SC Habsev GRUP SRL
Uzinelor 90

Republica Moldova

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25.04.2023

Your PV system from SC Habsev GRUP SRL

Address of Installation

SA Franzeluţa, MD-2032, MOLDOVA, mun.Chişinău, mun.Chişinău, Sarmizegetusa 30

Project Overview

Figure: Overview Image, 3D Design

PV System

3D, Grid-connected PV System

Climate Data	Chisinau, MDA (1996 - 2015)	
PV Generator Output	850,3	kWp
PV Generator Surface	3 995,5	m²
Number of PV Modules	1546	
Number of Inverters	6	

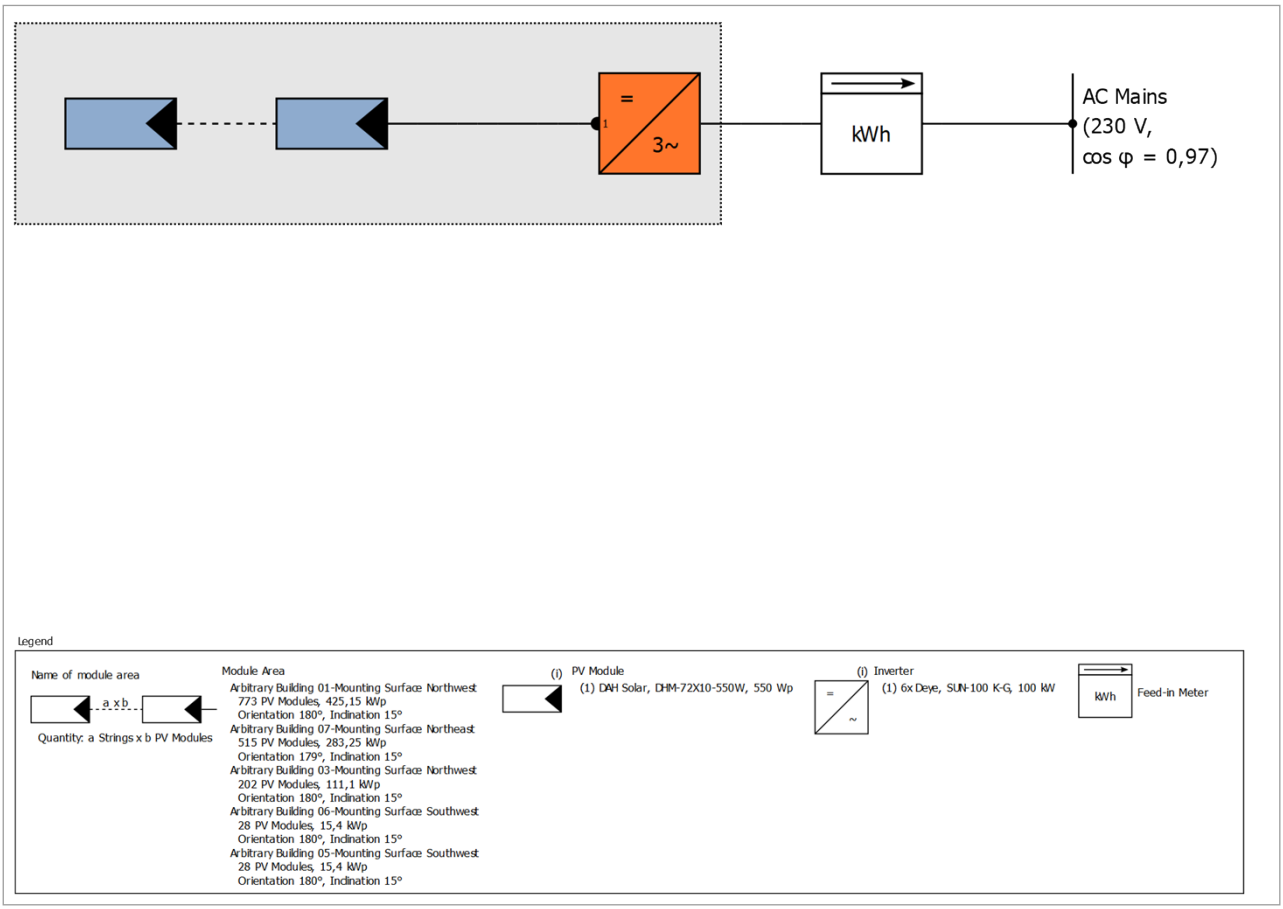

Figure: Schematic diagram

The yield

The yield

PV Generator Energy (AC grid)	991 100	kWh
Grid Feed-in	991 100	kWh
Down-regulation at Feed-in Point	0	kWh
Own Power Consumption	0,0	%
Solar Fraction	0,0	%
Spec. Annual Yield	1 164,97	kWh/kWp
Performance Ratio (PR)	79,8	%
Yield Reduction due to Shading	8,6	%/Year
CO_2 Emissions avoided	465 570	kg / year

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
Start of Operation	21.04.2023

Climate Data

Location	Chisinau, MDA (1996 - 2015)
Resolution of the data	1 h
Simulation models used:	
- Diffuse Irradiation onto Horizontal Plane	Hofmann
- Irradiance onto tilted surface	Hay & Davies

Module Areas

1. Module Area - Arbitrary Building 01-Mounting Surface Northwest

PV Generator, 1. Module Area - Arbitrary Building 01-Mounting Surface Northwest

Name	Arbitrary Building 01-Mounting Surface Northwest
PV Modules	773 x DHM-72X10-550W (v1)
Manufacturer	DAH Solar
Inclination	15 °
Orientation	South 180 °
Installation Type	Mounted - Roof
PV Generator Surface	1 997,7 m²

