CorEnergy
CorEnergy Ltd, Enterprise Point,
Altrincham Road,Sharston
Manchester, M22 9AF

Contact person:
John Honeyball
Phone: 07929873384
E-Mail: John.Honeyball@cor-energy.co.uk

IPSEN Biopharm

12 Ash Road North, Wrexham.
LL13 9JT

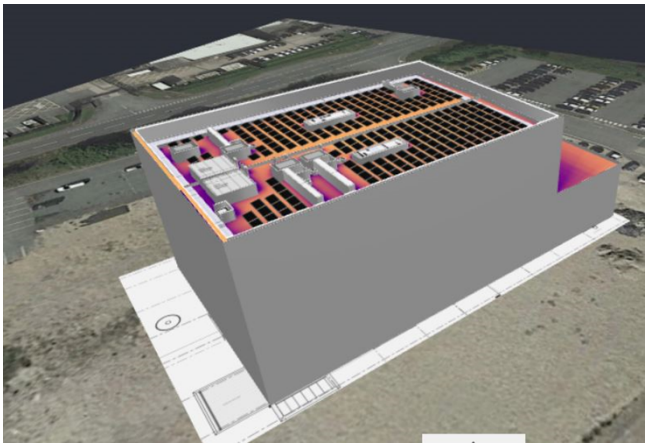
Customer No.: PR240057
Project Name: Ipsen Biophorm

25/03/2025

Your PV system from CorEnergy

Address of Installation

12 Ash Road North, Wrexham.
LL13 9JT



Project Description:
KWP - New Build Installation

Project Overview

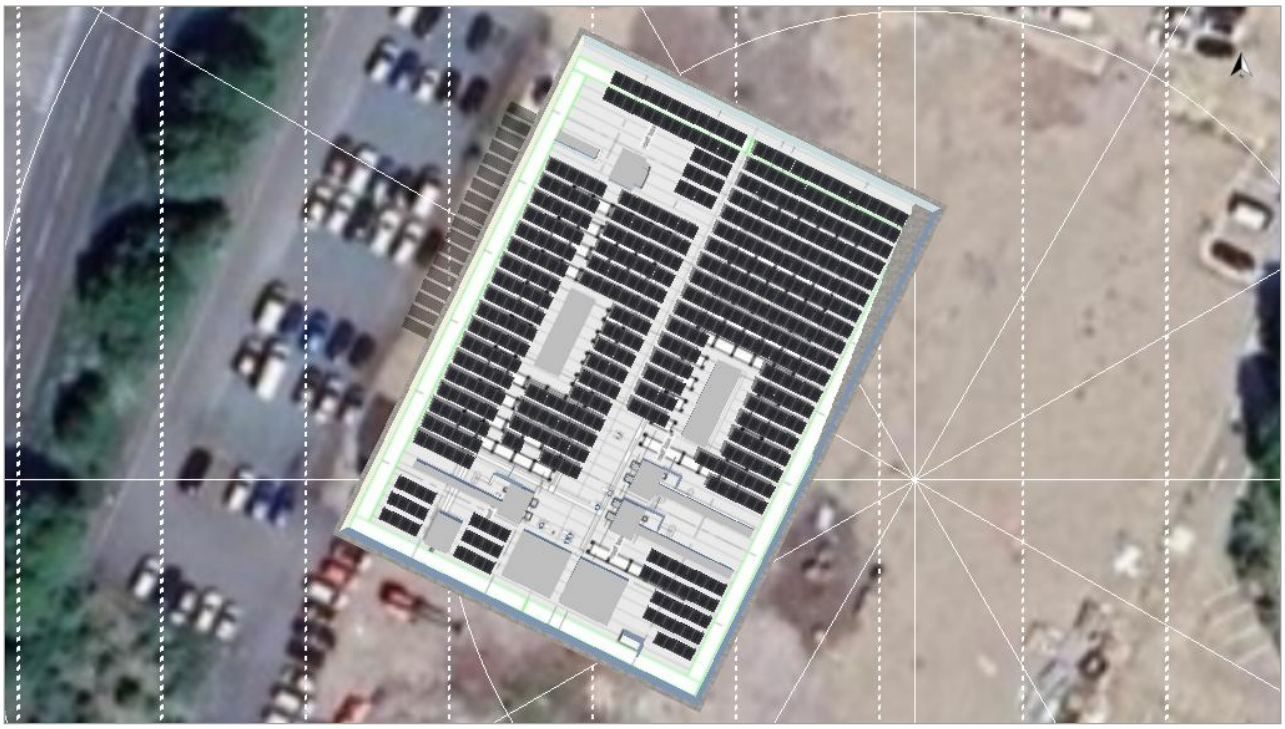


Figure: Overview Image, 3D Design

PV System

3D, Grid-connected PV System with Electrical Appliances

Climate Data	Hawarden (Auto), GBR (2001 - 2020)	
Values source	Meteonorm 8.2	
PV Generator Output	130.66	kWp
PV Generator Surface	555.5	m²
Number of PV Modules	278	
Number of Inverters	1	

