Eden Sustainable Ltd
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London
EC4R 1BB

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Project Name: Reliance Worldwide Company

01/12/2022

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	171.12	kWp
PV Generator Surface	829.6	m²
Number of PV Modules	372	
Number of Inverters	3	

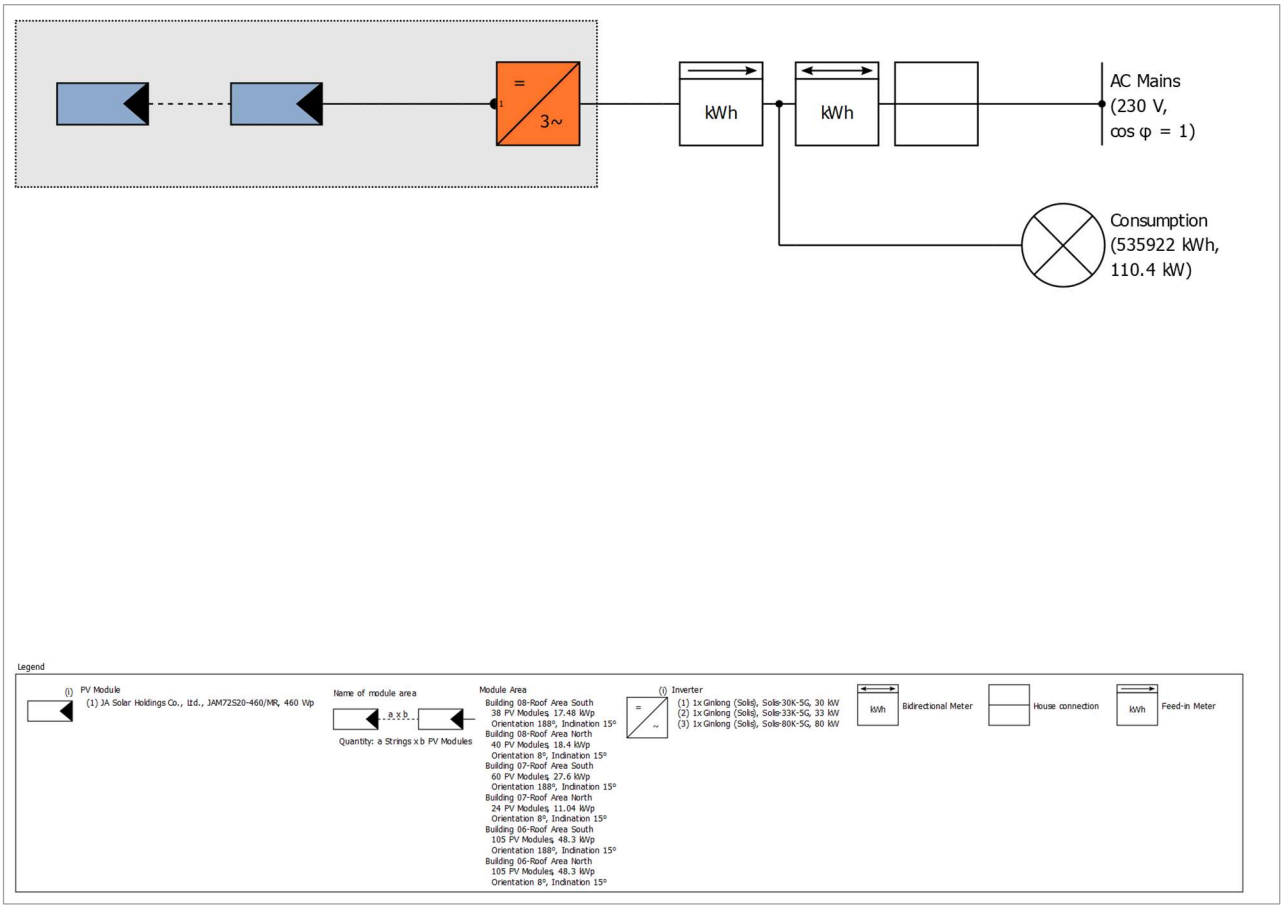


Figure: Schematic diagram

Production Forecast

Production Forecast

PV Generator Output	171.12	kWp
Spec. Annual Yield	844.36	kWh/kWp
Performance Ratio (PR)	84.76	%
Yield Reduction due to Shading	1.9	%/Year
PV Generator Energy (AC grid)	144,528	kWh/Year
Own Consumption	129,688	kWh/Year
Down-regulation at Feed-in Point	0	kWh/Year
Grid Feed-in	14,840	kWh/Year
Own Power Consumption	89.7	%
CO_2 Emissions avoided	28,031	kg / year
Level of Self-sufficiency	24.2	%

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

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	535922 kWh
RWC MPAN 2000051895326 YE 31-10-2022 CSV	535922 kWh
Load Peak	110.4 kW

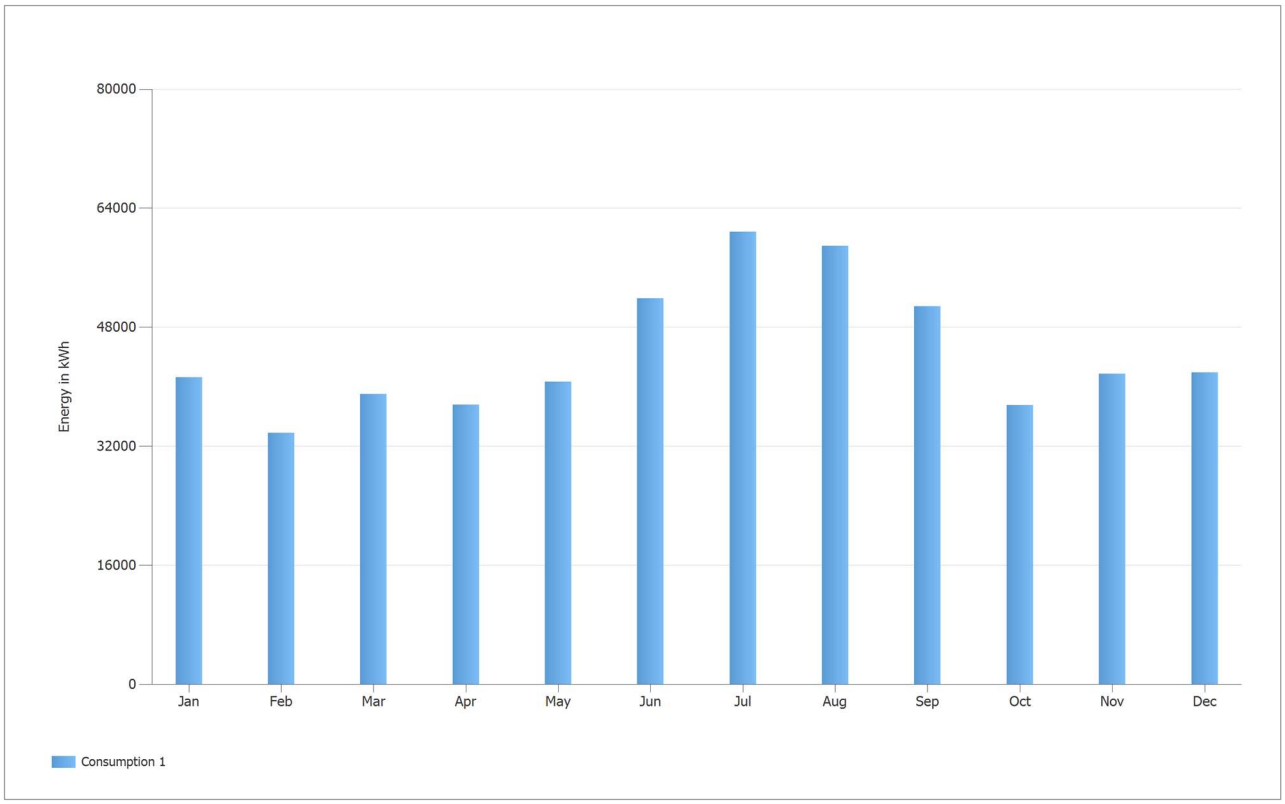


Figure: Consumption

Module Areas

1. Module Area - Building 08-Roof Area South

PV Generator, 1. Module Area - Building 08-Roof Area South

Name	Building 08-Roof Area South
PV Modules	38 x JAM72S20-460/MR (v5)
Manufacturer	JA Solar Holdings Co., Ltd.
Inclination	15 °
Orientation	South 188 °
Installation Type	Roof parallel
PV Generator Surface	84.7 m²

Figure: 1. Module Area - Building 08-Roof Area South

2. Module Area - Building 08-Roof Area North

PV Generator, 2. Module Area - Building 08-Roof Area North

Name	Building 08-Roof Area North
PV Modules	40 x JAM72S20-460/MR (v5)
Manufacturer	JA Solar Holdings Co., Ltd.
Inclination	15 °
Orientation	North 8 °
Installation Type	Roof parallel
PV Generator Surface	89.2 m²

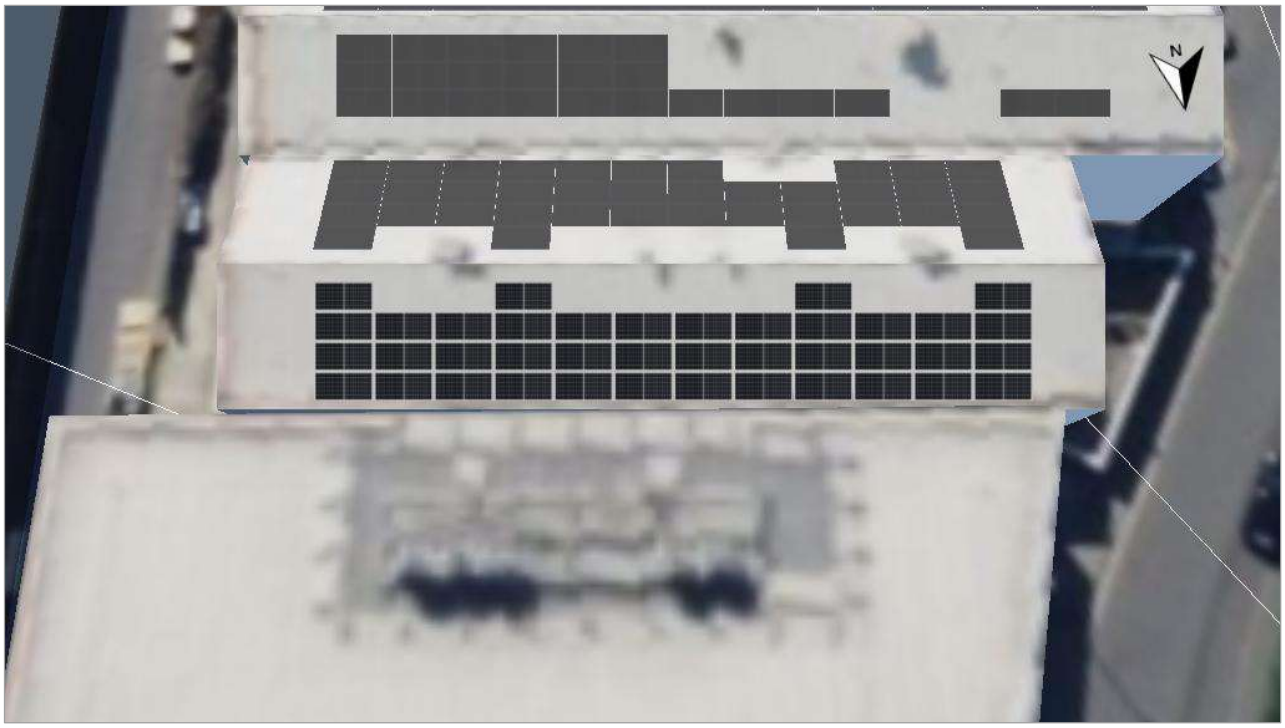


Figure: 2. Module Area - Building 08-Roof Area North

3. Module Area - Building 07-Roof Area South

PV Generator, 3. Module Area - Building 07-Roof Area South

Name	Building 07-Roof Area South
PV Modules	60 x JAM72S20-460/MR (v5)
Manufacturer	JA Solar Holdings Co., Ltd.
Inclination	15 °
Orientation	South 188 °
Installation Type	Roof parallel
PV Generator Surface	133.8 m²