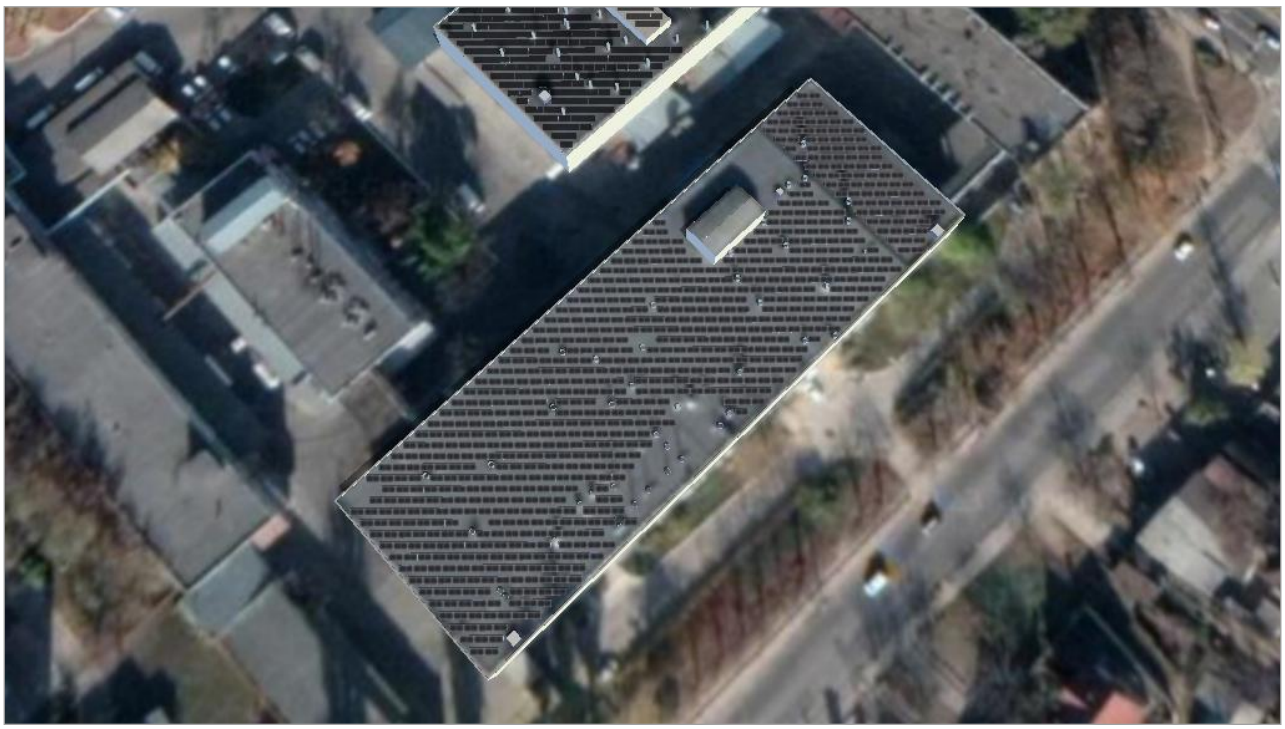

Figure: 1. Module Area - Arbitrary Building 01-Mounting Surface Northwest

2. Module Area - Arbitrary Building 07-Mounting Surface Northeast

PV Generator, 2. Module Area - Arbitrary Building 07-Mounting Surface Northeast

Name	Arbitrary Building 07-Mounting Surface Northeast
PV Modules	515 x DHM-72X10-550W (v1)
Manufacturer	DAH Solar
Inclination	15 °
Orientation	South 179 °
Installation Type	Mounted - Roof
PV Generator Surface	1 331,0 m²