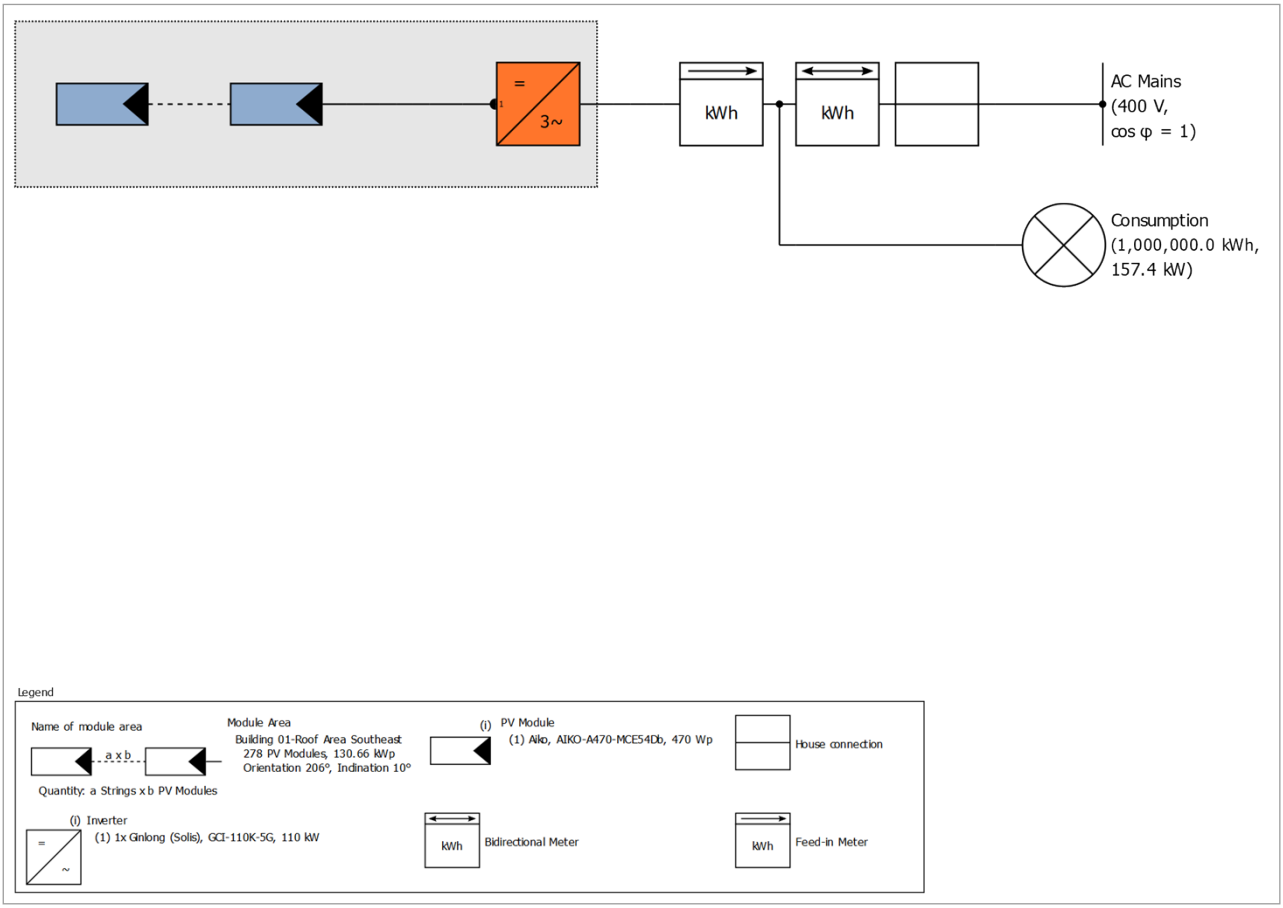


Figure: Schematic diagram

Production Forecast

Production Forecast

PV Generator Output	130.66	kWp
Spec. Annual Yield	926.20	kWh/kWp
Performance Ratio (PR)	86.21	%
Yield Reduction due to Shading	10.9	%
PV Generator Energy (AC grid)	121,031	kWh/Year
Own Consumption	121,031	kWh/Year
Clipping at Feed-in Point	0	kWh/Year
Grid Export	0	kWh/Year
Own Power Consumption	100.0	%
CO_2 Emissions avoided	27,228	kg / year
Level of Self-sufficiency	12.1	%

Financial Analysis

Your Gain

Total investment costs	195,990.00	£
Internal Rate of Return (IRR)	12.80	%
Amortization Period	7.6	Years
Electricity Production Costs	0.0897	£/kWh
Energy Balance/Feed-in Concept	Surplus 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 with Electrical Appliances

Climate Data

Location	Hawarden (Auto), GBR (2001 - 2020)
Values source	Meteonorm 8.2
Data resolution	1 h
Simulation models used:	
- Diffuse Irradiation onto Horizontal Plane	Reindl reduced
- Irradiance onto tilted surface	Perez

