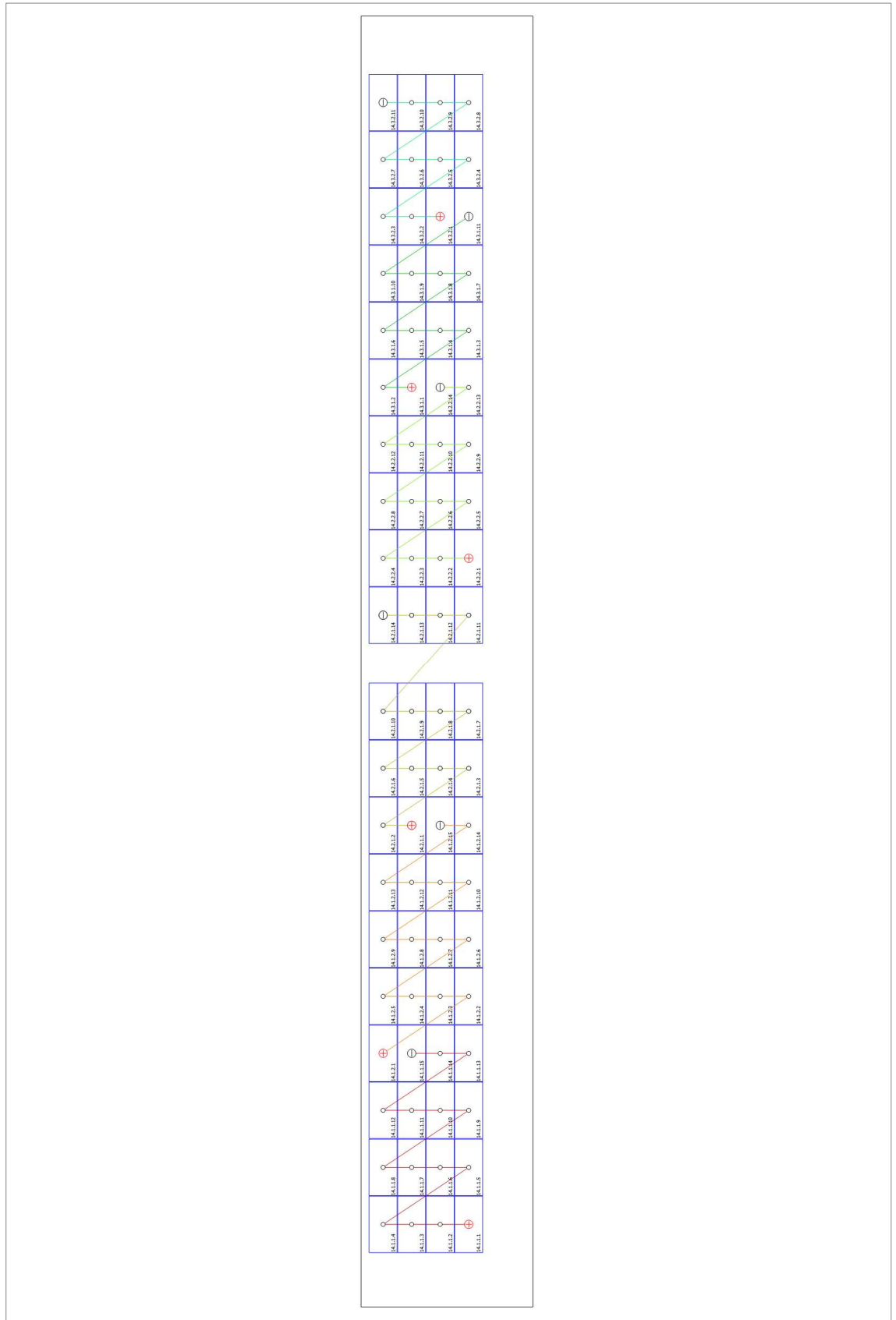


Figure: Building 04-Roof Area South

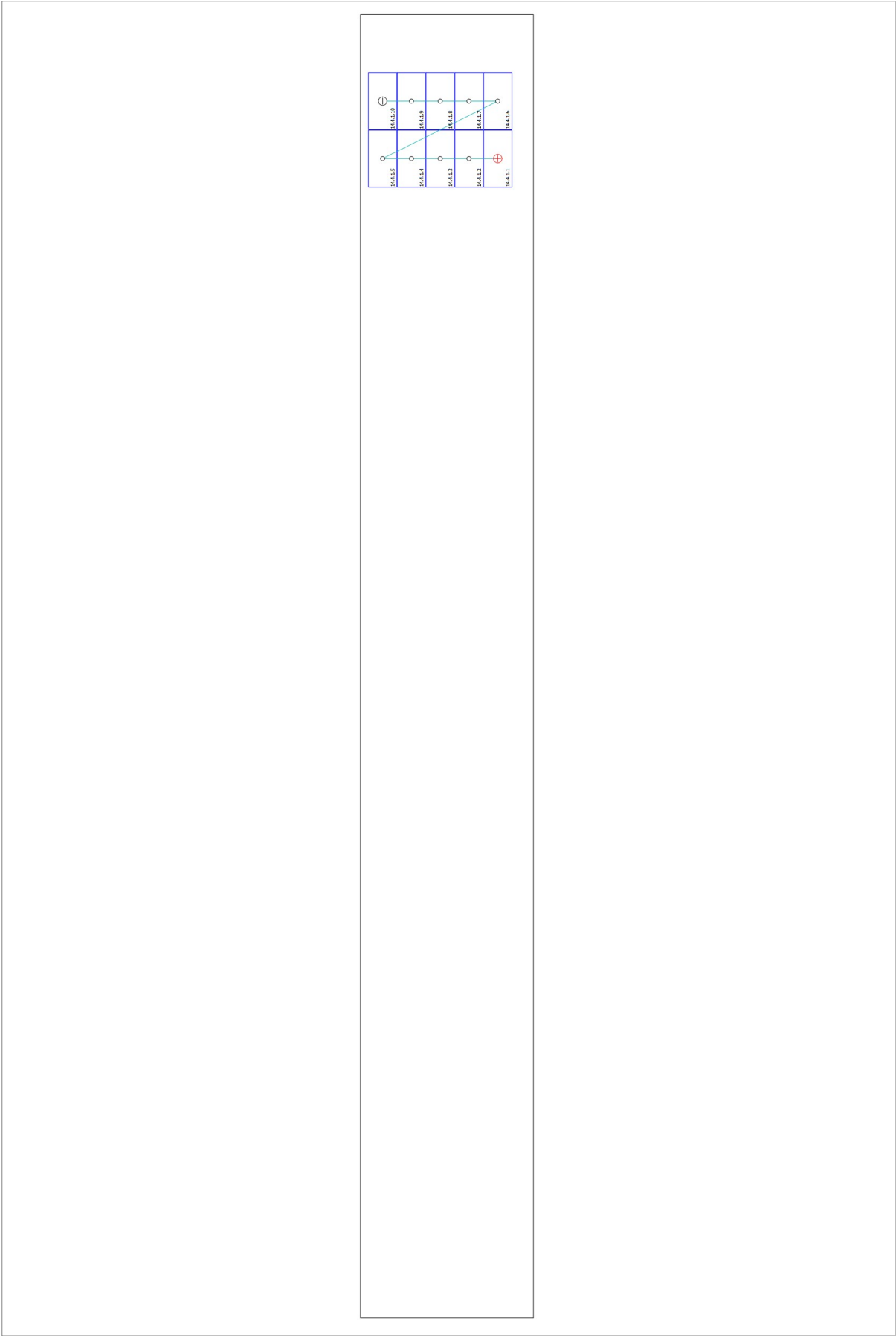