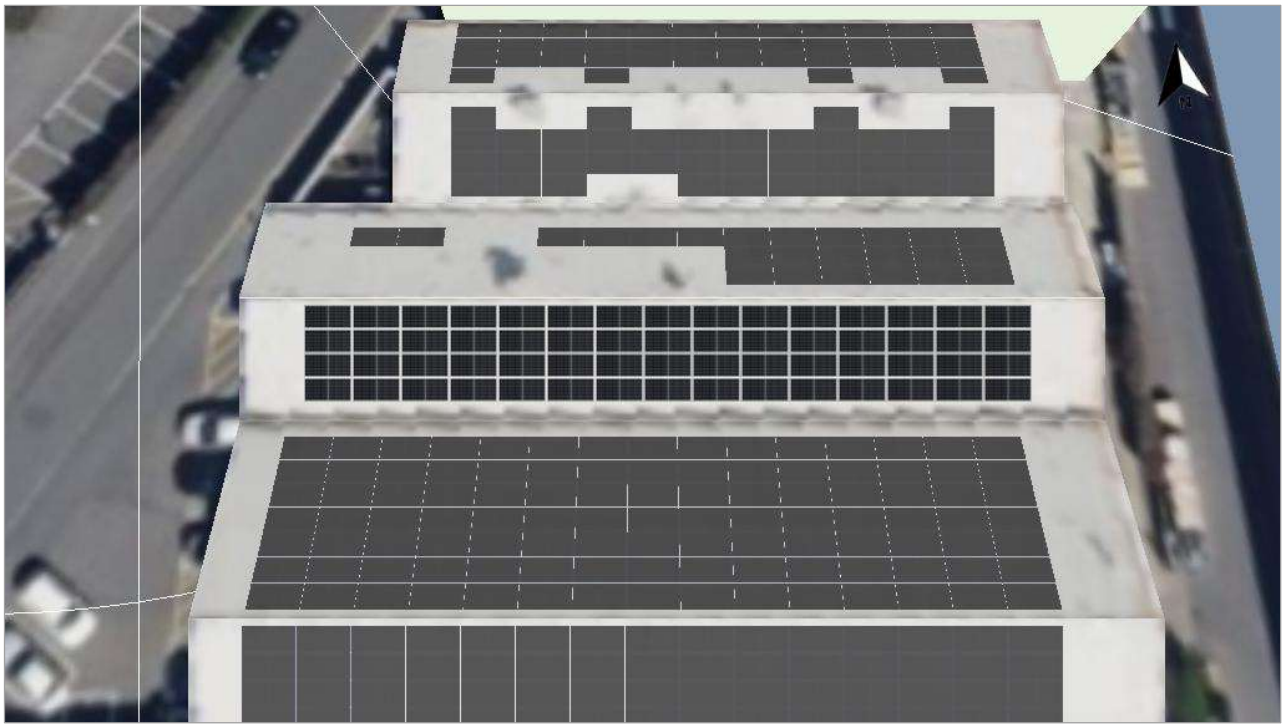


Figure: 3. Module Area - Building 07-Roof Area South

4. Module Area - Building 07-Roof Area North

PV Generator, 4. Module Area - Building 07-Roof Area North

Name	Building 07-Roof Area North
PV Modules	24 x JAM72S20-460/MR (v5)
Manufacturer	JA Solar Holdings Co., Ltd.
Inclination	15 °
Orientation	North 8 °
Installation Type	Roof parallel
PV Generator Surface	53.5 m²

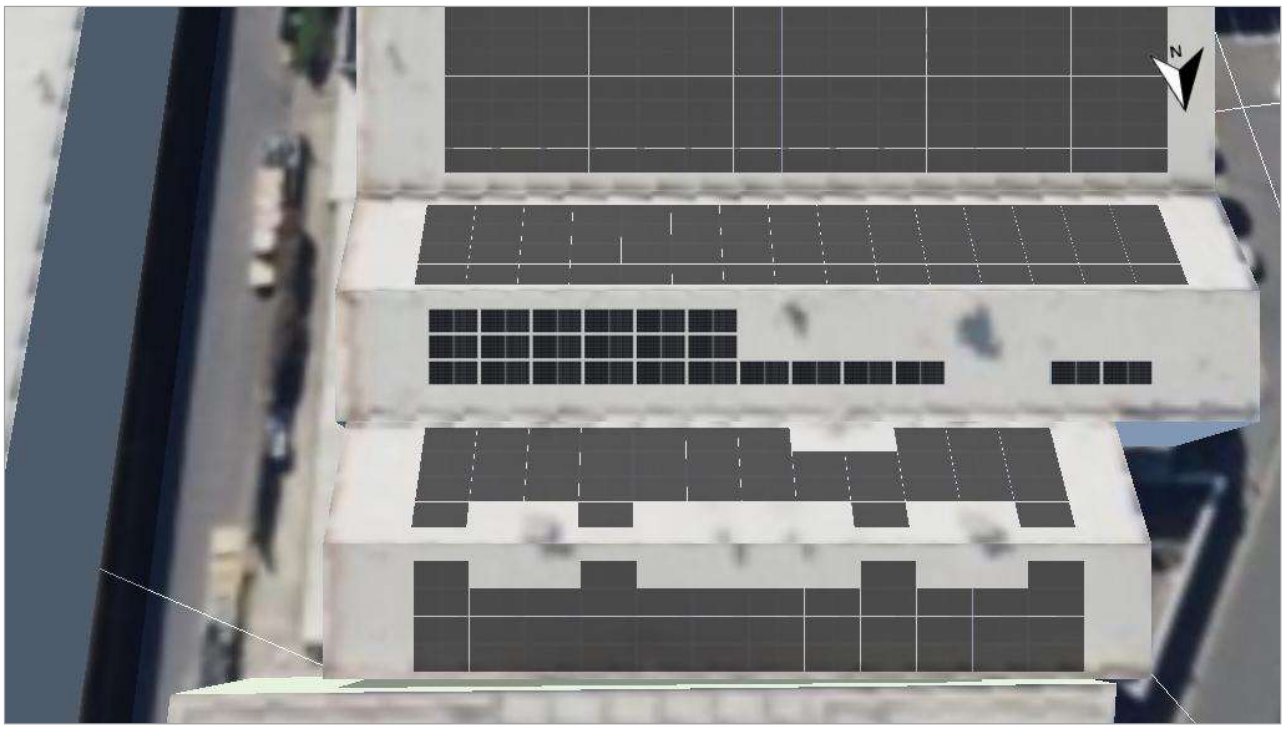


Figure: 4. Module Area - Building 07-Roof Area North

5. Module Area - Building 06-Roof Area South

PV Generator, 5. Module Area - Building 06-Roof Area South

Name	Building 06-Roof Area South
PV Modules	105 x JAM72S20-460/MR (v5)
Manufacturer	JA Solar Holdings Co., Ltd.
Inclination	15 °
Orientation	South 188 °
Installation Type	Roof parallel
PV Generator Surface	234.2 m²

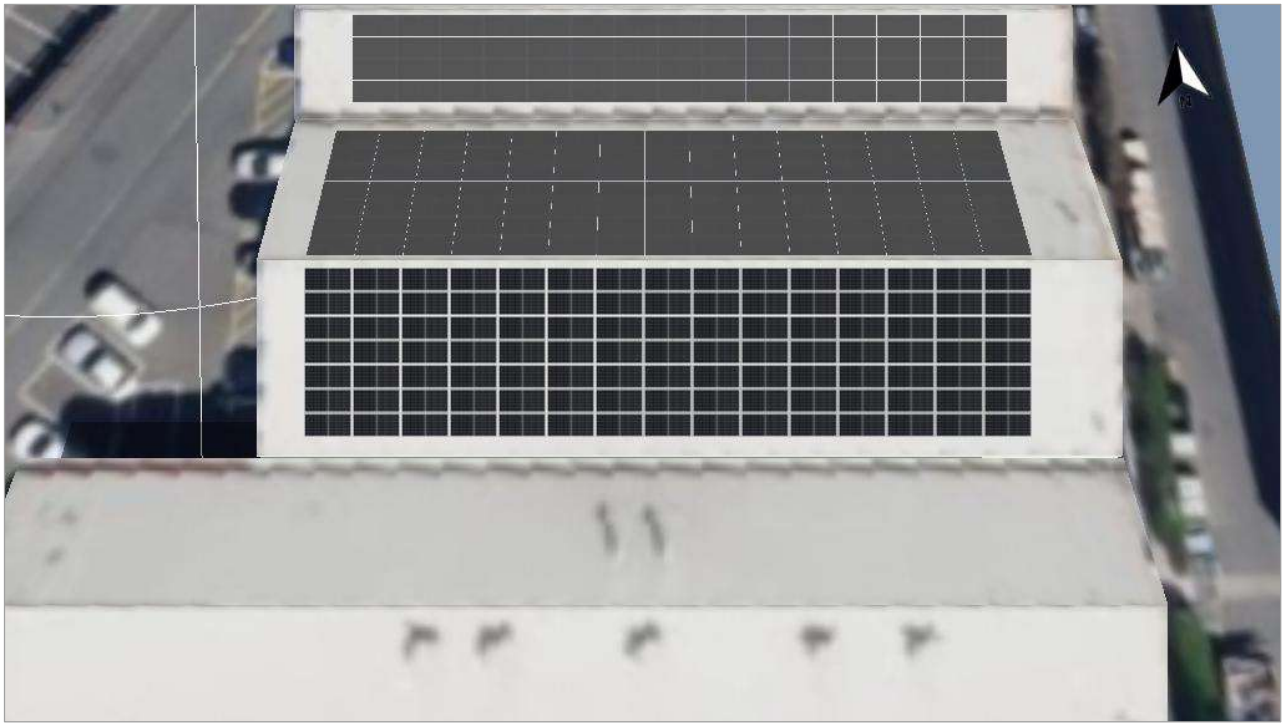


Figure: 5. Module Area - Building 06-Roof Area South

6. Module Area - Building 06-Roof Area North

PV Generator, 6. Module Area - Building 06-Roof Area North

Name	Building 06-Roof Area North
PV Modules	105 x JAM72S20-460/MR (v5)
Manufacturer	JA Solar Holdings Co., Ltd.
Inclination	15 °
Orientation	North 8 °
Installation Type	Roof parallel
PV Generator Surface	234.2 m²