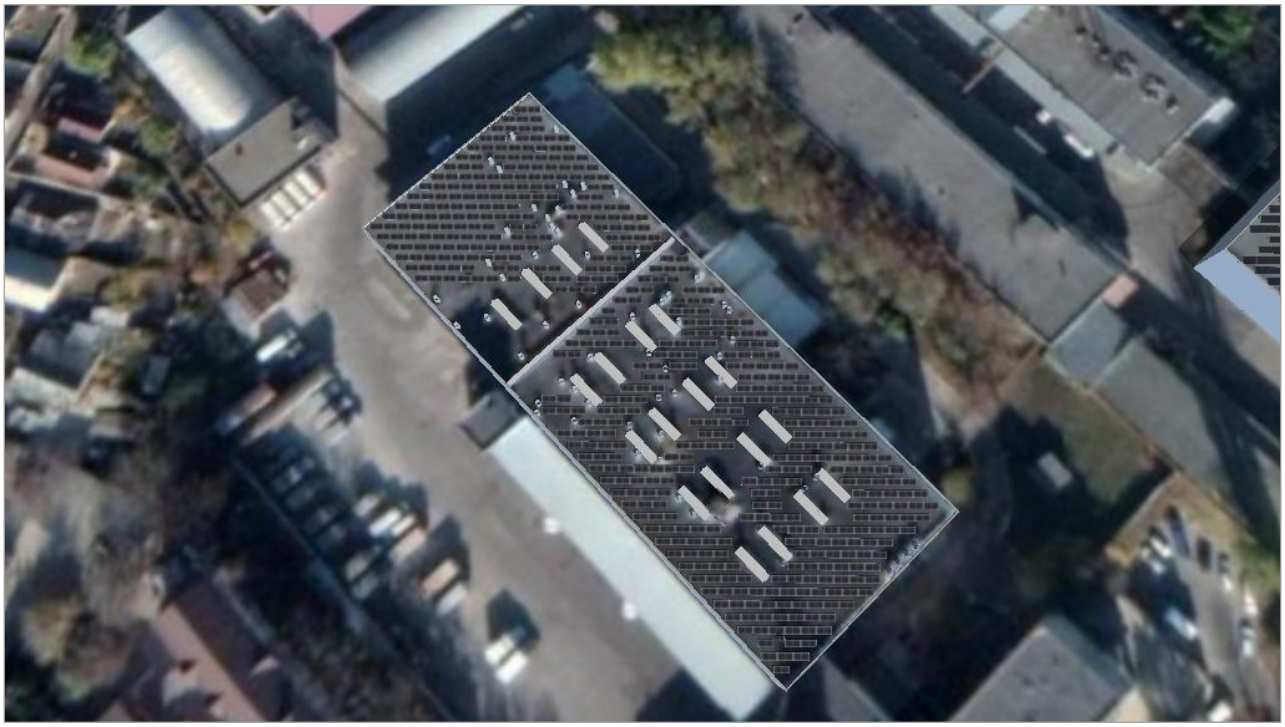

Figure: 2. Module Area - Arbitrary Building 07-Mounting Surface Northeast

3. Module Area - Arbitrary Building 03-Mounting Surface Northwest

PV Generator, 3. Module Area - Arbitrary Building 03-Mounting Surface Northwest

Name	Arbitrary Building 03-Mounting Surface Northwest
PV Modules	202 x DHM-72X10-550W (v1)
Manufacturer	DAH Solar
Inclination	15 °
Orientation	South 180 °
Installation Type	Mounted - Roof
PV Generator Surface	522,0 m²

Figure: 3. Module Area - Arbitrary Building 03-Mounting Surface Northwest

4. Module Area - Arbitrary Building 06-Mounting Surface Southwest

PV Generator, 4. Module Area - Arbitrary Building 06-Mounting Surface Southwest

Name	Arbitrary Building 06-Mounting Surface Southwest
PV Modules	28 x DHM-72X10-550W (v1)
Manufacturer	DAH Solar
Inclination	15 °
Orientation	South 180 °
Installation Type	Mounted - Roof
PV Generator Surface	72,4 m²

Figure: 4. Module Area - Arbitrary Building 06-Mounting Surface Southwest

5. Module Area - Arbitrary Building 05-Mounting Surface Southwest

PV Generator, 5. Module Area - Arbitrary Building 05-Mounting Surface Southwest

Name	Arbitrary Building 05-Mounting Surface Southwest
PV Modules	28 x DHM-72X10-550W (v1)
Manufacturer	DAH Solar
Inclination	15 °
Orientation	South 180 °
Installation Type	Mounted - Roof
PV Generator Surface	72,4 m²

