Part I Overview

About Us

Baoding Jiasheng Photovoltaic Technology Co., Ltd. (Here by "GAIN SOLAR"), Gain Solar is a professional solution provider,Founded in 2007. New technology and science enterprise, Hebei Province"specialized and special new" enterprise, China Photovoltaic Industry Association photovoltaic building professional Committee,The deputy chairman of the committee. With the support of the whole industrial chain, it can provide with professional one-stop services including building energy saving, BIPV R&D, design,construction ,installation and operation for global market.

Gain solar's green building materials not only meet the PV standards, but also fully comply with the construction standards.

Gain solar obtained the first Green Building Materials Certification & 3C & TUV certification in BIPV industry.It is the first company to publish the international standards in BIPV industry ,participated in 17 standards. And had around 323 patents.

Under the support of four National R&D and innovation platforms, including the State Key Laboratory of Photovoltaic Materials and Cells and the National Key Laboratory of Energy Photovoltaic Technology, Gain Solar has invested nearly one billion RMB in R&D funds over the past 16 years, cultivated over 2,000 professionals in related fields, and launched a total of 13 Generation of BIPV products. Among them, based on the exclusive optical nano coating technology, Gain Solar research and development design and production of China's first color crystalline silicon BIPV -Black Brick, Colored Glaze series, innovative artistic expression of green building materials; Based on the world's leading high efficiency flexible technology, Gain Solar has developed and designed the world's first bent solar tile, filling the gap in bent silicon products. The products beautify the urban environment from the appearance, color, texture, modeling and other aspects, known as "Art Zero- Carbon building solutions provider ".

4

4 National R&D and innovation platforms

5

5 Professional certificate TUV, CCC, CTC、CTC、Green Building Material

17

17 BIPV Professional standard

16

16 years BIPV applications experiences

323

323 Patents

100+

100+ BIPV cases study

5MW

5MW Installed capacity of single project



Part II Product

Rooftop

Skylight, metal alloy rooftop, tile rooftop

Products: Solar tile-Bent tile, Solar tile-Flat tile



Solar tile-Bent tile

Solar tile-Flat tile

Building Facade

Curtain wall, decoration, hand rail and so on.

Product: Black brick, Colored glaze



Black Brick

Colored Glaze

Maintenance structure

BIPV use in solar floor tile, balcony fence, louver, Shadow

Products: Colored glaze, solar floor tile



Colored Glaze
Solar Hand Rail

Solar Floor Tile

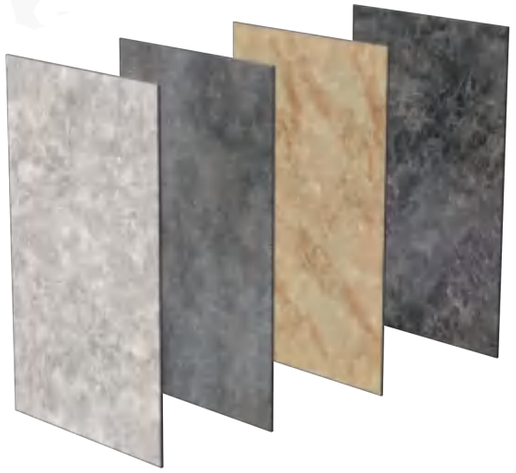
Black Brick-Marble

◉ Optimize the mainstream material texture of building materials market, perfectly hide the battery, customized design and production, can meet the needs of architectural beauty.

◉ It can be used in combination with the thermal insulation board. It can be installed at one time to realize the three functions of power generation, decoration and thermal insulation, and avoid repeated construction.

◉ Through the double standard and certification of photovoltaic industry and building materials industry, fire prevention, waterproof, wind resistance, earthquake resistance, and the building life.

◉ 25/30 year power generation warranty.



Customized marble texture
Colorful and durable

Optical micropore structure
Decoration and power generation

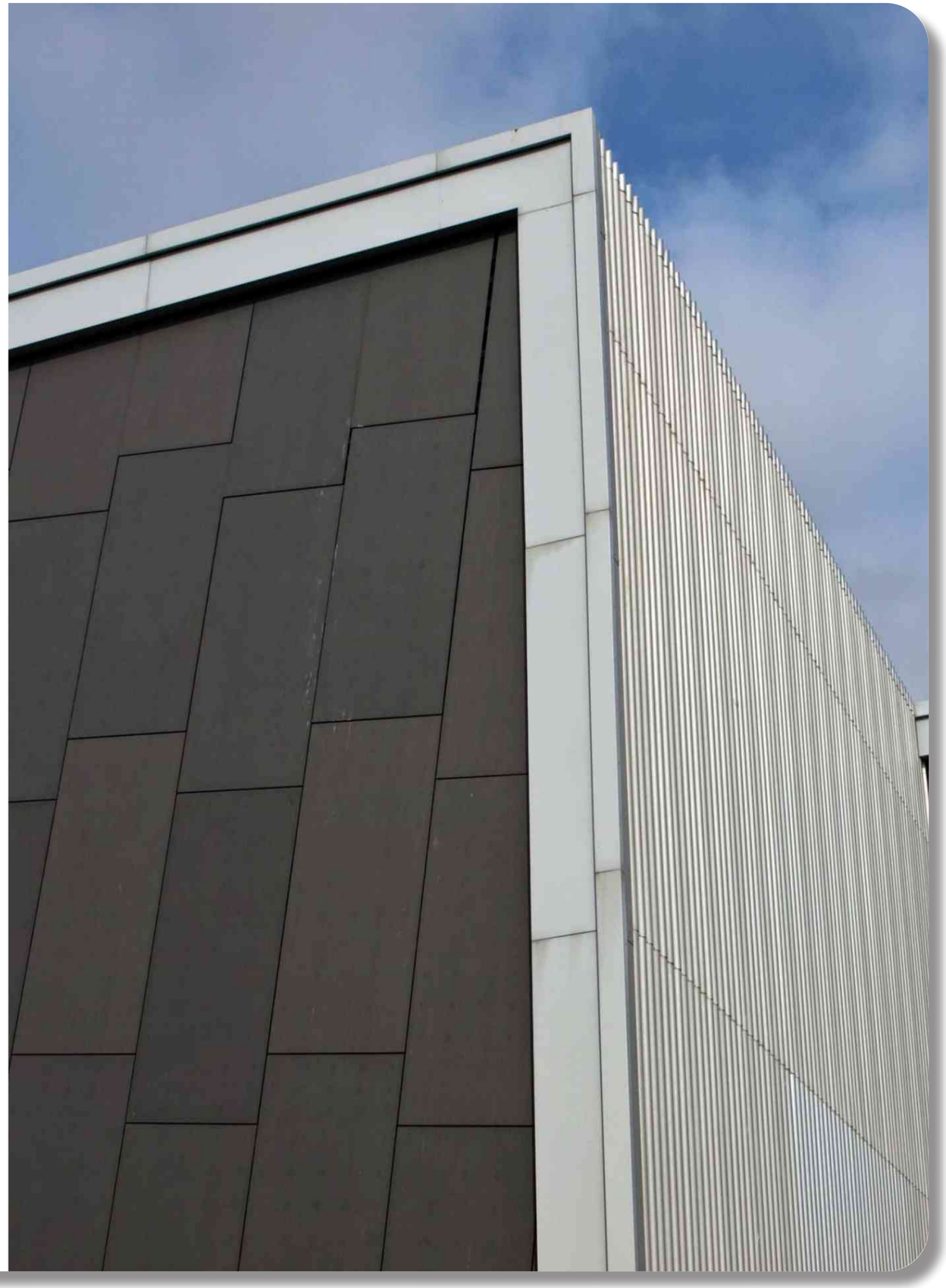
Building sealing material used
Same life cycle with buildings

Characteristic surface texture
Low reflection light and easy to clean

High strength light quality
Corrosion resistant and easy to clean

Excellent thermal insulation
clean electricity and energy saving

Power output:	80-195W	Color:	Creamy white, Black, Marbling, Dark black
Module efficiency:	10%-16%	Dimensions:	1080×1780×13.5mm
Voltage at Pmax:	27.3-32.6V	Solar Cell:	120mono/mono half-cell/166×83mm
Current at Pmax:	2.93-5.98A	Glass:	Low-iron tempered glass/ 6+6mm
Open-circuit voltage:	32.7-39.1V	Baseplate:	PVB
Short-circuit current:	3.07-6.28A	Weight:	64kg



Solar Tile

- New photovoltaic building materials can replace traditional roof tiles.
- Green, zero-carbon energy for urban renewal and beautiful countryside.

Safe and reliable
Class A grade fire | High strength |same life span with building

High efficient
Integrated module design | High installed capacity
High power generation

Excellent waterproofing
Triple waterproofing design | By GB/T 36584-2018-5.1 the waterproof test

Stylish and beautiful
Texture and color can be customized design | overall roof design combine with aesthetics

High self-cleaning ability
Special structure and surface material texture to avoid the formation of mud bands| High self-melting ability



GENERAL CHARACTERISTICS

Module type	JS35DG-5e 1/2	JS87DG-13e 1/2
Dimension	630*480mm	1260*480mm
Weight	7.5kg	15.5kg
Glass (material/thickness)	low iron tempered glass/3.2mm	low iron tempered glass/3.2mm
Solar cell	182*91mm (2*5)	182*91mm (2*12)
Junction Box	⩾IP67	⩾IP67
Cable type	450mm / 4mm²	900mm / 4mm²
Cable connector	MC4	MC4
Service life	>30years	>30years

ELECTRICAL PARAMETERS AT STANDARD TEST CONDITIONS (STC)

Solar cell type	Monocrystalline	Monocrystalline
Peak power (P_{max})	35W	87W
Component efficiency (%)	15.9%	18.4%
Voltage at Pmax (V_{mpp})	5.7V	13.7V
Current at Pmax (I_{mpp})	6.14A	6.35A
Open-circuit voltage (V_{oc})	6.74V	16.20V
Short-circuit current (I_{sc})	6.53A	6.75A

OPERATING CONDITIONS

Max. system voltage	1500V_{DC}
Maximum fuse rating	20A
Operating temperature	-40°C~+85°C
Max. static load, front(e.g., snow)	5400Pa
Max. static load, back (e.g., wind)	2400Pa
Max. hailstone impact (diameter / velocity)	25mm / 23m/s

CLASS OF PERFORMANCE

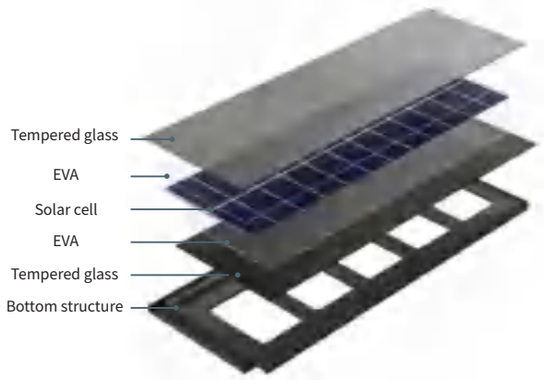
Color	Black/Red/Gray
performance class	2400Pa
Fire-proof level	ClassA
Hail resistance grade	Φ25mm/23m/s
Operating temperature	-40°C~+85°C
Working humidity	0-80%

THERMAL CHARACTERISTICS

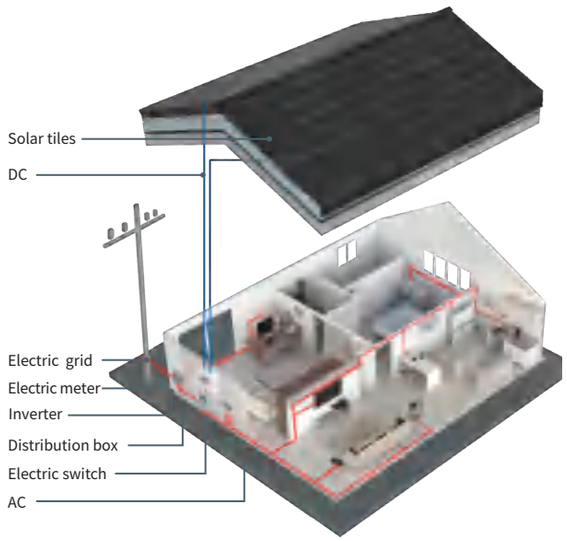
Nominal operating cell temperature	NOCT	°C	45 ± 2
Temperature coefficient of P_{max}	γ	%/°C	-0.36
Temperature coefficient of V_{oc}	β_{voc}	%/°C	-0.30
Temperature coefficient of I_{sc}	α_{isc}	%/°C	0.05

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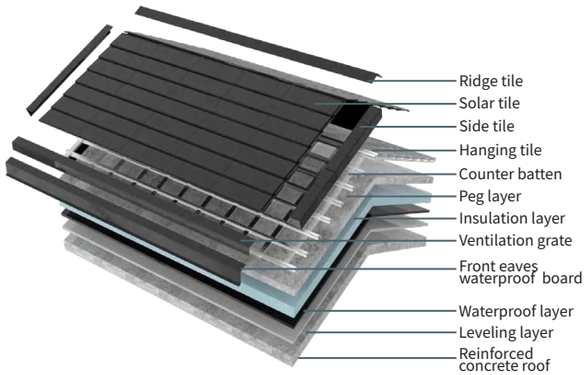
PRODUCT STRUCTURE



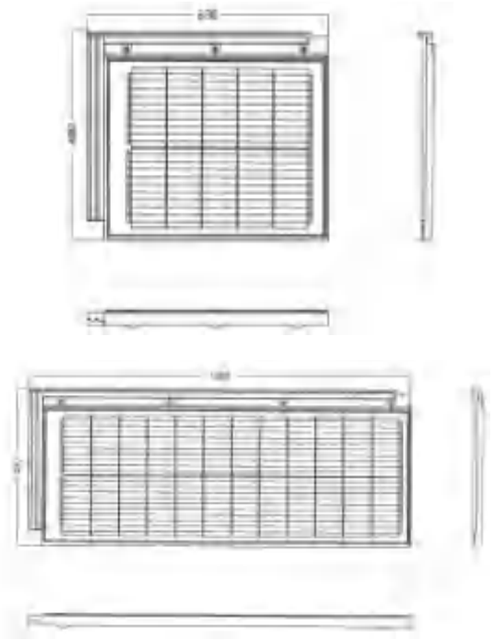
ELECTRICAL SYSTEM



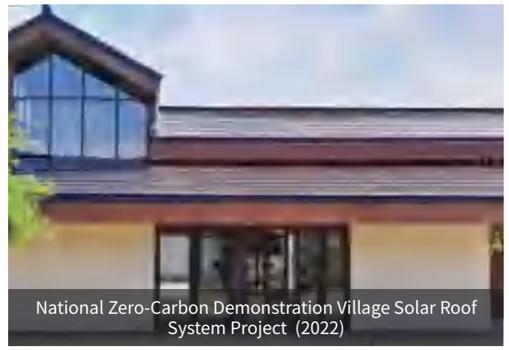
INSTALLATION STRUCTURE



DIMENSION (Unit : mm)



PROJECT CASE



National Zero-Carbon Demonstration Village Solar Roof System Project (2022)



Xi'an Residential Villa Solar Roof System Project (2022)

Colored Glaze-Colorful

◉ Can be applied to building facades, can replace traditional glass curtain walls or be used as exterior wall decoration.