Figure: 6. Module Area - Building 06-Roof Area North

Horizon Line, 3D Design

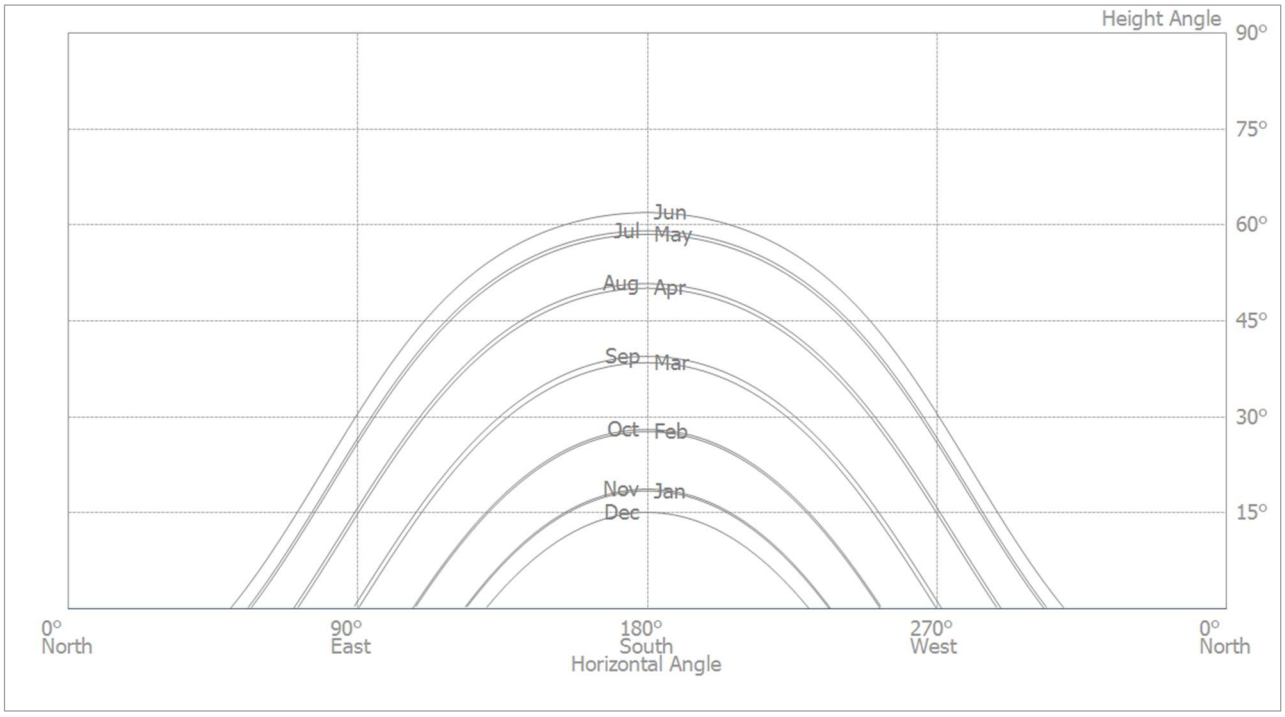


Figure: Horizon (3D Design)

Inverter configuration

Configuration 1

Module Areas	Building 08-Roof Area South + Building 08-Roof Area North
Inverter 1	
Model	Solis-30K-5G (v2)
Manufacturer	Ginlong (Solis)
Quantity	1
Sizing Factor	119.6 %
Configuration	MPP 1: 2 x 19
	MPP 2: 2 x 13
	MPP 3: 1 x 14

Configuration 2

Module Areas	Building 07-Roof Area South + Building 07-Roof Area North
Inverter 1	
Model	Solis-33K-5G (v2)
Manufacturer	Ginlong (Solis)
Quantity	1
Sizing Factor	117.1 %
Configuration	MPP 1: 2 x 16
	MPP 2: 2 x 14
	MPP 3: 2 x 12

Configuration 3

Module Areas	Building 06-Roof Area South + Building 06-Roof Area North
Inverter 1	
Model	Solis-80K-5G (v4)
Manufacturer	Ginlong (Solis)
Quantity	1
Sizing Factor	120.8 %
Configuration	MPP 1: 2 x 14
	MPP 2: 2 x 14
	MPP 3: 2 x 11
	MPP 4: 1 x 14
	MPP 5: 1 x 13
	MPP 6: 2 x 15
	MPP 7: 2 x 14
	MPP 8: 2 x 14
	MPP 9: 1 x 19

AC Mains

AC Mains

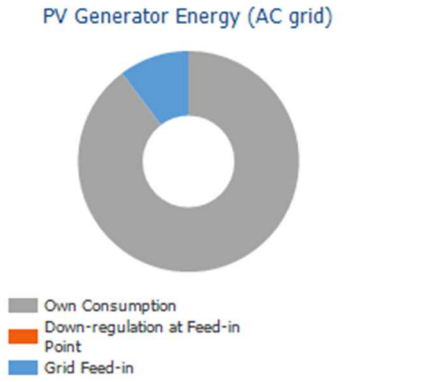
Number of Phases	3
Mains voltage between phase and neutral	230 V
Displacement Power Factor (cos phi)	+/- 1

Simulation Results

Results Total System

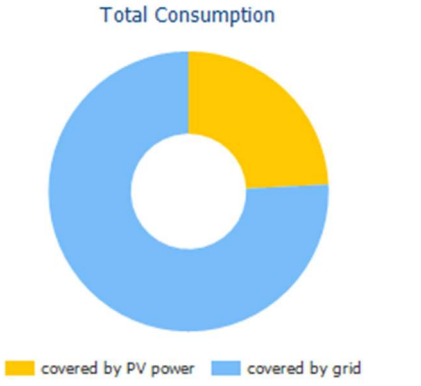
PV System

PV Generator Output	171.12	kWp
Spec. Annual Yield	844.36	kWh/kWp
Performance Ratio (PR)	84.76	%
Yield Reduction due to Shading	1.9	%/Year
PV Generator Energy (AC grid)	144,528	kWh/Year
Own Consumption	129,688	kWh/Year
Down-regulation at Feed-in Point	0	kWh/Year
Grid Feed-in	14,840	kWh/Year
Own Power Consumption	89.7	%
CO_2 Emissions avoided	28,031	kg / year



Appliances

Appliances	535,922	kWh/Year
Standby Consumption (Inverter)	40	kWh/Year
Total Consumption	535,962	kWh/Year
covered by PV power	129,688	kWh/Year
covered by grid	406,274	kWh/Year
Solar Fraction	24.2	%



Level of Self-sufficiency

Total Consumption	535,962	kWh/Year
covered by grid	406,274	kWh/Year
Level of Self-sufficiency	24.2	%