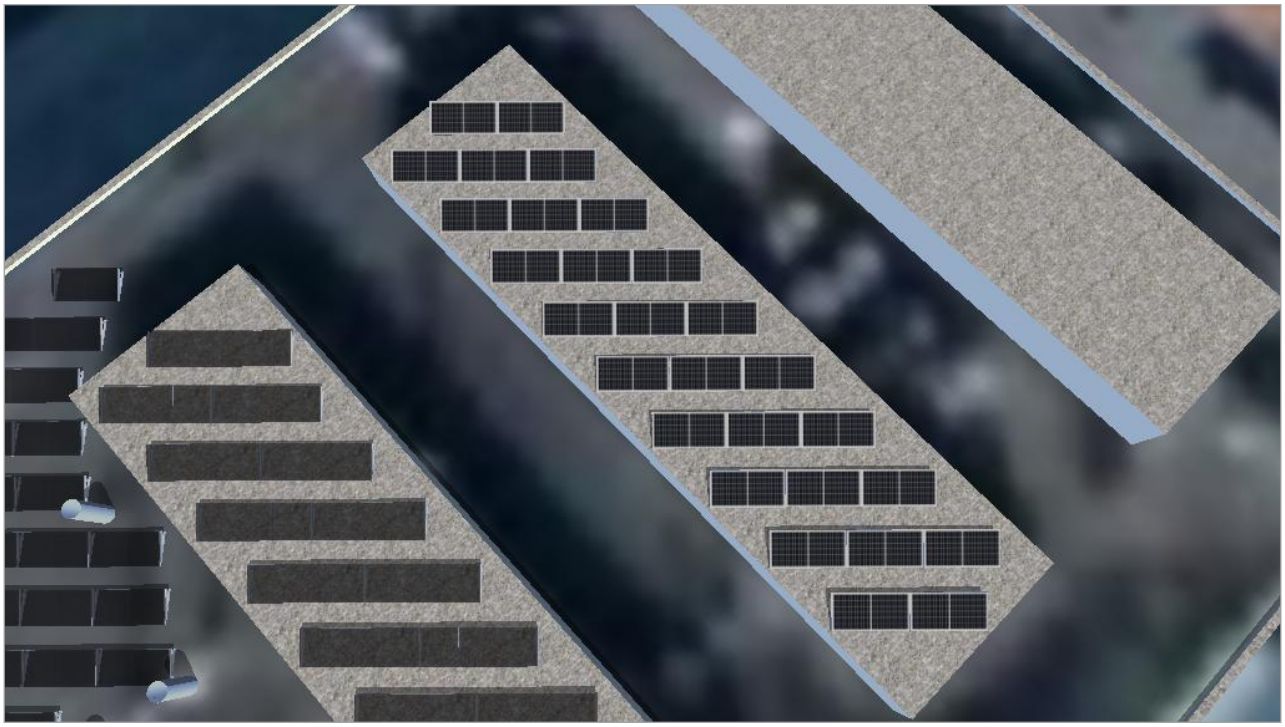

Figure: 5. Module Area - Arbitrary Building 05-Mounting Surface Southwest

Horizon Line, 3D Design

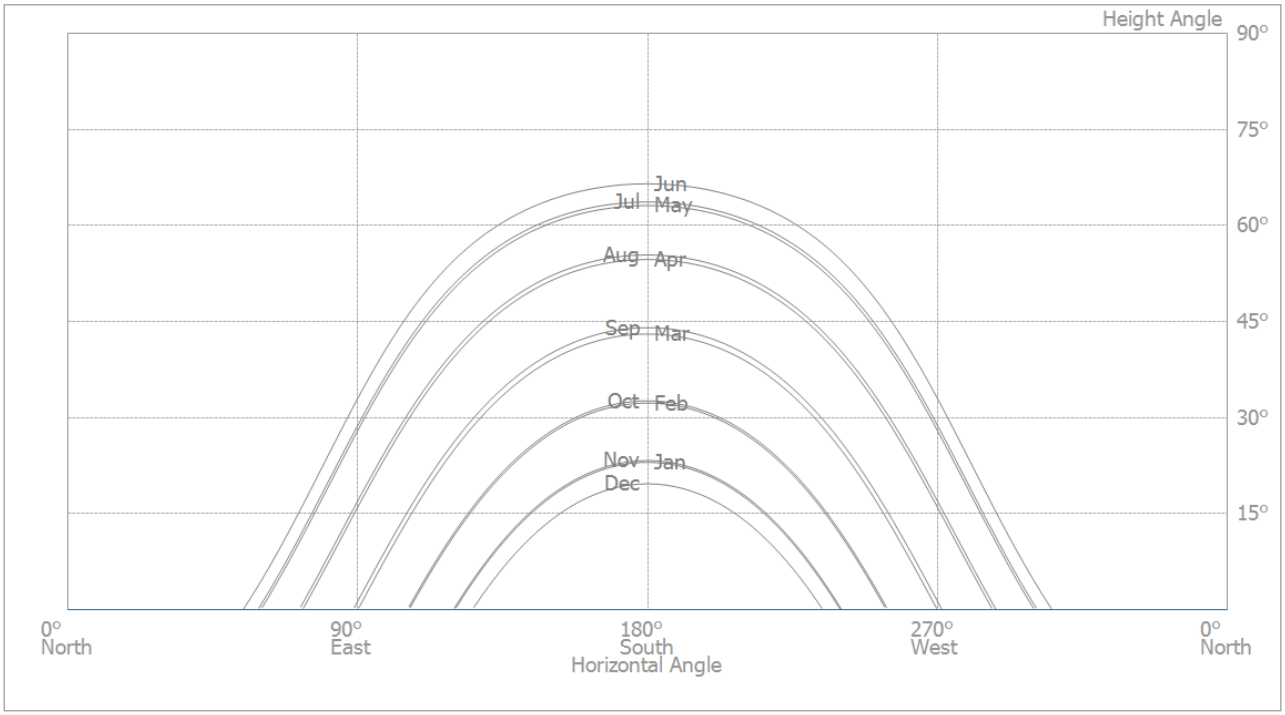

Figure: Horizon (3D Design)

AC Mains

AC Mains	
Number of Phases	3
Mains Voltage (1-phase)	230 V
Displacement Power Factor (cos phi)	+/- 0,97

Simulation Results

Results Total System

PV System

PV Generator Output	850,3	kWp
Spec. Annual Yield	1 164,97	kWh/kWp
Performance Ratio (PR)	79,8	%
Yield Reduction due to Shading	8,6	%/Year
Grid Feed-in	991 100	kWh/Year
Grid Feed-in in the first year (incl. module degradation)	988 527	kWh/Year
Standby Consumption (Inverter)	526	kWh/Year
CO_2 Emissions avoided	465 570	kg / year