⩾ 24 %
solar cell conversion efficiency

25 YEAR
linear warranty

0-5W
power deviation

Original color technology

More beautiful: rich colors, high brightness, high gloss, the sun can present different texture color.

Colorproof: High and durable color, no fading for a long time in outdoor environment.

High efficient: High-efficiency solar cell technology, high power generation efficiency.

Customization: Color, size, shape can be customized.

Energy saving, clean and environmental protection

Energy saving: Can reduce building energy consumption by 11%.

Capacity: photovoltaic power generation, clean energy, actively generate energy, more conducive to building carbon neutral.

More environmental protection: no noise, no radiation, no light pollution, non-toxic and harmless.

Same life span as the building

Superior performance: building-grade materials, in line with the four-character test of building materials, double waterproof, Class A fireproof, excellent windproof and earthquake resistance.

Reliable quality: high strength corrosion resistance, high temperature and humidity resistance, adapt to extreme weather.



ELECTRICAL PARAMETERS AT STANDARD TEST CONDITIONS (STC)

	JS115DG-18e 1/2	JS345DG-27e 1/2
Module type		
Power output (P_{max})	100W~115W	295W~345W
Power output tolerances (ΔP_{max})	0-5W	0-5W
Module efficiency (η_m)	13.9%~16.0 %	14.1%~16.4%
Voltage at Pmax (V_{mpp})	20.0V~20.2V	30.0V~30.2V
Current at Pmax (I_{mpp})	5.00A~5.69A	9.83A~11.4A
Open-circuit current (V_{oc})	24.2V~24.4V	36.3V~36.5V
Short-circuit current (I_{sc})	5.27A~6.01A	10.4A~12.1A

STC：1000W/m2 irradiance , 25 degree cell temperature, AM1.5g

OPERATING CONDITIONS

Maximum System Voltage	1500V_{DC}
Maximum Fuse Rating	20A
Operating temperature	-40°C~+85°C
Max.static load,back(e.g.,snow)	5400Pa
Max.static load,back(e.g.,wind)	2400Pa
Max.hailstone impact(diameter/velocity)	25mm / 23m/s

THERMAL CHARACTERISTICS

Nominal operating cell temperature	NOCT	°C	45 ± 2
Temperature coefficient of P_{max}	γ	%/°C	-0.36
Temperature coefficient of V_{oc}	β_{Voc}	%/°C	-0.30
Temperature coefficient of I_{sc}	α_{isc}	%/°C	0.05

CONSTRUCTION MATERIALS

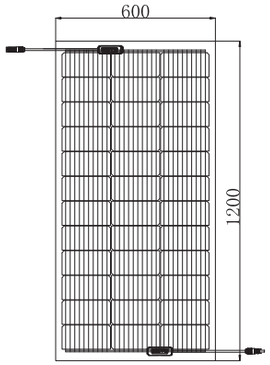
	JS115DG-18e 1/2	JS345DG-27e 1/2
Product type		
Glass (material / thickness)	low-iron tempered glass / 6mm	low-iron tempered glass / 6mm
Baseplate (material)	PVB	PVB
Junction box (protection degree)	⩾IP67	⩾IP67
Cable (length / cross-sectional area)	300mm / 4mm² / Customizable	300mm / 4mm² / Customizable
Plug connector (type / protection degree)	MC4 / IP67	MC4 / IP67
Packing	A pallets or wooden box	A pallets or wooden box
Dimensions (L / W / TH)	1200*600mm	1780*1180mm
Dimensions of cell	182*91mm	182*91mm
Cell layout	3*12	2-6*9
Weight	24kg	70kg

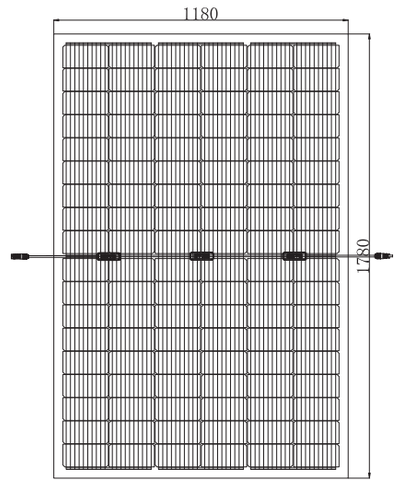
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COLOR(customizable)



DIMENSIONS(Unit :mm)





Colored Glaze-Crystal Clear

◉ Building facade use, can replace traditional curtain wall or as a facade decoration

Transmittance can be customized

High light transmittance: excellent light transmittance, meeting the lighting needs of buildings.

Customization: Size and shape can be customized.

High efficiency: high light transmittance, high power generation.

Energy saving, clean and environmental protection

Energy saving: Can reduce building energy consumption by 11%.

Producible energy: photovoltaic power generation, clean energy, self-produced energy, more conducive to building carbon neutrality.

Environmental protection: reduce light pollution, more conducive to human health and ecological environment.

Same life span as the building

Excellent performance: building grade material, in line with the four characteristics of building materials test, double waterproof, Class A fire, wind proof.

Reliable quality: high strength corrosion resistance, high temperature and humidity resistance, adapt to extreme weather.



ELECTRICAL PARAMETERS AT STANDARD TEST CONDITIONS (STC)

Module type	JS120DG-18e 1/2	JS360DG-54e 1/2
Power output (P_{max})	120W	360W
Power output tolerances (ΔP_{max})	0-5W	0-5W
Module efficiency (η_m)	16.7%	17.1%
Voltage at Pmax (V_{mpp})	20.5V	61.6V
Current at Pmax (I_{mpp})	5.86A	5.85A
Open-circuit current (V_{oc})	24.6V	73.9V
Short-circuit current (I_{sc})	6.15A	6.14A

STC: 1000W/m² irradiance , 25 degree cell temperature, AM1.5g.

OPERATING CONDITIONS

Maximum System Voltage	1500V_{DC}
Maximum Fuse Rating	20A
Operating temperature	-40°C ~ +85°C
Max.static load, infront(e.g.,snow and wind)	5400Pa
Max.static load,back(e.g.,wind)	2400Pa
Max.hailstone impact(diameter/velocity)	25mm / 23m/s

THERMAL CHARACTERISTICS

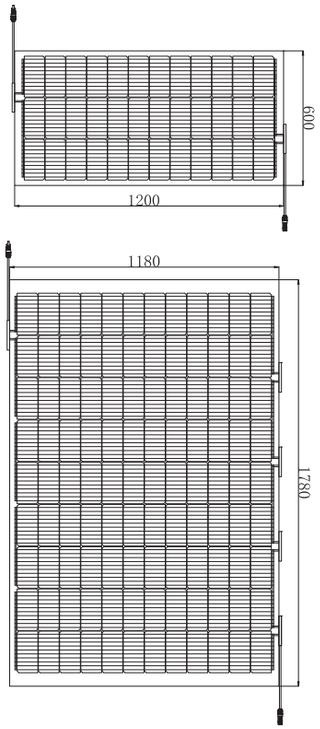
Nominal operating cell temperature	NOCT	°C	45 ± 2
Temperature coefficient of P_{max}	γ	%/°C	-0.36
Temperature coefficient of V_{oc}	β_{Voc}	%/°C	-0.30
Temperature coefficient of I_{sc}	α_{Isc}	%/°C	0.05

CONSTRUCTION MATERIALS

Product type	JS120DG-18e 1/2	JS360DG-54e 1/2
Glass (material / thickness)	low-iron tempered glass / 6mm	low-iron tempered glass / 6mm
Baseplate (material)	PVB	PVB
Junction box (protection degree)	⩾IP67	⩾IP67
Cable (length / cross-sectional area)	300mm / 4mm² / Customizable	300mm / 4mm² / Customizable
Plug connector (type / protection degree)	MC4 / IP67	MC4 / IP67
Packing	pallets or wooden box	pallets or wooden box
Dimensions (L / W / TH)	1200*600mm	1780*1180mm
Dimensions of cell	182*91mm	182*91mm
Cell layout	3*12	9*12
Weight	24kg	70kg

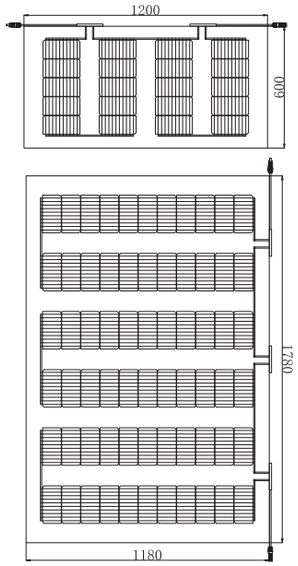
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DIMENSIONS(Unit： mm)



MORE TRANSMITTANCE (customizable)

(Unit： mm)



Colored Glaze-Dark Black

- Full black crystalline silicon photovoltaic building materials.
- Can be used for building roof, exterior facade and other places.

Solid color design has a unique look

High fashion: dark black appearance, thick and elegant.

High efficiency: high light absorption rate, higher power generation efficiency.

Customization:Size and shape can be customized.

Energy saving, clean and environmental protection

Energy consumption reduction: high energy saving coefficient, natural heat dissipation, reduce building energy consumption.

Producible energy: photovoltaic power generation, clean energy, self-produced energy, more conducive to building carbon neutrality.

More environmental protection: no noise, no radiation, no light pollution, non-toxic and harmless.

Same life span as the building

Excellent performance: Building grade material, in line with the four characteristics of building materials test, double waterproof, Class A fire prevention,Excellent wind and shock resistance.

Reliable quality: high strength corrosion resistance, high temperature and humidity resistance, adapt to extreme weather.



ELECTRICAL PROPERTY PARAMETER

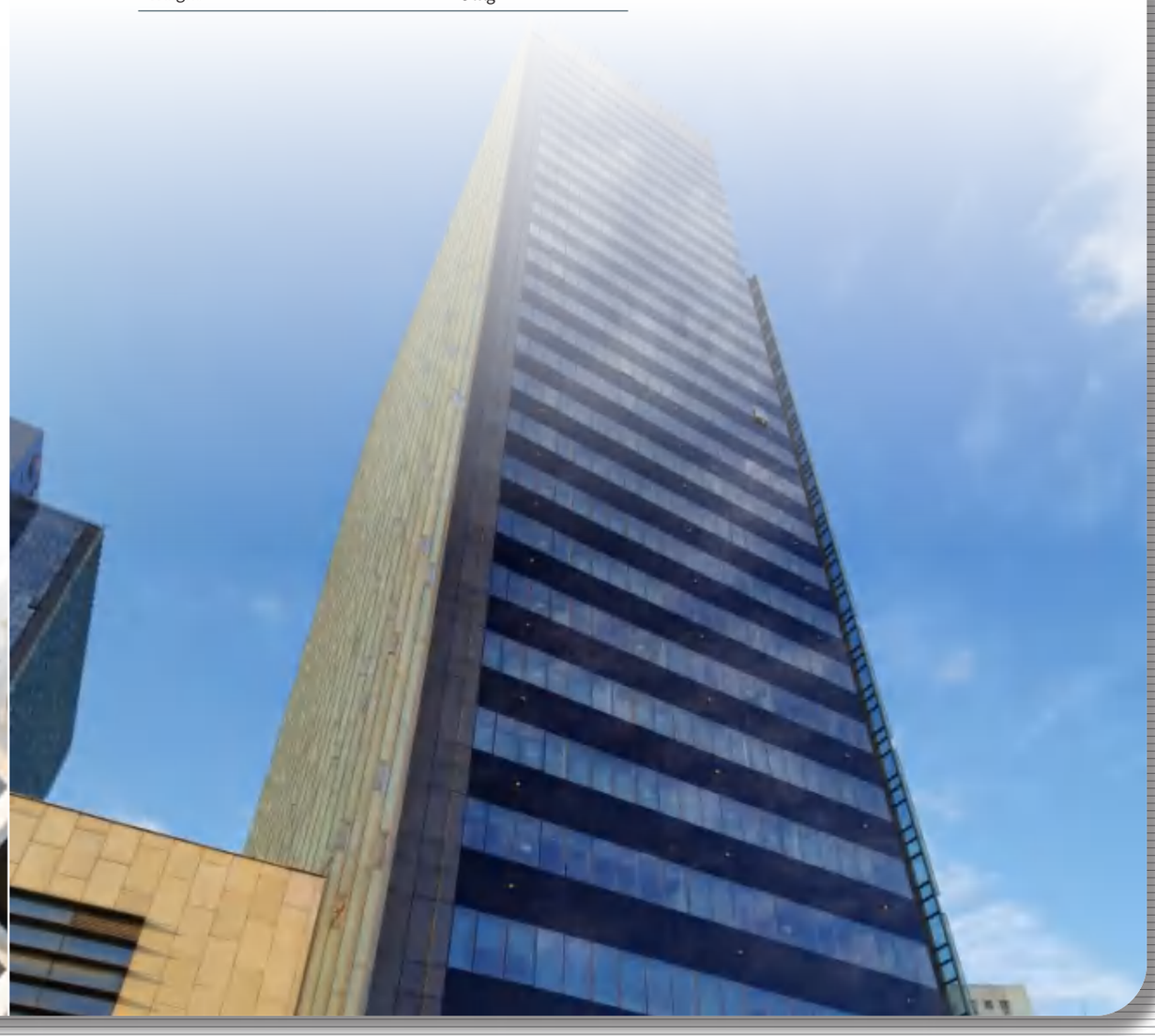
Peak power	325W
Module efficiency	16.9%
Voltage at Pmax	33.9V
Current at Pmax	9.59A
Open circuit voltage	40.7V
Short circuit current	10.1A

GENERAL CHARACTERISTICS

Dimensions	1080×1780mm
Cell	120 pieces/mono half cell /166×83mm
Glass	low iron tempered glass/ 6+6mm
Encapsulating material	PVB
Weight	64kg

PRODUCT DISPLAY





Solar Floor Tile

◉ Designed for landscape beautification, ground night lighting design.

◉ With photovoltaic power generation, lighting, energy storage and other functions, can meet the whole night landscape lighting electricity demand.

◉ Applicable to square ground, walk ground, building lighting, curtain wall decoration, residential area, commercial square lighting, cultural landscape,tourist attractions decorate the streets and other places.

★ **High strength explosion-proof, pressure resistance, high and low temperature resistance, UV resistance.**

★ **Good sealing, dustproof and waterproof, 12v DC low voltage, reliable and safe.**

★ **High sensitivity, equipped with colorful LED lights, intelligent control of stepless dimming.**

★ **Own energy storage, simple wiring, convenient installation, paving flexible.**

★ **Rich colors, diverse textures, beautify the urban environment.**

★ **Building material standard, long service life.**

★ **Exterior dimensions can be customized.**

Appearance can be customized: Color system: gray, blue, red, yellow color optional.

Texture system: a variety of imitation stone texture optional.

The size can be customized: maximum 1.2*0.4m, minimum 0.4*0.4m.