Consumption

Total Consumption	1000000 kWh
Research institute	1000000 kWh
Load Peak	157.4 kW

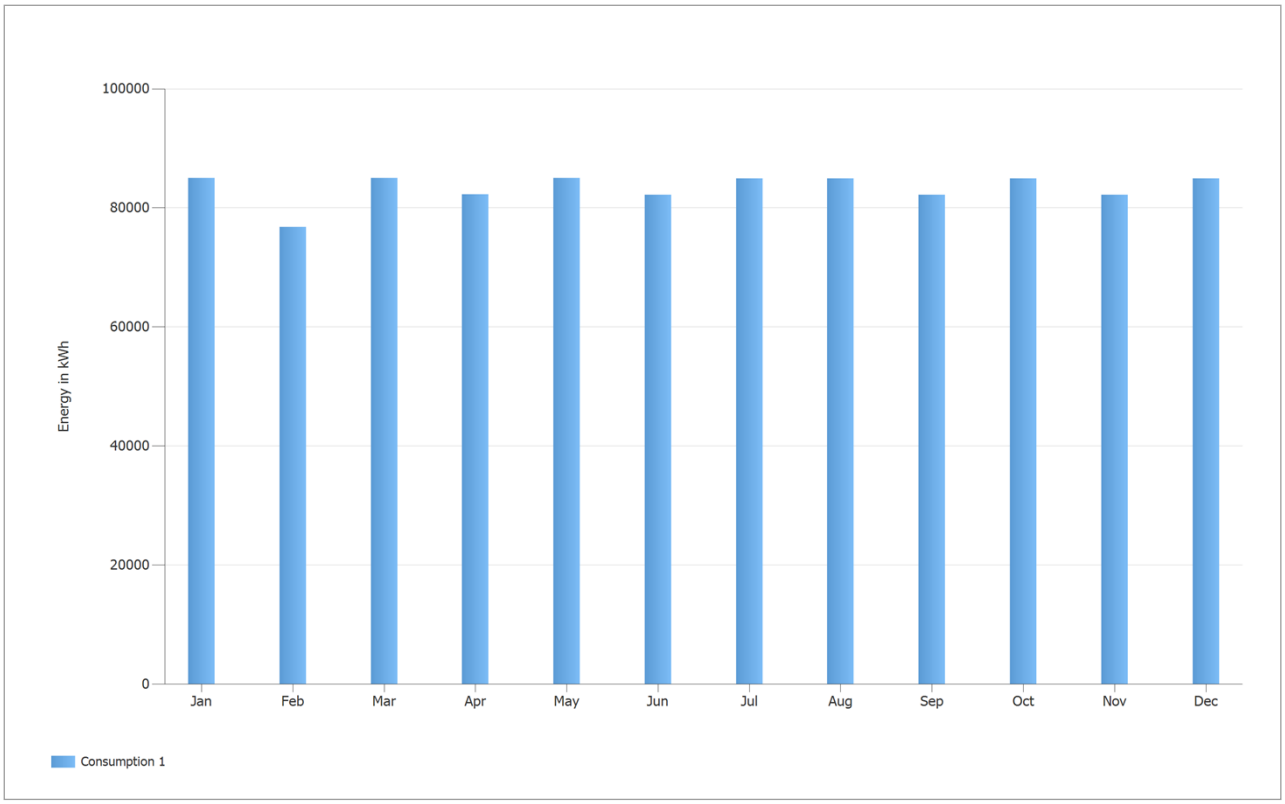


Figure: Consumption

Module Areas

1. Module Area - Building 01-Roof Area Southeast

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

Name	Building 01-Roof Area Southeast
PV Modules	278 x AIKO-A470-MCE54Db (v1)
Manufacturer	Aiko
Inclination	10 °
Orientation	Southwest 206 °
Installation Type	Mounted - Roof
PV Generator Surface	555.5 m²