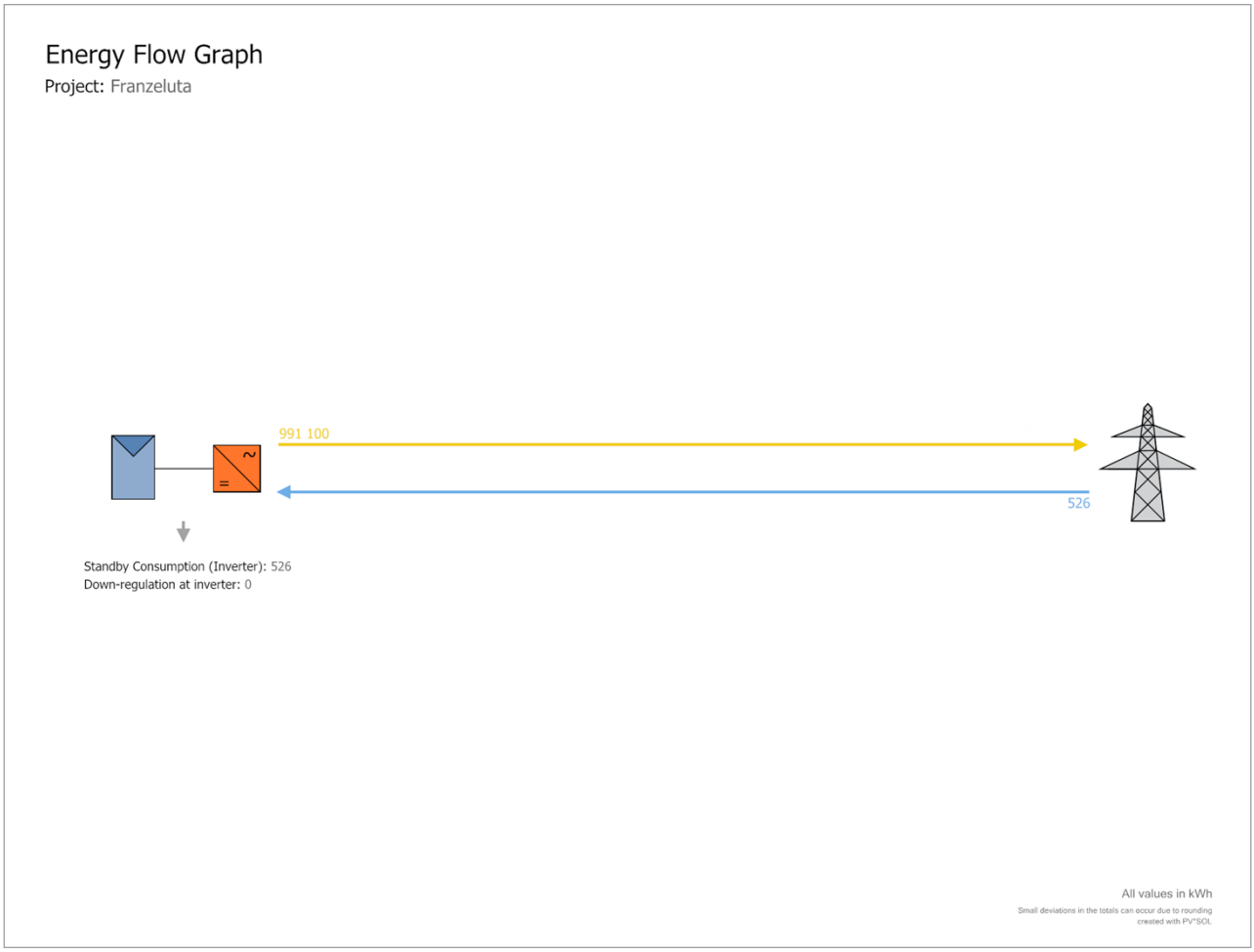

Figure: Energy Flow Graph

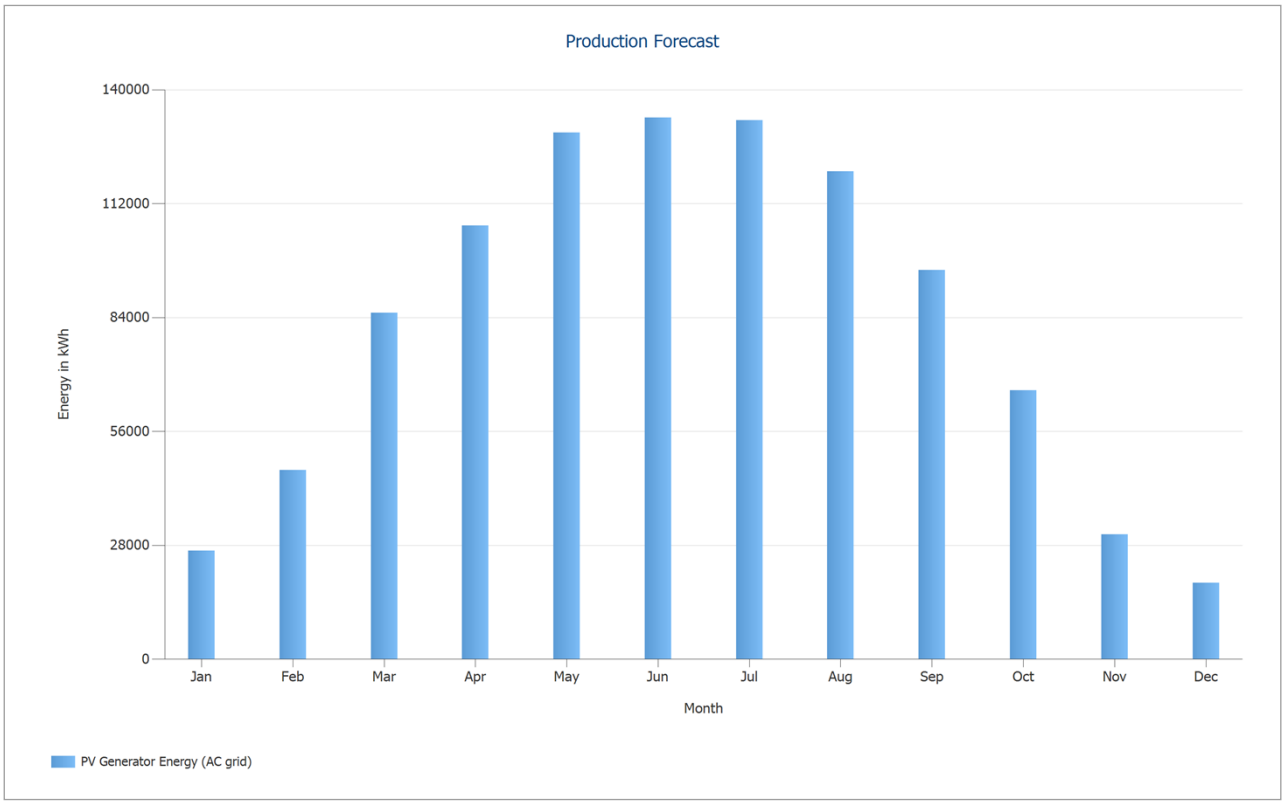

Figure: Production Forecast

Results per Module Area

Arbitrary Building 01-Mounting Surface Northwest

PV Generator Output	425,15	kWp
PV Generator Surface	1 997,73	m²
Global Radiation at the Module	1444,56	kWh/m²
Global Radiation on Module without reflection	1460,29	kWh/m²
Performance Ratio (PR)	81,54	%
PV Generator Energy (AC grid)	506178,18	kWh/Year
Spec. Annual Yield	1190,59	kWh/kWp

Arbitrary Building 07-Mounting Surface Northeast

PV Generator Output	283,25	kWp
PV Generator Surface	1 330,96	m²
Global Radiation at the Module	1444,45	kWh/m²
Global Radiation on Module without reflection	1460,20	kWh/m²
Performance Ratio (PR)	78,29	%
PV Generator Energy (AC grid)	323745,95	kWh/Year
Spec. Annual Yield	1142,97	kWh/kWp