ELECTRICAL PERFORMANCE

Dimensions	400×400×75mm	1200×400×75mm
Light power	2.6W	5.2W
Module power	13W	26W
Pv module voltage	15V	15V

OPERATING CONDITIONS

Dimension	400×400×75mm	1200×400×75mm
System Voltage	DC11.1V	DC11.1V
Operating temperature	-25°C~+50°C	-25°C~+50°C
Output voltage	DC10-12.6V	DC10-12.6V
Light source life	50000h	50000h
Control mode	Trample sensor	Trample sensor
Operating hours	12h (Battery fully charge)	12h (Battery fully charge)

GENERAL CHARACTERISTICS

Dimensions	400×400×75mm	1200×400×75mm
Material	201 Stainless steel + tempered laminated glass	201 Stainless steel + tempered laminated glass
Glow angle	120 degrees	120 degrees
LED color	Single blue, single white, single green, single yellow, etc	Single blue, single white, single green, single yellow, etc
Components of the system	Photovoltaic module, LED full-color light strip, metal shell, DMX controller	Photovoltaic module, LED full-color light strip, metal shell, DMX controller
Lighting method	Trample sensor+time control	Trample sensor+time control

APPEARANCE TEXTURE (stone texture can be customized)

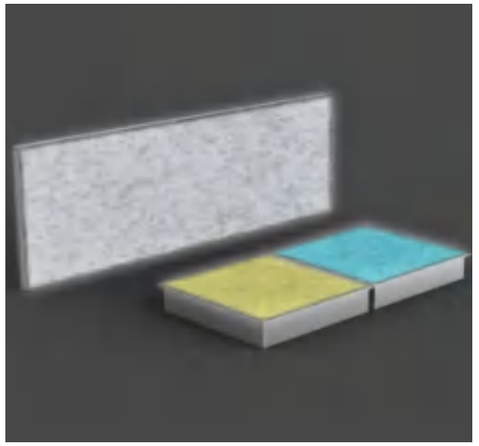


LIGHT LAMP WITH COLOR (customizable)



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EXHIBITION



PROJECT CASE





Solar Leisure Seats

- Smart and practical, in line with the aesthetics of space facilities.
- Clean energy, building a green and low-carbon life.

Super function

Set green power generation, landscaping, convenient charging, leisure and other functions in one.

Functions can be customized, equipped with WIFI, Bluetooth audio, human body induction lighting and other functions.

Clean energy

Efficient photovoltaic power generation is not only green, but also can meet the charging needs of mobile phones, computers, tablets and other common devices.

Quality assurance

Waterproof, moisture proof, rust proof, high temperature resistance, corrosion resistance.

Beautify the environment

Adhering to the aesthetic design of space, the appearance can be customized, diversified modeling, to meet the multi-dimensional scene.

Widely used

It is suitable for high-grade residential area, municipal park, garden landscape, square pedestrian street, station pier and other scenes.



INTRODUCTION

Outdoor Solar Leisure Seats, mainly use photovoltaic clean energy into electricity, through the intelligent control system, the energy is stored in the battery, according to the demand of electrical equipment is input to different electrical equipment through intelligent controller to solve the electricity problem of public infrastructure.

FUNCTION FEATURES

USB phone charging | wireless phone charging | Bluetooth music playback | Human body induction lighting | Wi-Fi

SPECIFICATIONS

Appearance color	Wood grain color、elegant black
Material	Q235 1.5mm galvanized steel/201# stainless steel/aluminum sheet
Solar Module	Mono solar module
Battery	Lithium battery
WiFi	2.4GHz/150MBPS
Audio	12V/0.84A 45Hz-18KHz 1pcs
Bluetooth voice	5V~12V 50~500MA/50Hz 1pcs
Operating temperature	-40°C~60°C
USB charging	5V/2.4A 2pcs
Wireless charging	5V/2.4A 2pcs

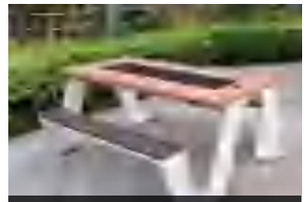
PRODUCT DISPLAY



JSC-2201 1700*450*480mm



JSC-2202 1700*450*480mm



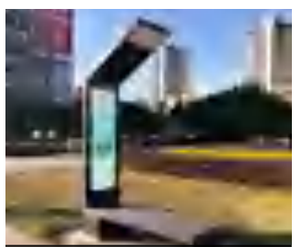
JSC-2203 1800*1460*700mm



JSC-2204 2100*460*480mm



JSC-2205 1800*550*730mm



JSC-2206 2000*686*3090mm



JSC-2207 2100*600*2400mm



JSC-2208 2480*550*2200mm

Solar Flower

◉ By using the global positioning tracking algorithm, the blade (photovoltaic panel) can automatically adjust the direction, Angle and retracting state of the blade along with the moving path of the sun, so as to always maintain the optimal power generation Angle and maximize the power generation efficiency in the whole period.

◉ Adapted to a variety of climates, even cloudy, the leaf can also track the position of the sun and move.

Fresh in appearance
Sunflower bionic design, beautiful and novel for a variety of application scenarios.

High power generation efficiency
The power generation per unit area is 40% higher than the traditional photovoltaic panel, and the service life can reach more than 20 years.

Multiple axis tracking
Solar real-time tracking system, automatic blade folding and cleaning.

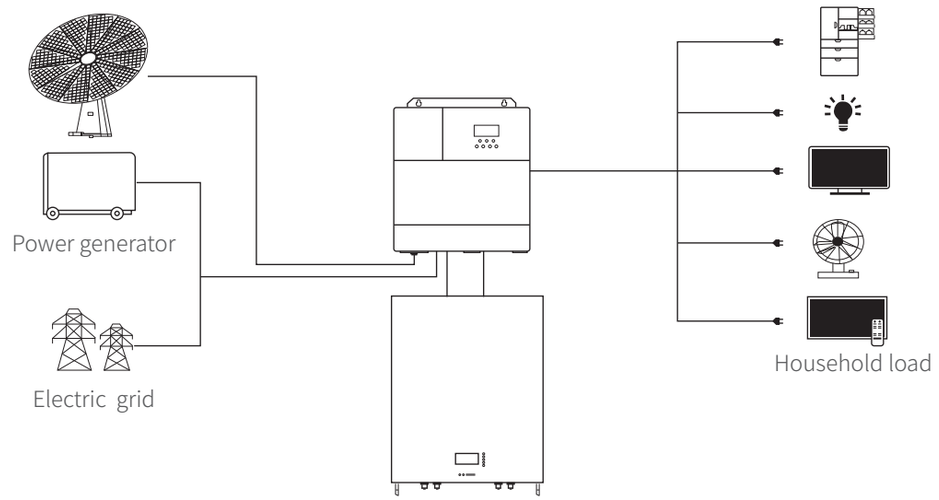
Easy installation
Flexible installation location, easy to carry a lifting, saving labor costs.

Safety monitoring
-20°C to keep safe and stable start, snow protection, sensor monitoring wind speed one key start.

Model Optional
There are two specifications of 1.4kW and 2.6kW.



COMPOSITION OF SYSTEM



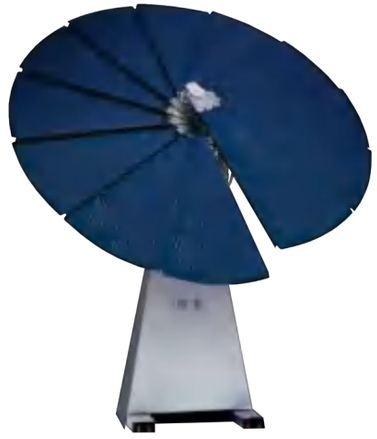
ELECTRICAL PERFORMANCE

MODULE PARAMETERS		
Module type	1.4kW	2.6kW
Module efficiency (η_m)	⩾21.6%	⩾21.6%
Voltage at Pmax (V_{mpp})	29.55V	23.54V
Current at Pmax (I_{mpp})	4.23A	9.53A
Open circuit voltage (V_{oc})	32.12V	25.62V
Short circuit current (I_{sc})	4.43A	9.92A

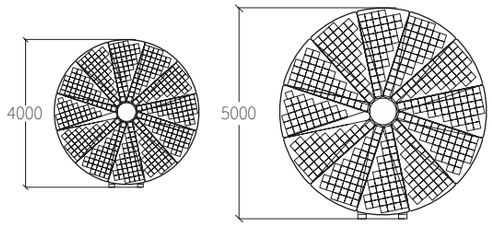
OPERATING CONDITIONS		
Module type	1.4kW	2.6kW
Max. system voltage	1000V_{DC}	1000V_{DC}
Operating temperature	-15°C ~ 60°C	-15°C ~ 60°C
Output voltage	220V AC	220V AC
Environment humidity	5% ~ 95%	5% ~ 95%
Operating mode	on/off grid	on/off grid

GENERAL CHARACTERISTICS		
Module type	1.4kW	2.6kW
Dimensions	1595×1022×4.5mm	2070×1228×4.5mm
Product size (expanded)	4000×4000×4000	5000×5000×5000mm
Product size (closure)	1030×1330×2170	1440×1300×2710mm
Weight	About 650KG	About 950KG
Structure	Three-axistracking	Three-axistracking
Waterproof rating	IP65	IP65

PRODUCT DISPLAY



SIZE OF EXPANSION



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Solar Noise Barrier

◉ It integrates multiple functions such as noise isolation, clean power generation, beautification of the environment, energy saving and emission reduction, and efficient use of idle resources, effectively helping the transportation industry to achieve carbon neutrality.

★ Double-sided power generation, make full use of reflected light and scattered light, power generation can be increased by up to 30%.

★ Intelligent no heat spot, can adapt to complex installation environment.

★ Quick wiring, easy installation; Customized development and installation frame, convenient disassembly and maintenance.

★ Filter noise reduction technology, noise reduction effect is obvious.

★ Intelligent monitoring and operation and maintenance platform can realize real-time fault warning, diagnosis and location.



ELECTRICAL PERFORMANCE

Dimensions	320w/1090*1790*11.5
Peak power	320Wp
Power output tolerances	±5
Module efficiency	⩾16.4%
Voltage at Pmax	34.2V
Current at Pmax	9.36A
Open circuit voltage	41.7V
Short circuit current	9.83A

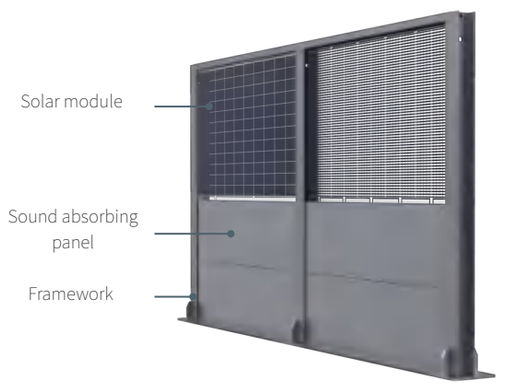
PERFORMANCE INDICATORS

Product	3.5-meter straight-arm composite pv sound barrier
Mean sound absorption coefficient NRC	0.8
Noise reduction effect	⩾10dB
Sound insulation quantity	metal sound-absorbing board⩾30dB photovoltaic building materials⩾35dB
Wind pressure	⩽3KPa, ⩾-2.5KPa
Surface density	⩽32KG/m²
Deformation resistance	meetsJTT 646-2005
Impact resistance	meetsJTT 646-2005
Fire rating	GB8624-2006, Class A
Service life	Overall＞25years pv building materials＞30years steel column＞50years

GENERAL CHARACTERISTICS

Dimensions	1090*1790*11.5 (mm)
PV Structure	5+5mm
Weight	55Kg
Fire rating	GB8624-2006, Class A

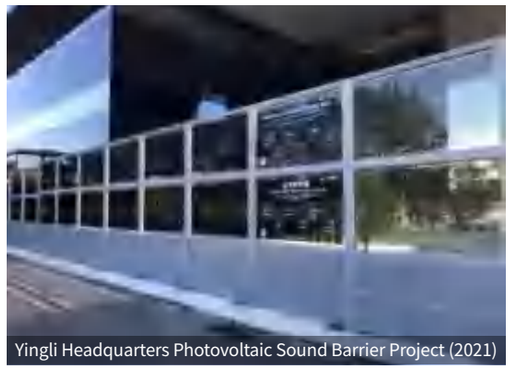
PRODUCT DISPLAY



PROJECT CASE


Seoul Noisy Barrier (2017)


Photovoltaic Sound Barrier Project of Guoluo Prefecture Communications Bureau of Qinghai Province (2019)


Yingli Headquarters Photovoltaic Sound Barrier Project (2021)

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Part III Application Cases

Guangzhou Baiyun International Conference Center Phase II

◇ Decorative surface of building accessories ◇

- China's first garden-style BIM zero-carbon international conference center

Design Features:

Project Characteristics

The first Lingnan garden-style BIM zero-carbon international conference center in China. Lingnan garden culture integrates Yingli Jiasheng BIPV system solutions, integrating photovoltaic power generation technology and Cantonese charm into the building. Modern interpretation and clever layout are carried out to form a garden-style international conference center with a new era architectural style. The 6mm-thick "Colored Glaze-Colorful" can be customized, using PVB film, which meets the double certification of the photovoltaic + construction industry in terms of fire protection and other safety properties. There is a 100mm cavity between the components and the roof. The special structural design enables air flow to form convection, which significantly reduces the heat transmitted to the building interior by more than 20%. The special slotted node design, "U"-shaped wiring method and optimal string design are used to reduce cable losses and avoid secondary wiring problems during the construction process.

Energy Saving

Calculated based on daily radiation and power generation efficiency, the building's average daily power generation can reach 729 degrees, including a 6kW intelligent lighting control system, a 10kW automatic fire alarm and fire linkage control system, a 7kW audio broadcast system, and a 7kW multi-function conference system. Provide all-weather power supply; the annual power generation is 266,000 kilowatt-hours, which is equivalent to an annual reduction of 220.46 tons of carbon dioxide, a reduction of 106.5 tons of greenhouse gases generated by coal combustion, and a reduction of 72.42 tons of dust and 7.99 tons of sulfur dioxide.



Time：2023

Location：Guangzhou

Capacity：261 kW

Installed area：5000 ㎡





Suzhou East China Visual Industrial Park Project

◇ Skylight system ◇

- National high-quality demonstration project

Time：2023

Location：Jiangsu·Suzhou

Capacity：250 kW

Installed area：2000 ㎡

Design Features：

Project Characteristics

National high-quality demonstration benchmark project. Suzhou East China Machine Vision Industrial Park is listed as an annual key investment project by Suzhou City. The overall design concept of the industrial park is closely integrated with the machine vision industry. The top is oval-shaped, standing like a lens, and has both a sense of the future and a sense of technology. 250kW Colored Glaze-Crystle Clear BIPV materials are installed on the roof, and photovoltaic power generation provides enterprises with low-cost, environmentally friendly green electricity, effectively reducing building energy consumption. Under the sunlight, the cells arranged in rows form a special visual effect, which is perfectly in line with the company's business philosophy.

Energy Saving

Based on the total installed capacity, daily radiation and power generation efficiency, it is calculated that the project can generate 822 kilowatt hours of electricity per day to run high-power products such as 62kW product laboratory equipment, 33kW product application center equipment, and 20kW multimedia training room equipment8 hours; the annual power generation can reach 300,000 kilowatt-hours, reducing greenhouse gases produced by 120 tons of coal combustion, which is equivalent to reducing carbon dioxide emissions by 99.36 tons and reducing sulfur dioxide by 3.6 tons.