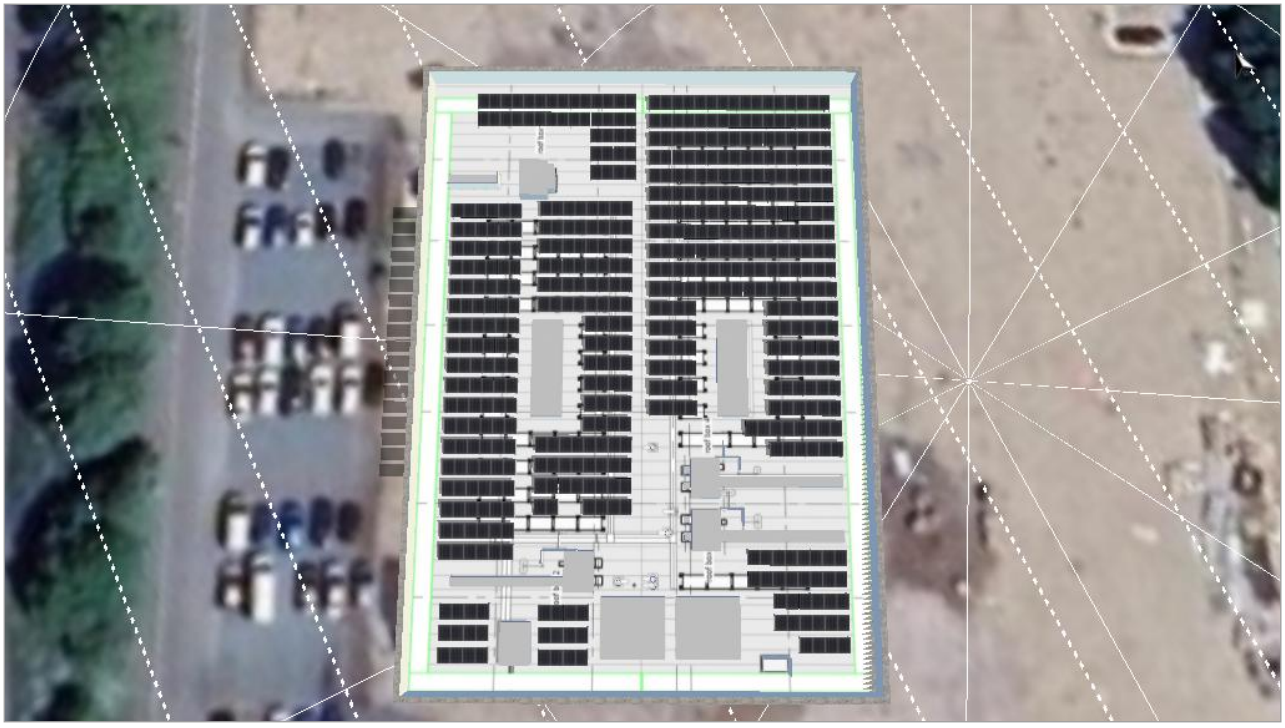


Figure: 1. Module Area - Building 01-Roof Area Southeast

Horizon Line, 3D Design

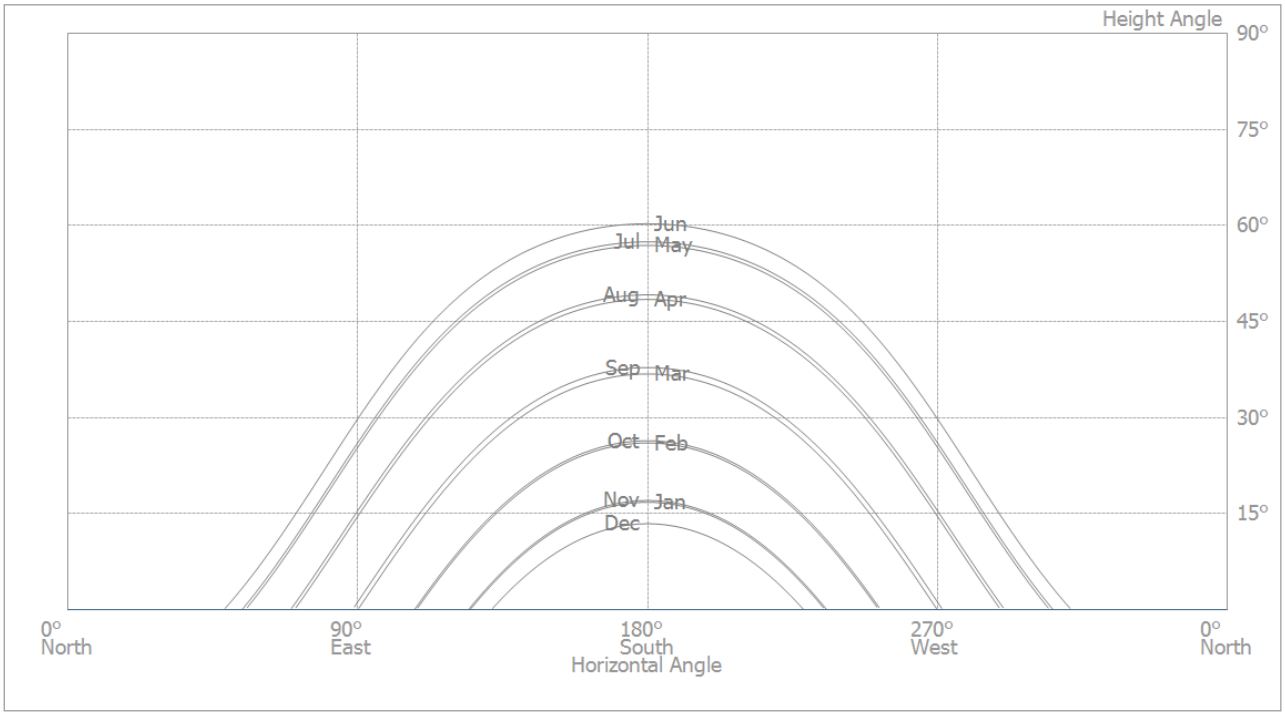


Figure: Horizon (3D Design)

Inverter configuration

Configuration 1	
Module Area	Building 01-Roof Area Southeast
Inverter 1	
Model	GCI-110K-5G (v4)
Manufacturer	Ginlong (Solis)
Quantity	1
Sizing Factor	118.8 %
Configuration	MPP 1: 2 x 17
	MPP 2: 2 x 17
	MPP 3: 2 x 17
	MPP 4: 2 x 17
	MPP 5: 2 x 17
	MPP 6: 2 x 16
	MPP 7: 1 x 25
	MPP 8: 1 x 17
	MPP 9: 1 x 17
	MPP 10: 1 x 17

AC Mains

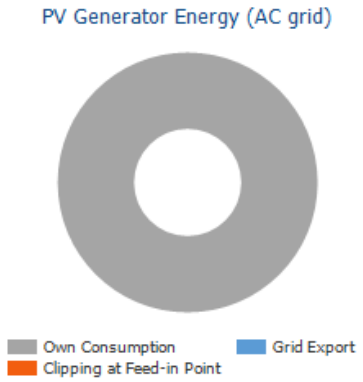
AC Mains	
Number of Phases	3
Mains voltage between phase and neutral	400 V
Displacement Power Factor (cos phi)	+/- 1

Simulation Results

Results Total System

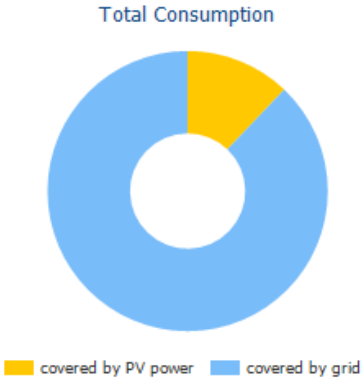
PV System

PV Generator Output	130.66	kWp
Spec. Annual Yield	926.20	kWh/kWp
Performance Ratio (PR)	86.21	%
Yield Reduction due to Shading	10.9	%
PV Generator Energy (AC grid)	121,031	kWh/Year
Own Consumption	121,031	kWh/Year
Clipping at Feed-in Point	0	kWh/Year
Grid Export	0	kWh/Year
Own Power Consumption	100.0	%
CO_2 Emissions avoided	27,228	kg / year



Appliances

Appliances	1,000,000	kWh/Year
Standby Consumption (Inverter)	14	kWh/Year
Total Consumption	1,000,014	kWh/Year
covered by PV power	121,031	kWh/Year
covered by grid	878,983	kWh/Year
Solar Fraction	12.1	%



Level of Self-sufficiency

Total Consumption	1,000,014	kWh/Year
covered by grid	878,983	kWh/Year
Level of Self-sufficiency	12.1	%