Arbitrary Building 03-Mounting Surface Northwest

PV Generator Output	111,10	kWp
PV Generator Surface	522,05	m²
Global Radiation at the Module	1440,09	kWh/m²
Global Radiation on Module without reflection	1455,78	kWh/m²
Performance Ratio (PR)	76,00	%
PV Generator Energy (AC grid)	122902,87	kWh/Year
Spec. Annual Yield	1106,24	kWh/kWp

Arbitrary Building 06-Mounting Surface Southwest

PV Generator Output	15,40	kWp
PV Generator Surface	72,36	m²
Global Radiation at the Module	1444,56	kWh/m²
Global Radiation on Module without reflection	1460,29	kWh/m²
Performance Ratio (PR)	85,11	%
PV Generator Energy (AC grid)	19137,16	kWh/Year
Spec. Annual Yield	1242,67	kWh/kWp

Arbitrary Building 05-Mounting Surface Southwest

PV Generator Output	15,40	kWp
PV Generator Surface	72,36	m²
Global Radiation at the Module	1444,56	kWh/m²
Global Radiation on Module without reflection	1460,29	kWh/m²
Performance Ratio (PR)	85,10	%
PV Generator Energy (AC grid)	19136,23	kWh/Year
Spec. Annual Yield	1242,61	kWh/kWp