Electric Valley Green Corridor City Intelligent Exhibition Hall

◇ Decorative surface of building accessories ◇

▪ Baoding’s first zero-carbon exhibition hall demonstration project integrating scientific and technological innovation wisdom

Time：2023

Location：Hebei·Baoding

Capacity：216.51 kW

Installed area：1612 ㎡



Design Features:

Project Characteristics

Baoding’s first zero-carbon exhibition hall demonstration project integrating scientific and technological innovation wisdom. In order to effectively improve the environmental benefits of the park, the Electric Valley Green Corridor City Smart Enjoyment Exhibition Hall in Shiguang Park is equipped with Yingli Gain Solar’s customizable 5+5mm glazed series of products, which use photovoltaic power generation technology as the core and adopt a hidden frame type. The installation process and craftsmanship, the building surface is bright and shiny, and its color is unusual, which is a combination of humanities, art, science and technology. The three colors of blue, green and orange are spliced together to form a colorful photovoltaic curtain wall, which symbolizes the colorfulness of Baoding's city, industry, life and other aspects. Blue symbolizes "a city of quality life", green highlights "new energy characteristic industries", and orange indicates "people's rich and colorful lives". The three "colors" help build Baoding into a city of technology, quality and wisdom.

Energy Saving

The total installed capacity of the three exhibition halls is 216.51kW. Based on daily radiation and power generation efficiency calculation, the daily power generation reaches 496 kWh, which can be used for a total of 124kW of electrical equipment such as AI smart welcome screens, XR virtual exhibition halls, and AI picture reading. Self-use for 4 hours/day; the annual power generation can reach 180,000 kWh, which is equivalent to an annual reduction of 59.62 tons of carbon dioxide, a reduction of 72 tons of greenhouse gases produced by coal combustion, and a reduction of 1.22 tons of dust and 2.16 tons of sulfur dioxide. Not only can it save electricity bills, it can also alleviate urban power consumption pressure and improve residents' quality of life.





Wuxi Lihu Future City

◇ Skylight system ◇

- Wuxi's first BIPV+ landscape urban characteristic urban benchmark project

Time：2023

Location：Jiangsu·Wuxi

Capacity：203 kW

Installed area：1204 m^2

Design Features：

Project Characteristics

Wuxi’s first BIPV+ landscape urban characteristic benchmark project. Lihu Future City stands on the lake and thrives on the water. The plan adheres to the top-level design of "smart, low-carbon, ecological and future". It is people-oriented, takes production as the core and water as the soul. It anchors the "landscape living room and urban vitality area". , science and technology innovation exchange place, future smart city" goal positioning. The Colored Glaze·Crystal Clearseries of photovoltaic green building materials are installed on the building's lighting roof, and the crystalline silicon cells are divided into thin strips using the dicing process to achieve high light transmittance and unobstructed visual effects. The products are arranged and combined according to the expression of "LIFURECITY" , demonstrating the C-position of Lihu Future City in the Taihu Science and Technology Innovation Community, and presenting a future city that perfectly integrates mountains, water, and cities.

Energy Saving

The building is equipped with a total of 203kW photovoltaic green building materials. Based on daily radiation and power generation efficiency, it can generate 570.41 degrees of electricity per day, which can provide 8 hours (day) of clean power for 13kW smart screens, 3kW lighting systems, and 7kW central control systems. ; Provides 208,200 kilowatt-hours of green electricity to buildings every year, reducing 83.28 tons of greenhouse gases produced by coal combustion, which is equivalent to reducing carbon dioxide emissions by 68.96 tons and reducing sulfur dioxide by 2.5 tons.



TusDesign Building

◇ Skylight system ◇

- The first BIPV project in Jiangsu that integrates Jiangsu-style culture and modern ecology

Design Features:

Project Characteristics

It is the first BIPV project in Jiangsu that integrates Jiangsu-style culture and modern ecology, and is a national-level high-quality demonstration benchmark building. Tus-Design Building is located in the Jinji Lake East CBD area of Suzhou Industrial Park, Jiangsu Province, with a total construction area of approximately 78,000 square meters. The project integrates low-carbon technologies such as BIPV. In order to meet the demand for high-transparency daylighting roofs, Yingli Gain Solar installed 6+6mm "Colored Glaze-Crystle Clear" series photovoltaic green building materials on the building's daylighting roofs to replace traditional building materials (installed capacity 150kw, annual power generation 15.6 0,000 degrees); at the same time, 5+5mm green "Colored Glaze-Colorful" series photovoltaic green building materials (installed capacity 6.8kw, annual power generation 4300 kWh) are installed on the basketball court to create a vivid colorful facade. The building organically combines low-carbon energy-saving technology with architectural aesthetics and building functions, and gives full play to its green resource integration capabilities in green building materials and other aspects.

With its open landscape perspective, rhythmic creative space, and vertical sky courtyard concept, Tus-Design Building inherits Suzhou-style culture and integrates Suzhou traditional culture and modern ecological space. It has won three-star green buildings and LEED CS gold awards. It is A national-level high-quality demonstration benchmark building that integrates green, healthy and smart technologies is a high-quality green building demonstration project in Jiangsu Province and a leading benchmark for the headquarters of domestic A-share listed companies.

Energy Saving

The building is equipped with a total of 156.8kW photovoltaic green building materials. Based on daily radiation and power generation efficiency, it can generate 439 degrees of electricity per day, which can supply the 11kW smart large screen system to operate for 8 hours a day, and the 7kW lighting system to operate 24 hours a day; every year It provided 160,300 kilowatt-hours of green electricity for the building, reducing 64.12 tons of greenhouse gases produced by coal combustion, which is equivalent to reducing carbon dioxide emissions by 132.73 tons.

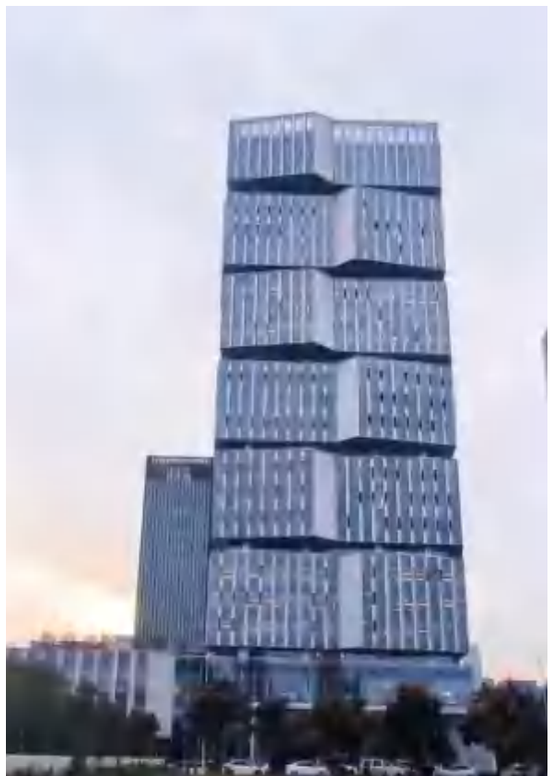
Time：2023

Location：Jiangsu·Suzhou

Capacity：156.8 kW

Installed area：1180 ㎡







Hefei Jinpeng Center BIPV photovoltaic project

◇ Decorative surface of building accessories ◇

- The largest BIPV curtain wall project in Anhui Province

Time：2023

Location：Anhui·Hefei

Capacity：121 kW

Installed area：1050 ㎡



Design Features：

Project Characteristics

Innovative practice of low-carbon smart buildings, it is the BIPV photovoltaic project with the largest curtain wall construction area in Anhui Province. Based on the building facade structure, the curtain wall project is designed as a vertically concealed and horizontally exposed structure. 638 pieces of "Colored Glaze· Dark Black" series crystalline silicon photovoltaic building materials are integrated into the entire curtain wall system and installed in the east, south and southeast from the 6th to 23rd floors of the building. The position of the wall between the windows realizes the perfect integration of photovoltaic products and buildings. The lightweight products have superior light transmission performance. With high-efficiency cells, the conversion efficiency is as high as 21%. While increasing power generation, the dark blue appearance satisfies the building Aesthetics highlights the weight, grandeur and industrial feel of the building.

Energy Saving

Based on the total installed capacity, daily radiation and power generation efficiency, it is calculated that the project can generate 274 Kwh of electricity per day, which can be used for the 7.8KW DC lighting system in the exhibition hall to run 24 hours a day, and the 17.7KW wireless network and GPRS network system. It operates 14 hours a day to meet the building's annual energy demand. The annual power generation can reach 100,000 degrees, reducing 40 tons of greenhouse gases produced by coal combustion, which is equivalent to reducing carbon dioxide emissions by 86.34 tons and reducing sulfur dioxide by 1.2 tons.





National Energy Group Tianjin Wind Farm Office Building

◇ Decorative surface of building accessories ◇

▪ China Energy Group’s first commercial office building BIPV energy transformation demonstration project

Time：2023

Location：Tianjin

Capacity：98 kW

Installed area：1300 ㎡



Design Features：

Project Characteristics

China Energy Group’s first commercial office building BIPV energy transformation demonstration project. The project is located on Xutai Highway in Binhai New District, Tianjin, and is adjacent to Rongwu Expressway to the west, so the transportation is relatively convenient. A total of 425 pieces of Colored Glaze ·Colorful series products are installed on the building facade, north glass of the roof, and south slope of the roof. They integrate artistry and non-toxic and environmentally friendly power generation functions. Under the sunlight, the colored glaze makes the building It has a more technological sense. In addition, the project is also equipped with a 30kW string photovoltaic inverter, which adopts a "spontaneous and self-consumption" power supply mode to adjust the building's power consumption in real time according to the building's power consumption.

Energy Saving

The building has a total of 98kW photovoltaic green building materials installed. Based on daily radiation and power generation efficiency, it can generate 231 degrees of electricity per day, providing 8 hours of clean power for the 28kW central control system facility and 24-hour operation of the 3kW lighting system; every year Providing 84,600 kilowatt-hours of green electricity to the building, reducing greenhouse gases produced by 33.84 tons of coal combustion, which is equivalent to reducing carbon dioxide emissions by 28.02 tons and reducing sulfur dioxide by 1.02 tons.





BBMG Huairou Xingfa Technology Park

◇ Decorative surface of building accessories ◇

- The first domestic renovation project to obtain zero-carbon quality certification

Time：2023

Location：Beijing

Capacity：109 kW

Installed area：1100 ㎡



Design Features：

Project Characteristics

Photovoltaic + high energy-consuming cement park transformation demonstration, the first domestic transformation project to obtain zero-carbon quality certification. BBMG introduced a direct-flexible light storage system, installed 7kW colored glaze-Crystle clear products on the curtain wall of the zero-carbon exhibition hall, and customized the BBMG LOGO pattern based on the building material-grade photovoltaic power generation preparation process and technology; 102KW distributed photovoltaic modules were installed on the roof. and a 40kWh energy storage device for self-use, and the excess power generation can also meet emergency power needs. It is a demonstration project for BIPV to help cement plants transform into green transformations.

Energy Saving

According to national standards, carbon emissions have been reduced from more than 600,000 tons per year to 14,000 tons per year. As a low-carbon and smart science and technology park, Xingfa Science and Technology Park will also reduce more than 3,100 tons per year on this basis, reducing carbon emissions by 98.2%.





Qingyan Road Middle School Cultural and Sports Center Project

◇ Decorative surface of building accessories ◇

▪ Wuxi's first zero-energy consumption middle school demonstration project

Time：2023

Location：Jiangsu·Wuxi

Capacity：93.8 kW

Installed area：1000 m^2



Design Features:

Project Characteristics

Wuxi’s first zero-energy consumption middle school demonstration project, promoting green and low-carbon development of the campus. Qingyan Road Middle School Cultural and Sports Center is located on the southeast side of the intersection of Qingyan Road and Qingshu Road. The school actively responds to the construction and development requirements under the "double carbon" goal and builds a zero-energy middle school project. The imitation aluminum plate photovoltaic green building materials Black Brick series are installed on the roof of the building. In addition to meeting the aesthetic requirements of the building, it can also reduce the carbon emissions caused by the building to the greatest extent through the green electricity brought by photovoltaic power generation. Cooperating with the energy storage system to reduce the peak charge load and equipped with smart microgrids, the power system is made more portable and efficient, helping Qingyan Road Middle School embark on the path of eco-friendly zero energy consumption.

Energy Saving

The building is equipped with a total of 93.8kW photovoltaic green building materials. According to the daily radiation and power generation efficiency, it can generate 261 degrees of electricity every day, providing 8 hours (day) for the 7kW electronic information system room, 5kW lighting system, and 8kW new air-conditioning system.) Green electricity; it provides 95,400 kilowatt-hours of green electricity to buildings every year, reducing 38.16 tons of greenhouse gases produced by coal combustion, which is equivalent to reducing carbon dioxide emissions by 31.60 tons and reducing sulfur dioxide by 1.14 tons.





Suzhou Fenhu High-tech Zone Conflict Mediation Center Project

◇ Decorative surface of building accessories ◇

- The first government-invested national high-quality BIPV demonstration building in Suzhou

Design Features:

Project Characteristics

Suzhou’s first government-invested national-level high-quality BIPV demonstration benchmark building. In order to implement the Fenhu High-tech Zone people's livelihood project, the Suzhou Wujiang District People's Government invested in the construction of a green renovation project for the Conflict Mediation Center, which adopted a suspended external shading system, environmentally friendly materials used throughout the scene, a rooftop photovoltaic system, a rainwater collection system, and an open space Ecological greening, natural ventilation and lighting, 80kW Black Brick were installed on the building facade, and 10kW Colored Glaze were installed on the lighting roof. Through technical transformation, operation improvement and other measures, the original building was upgraded to an integrated one. Three major dimensions: "clean energy, green buildings, and lifestyle advocacy". After upgrading and renovation, the building's comprehensive energy-saving rate in the office area has been increased to 85%. It is also equipped with an 80kW/h energy storage system, striving to create a comprehensive solution for a carbon-neutral community.

Energy Saving

The building is equipped with a total of 90kW photovoltaic green building materials. Based on daily radiation and power generation efficiency, it can generate 158 kWh of electricity per day, which can provide 20kW network power equipment (calculators, printers, etc.) for 8 hours of daily operation and 7kW lighting system daily.