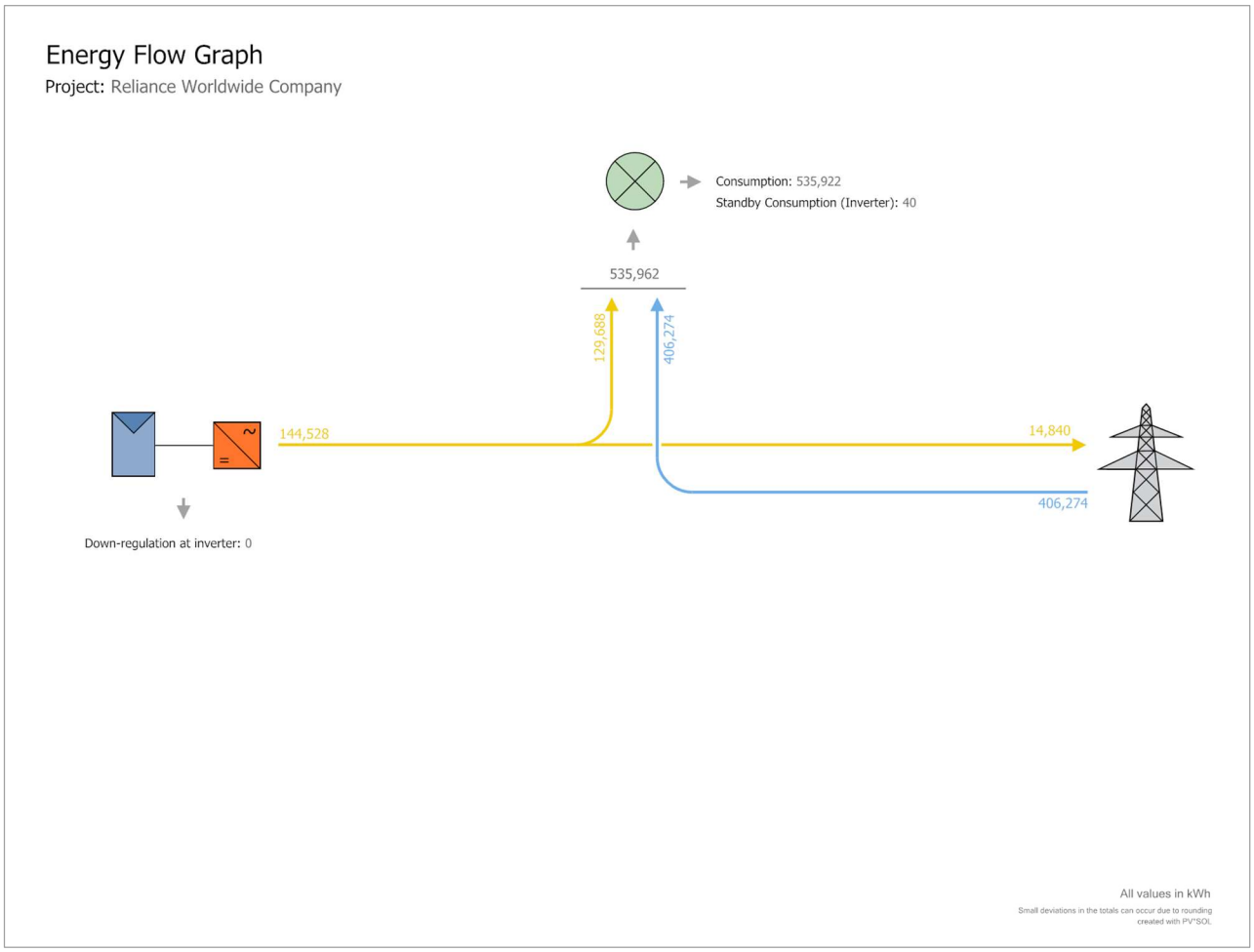


Figure: Energy flow

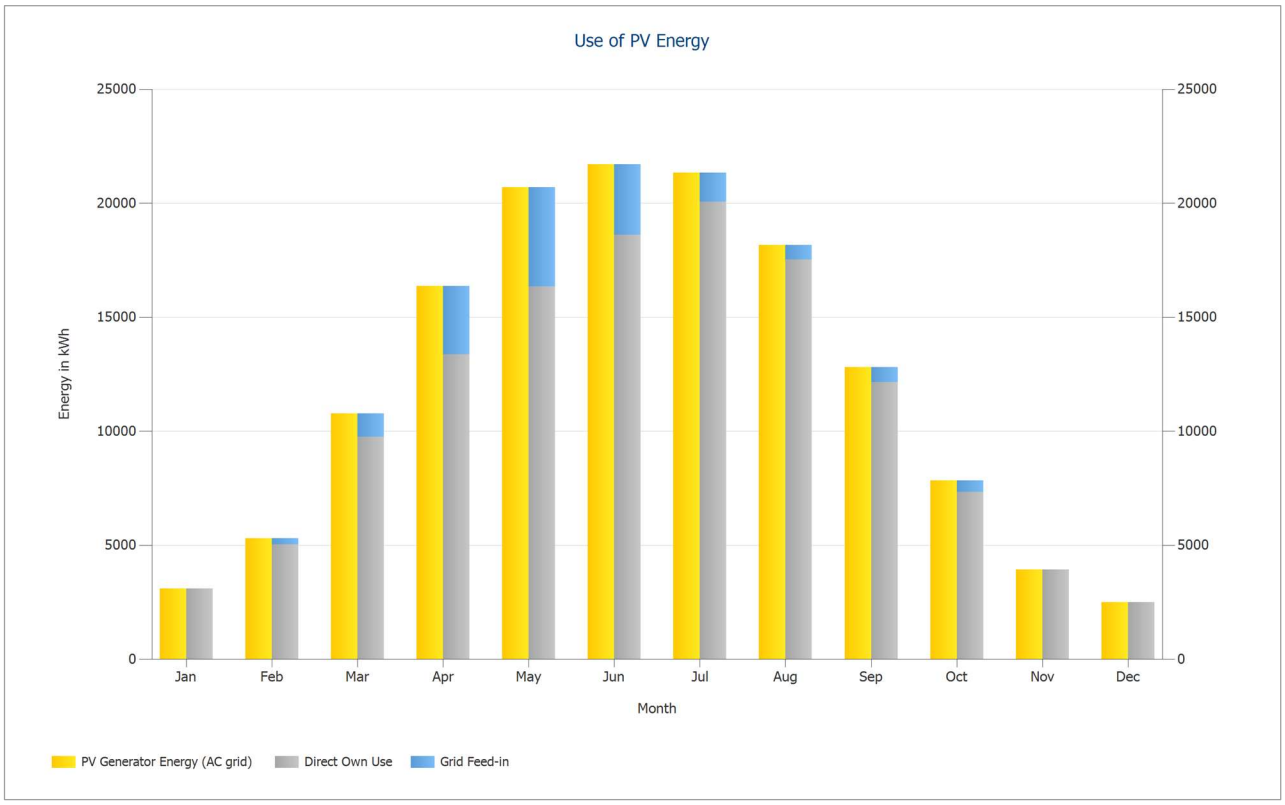


Figure: Use of PV Energy

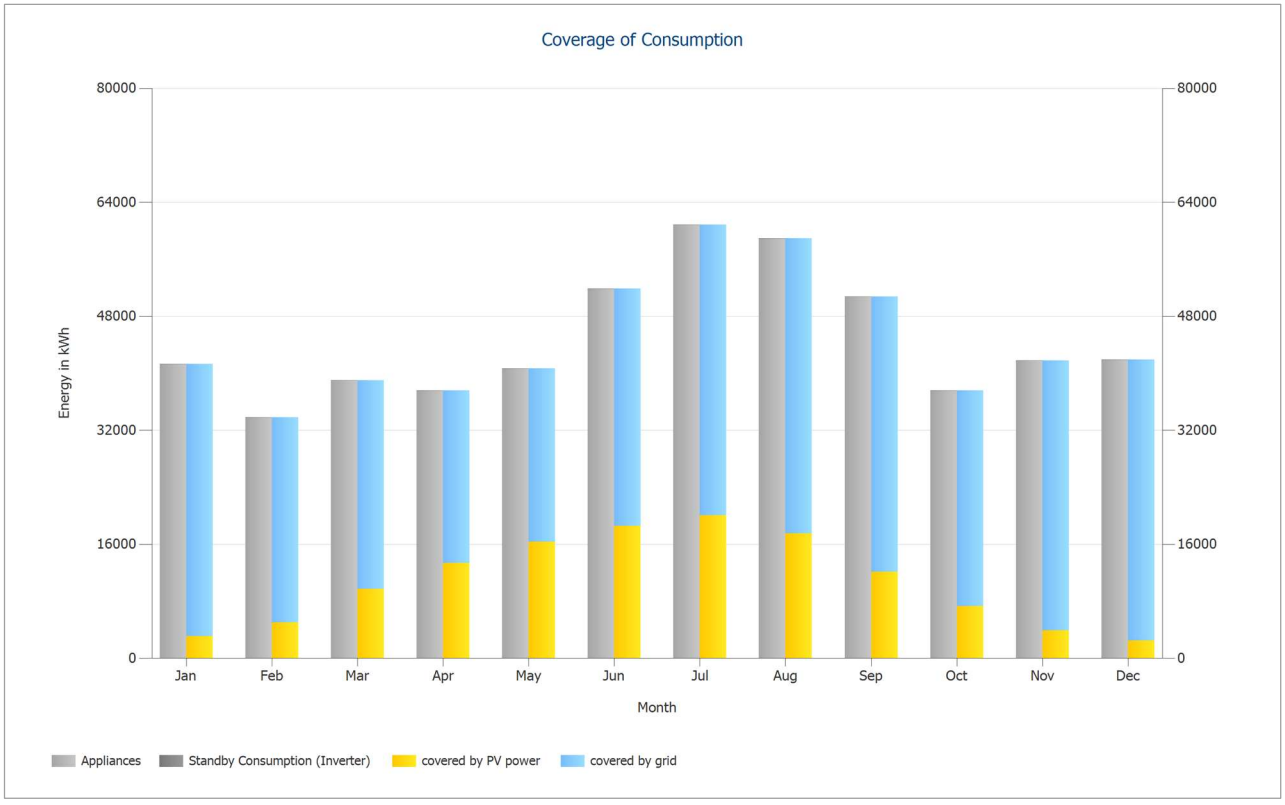


Figure: Coverage of Consumption

Plans and parts list

Circuit Diagram

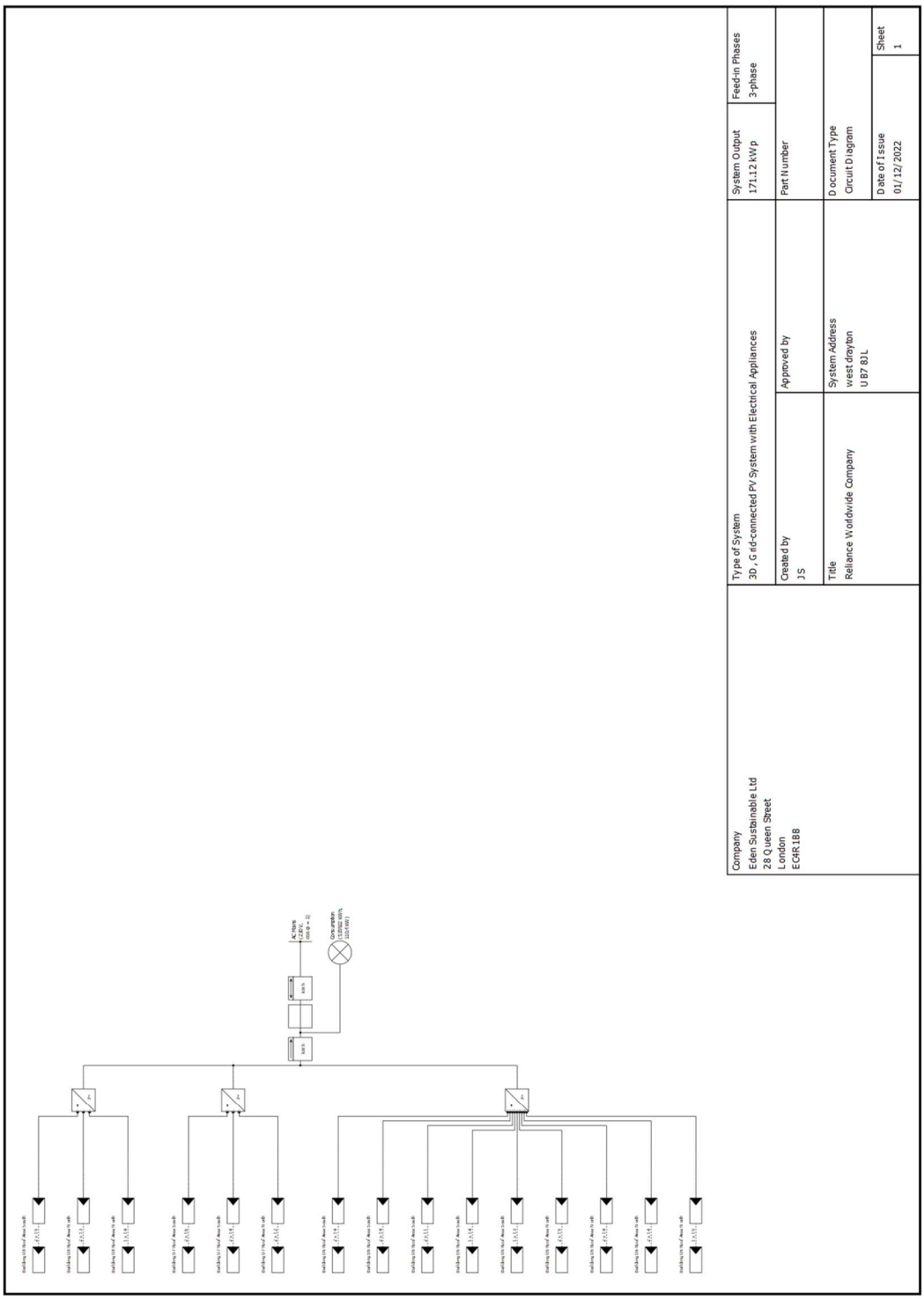


Figure: Circuit Diagram

Overview plan

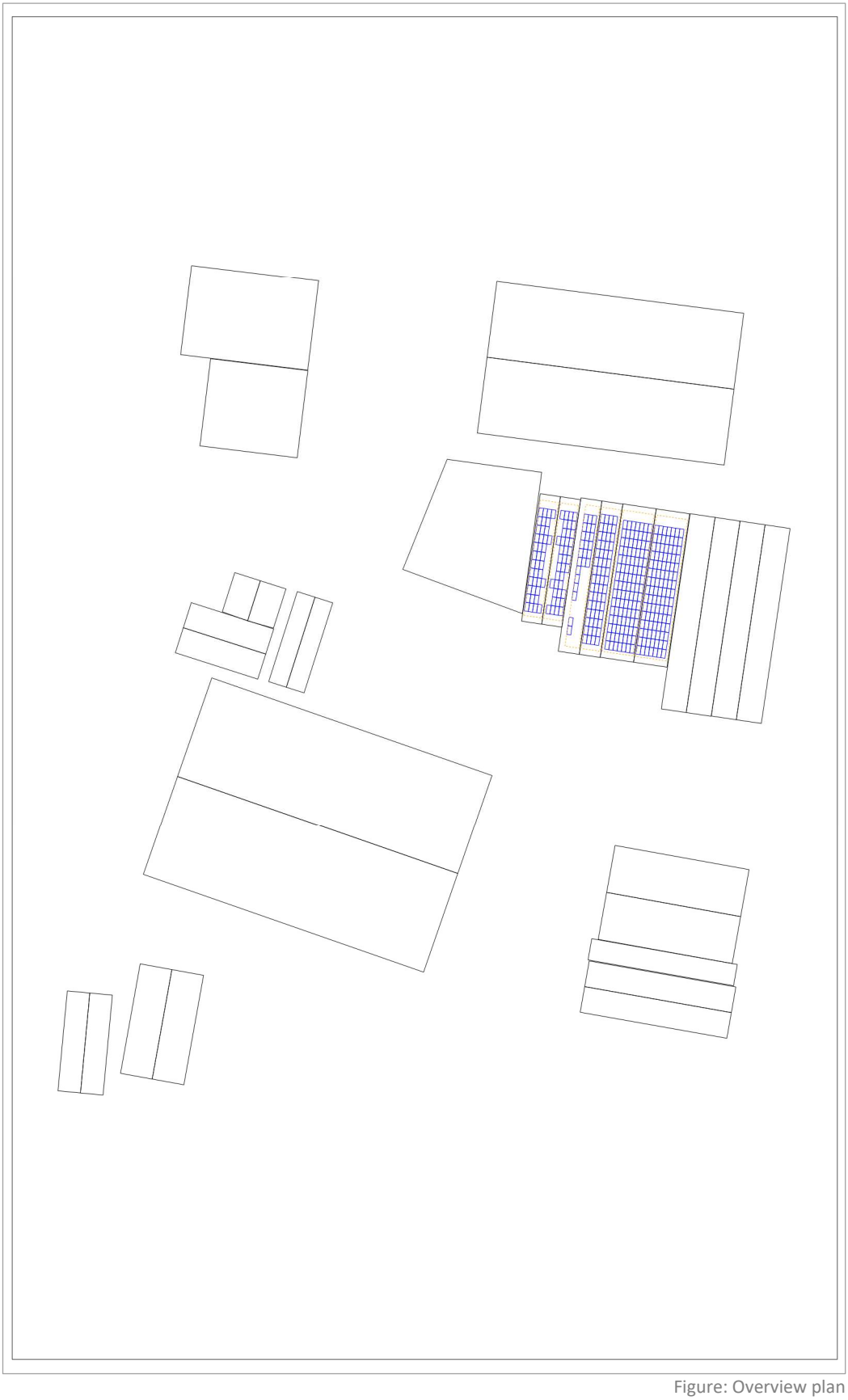