Plans and parts list

Dimensioning Plan

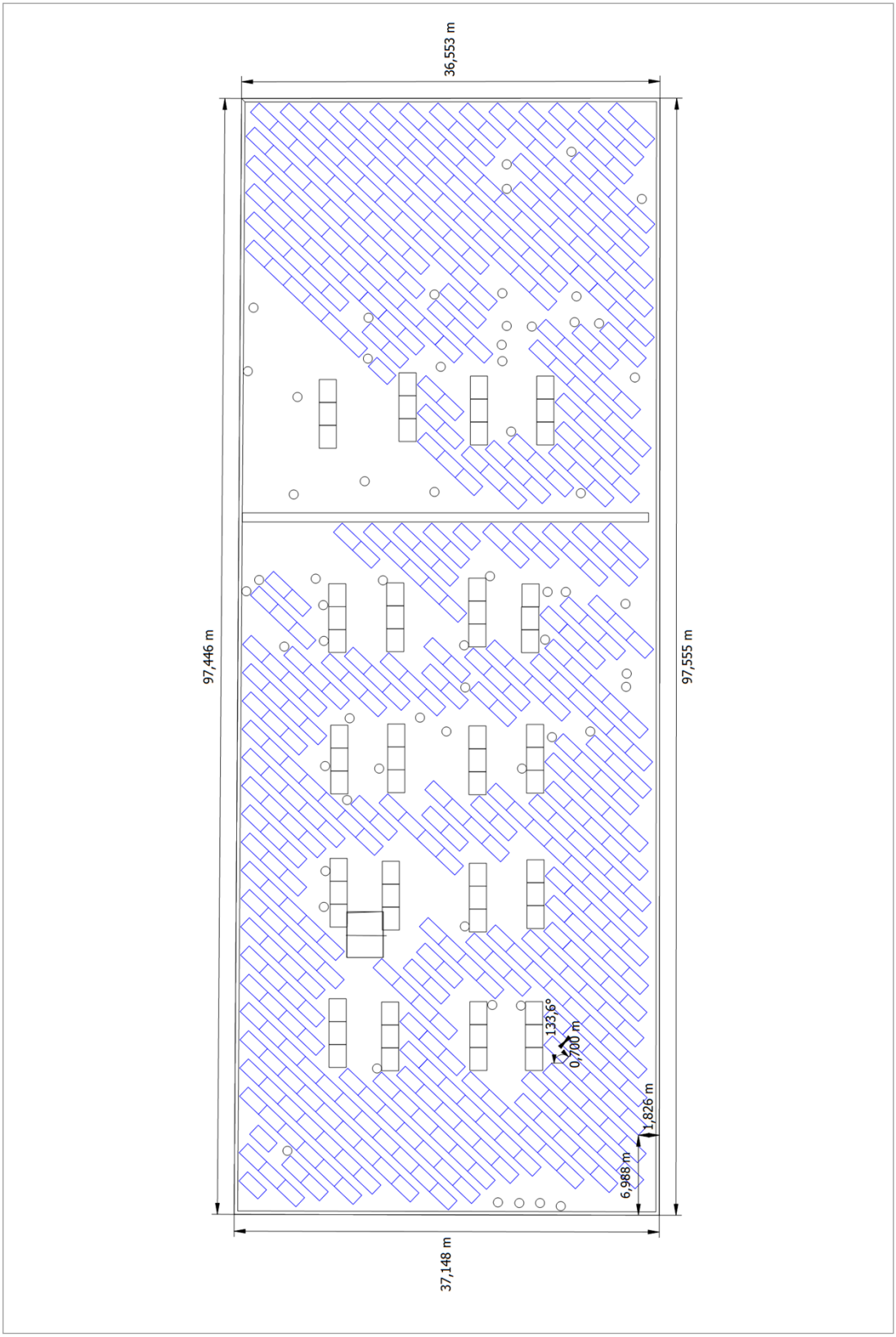

Figure: Arbitrary Building 07-Mounting Surface Northeast

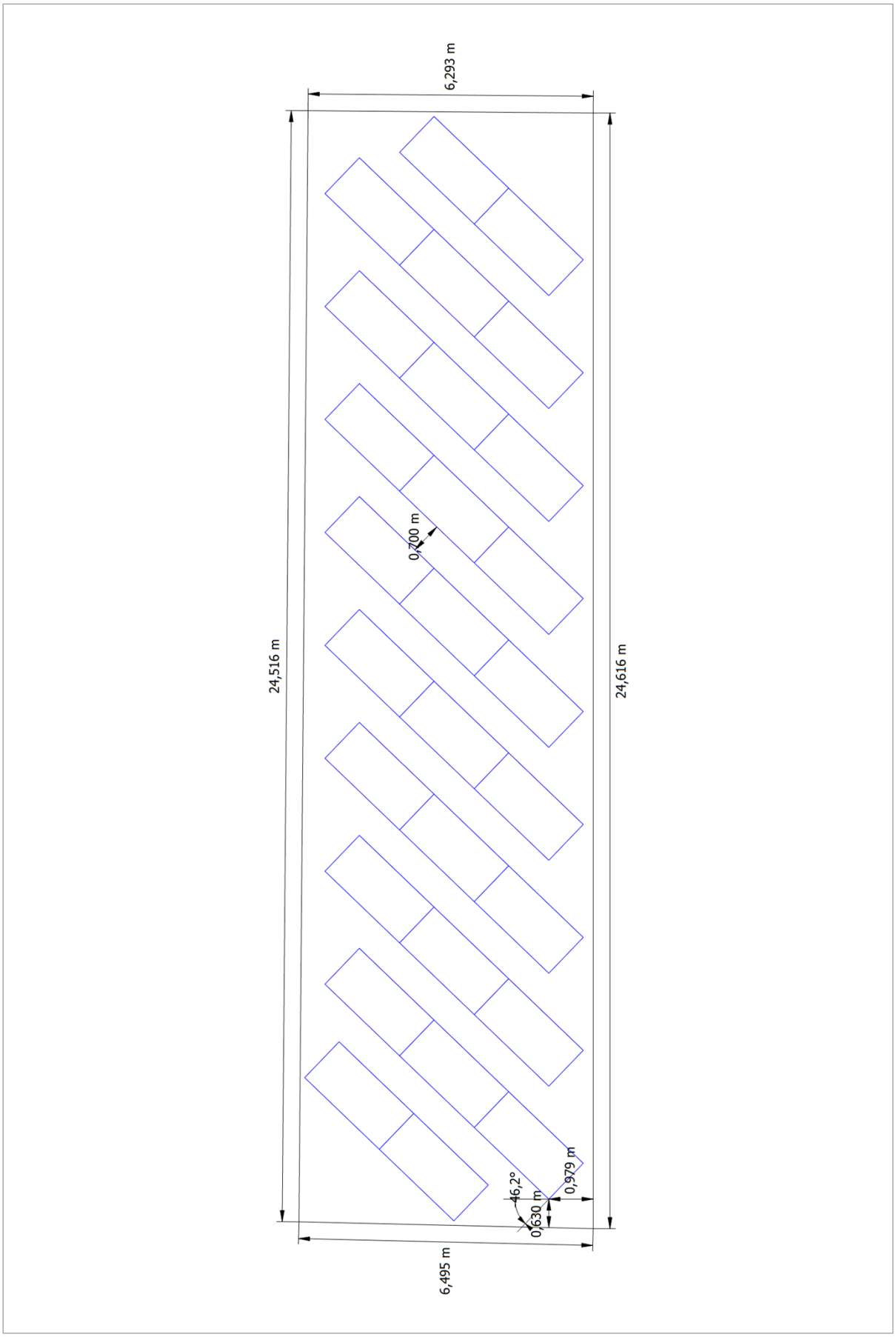

Figure: Arbitrary Building 06-Mounting Surface Southwest

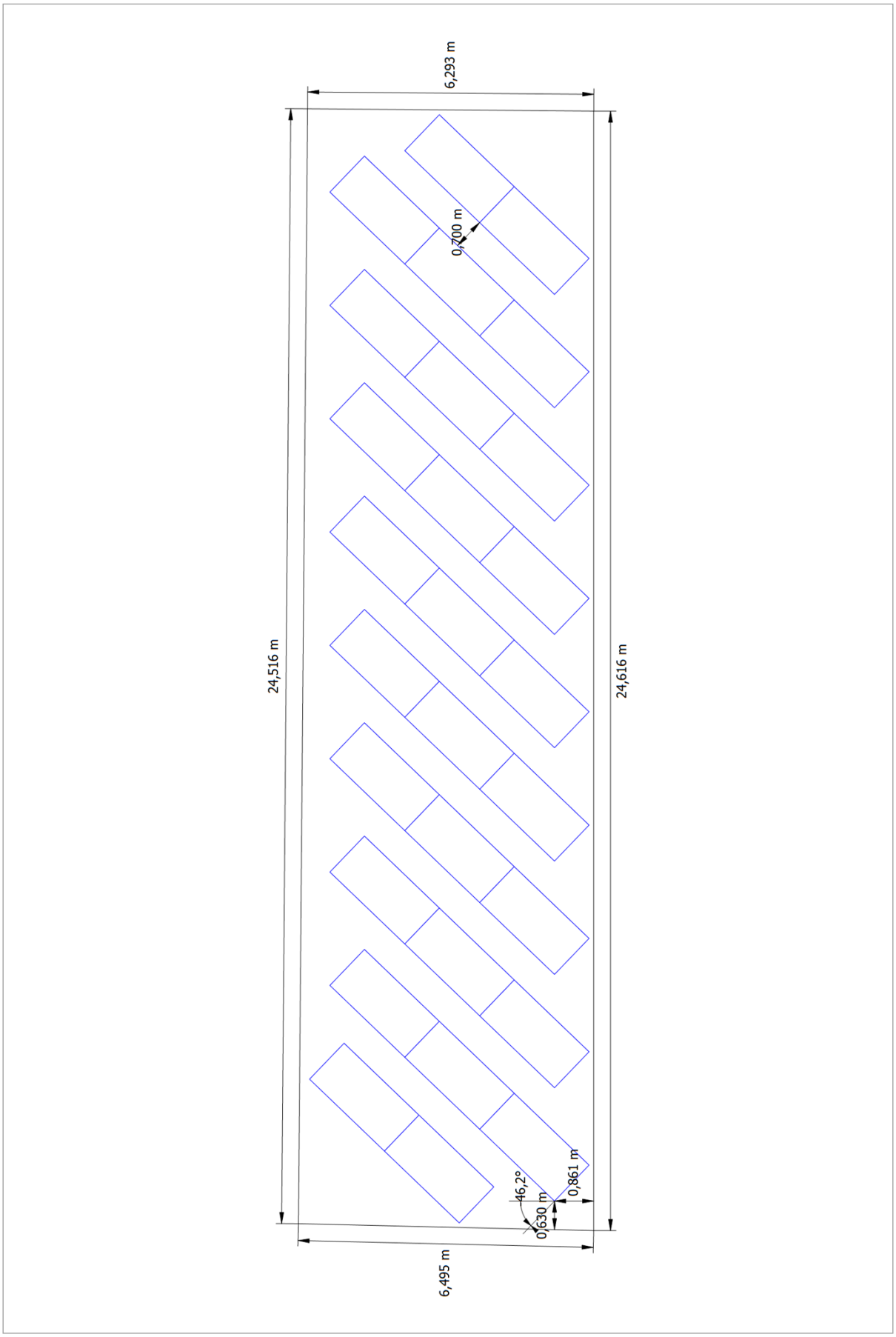