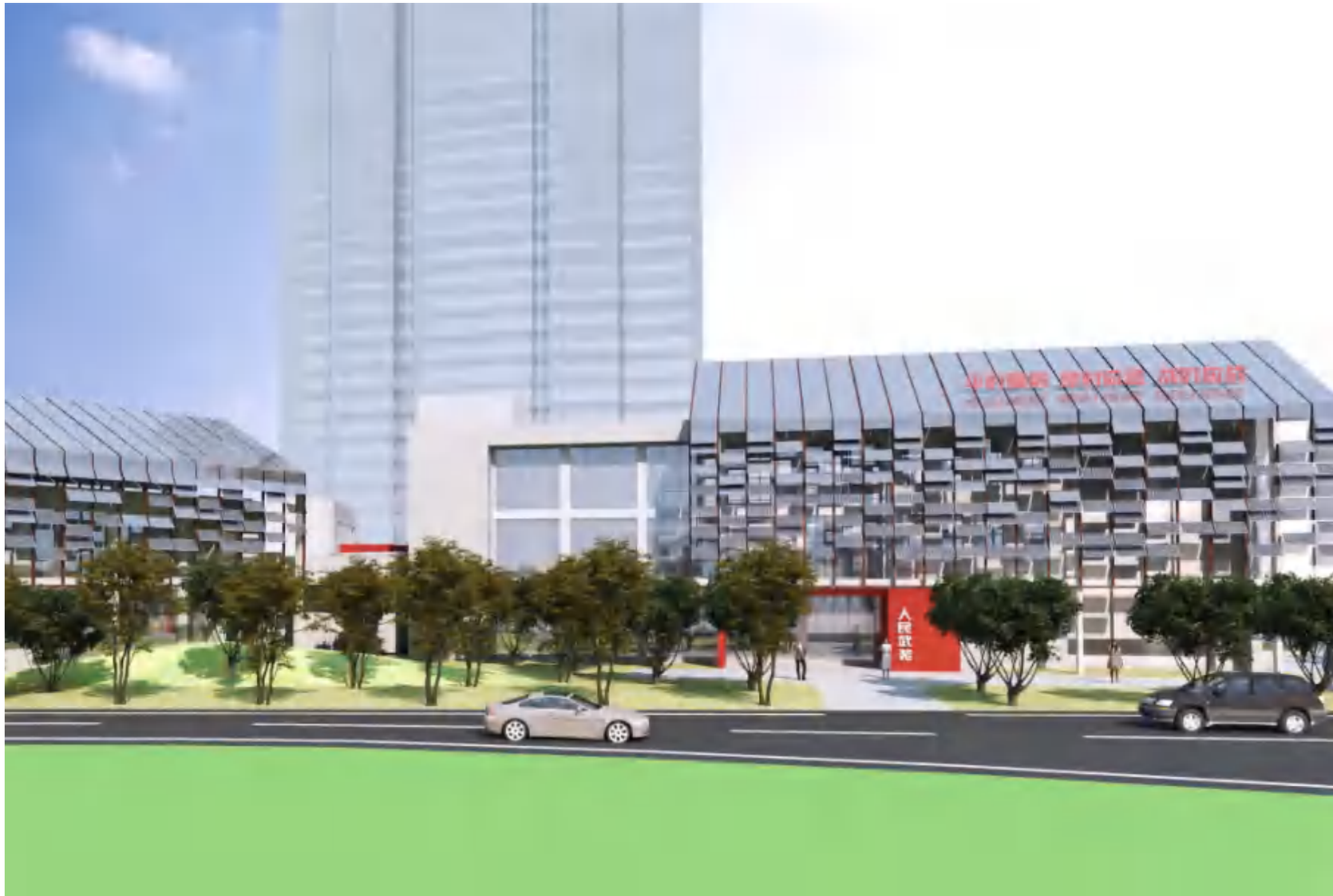
Time：2023

Location：Jiangsu·Suzhou

Capacity：90 kW

Installed area：1260 ㎡





Shenzhen Science and Technology Museum (new museum)

◇ Decorative surface of building accessories ◇

- Shenzhen's first BIPV+ digital civilization innovation and technology museum demonstration project

Time：2023

Location：Shenzhen

Capacity：61 kW

Installed area：455 m^2

Design Features：

Project Characteristics

Shenzhen’s first BIPV+ digital civilization innovation and technology museum demonstration benchmark. With the theme of "Digital Civilization Unlocks Innovation and the Future", Shenzhen Science and Technology Museum (new museum) introduces BIPV smart power generation system and achieves scientific matching of renewable energy and smart grid through overall planning and design. In the position where the curvature of the main building's daylight roof is relatively gentle, 608 pieces of Colored Glaze (product size: 100W1492*550mm) series photovoltaic green building materials were installed. The black skin color is consistent with the color of the roof aluminum veneer and metal plate curtain wall. The futuristic architectural form with great visual impact brings a mysterious color to the science and technology museum. In addition, the product also has good thermal stability, aging resistance, insulation performance and bonding performance, and has the same lifespan as the building. As one of Shenzhen’s “Top Ten Cultural Facilities in the New Era”, the Shenzhen Science and Technology Museum will become a pearl in the Guangdong-Hong Kong-Macao Greater Bay Area and the Guangzhou-Shenzhen Science and Technology Innovation Corridor. It will also be an important base for young people to learn scientific knowledge, inspire the spirit of exploration, and cultivate innovative abilities.

Energy Saving

The building is equipped with a total of 61kW photovoltaic green building materials. Based on daily radiation and power generation efficiency, it can generate 186 kWh of electricity per day for the operation of 7kW projection equipment, 5kW smart large screen system, 9kW astronomical dome theater equipment and 2kW lighting system. 8 hours (day); it provides 67,900 kilowatt-hours of green power to buildings every year, reducing 27.16 tons of greenhouse gases produced by coal combustion, which is equivalent to reducing carbon dioxide emissions by 22.49 tons and reducing sulfur dioxide by 0.81 tons.



Jiangsu Sheyang Port Zero Carbon Industrial Park

◇ Decorative surface of building accessories ◇

- The first green zero-carbon demonstration park in East China

Time：2023

Location：Jiangsu·Sheyang

Capacity：30 kW

Installed area：338 ㎡



Design Features:

Project Characteristics

The first all-green electricity and zero-carbon demonstration park in the Yangtze River Delta. Relying on abundant solar energy resources, the zero-carbon park uses the integrated control of "source, grid, load and storage" to build a "zero-carbon" ecosystem that is safe and controllable, efficient in energy use, and diversified energy storage. The buildings in the park are not only equipped with Yingli Gain Solar The imitation aluminum plate photovoltaic green building material "Black Brick " makes the building color and appearance uniform. Zero-carbon products such as solar flowers and solar seats are also introduced to deeply integrate the zero-carbon concept into the "blood" of the park.

Energy Saving

The building is equipped with a total of 30kW photovoltaic green building materials. Based on calculations of daily radiation and power generation efficiency, it can generate 92 degrees of electricity per day, which can run the 30kW energy control platform for 2 hours a day and the 4kW lighting system 24 hours a day; every year The building provides 33,400 kilowatt-hours of green electricity, reducing greenhouse gases produced by 13.36 tons of coal combustion, which is equivalent to reducing carbon dioxide emissions by 11.06 tons and reducing sulfur dioxide by 0.4 tons.





Mongolia Electric Power Group Co., Ltd. National Key Laboratory, A-level big data center project

◇ Decorative surface of building accessories ◇

- Inner Mongolia Electric Power Group's first comprehensive production, scientific research and cultural base mainly composed of national key laboratories and data centers

Time：2023

Location：Hohhot City, Inner Mongolia

Capacity：29.18 kW

Installed area：627 ㎡



Design Features：

Project Characteristics

Inner Mongolia Electric Power Group’ s first comprehensive production, scientific research and cultural base with national key laboratories and data centers as its mainstay. In order to help the autonomous region's energy green and low-carbon transformation, Mongolia Electric Group introduced BIPV smart system solutions and installed stone-like photovoltaic green building materials Black Brick on the laboratory facade. Special masonry glass was used to make the products colorful and durable, in line with the architecture. While the aesthetic design provides a steady stream of green electricity for the building, it also provides practical experience for energy companies to transform towards green, low-carbon and digital transformation.

Energy Saving

The building is equipped with a total of 29.18kW photovoltaic green building materials. Based on daily radiation and power generation efficiency, it can generate 101 kWh of electricity per day, which can be used for 24-hour operation of the 4kW lighting system; it provides 37,000 kWh of green power to the building every year, reducing It eliminated 14.8 tons of greenhouse gases generated by coal combustion, which is equivalent to reducing carbon dioxide emissions by 12.25 tons and reducing sulfur dioxide by 0.44 tons.





SRIBS Scientific Research Office Building

◇ Decorative surface of building accessories ◇

- One of the first projects in China to receive net-zero carbon building certification

Time：2023

Location：Shanghai

Capacity：21.88 kW

Installed area：220 ㎡



Design Features:

Project Characteristics

One of China's first net-zero carbon building certification pioneer projects, the building's facade uses Gain solar's black brick series products. Different from traditional buildings, the project installs colored crystalline silicon photovoltaic green building materials around the window frames. The nearly uniform gray color is beautiful and elegant, and ensures the facade effect and photovoltaic power generation efficiency, replacing concrete and reducing construction costs. At the same time, the clean power generation function improves the energy saving level of the building and reduces carbon emissions during the operation phase.

Energy Saving

It can generate 44 degrees of clean electricity every day, which can run 2.4KW lighting for 14 hours. The project is expected to generate 16,200 kwh of electricity annually, equivalent to an annual reduction of 13.41 tons of carbon dioxide emissions.





Wuxi International Conference Center

◇ Roof Lighting System ◇

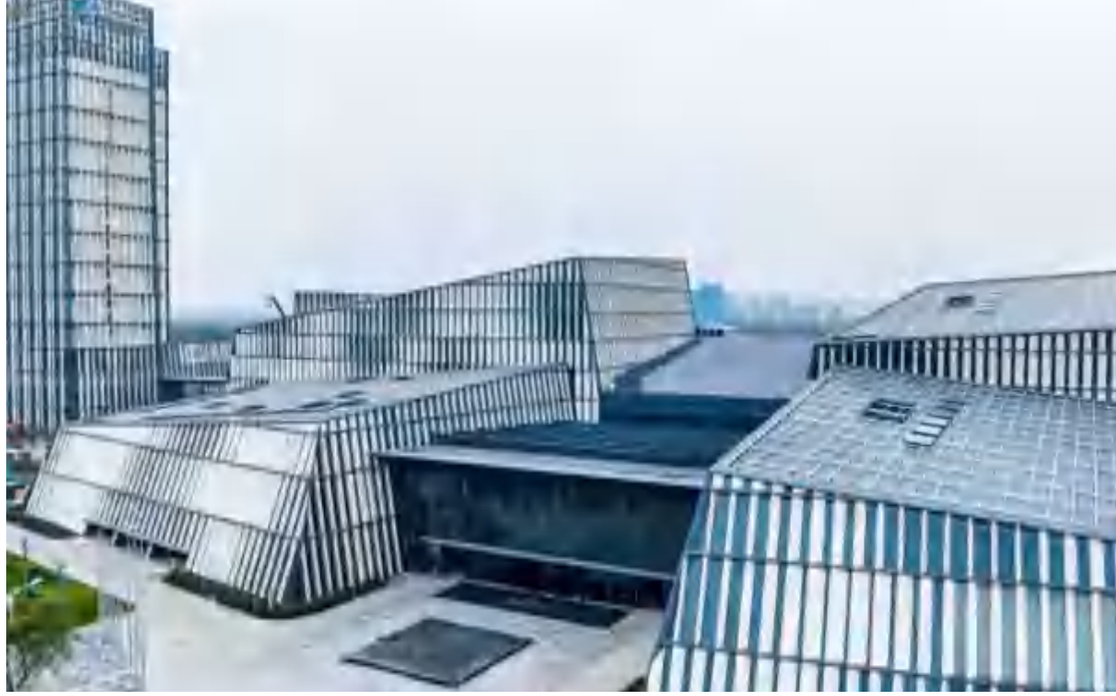
- Jiangsu's first exhibition center BIPV project.

Time：2022

Location：Wuxi

Capacity：481 kW

Installed area：4861 m^2



Design Features:

Project Characteristics

Wuxi International Convention Center is Jiangsu's first exhibition center BIPV project, its house,the surface lighting ceiling adopts the crystalline silicon photovoltaic green building materials of Gain solar -- "Colored Glaze-Crystal Clear"Series products, the use of glass hollow instead of the traditional roof metal plate, beautiful appearanceIt is permeable and can generate electricity, realizing the perfect combination of photovoltaic and building. "White waves pile up glass,Glass clear mirror mooring ", glass series of products unique appearance to meet the architectural aesthetic at the same time, it also has the effect of energy saving and emission reduction, reducing energy consumption.

Energy Saving

The building is equipped with a total capacity of 481KW and an installation area of "Colored Glaze-Crystal Clear"4,861 square meters, providing 482,000 KWH of green electricity to the building every year, a reduction of 192.8Burning a ton of coal produces the same amount of greenhouse gases as cutting 501.2 tons of carbon dioxide,Emission reduction of dust 3.3 tons, sulfur dioxide 4.2 tons.





Tianhan Grand Theatre

◇ Roof Lighting System ◇

- Photovoltaic + Chinese traditional cultural building project application demonstration.

Time：2022

Location：Hanzhong, Shaanxi Province

Capacity：291.26 kW

Installed area：2492.9 m^2



Design Features：

Project Characteristics

The design concept of the building is derived from the Han Dynasty "bamboo book", which has been turned upside down to form a massive Mobius ring, 180 meters in diameter, with steel corridors for visitors to walk through. At the top of the ring corridor, 291.26kw Colored Glaze-Grystal Clear, series Yingli Gain solar photovoltaic green building materials are laid. The annual power generation is more than 240,000 degrees, which not only meets the requirements of the green two-star building standard, but also reduces the energy consumption of the whole building. While perfectly interpreting the ancient charm of the Han style, it realizes the green and low-carbon development.

Energy Saving

A total of 291.26KW crystalline silicon photovoltaic building materials are installed in the building. The annual power generation can reach 246,600 KWH, which is equivalent to the annual emission reduction of 212.28 tons of carbon dioxide, 85.28 tons of greenhouse gases generated by coal combustion, 58 tons of dust and 6.4 tons of sulfur dioxide.





Shanghai Zero Carbon Exhibition Hall

◇ Outer Orotective Decorative Surface ◇

- The first zero-energy permanent modular building in China.

Time：2022

Location：Shanghai

Capacity：115.68 kW

Installed area：1200 m^2



Design Features:

Project Characteristics

China's first zero-energy modular building, the west facade of the building used Yingli Gain solar Brick series products, silver and white texture and building appearance integrated, overall coordination atmosphere.

The combination of black brick and thermal insulation board also improves the energy-saving effect of the building the power consumption per square meter of the public buildings is 70-80 degrees, while the zero-carbon pavilion consumes only 26 degrees per square meter, while the photovoltaic power generation is at least 33 degrees per square meter, and the photovoltaic green power can fully meet the needs of buildings Energy demand, to achieve a true sense of zero energy consumption.

Energy Saving

A total of 115.68KW crystalline silicon photovoltaic building materials are installed in the building, and the annual power generation can reach 124,445 degrees Celsius, equivalent to an annual reduction of 104.08 tons of carbon dioxide, a reduction of 49.78 tonsthe greenhouse gases produced by the combustion of coal are 33.85 tons of dust and 3.73 tons of sulfur dioxide.







Beijing Sanlitun Adidas Store

◇ Decorative surface of building accessories ◇

▪ Beijing's first photovoltaic + commercial complex demonstration project

Time：2022

Location：Beijing

Capacity：48 kW

Installed area：480 ㎡



Design Features：

Project Characteristics

Photovoltaic + commercial complex demonstration benchmark, classic application of energy-saving renovation of existing buildings. The project is located in the center of Sanlitun, a world-class business district. Gain Solar Colored Glaze replaces the traditional curtain wall structure, with a dark blue appearance that is unified and atmospheric. At the same time, a special three-dimensional structure is formed on the building's facade with a special inclination, highlighting the architectural aesthetics in terms of color and shape; the slope with a certain angle also ensures power generation efficiency .

Energy Saving

A total of 48kW crystalline silicon photovoltaic building materials are installed in the building. Based on calculations of daily radiation and power generation efficiency, the building’ s average daily power generation is 119 kWh, which can run the 12kW lighting system for 10 hours a day; the annual power generation can reach 43,300 kWh. This is equivalent to an annual reduction of 45.09 tons of carbon dioxide, a reduction of 17.34 tons of greenhouse gases produced by coal combustion, and a reduction of 0.29 tons of dust and 0.38 tons of sulfur dioxide.