Figure: Overview plan

Dimensioning Plan

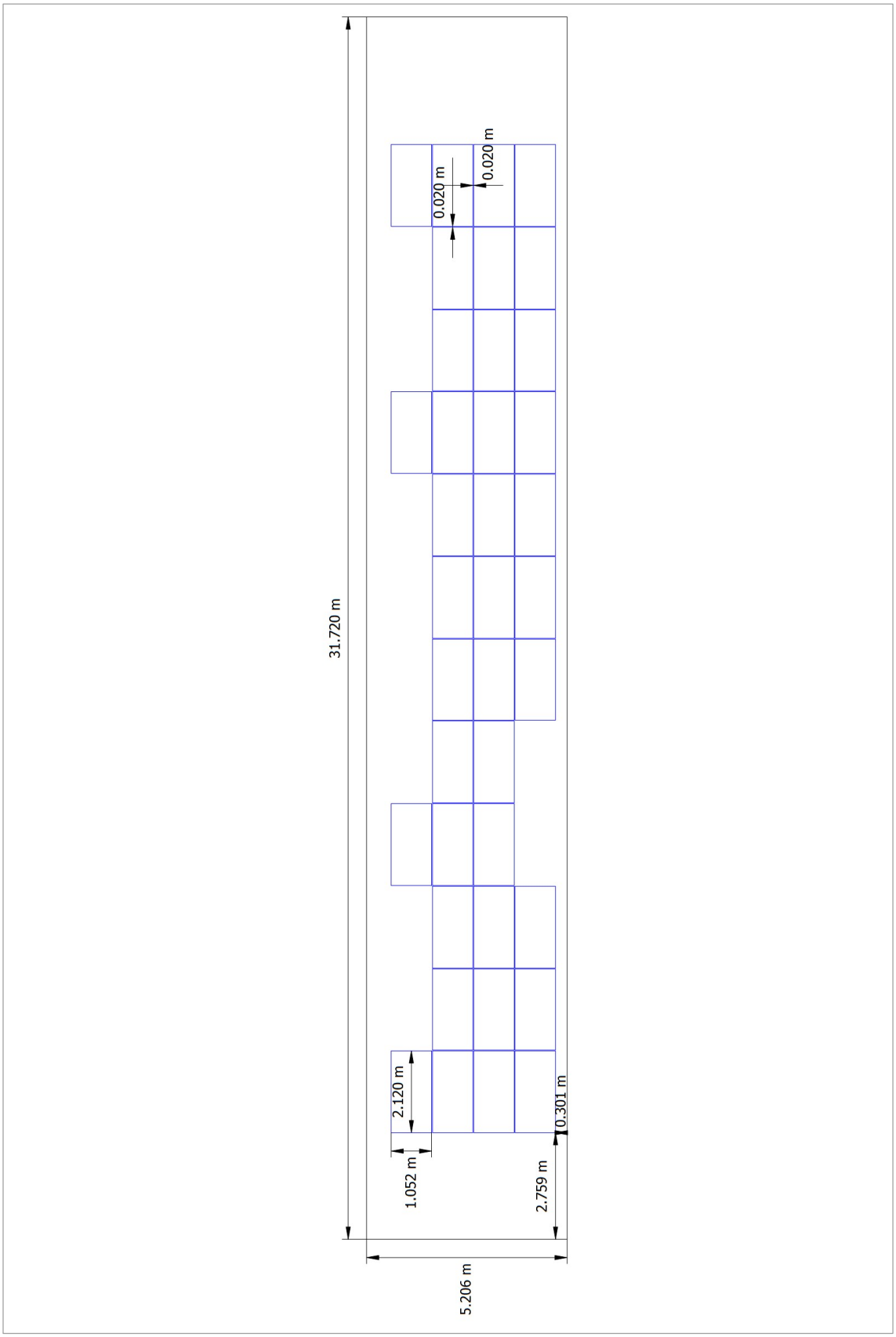


Figure: Building 08-Roof Area South

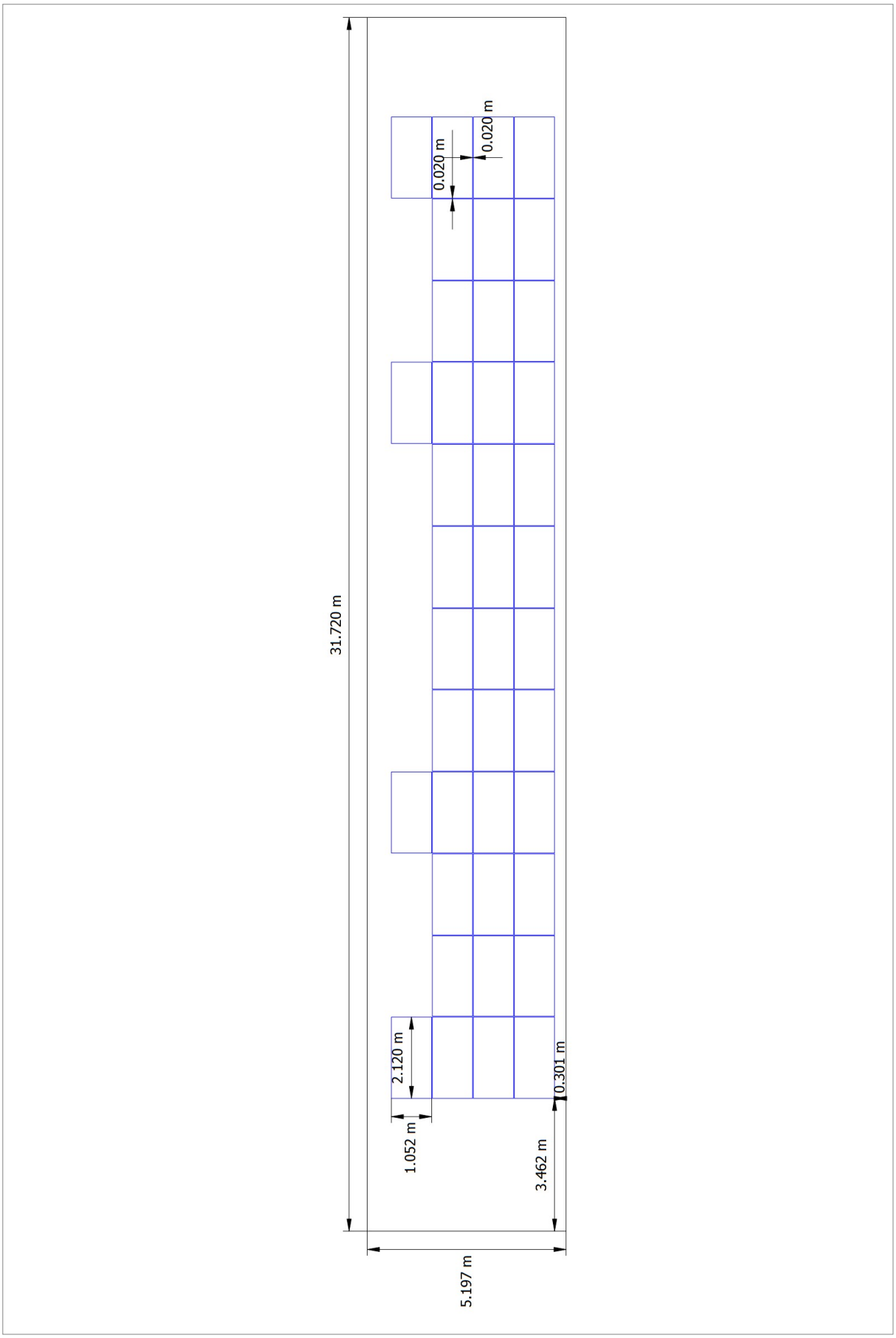


Figure: Building 08-Roof Area North

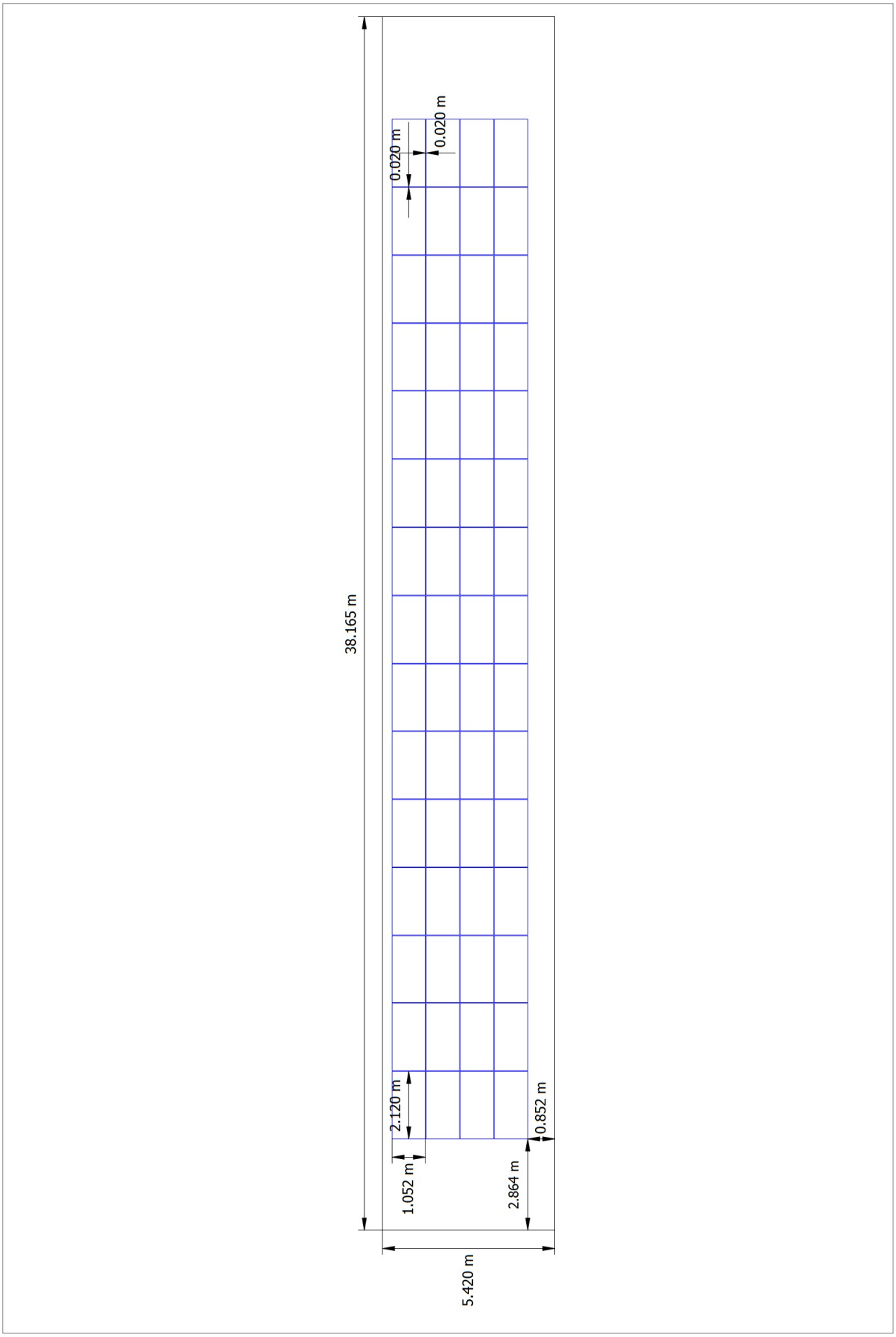


Figure: Building 07-Roof Area South

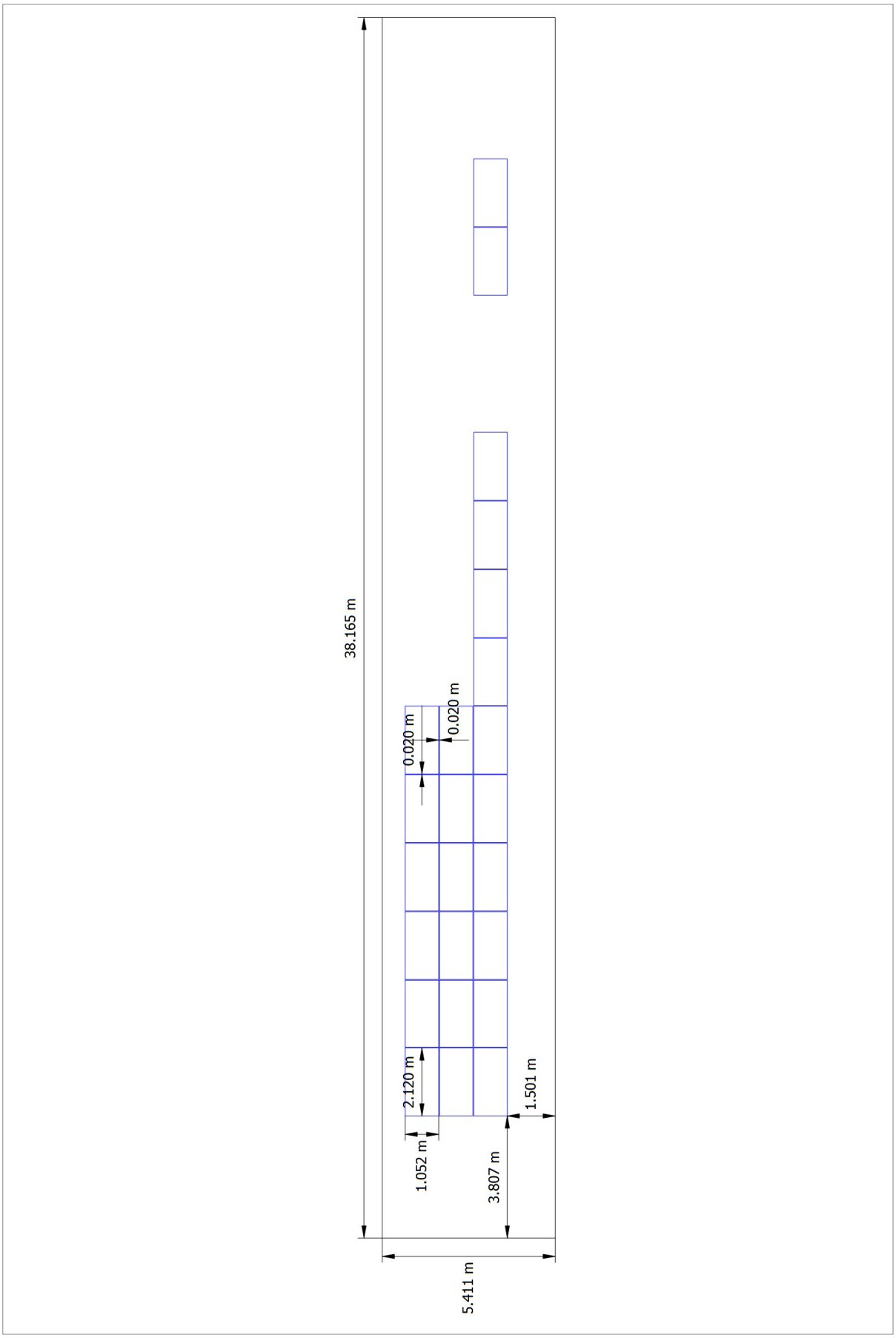


Figure: Building 07-Roof Area North