Figure: Arbitrary Building 05-Mounting Surface Southwest

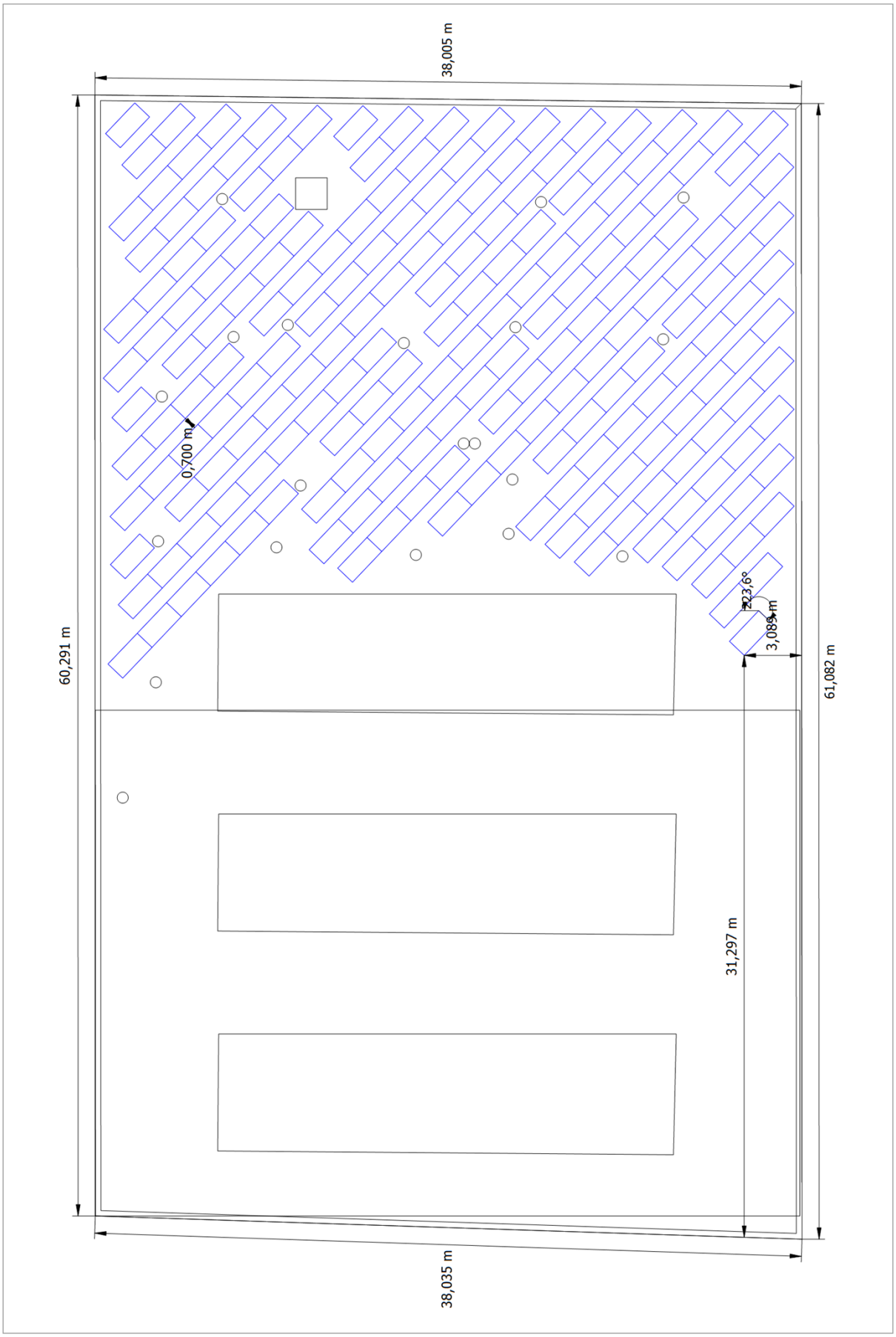

Figure: Arbitrary Building 03-Mounting Surface Northwest

Figure: Arbitrary Shading 01-Mounting Surface Northwest

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