Tibet Songtsen Basongtso Lingka

◇ Tile roofing system ◇

▪ Songtsam’ s first green and low-carbon hotel at an altitude of 3,000 meters

Time：2023

Location：Tibet

Capacity：841.81 kW

Installed area：6931 ㎡



Design Features：

Project Characteristics

Songtsam's first green and low-carbon hotel at an altitude of 3,000 meters. In order to promote the green, low-carbon and circular development of rural areas, Songtsam Group introduced Yingli Gain Solar standardized photovoltaic roof tiles and adopted Siemens Energy's low-carbon energy system solutions to design the roof into a structure with a short north slope and a long south slope to maximize the Use solar energy to generate electricity. The product's high flexibility can resist base deformation and cover minor cracks, making it suitable for areas with extreme weather, sufficient sunshine, and strong ultraviolet penetration. At the same time, the standardized size of 1197*397 also avoids the transportation problems caused by large-sized building materials and ensures the smooth progress of construction.

Energy Saving

Songtsan Basongtso Linka has a total installed area of 6931 square meters and a total installed capacity of 841.81KW. Based on the daily radiation and power generation efficiency, it is estimated that the hotel can generate 3123 kWh of electricity every day, supplying 122 rooms with a total of 512.4KW. The electricity system (air conditioning, bathroom, refrigerator, lighting, etc.) operates for 6 hours a day, and the living room and restaurant total 100KW. The DC lighting system operates 24 hours a day and is expected to replace approximately 1 million kilowatt-hours of traditional energy consumption on average annually, equivalently reducing emissions by approximately 1,080 tons of carbon dioxide.





Shanghai Lingang Academy Workshop

◇ Tile roofing system ◇

▪ Shanghai’s first rural carbon-neutral ecological cycle demonstration building

Time：2023

Location：Shanghai

Capacity：133 kW

Installed area：860 ㎡



Design Features:

Project Characteristics

Shanghai’s first rural carbon-neutral ecological cycle demonstration building. The project is based on the design concept of "gentle slope, continuous roof; undulating gables and rich contours", and introduces BIPV technology to break the previous situation of using photovoltaic modules with single shapes and monotonous colors on building roofs, and customize them according to the size and shape of the roof. Optimized the design of solar rooftiles and installed 1,778 T-Max Tile_O Series products to achieve the maximum power generation capacity of the building. While taking into account power generation efficiency and architectural aesthetics, it also outputs high-quality "investment-operation-construction-management-service" Full life cycle green energy integration services to create "landscape + industrialization" rural revitalization projects.

Energy Saving

The building is equipped with a total of 133kW photovoltaic green building materials. According to calculations of daily radiation and power generation efficiency, it can generate 231 degrees of electricity per day, which can run the 13kW air-conditioning system, 3kW lighting system, and 7kW smart management system for 10 hours a day; every year The building provides 84,200 kilowatt-hours of green electricity, reducing greenhouse gases produced by 33.68 tons of coal combustion, which is equivalent to reducing carbon dioxide emissions by 27.89 tons and reducing sulfur dioxide by 1.01 tons.





CRRC Changchun Exhibition Hall

◇ Tile roofing system ◇

- Jilin's first industrial civilization + historical and cultural old street BIPV exhibition hall

Design Features:

Project Characteristics

Jilin's first industrial civilization + historical and cultural old street BIPV exhibition hall project. The project is located in the Kuancheng historical district of Changchun. The relevant person in charge of the Kuancheng District government said that in order to rejuvenate the spirit and vitality of the old district in the city center, the BIPV smart system was introduced to break the data island and automatically adjust the output according to the power demand to maximize the protection of the power grid. Stable operation and improve the utilization efficiency of photovoltaic power generation. The T Max-A series of photovoltaic green building materials are installed on the roof of the building to meet the functions of building drainage, heat preservation, heat insulation, fire prevention, and ultraviolet protection. The black and red tiles of different colors form the "CRRC" logo appearance, which perfectly fits the building Aesthetics, eye-catching. At the same time, the project also incorporates energy storage technology to supply the electricity stored during the day at night or on rainy days to achieve a balanced and stable supply of energy.

Energy Saving

The building is equipped with a total of 48kW photovoltaic green building materials. Based on the daily radiation and power generation efficiency, it can generate 139 degrees of electricity per day, which can run a 7kW screen TV and a 10kW three-dimensional sand table for 8 hours a day, and a 3kW lighting system can operate for 8 hours a day. Runs 24 hours a day; provides 50,800 kilowatt-hours of green power to buildings every year, reducing 20.32 tons of greenhouse gases produced by coal combustion, which is equivalent to reducing carbon dioxide emissions by 16.82 tons and reducing sulfur dioxide by 0.61 tons.



Time：2023

Location：Changchun

Capacity：48 kW

Installed area：328 ㎡





Zero carbon characteristic town of Panzhihua

◇ Tile Roof Component System ◇

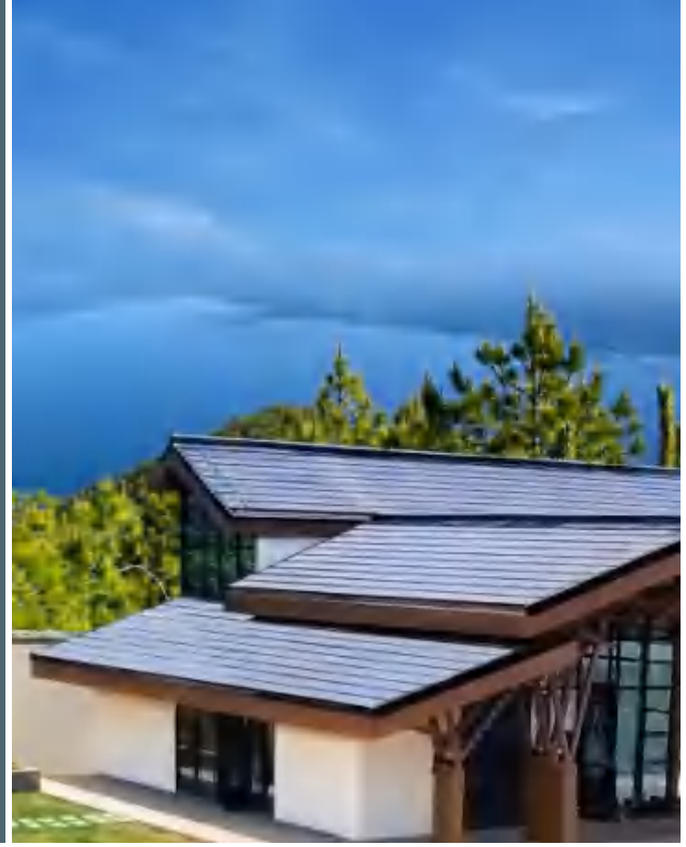
- The first batch of zero-carbon village pilot projects with national demonstration significance.

Time：2022

Location：Hunsala Village, Sichuan Province

Capacity：46.9 kW

Installed area：343.48 m^2





Design Features:

Project Characteristics

The first batch of zero-carbon village pilot projects with national demonstration significance,The photovoltaic tile series of Yingli Gain Solar is applied on the roof. The integrated design and installation of the roof presents a consistent dark blue color, which contrasts with the light-colored walls, creating a leisurely artistic conception of white walls and black tiles;Under the sunlight, the texture of photovoltaic tiles enriches the artistic expression of the building, making the roof of the building not monotonous and reducing light pollution.

Energy Saving

A total of 680 pieces of Solar tile have been installed in the building, with a total installed capacity of 46.9kw.Annual power generation can reach 67,862 degrees, equivalent to reducing 67.66 tons of carbon dioxide,Emission reduction of 18.46 tons of dust.







Qishui Bay tourism resort complex "Double carbon" demonstration project

◇ Photovoltaic Floor Tile ◇

▪ The first "BRE Net Zero Carbon" and "Zero Energy" building certification program in Hainan Province.

Design Features:

Project Characteristics

The floor tiles are laid on the green space, which is designed through the special texture of the surface

Reach the day and the natural environment into one, green and white; When step on the tiles at night,Emitting soft blue light, creating a romantic and dreamy atmosphere. The project also applies lightVolt + Passive building techniques maximize the use of the project's roof, facade and surroundings solar energy resources, through the roof photovoltaic power generation system, photovoltaic glass curtain wall, Seven photovoltaic application forms build a comprehensive energy consumption management platform,Realize intelligent energy consumption management.

Energy Saving

After renovation and upgrading, the project can save energy by more than 30% and generate clean energy every year,Electricity is about 910,000 KWH, after meeting their own electricity, but also can realize the Internet128,900 KWH, is expected to reduce annual carbon dioxide emissions of 530 tons, 112 burning tons of standard coal to achieve the goal of zero carbon zero energy building.



Time：2022

Location：Wenchang, Hainan

Capacity：453.2 kW





State Grid Rongdong Power Supply Service Center project in Xiongan New Area

◇ DC Intelligent Microgrid System ◇

- Xiong'an's first near-zero carbon clean building.

Design Features:

Project Characteristics

Photovoltaic floor tiles as a leisure area on the roof of the Internet celebrities punched the card attraction, the appearance looks like conventional floor tiles, in fact, the integration of photovoltaic power generation technology. Photovoltaic floor tiles use photovoltaic power generation to drive the floor tiles to glow, and adopt the pedal induction design, each step will show different colors of light, brilliant and changeable colors not only decorate the night scene of the building, but also greatly enhance the interactive and interesting leisure area. From the aerial view, the photovoltaic products laid on the top floor of Rongdong Power Supply Service Center shine in the sunlight. They convert the light energy into electricity and provide green power support for the operation of the center's equipment.

Energy Saving

The whole building is equipped with a light storage direct and soft micro-grid system, which generates an average of 160,500 KWH of electricity every year, saves 45.51 tons of standard coal and reduces carbon emissions by 136.9 tons every year. The system can also realize safe off-grid operation for 4 hours, further improving the level of electrification of the building.

In addition, the building also uses a low-voltage DC microgrid construction scheme, which effectively reduces the loss caused by the long-distance transmission of photovoltaic power through the grid. Advanced DC lighting applications reduce the power loss of the entire lighting system by 15%.



Time：2022

Location：Xiong'an New Area

Capacity：148 kW

Installed area：326 m^2





Shanghai Electric Power Building

◇ Curtain Wall System • Hidden Frame Structure ◇

- The first application demonstration of photovoltaic unitized curtain wall in China.

Time：2022

Location：Shanghai,China

Capacity：132.94 kW

Installed area：1100 m^2



Design Features:

Project Characteristics

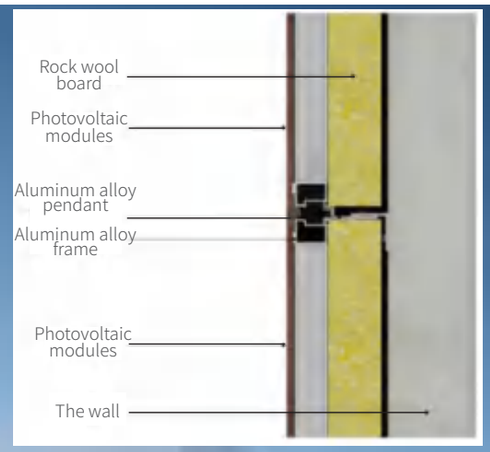
Yingli Gain Solar’s Colored Glaze-colorful series are applied to the facade of the project.

As the curtain wall panel, the Colored Glaze is pre-installed in the factory together with the supporting frame to make a complete basic unit of the curtain wall structure, and then directly installed on the main structure of the building. This modular installation method not only saves man-hours, but also reduces on-site construction pollution. At the same time, with the function of photovoltaic clean power generation, it can minimize building carbon emissions.

Energy Saving

117,200 kWh power generation, which is equivalent to reducing carbon dioxide emissions by 116.85 tons, saving 46.88 tons of standard coal, reducing dust emissions by 31.88 tons and sulfur dioxide by 3.52 tons.





Shanxi Smart Green Construction Demonstration Park project

◇ DC Intelligent Microgrid System ◇

Time：2022

Location：Shaanxi Province

Capacity：481 kW

Installed area：4861 m^2



Design Features:

Project Characteristics

As an auxiliary building of the office building, the building integrates eating and walking. The product of "colored glaze -colorful" is selected, adhering to the core concept of "green travel and low-carbon building". The light storage and direct flexible technology is adopted, and the four technologies of photovoltaic power generation, distributed energy storage, DC building and flexible control system are combined, superimposed and integrated to realize the energy-saving and low-carbon operation of the building. The direct and flexible light storage system design scheme provided by Yingli Gain solar for this building enables the building to realize self-regulation and independent optimization of building electricity consumption through the use of flexible electricity management system, which provides lighting for the underground parking lot, reduces energy consumption, realizes the organic integration of photovoltaic power generation and smart grid technology, and better reflects the green and low-carbon concept.

Energy Saving

A total of 77KW photovoltaic building materials have been installed in the building, with an installed area of 530 square meters. The annual power generation can reach 79,000 KWH, which is equivalent to the annual reduction of 78.95 tons of carbon dioxide, 31.68 tons of greenhouse gases produced by coal combustion, 21.54 tons of dust and 2.38 tons of sulfur dioxide.





CCCC （Xiongan）Qichen Light·Brand Exhibition Hall

◇ Roof Lighting System ◇

▪ Xiong'an's first batch of photovoltaic + people's livelihood security projects Photovoltaic storage smart micro-grid demonstration.

Time：2022

Location：Xiong'an New Area

Capacity：35 kW

Installed area：380 m^2

Design Features:

Project Characteristics

Photovoltaic lighting roof + roof planting builds the aesthetics of the fifth facade of the building "living towards the sun". The unique customized light transmittance of Colored Glaze-Crystal Clear,series not only meets the sun lighting needs of plant growth, but also takes into account the power generation performance. At the same time, it realizes the comprehensive functions of shading and rain, energy saving and emission reduction, clean power generation, beautifying the roof and so on to maximize the utilization of roof space resources. The building also adopts micro-grid energy storage system and DC micro-grid technology. The green electricity of photovoltaic daylighting roof can supply power for the night lighting of the building through energy storage and DC technology, reducing the energy consumption of the building and providing a reference for the green and low-carbon transformation of urban night lighting.

Energy Saving

A total of 35KW photovoltaic building materials are installed in the building. The annual power generation can reach 30,000 KWH, which is equivalent to the annual emission reduction of 29.91 tons of carbon dioxide, 0.9 tons of sulfur dioxide and 8.16 tons of dust.







Sinopec Junan 28th Gas Station, Linyi, Shandong Province

◇ Photovoltaic + Gas Station ◇

- Sinopec's first transparent BIPV gas station Zero-carbon smart gas station.

Time：2022

Location：Junan, Shandong

Capacity：72.36 kW

Installed area：510 m^2

Design Features：

Project Characteristics

Photovoltaic integrated awning. The appearance is beautiful and transparent. Crystal silicon photovoltaic building materials glazed glazed series instead of the original design of roofing metal plate, can not only generate electricity and waterproof function, reduce the potential rain leakage. Through building materials and photovoltaic industry double fire certification, more secure; The roof can support trampling, convenient cleaning and operation and maintenance, is a benchmark building of green gas station.

Energy Saving

A total of 72.36KW photovoltaic building materials are installed in the building. The annual power generation can reach 81,600 KWH, which is equivalent to the annual emission reduction of 81.39 tons of carbon dioxide and 32.65 tons of greenhouse gases generated by coal combustion.