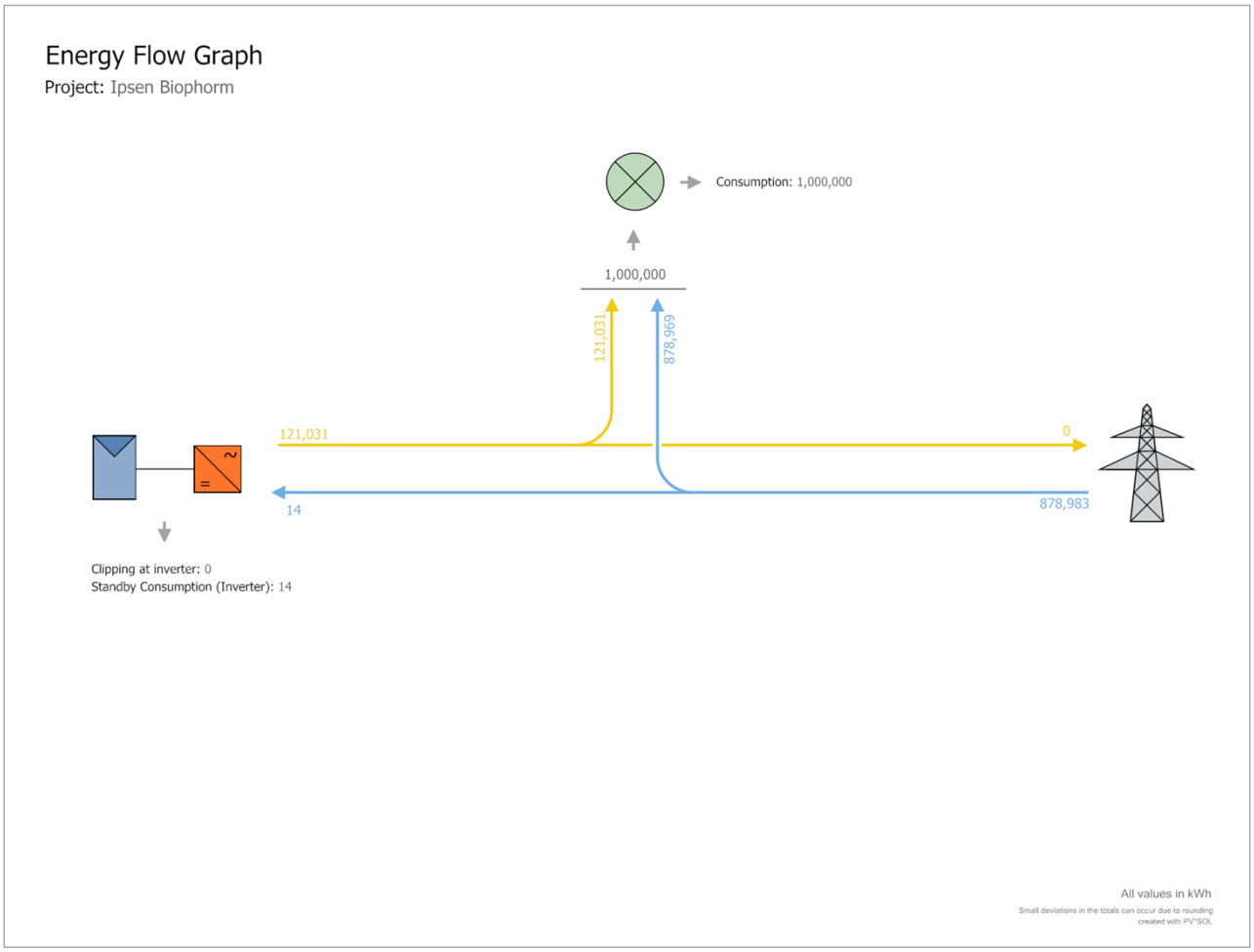


Figure: Energy flow

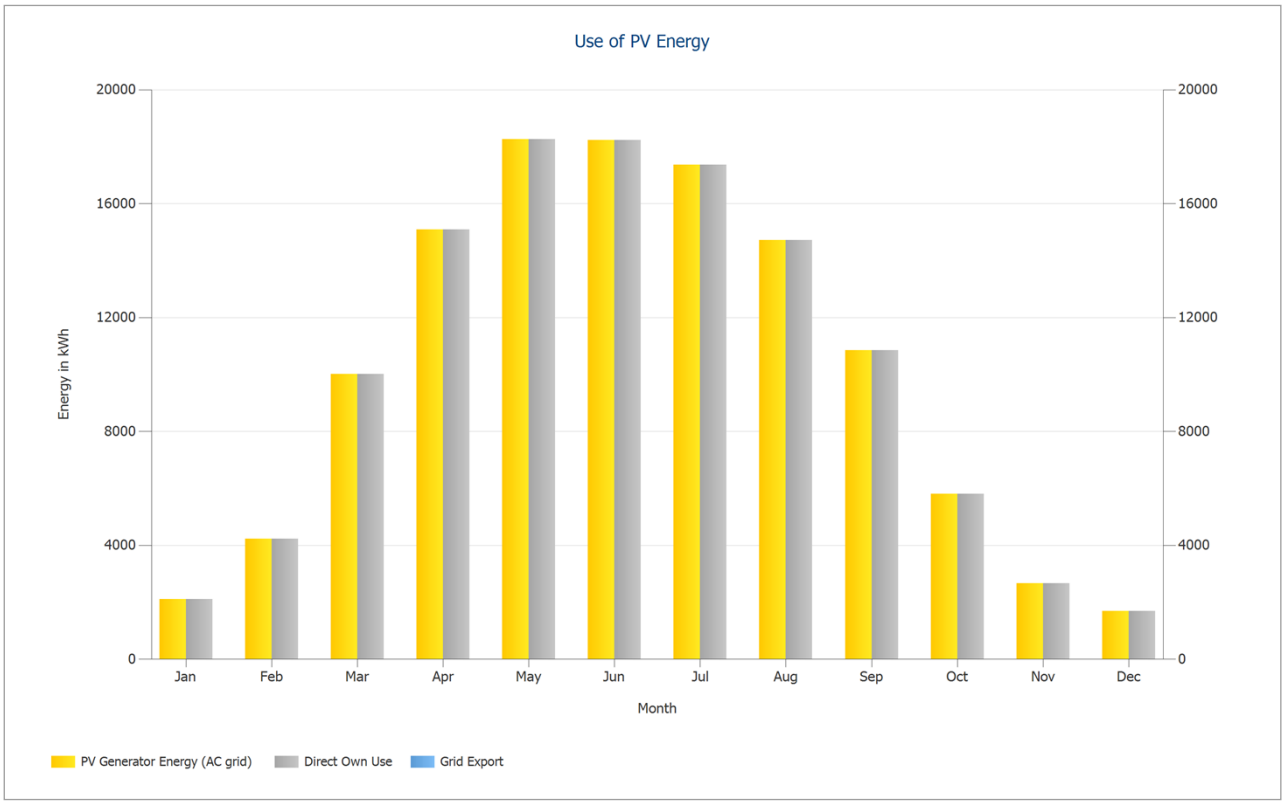


Figure: Use of PV Energy

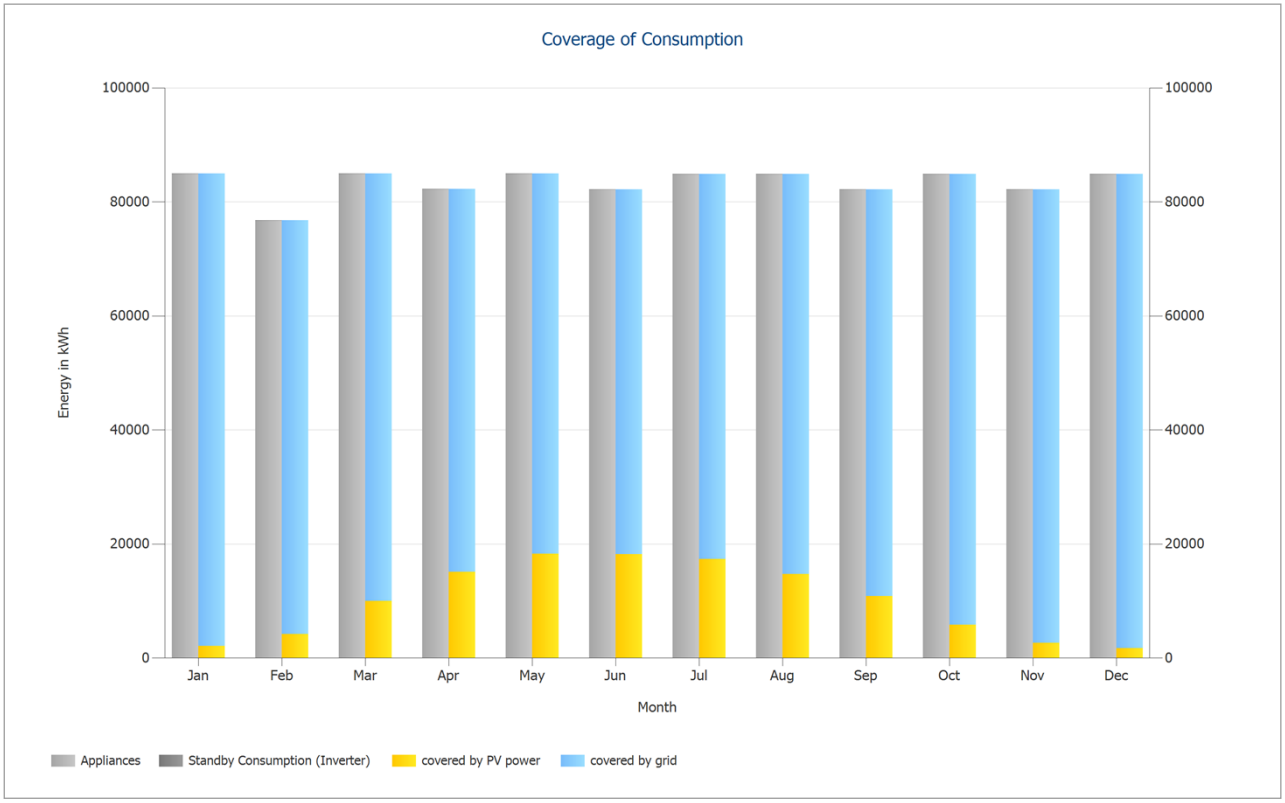


Figure: Coverage of Consumption

Plans and parts list