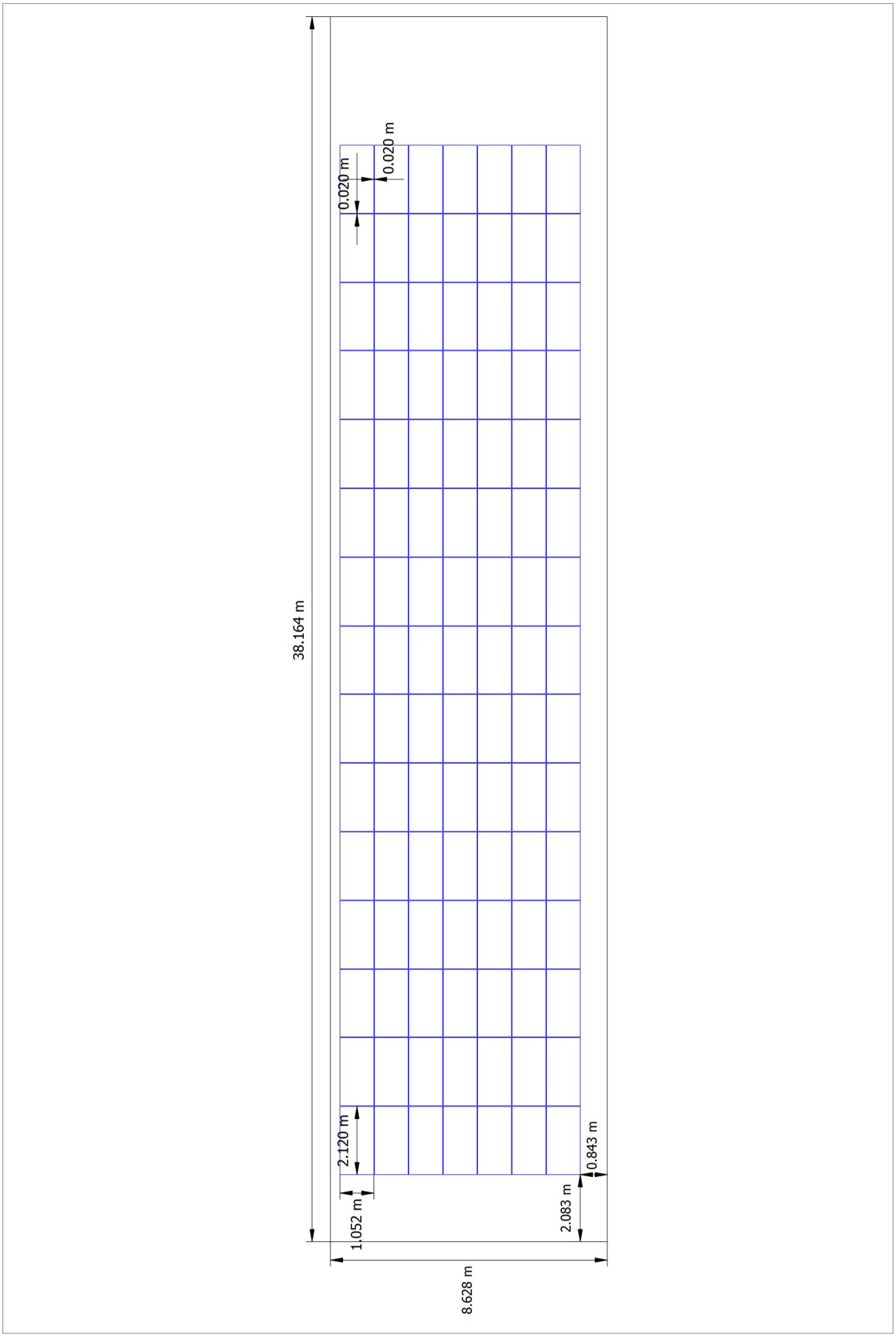


Figure: Building 06-Roof Area South

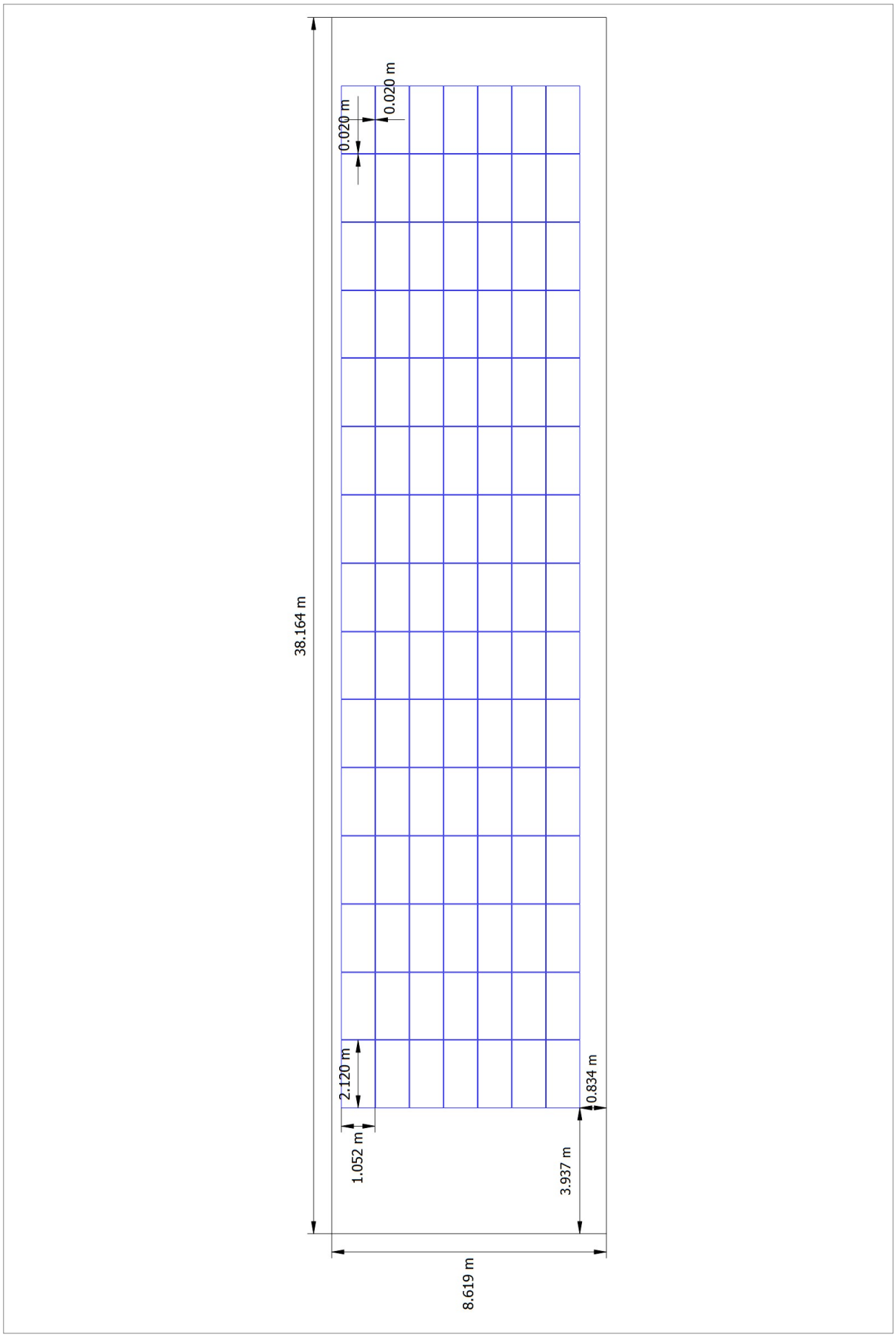


Figure: Building 06-Roof Area North

String Plan

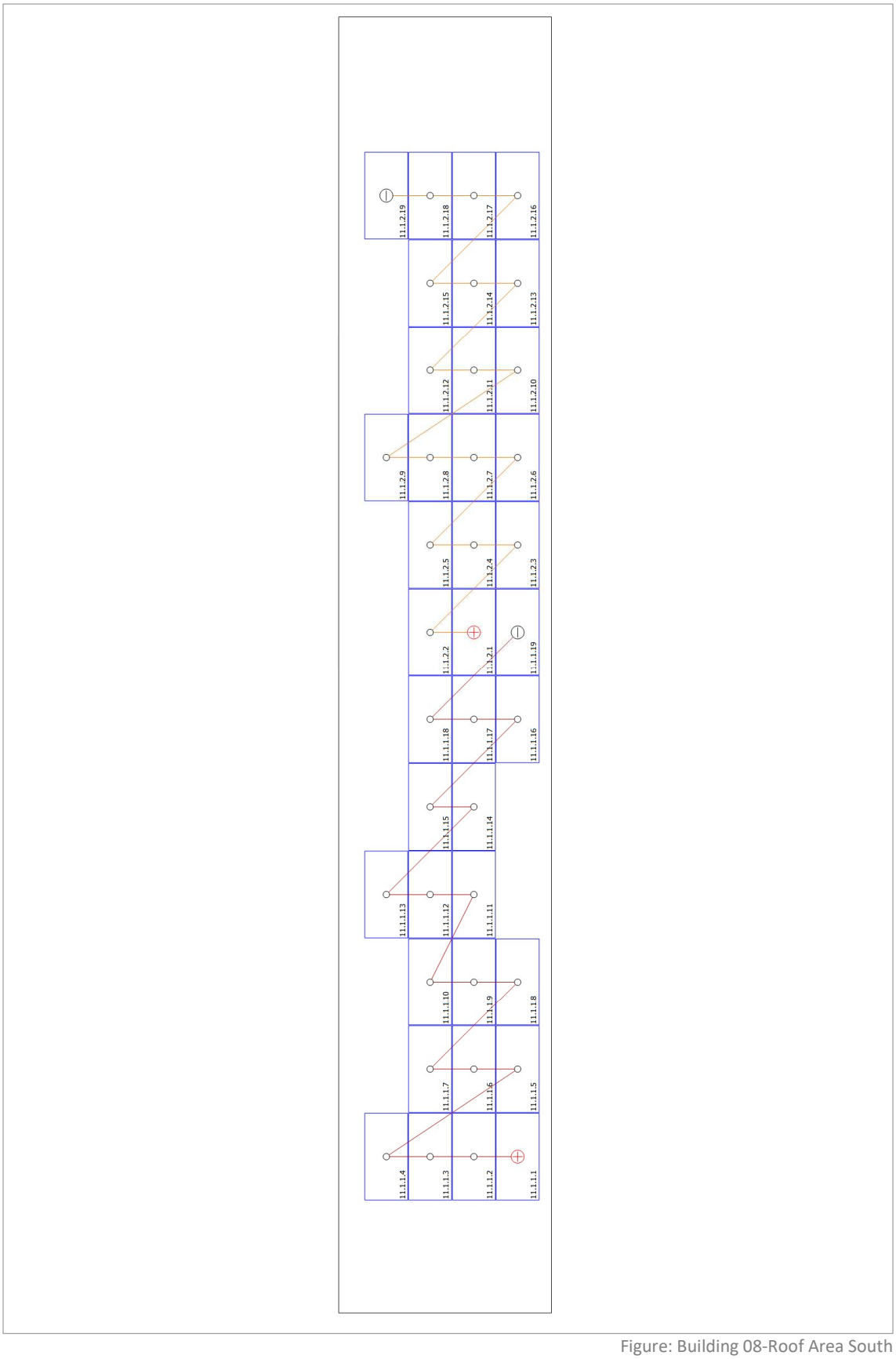


Figure: Building 08-Roof Area South

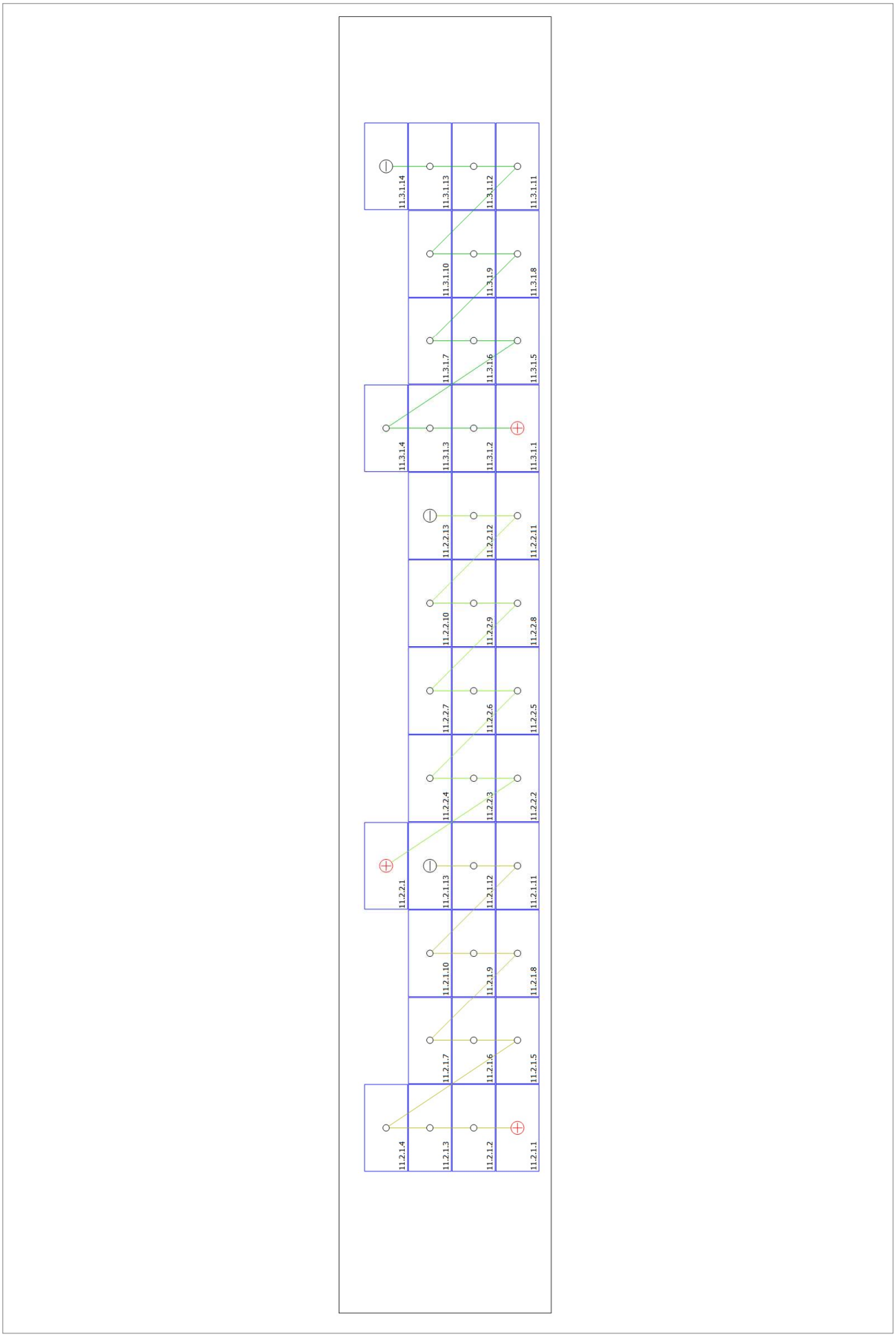


Figure: Building 08-Roof Area North

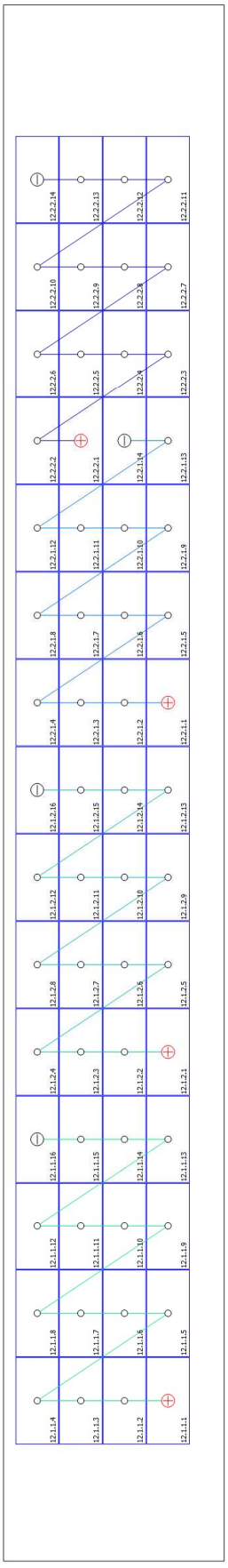