Xiongan New Area high-speed rail station

◇ Metal Roofing System ◇

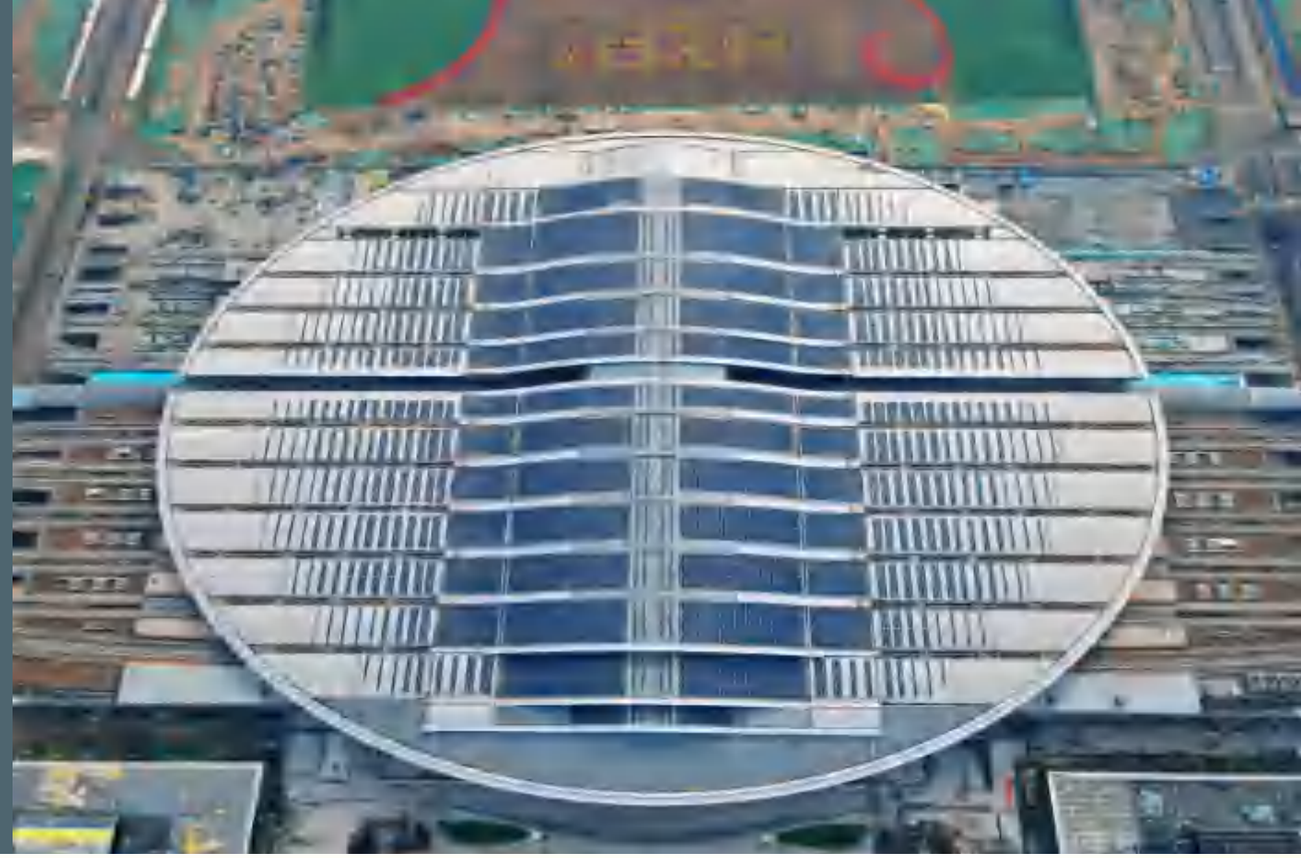
- Asia's largest high-speed rail station.

Time：2020

Location：Xiong'an New Area

Capacity：6 MW

Installed area：42000 m^2



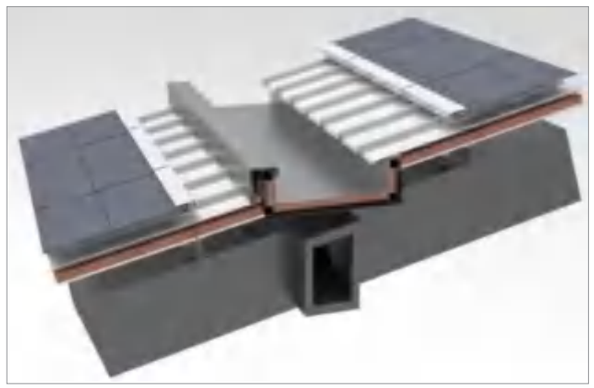
Design Features：

Project Characteristics

The roof combines high-power components with the original blue solar panels, creating a gradual blue effect through the different arrangement gaps of components, and achieving the harmony and unity of the overall architectural effect by combining the ellipse and ripple forms. High-power components can store a large amount of electric energy for the building for its own use, which meets the green and natural design concept at the beginning of the building design.

Energy Saving

A total of 42,000 square meters of photovoltaic building materials have been laid on the roof of the Xiongan Station, which can generate 5.8 million KWH of electricity annually, effectively save 30 percent of electric energy, save 1,800 tons of standard coal annually, and reduce carbon dioxide emissions by 4,500 tons, which is equivalent to planting 1.2 billion square meters of trees.





Nantong Quanzhu Factory photovoltaic smart daylighting project

◇ Skylighting Roof System + Photovoltaic Canopy ◇

Time：2022

Location：Nantong·Jiangsu

Capacity：43 kW

Installed area：460 m^2



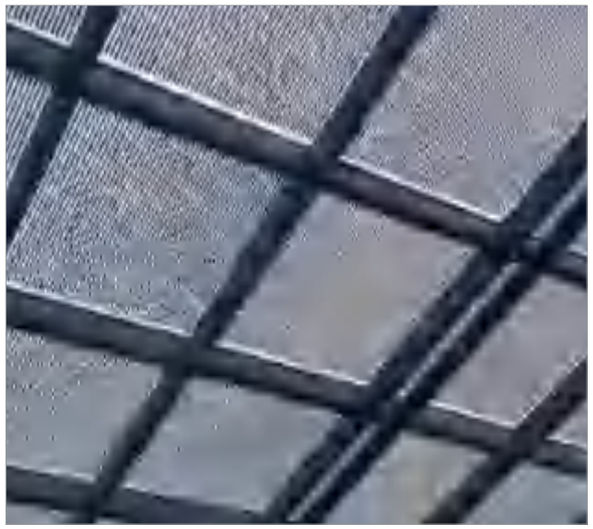
Design Features:

Project Characteristics

The project uses the latest series of "Colored Glaze-solar hand rail" with ultra-high light transmittance, which is also the first application of "Colored Glaze-solar hand rail" in the photovoltaic lighting ceiling. The rhythmic black battery lines are like strings, giving the building a balanced aesthetic feeling, but also ensuring ultra-high light transmittance. The 40% light transmittance fully meets the building lighting needs and saves daily energy. High efficiency silicon power generation technology provides more clean energy for buildings. Its implementation provides a reference for more factories to carry out green, intelligent and low-carbon transformation. The installed capacity of the project is 43 kW. The installed area is 460 square meters. The product light transmittance is as high as 40%. The estimated annual power generation is about 45,000 KWH. The annual carbon reduction is 43.8 tons,which greatly reduces the consumption of fossil energy.

Energy Saving

The capacity is 43 kw, the installed area is 460 ㎡, and the light transmittance of the product is 40%.The annual power generation will be about 45,000 kWh, and the annual carbon reduction will be 43.8 tons, which will greatly reduce the consumption of fossil energy.





Xiongan · CCCC Future Science and Innovation City Project Service Center

◇ Roof Lighting System ◇

▪ "Future City" Photovoltaic + DC Microgrid + Smart Energy Management Platform Demonstration.

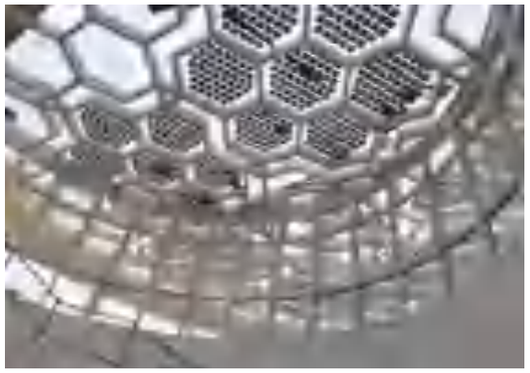
Design Features:

Project Characteristics

The Xiong'an Station architectural design concept comes from the implication of "Qinglian dripping dew, moistening Xiongan". Based on the scenery of Baiyangdian, the building is like "layers of lotus leaves. ". Customized hexagonal special-shaped BIPV used on the top, make the wiring hidden, achieve good light-transmitting.

Energy Saving

A total of 36kW of BIPV glass modules can provide 29,500 kWh per year, reduce carbon dioxide emissions about 29.4 tons. The building uses DC power supply and is managed based on the smart energy brain system to maximize the real-time control of energy and systematic energy saving.





Time：2021

Location：Xiong'an New Area

Capacity：36.7 kW

Installed area：280 m^2





Xixi Wetland Dragon Tonguezui Tourist Service Center

◇ Roof Lighting System ◇

- Green Energy-Saving Demonstration Building.
- LEED Platinum certification.
- 2013 Jingrui Award "Architectural Design Gold Award".

Time：2011

Location：Hangzhou·Zhejiang

Capacity：50.9 kW

Installed area：600 m^2





Design Features：

Project Characteristics

Customized light transmittance BIPV modules integrated with the simple appearance of the building itself, like a triangular transparent glazed jade scattered in the green space. Both realized the building light transmission, heat preservation, heat insulation requirements, the building got the world's most authoritative green building award, the highest platinum level certification of LEED in the United States, and 2013 Jingrui Award "Architectural Design Gold Award".

Energy Saving

The building is a energy-saving demonstration building with 50.9kW total capacity, can provide 50,000 kWh per year, which is equivalent to reducing carbon dioxide emissions by 50 tons. Due to the application of various renewable energy technologies such as photovoltaic, ground source heat pumps, and solar thermal.





Zevenaar Town

◇ Solar Roof Tile System ◇

- Urban Renewal - Zero Carbon Communities.

Time：2016

Location：Zevenaar·Netherlands

Capacity：4.2 kW

Installed area：23 m^2



Design Features：

Project Characteristics

Solar roof tiles use can keep the traditional tile architectural style and no appearance difference , also can provide the renewable energy to support the home using.

Energy Saving

4.2kW solar roof tile capacity can provide 41,500 kWh per year, reduce carbon dioxide emission 41.38 tons, and greatly save the consumption of fossil energy.







Photovoltaic+ Passive Intelligent Demonstration Building

◇ Outer Protective Decorative Surface ◇

Time：2018

Location：Baoding·Hebei

Capacity：100 kW

Installed area：728 m^2



Design Features：

Project Characteristics

The building adopts a modern Chinese style and a courtyard-style layout to truly achieve "zero carbon, green, wisdom and livable". The façade is made of black bricks and the roof is made of solar tiles, the photovoltaic application and the building can be perfectly combined.

Energy Saving

The annual 100,000 kWh power generation, which is equivalent to saving 40 tons of standard coal and reducing carbon dioxide emissions by 99.7 tons and sulfur dioxide by 3 tons. The first zero-carbon demonstration building in China that integrates energy technologies such as BIPV, passive buildings, ground source heat pumps, air source heat pumps, capillary radiation air conditioning systems, and smart energy management and control, smart office and other intelligent systems.





Shandong Zibo Innovation and Entrepreneurship Park City Development Service Center

◇ Curtain Wall System · Open Frame Type ◇

- Pv + high energy consumption cement park .

Time：2021

Location：Zibo·Shandong

Capacity：65.8 kW

Installed area：1051 m^2



Design Features：

Project Characteristics

This project takes "landscape texture, ecological core, cultural value, city impression" as the design concept, integrates PV and passive energy-saving technology to make the building, landscape, and city harmoniously. It's an unique future ecological building. Theeast, south and west facade of the building covered by Colored BIPV "Colored Glaze" products.The sky-blue curtain wall has a mirror effect, reflecting the surrounding blue sky, white clouds and grass, making the building more spatial and artistic.

Energy Saving

65.8kW BIPV modules can provide 71,000 kWh clean electricity per year, save 28.4 tons of standard coal, reduce carbon dioxide emissions 73.84 tons, and reduce dust, sulfur dioxide emissions 1.1 tons. The power generated can meet most of the daily electricity demand of the exhibition hall, allowing the building to change from energy consumption to production capacity, and achieve a balance between energy consumption and production capacity.

Exposed frame

Characteristic: crystalline silicon photovoltaic building materials are embedded in the aluminum frame, forming curtain wall members with aluminum frames on four sides; Curtain wall members are inlaid on the beam and column, forming a facade with exposed beam column and distinct aluminum frame. The main keel can be made of carbon steel or aluminum alloy profiles, and the outer decoration buckle cover is mostly aluminum alloy modeling.

Advantages: Exposed frame structure is the most traditional installation form, with reliable performance, a wide range of applications, easier to meet the construction requirements, and can show the beauty of the building masculinity.



Power Valley Convention and Exhibition Center

◇ Curtain Wall System • Point-Fixed Structure ◇

Time：2007

Location：Baoding · Hebei

Capacity：450 kW

Installed area：7500 m^2



▪ National Silver Award of "National Quality Project".

Design Features：

Project Characteristics

Independently research and development technology, obtained 17 patents.

It is the first time to realize the mass production of curved silicon BIPV products with large spacing, large size, high load and light transmittance. Also it is the first time to break through the welding belt straightening technology and solve the problem of welding belt bending.

Energy Saving

A total of 4450kW BIPV modules can provide 39.74 million kWh clean electricity per year, save 139 tons of standard coal, reduce carbon dioxide emissions 396 tons.

Point-Fixed Structure

Characteristic：It is composed of a panel, a point support device and a support structure. From the inside, there are obvious metal components. The main supporting dragon is carbon steel or stainless steel. The panel size is mostly 1200mm*2000mm. The design requirements can withstand the minimum wind load of 1kPa; The fixed jaw parts are divided into floating head, countersunk head or plum clip type, which can be installed in various forms to meet the needs of different architectural and decorative effects.

Advantages: The Point-Fixed structure has the characteristics of transparent visual effect. The processing of components is exquisite It is the perfect integration of exquisite metal components and photoelectric curtain wall decorative art.



Hefei Gongjie Office Building

◇ Curtain Wall System • Point-Fixed Structure ◇

Time：2020

Location：Hefei·Anhui

Capacity：140 kW

Installed area：1400 m^2

- National 2-star green building.

Design Features：

Project Characteristics

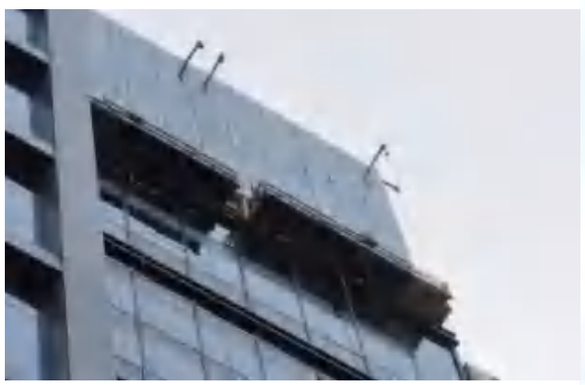
Colored BIPV "Colored Glaze" products firstly used in commercial buildigs (1,400 M2) facades of nearly 100M high buildings, it is very difficult in design and construction. The BIPV panels can save energy for the building and also compatible with building air tightness, water tightness, in-plane deformation, and wind pressure resistance requirements. it is a perfect integration with the traditional curtain wall.