Circuit Diagram

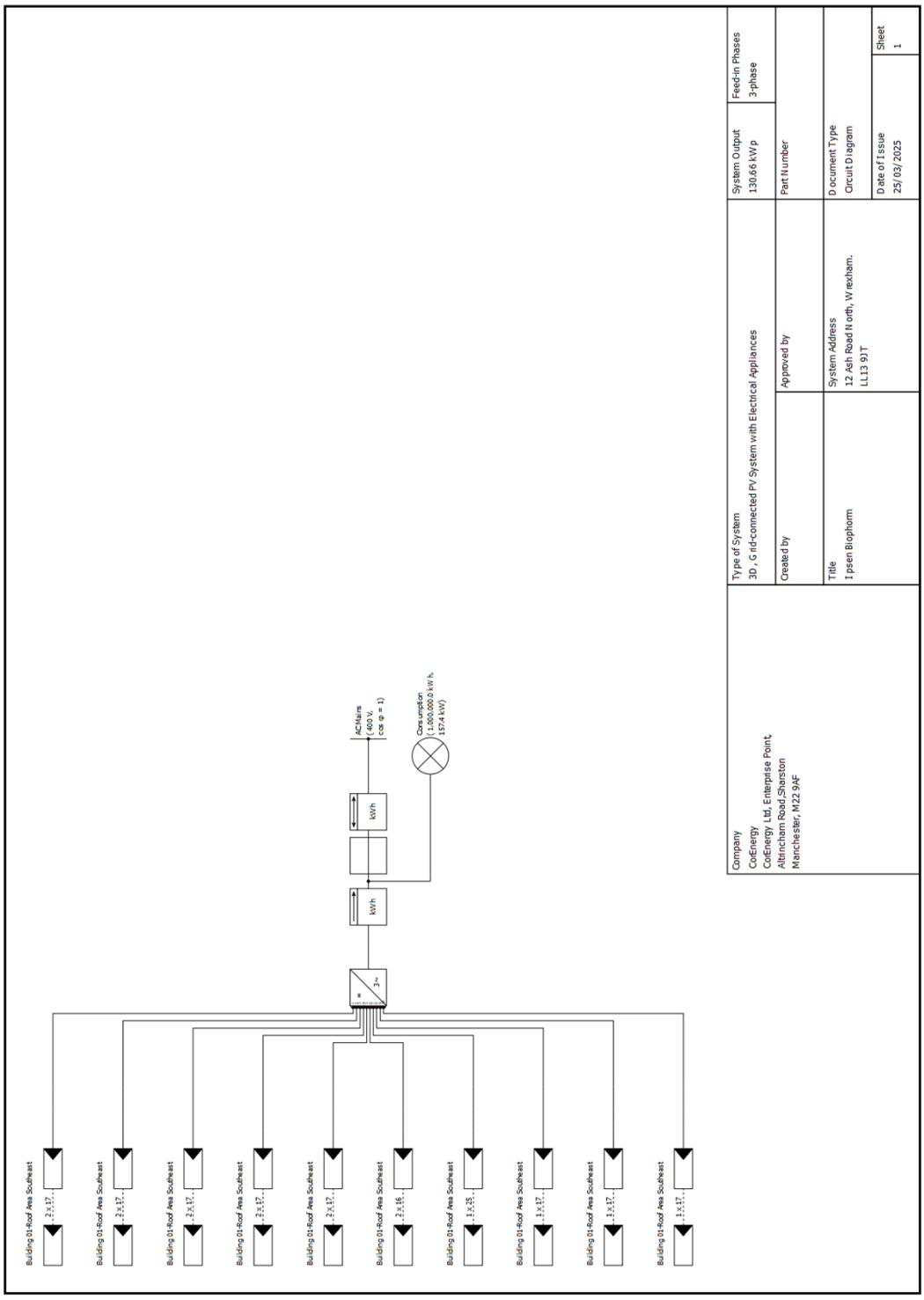


Figure: Circuit Diagram

Overview plan

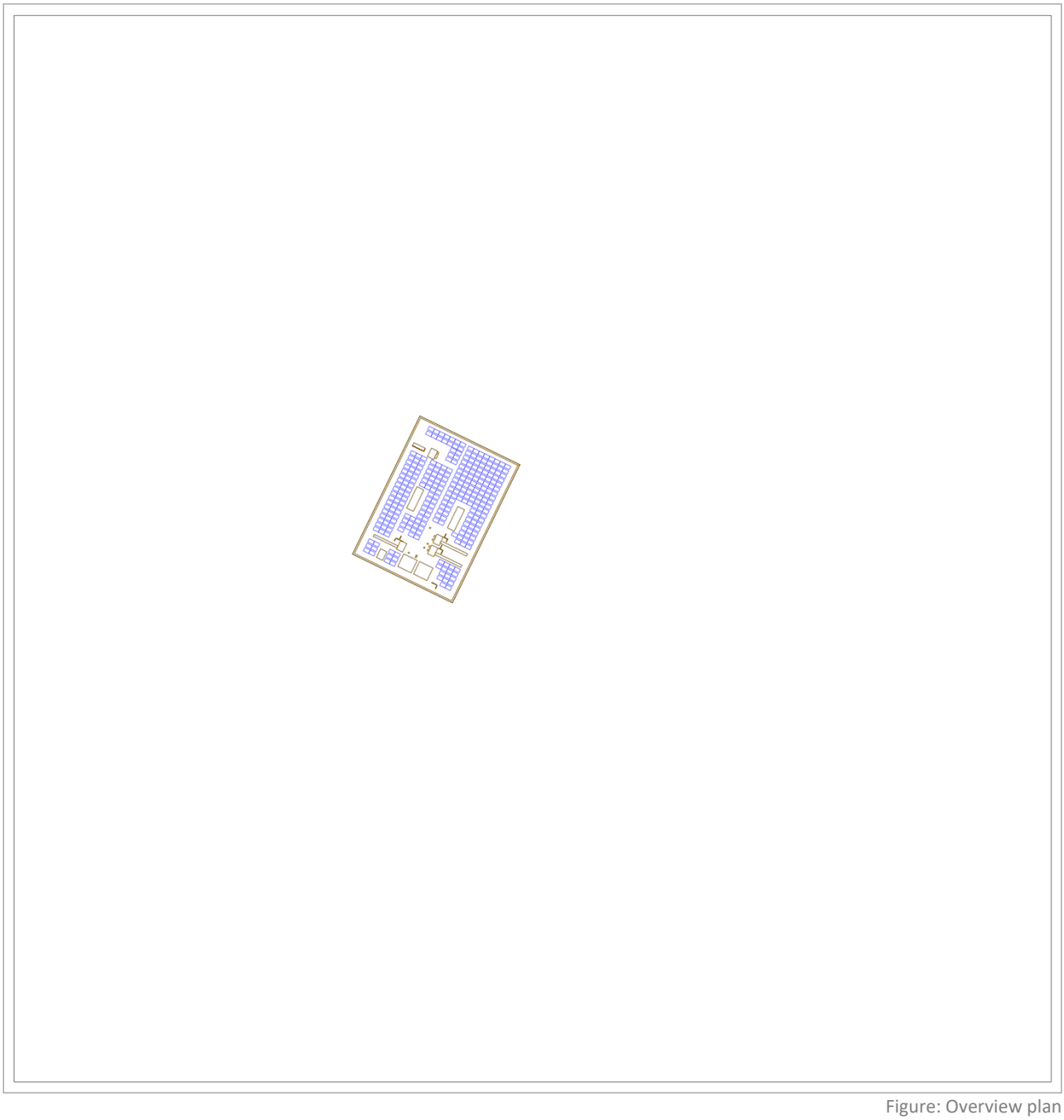


Figure: Overview plan

Dimensioning Plan

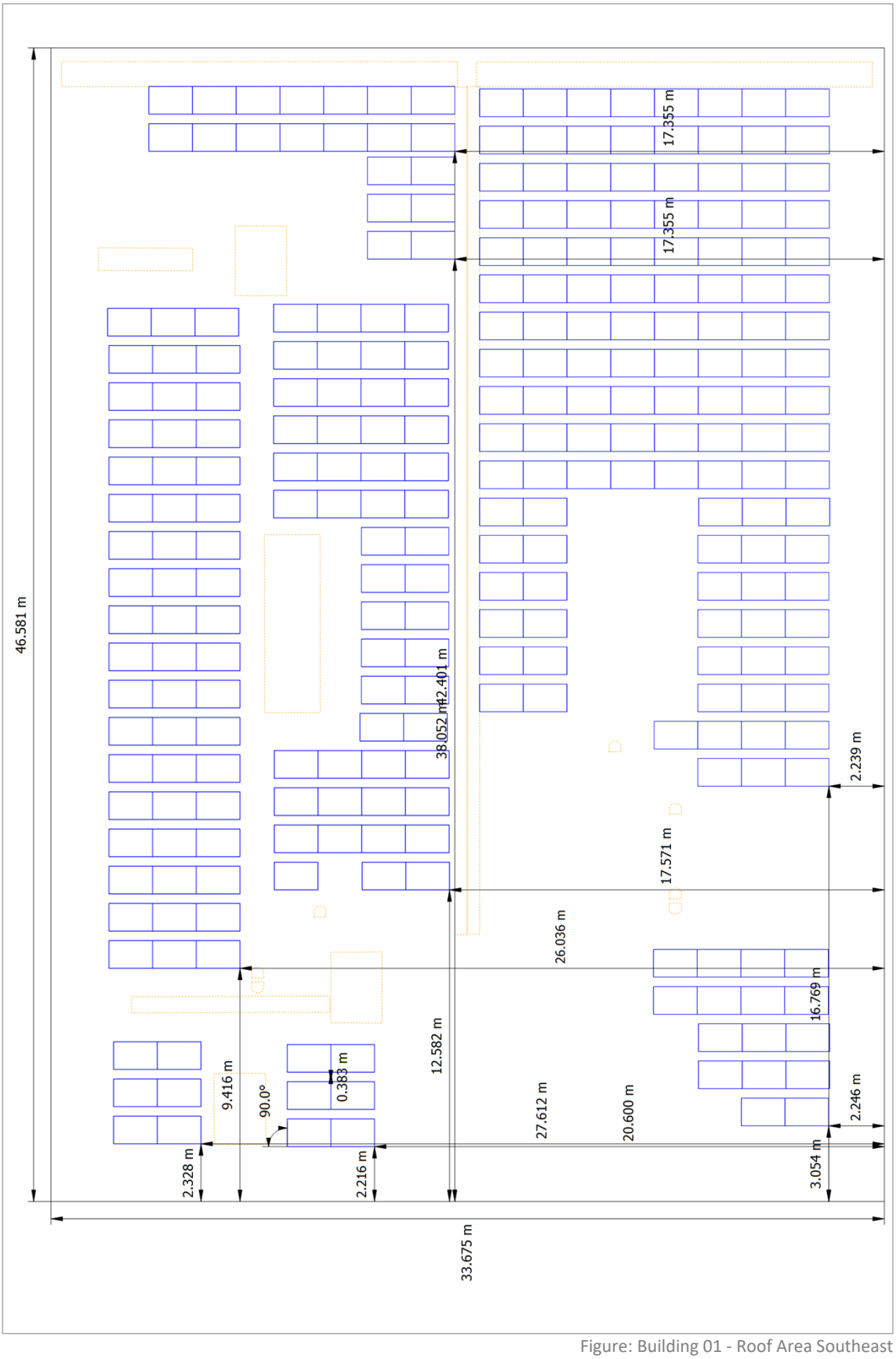