Figure: Building 04-Roof Area North

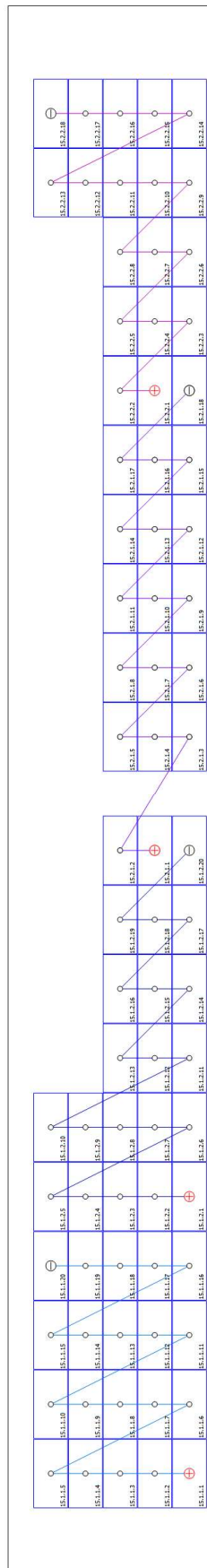
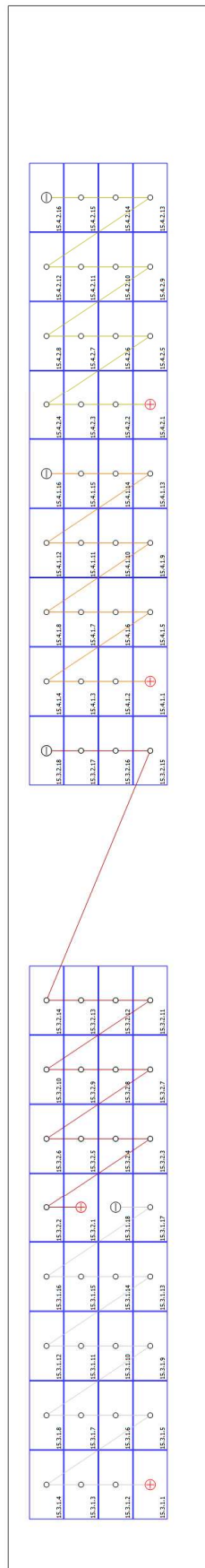