Figure: Building 07-Roof Area South

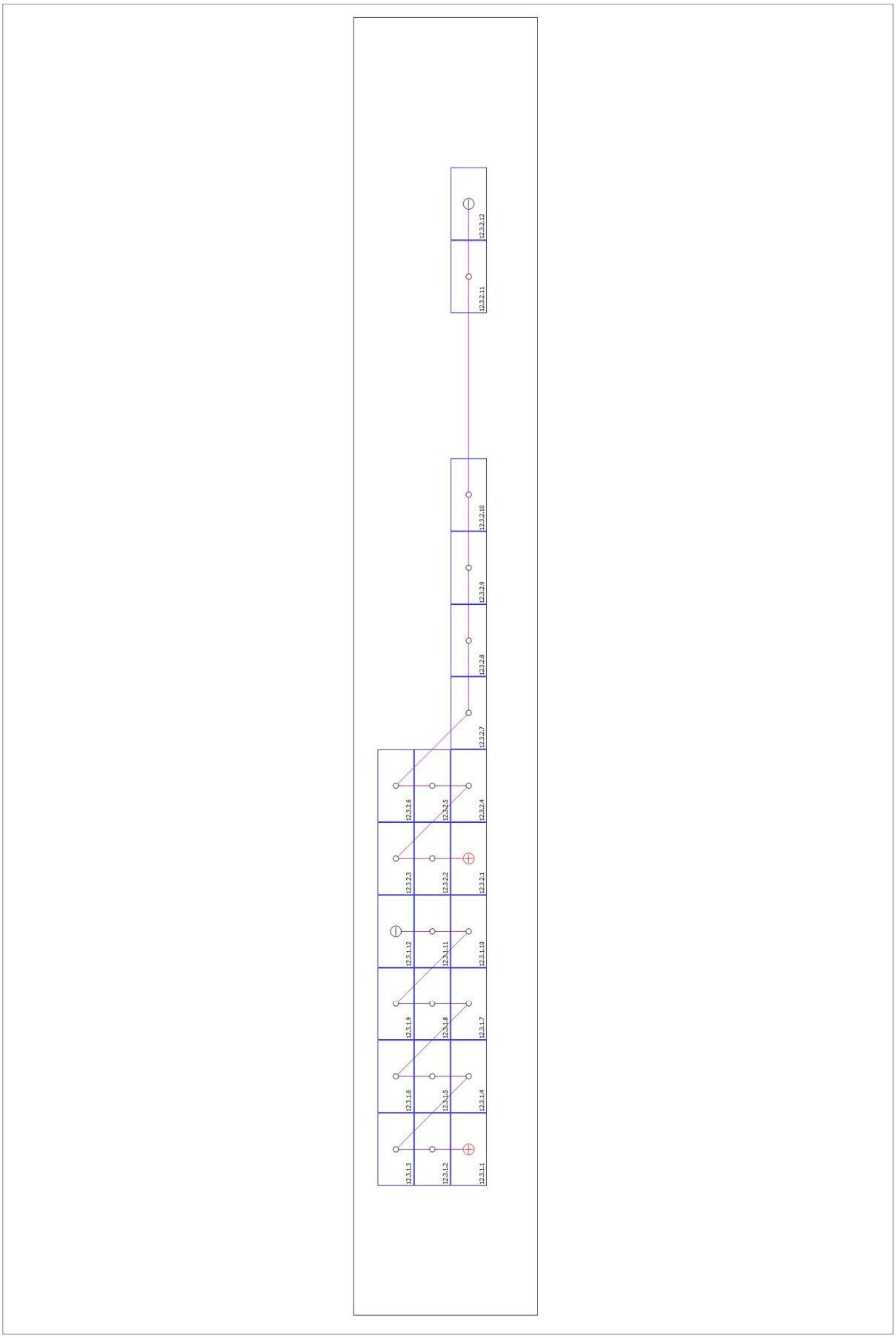


Figure: Building 07-Roof Area North

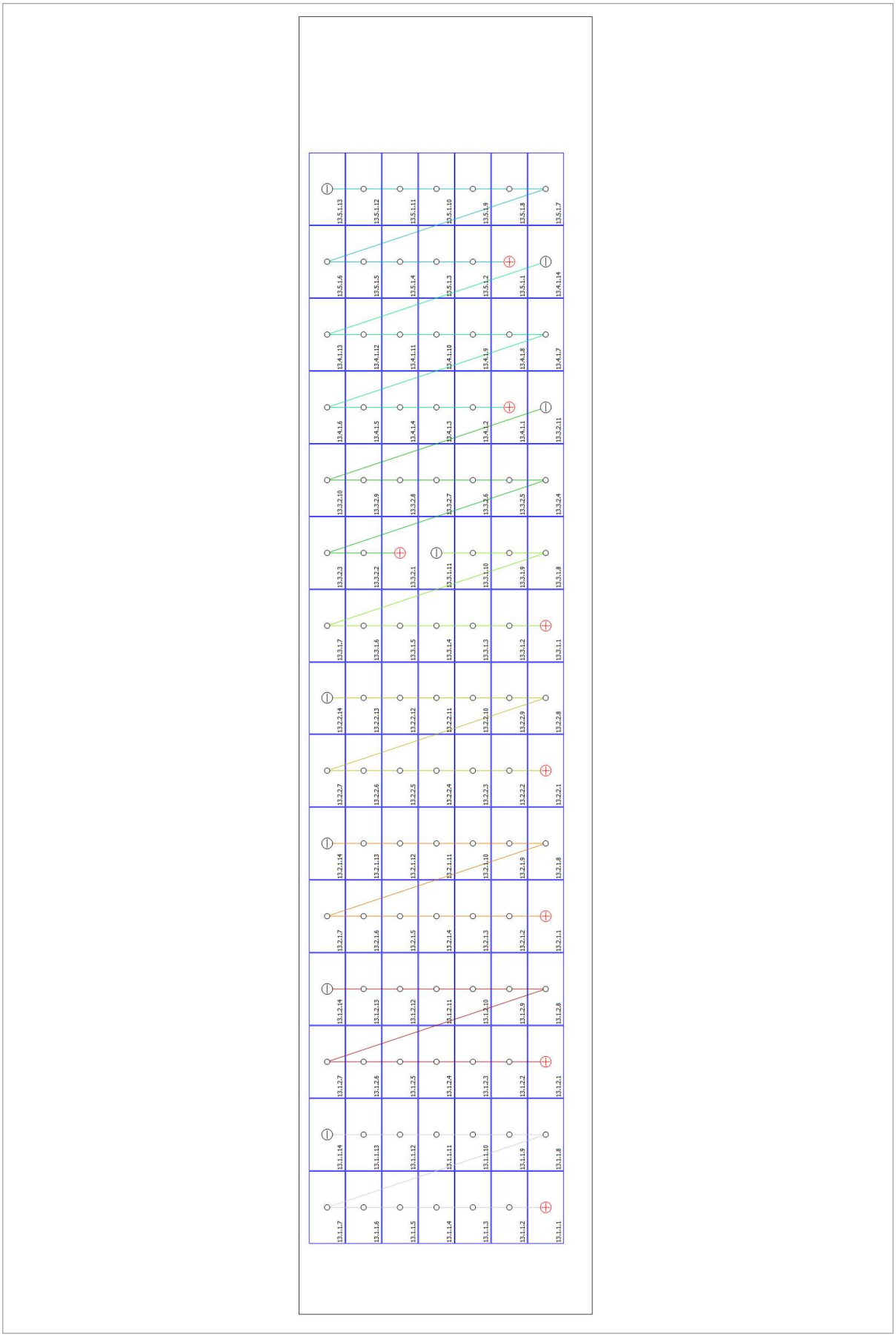


Figure: Building 06-Roof Area South

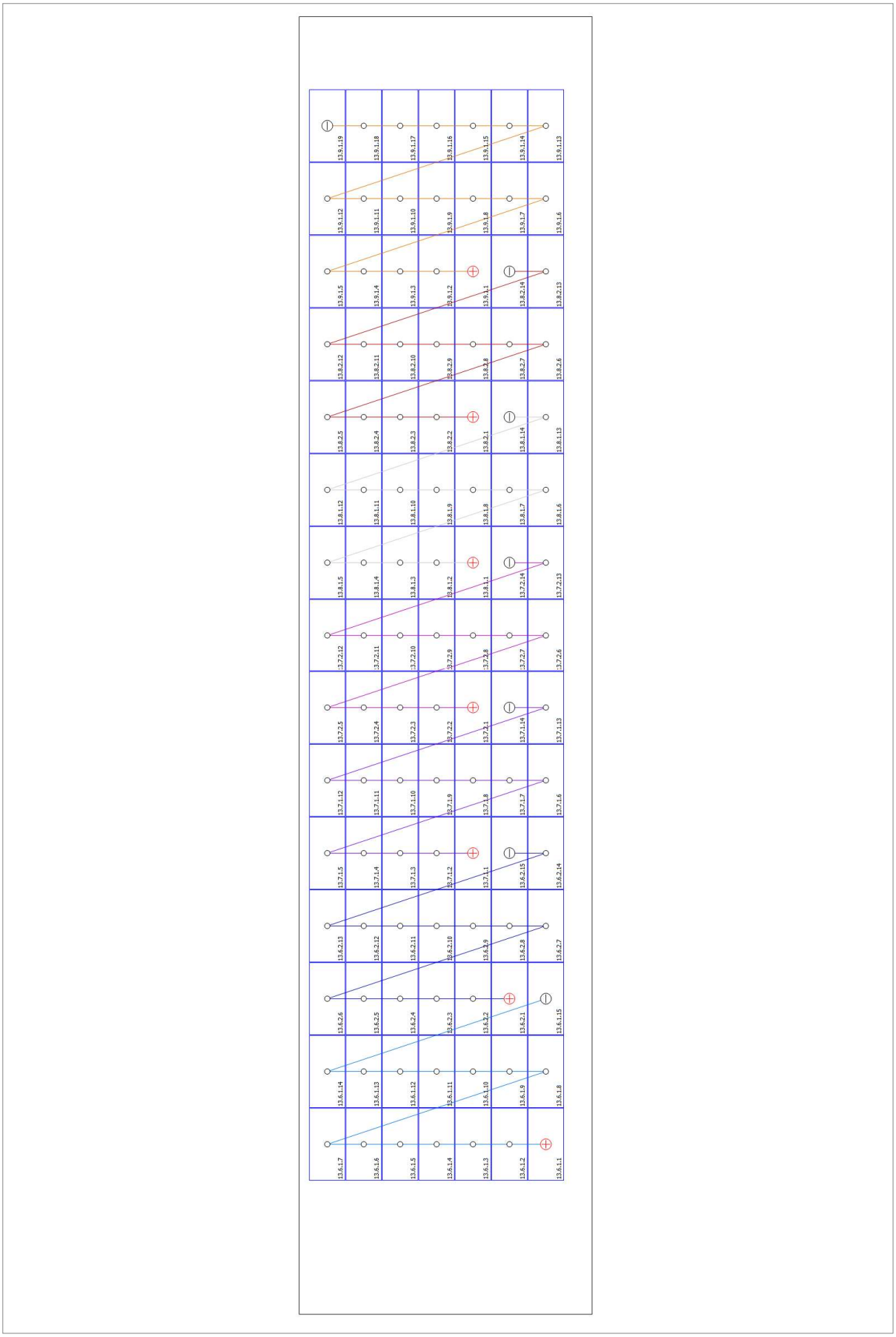


Figure: Building 06-Roof Area North

Parts list

Parts list

#	Type	Item number	Manufacturer	Name	Quantity	Unit
1	PV Module		JA Solar Holdings Co., Ltd.	JAM72S20-460/MR	372	Piece
2	Inverter		Ginlong (Solis)	Solis-30K-5G	1	Piece
3	Inverter		Ginlong (Solis)	Solis-33K-5G	1	Piece
4	Inverter		Ginlong (Solis)	Solis-80K-5G	1	Piece
5	Components			Feed-in Meter	1	Piece
6	Components			House connection	1	Piece
7	Components			Bidirectional Meter	1	Piece

Screenshots, 3D Design

Environment

Figure: Screenshot02