Figure: Building 01 - Roof Area Southeast

String Plan

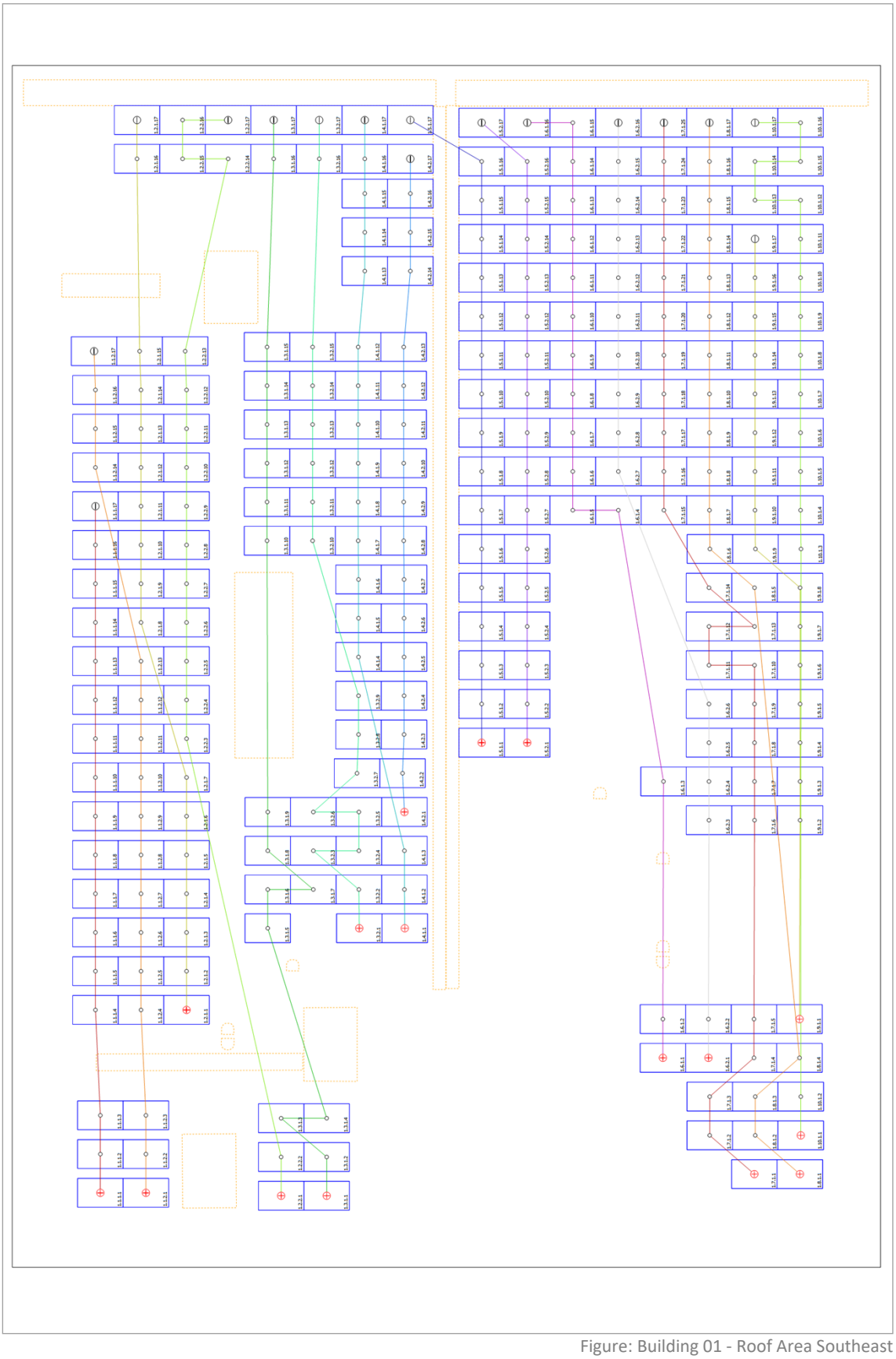


Figure: Building 01 - Roof Area Southeast

Parts list

Parts list

#	Type	Item number	Manufacturer	Name	Quantity	Unit
1	PV Module		Aiko	AIKO-A470-MCE54Db	278	Piece
2	Inverter		Ginlong (Solis)	GCI-110K-5G	1	Piece
3	Components			Feed-in Meter	1	Piece
4	Components			House connection	1	Piece
5	Components			Bidirectional Meter	1	Piece