Figure: Building 05-Roof Area South



 Created with PV*SOL premium 2022 (R3)
Valentin Software GmbH

Parts list

Parts list

#	Type	Item number	Manufacturer	Name	Quantity	Unit
1	PV Module		JA Solar Holdings Co., Ltd.	JAM72S20-460/MR	234	Piece
2	Inverter		Ginlong (Solis)	Solis-36K-5G	1	Piece
3	Inverter		Ginlong (Solis)	Solis-60K-4G	1	Piece
4	Components			Feed-in Meter	1	Piece
5	Components			House connection	1	Piece
6	Components			Bidirectional Meter	1	Piece

Screenshots, 3D Design Environment

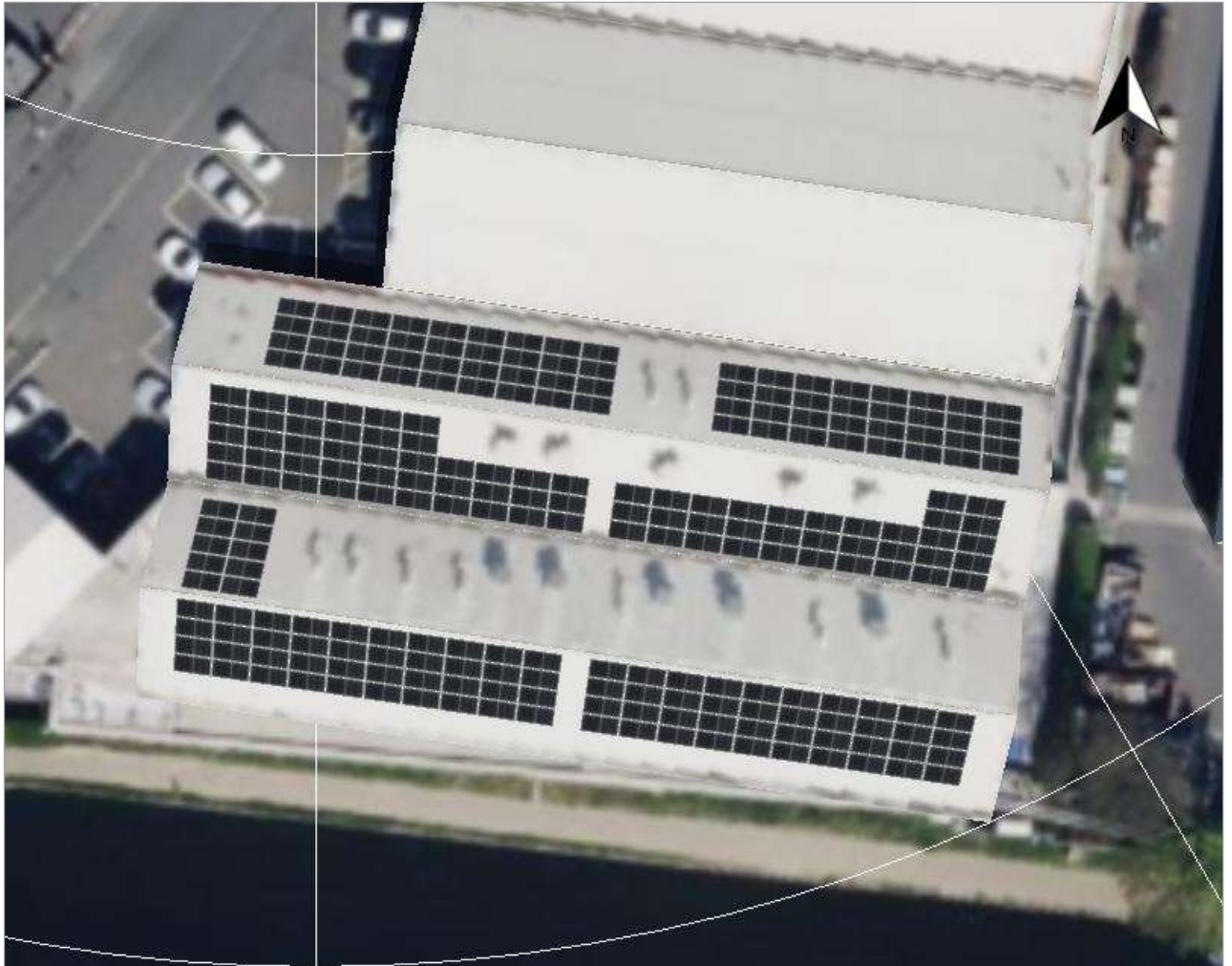


Figure: Screenshot02