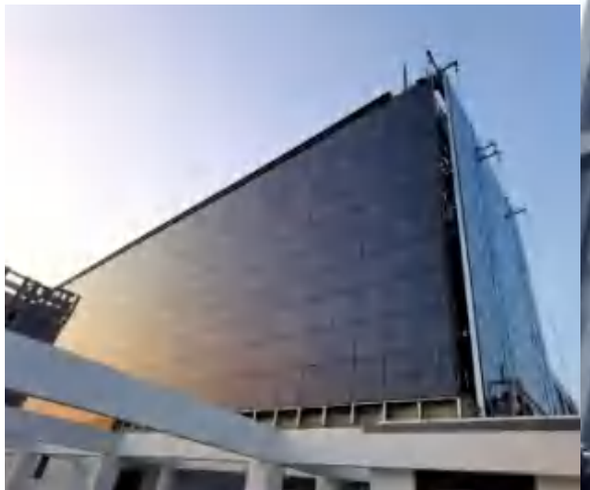
Energy Saving

A total of 140kW BIPV modules can provide 70,000 kWh clean electricity per year, save 69.8 tons of standard coal, reduce carbon dioxide emissions 28 tons, and reduce dust 19.4tons, sulfur dioxide emissions 2.1 tons.











Hainan Yingli Office Building

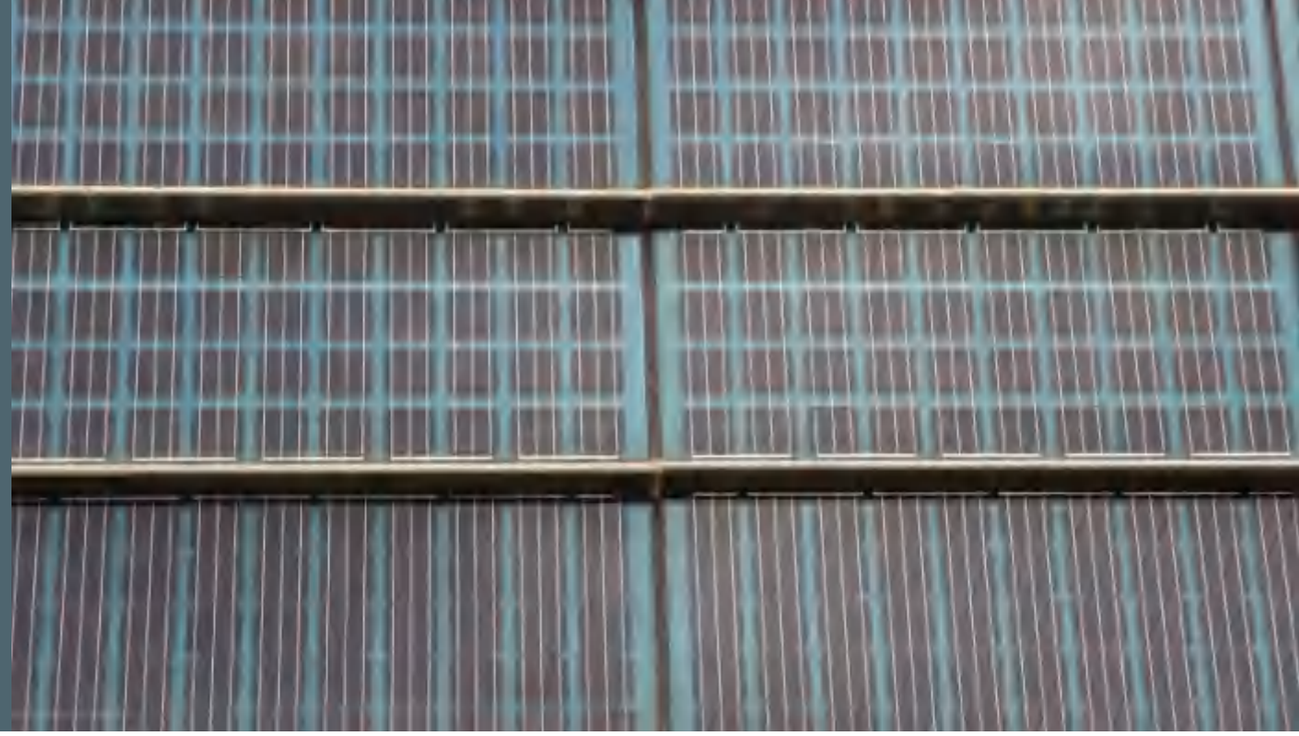
◇ Curtain Wall System • Semi-Hidden Frame ◇

Time：2013

Location：Haikou·Hainan

Capacity：410 kW

Installed area：4000 ㎡



Design Features：

Project Characteristics

Dark blue BIPV panels with high-efficiency panda cells to obtain higher power generation. The building has become a small power station that can output electricity, marking a new step in the construction of photovoltaic power stations on the walls and roofs of office buildings in Hainan Province.

Energy Saving

A total of 410KW solar glass provide 440,000 kWh power per year, which is equivalent to 438 tons of carbon dioxide emission reduction.

Semi-hidden frame structure

Features: The semi-hidden frame structure is divided into two forms: vertical horizontal hidden and vertical horizontal hidden. One corresponding edge was bonded with structural adhesive to form BIPV assembly, and the other corresponding edge was assembled with aluminum alloy inlay groove. Column material can be aluminum alloy or carbon steel.

Advantages: Taking into account the characteristics of clear frame and hidden frame, it can not only meet the modeling needs, but also reduce the light occlusion, and has a wide range of applications and superior effects.



Tianjin Beichen Cloud Data Center

◇ Structure-Hidden Frame Structure ◇

- Photovoltaic + new infrastructure typical case.
- Demonstration of green transformation of big data centers.
- Largest air duct exposed building in Asia.

Time：2021

Location：Tianjin·China

Capacity：327 kW

Installed area：1300 m^2



Design Features：

Project Characteristics

A typical case of photovoltaic + new infrastructure, demonstration of green transformation of big data center, the largest building with exposed air duct in Asia, the exterior design of the project pays tribute to the famous French art center Pompidou. Glazed Xuanqing series products are applied to the facade of the building to create a "high-tech" industrial aesthetic style, while saving the consumption of ordinary building materials, and the annual electricity generation can reach 324,000 KWH. It is a high-reliability green data center park with leading scale, leading power capacity and advanced design concepts in the Beijing-Tianjin-Hebei region.

Energy Saving

A total of 354KW BIPV can provide 324,000 kWh clean energy per year, which is equivalent to reducing carbon dioxide emissions by 323.03 tons, 129.6 tons of standard coal saving , reducing dust emissions by 88.13 tons and sulfur dioxide by 9.72 tons.

Hidden Frame Structure

Features: BIPV is fixed on the sub-frame with silicone structural sealant, and the sub-frame is fixed on the main frame by mechanical clamping. The size of the silicone structural sealant is usually 6*12mm or 8*16mm; the BIPV curtain wall gaps are filled with weather-resistant sealant, which has strong waterproof and airtightness, no obvious aluminum frame can be seen from the outside, and the surface is flat.
Advantages: The hidden frame structure with a excellent seismic performance.



Sino-singapore： Tianjin Eco-City Animation Park energy station

◇ Structure-Hidden Frame Structure ◇

- National Two-star Green Building.
- The first batch of CCER projects registered by the state.

Time：2012

Location：Tianjin·China

Capacity：66 kW

Installed area：800 m^2



Design Features：

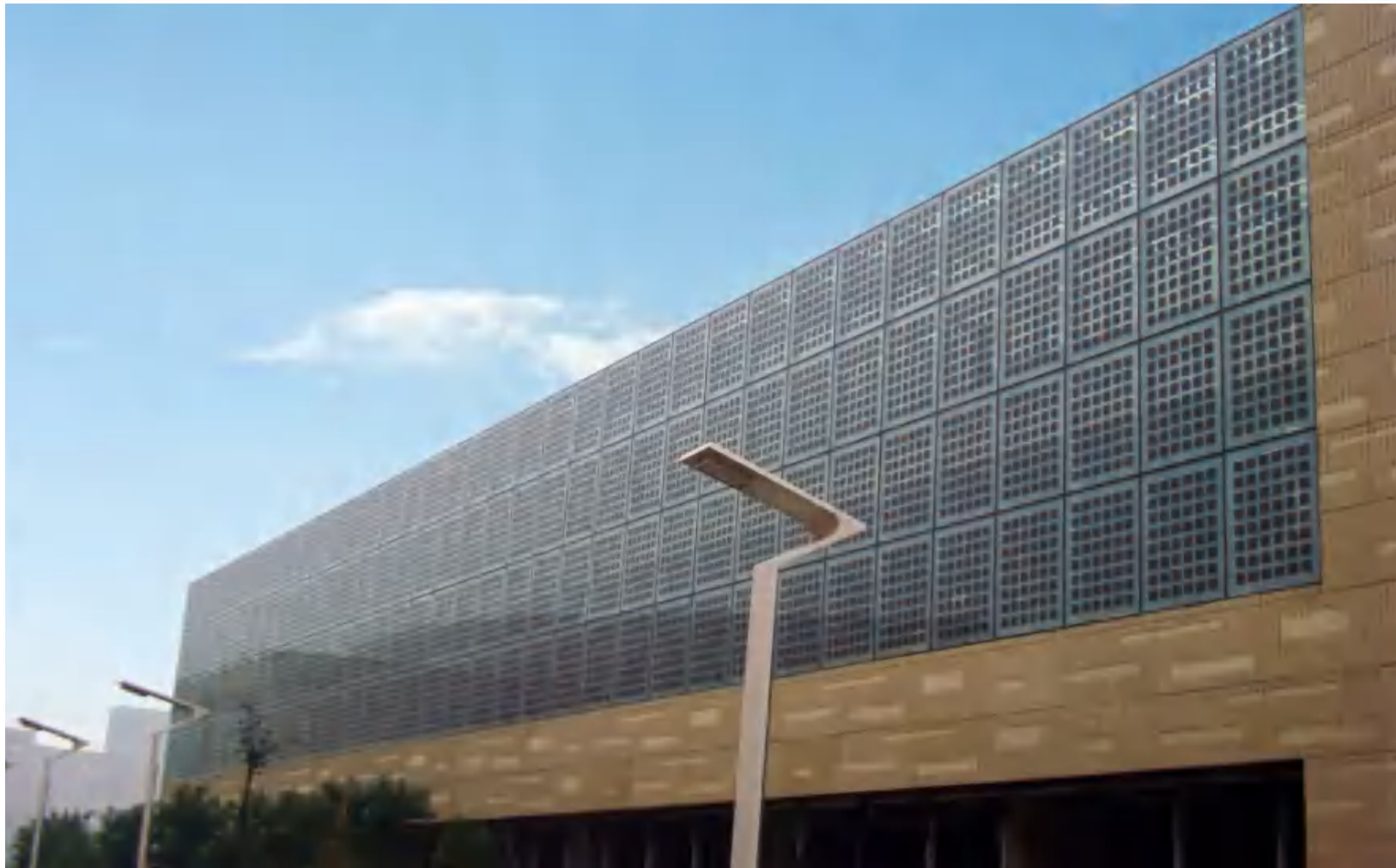
Project Characteristics

The hign light transmittance, high efficiency, safety, environmental protection and strong compression resistance BIPV design, which fully meets the requirements of project construction. The project is the first smart grid energy station in the country to realize the intelligent coupling and efficient utilization of multiple energy technologies. It has renewable energy technologies such as ground source heat pump and photovoltaic power generation, and four major energy-saving technologies such as water storage and gas triple supply. It realizes the fully efficient scientific coupling of renewable energy, clean energy and traditional energy.

Energy Saving

The multi-energy technologies used in the building can provide cooling and heating for about 240,000 square meters of public buildings in the animation park, saving 1,904 tons of standard coal, 4,971 tons of carbon dioxide emissions, 46 tons of sulfur dioxide emissions, and 10,000 tons of water every year.





Positec China Headquarters

◇ Sunshades ◇

Time：2014

Location：Suzhou·Jiangsu

Capacity：338 kW

Installed area：3200 m^2



- National Green Building Design Three-Star Certification.
- The Third Prize of National Green Building Innovation Award.
- U.S. LLED-NC Platinum Certification.

Design Features：

Project Characteristics

The photovoltaic sunshade system of the project uses Colored Glaze·Crystal Clear series products and adopts an open point-fixed installation structure with a transparent and beautiful appearance. It has an average annual power generation capacity of 360,000 degrees. In addition, the project also adopts a number of advanced energy-saving technologies, including natural lighting, natural ventilation, thermal insulation of the envelope structure, movable external shading, ground source heat pump, etc. It achieves the purpose of green energy saving, low carbon and environmental protection.

Energy Saving

The average annual power generation of the project reaches 360,000 kWh, which is equivalent to reducing carbon dioxide emissions by 360 tons.





South China-Science and Industry United Team X-House Project

◇ Solar Hand Rail ◇

- Won the first place in the International Solar Decathlon Competition - Dubai Division.

Time：2021

Location：Dubai·UAE

Capacity：21.9 kW

Installed area： 115 m^2



Design Features：

Project Characteristics

X-House is based on the traditional architecture of the Middle East, uses modern technology to improve the X-shaped wind catching tower and atrium, and actively adjust the microclimate of the whole house. The design is infinitely efficient, and the PV power generation can reach four times the electricity consumption of ordinary households.

The roof and facade use Panda bifacial BIPV modules and Colored Glaze-Dark Black from Gain Solar. The products of Colored Glaze-Dark Black are installed on the enclosure structure-facade, which is integrated with the building. In addition to providing electrical energy for the fans and night lights, it also adds a decorative effect, and truly integrates with the building.

Energy Saving

The average annual power generation of the building can reach 25,500 kWh, which is equivalent to reducing carbon dioxide emissions by 2.54 tons per year.





Tianjin Keppel Season Scenery World

◇ Window Wall ◇

- National Two-Star Green Buiding.

Time：2019

Location：Tianjin·China

Capacity：336 kW

Installed area：2040 m^2



Design Features:

Project Characteristics

Window wall for installation without changing the original building exterior wall, the optimal inclination angle ensures high power generation rate and at the same time play a certain shading effect. At the same time, the irregular arrangement makes the building have a better design aesthetic. The overall design takes into account good power generation performance, decorative performance, and sunshade performance, and realizes the perfect combination of photovoltaics and architecture.

Energy Saving

The average annual power generation of the project reaches 440,000 kWh, which is equivalent to reducing carbon dioxide emissions by 440 tons.





Shanxi Jiantou Intelligent Operation Center Office Building

◇ DC Intelligent Microgrid System ◇

- The First Ultra-low Energy Building in Shanxi Province.
- Three-star Green Building.
- Prefabricated AAA Standard Green Energy-saving and Environmentally Friendly Building.

Time：2021

Location：Taiyuan·Shanxi

Capacity：94.1 kW

Installed area：765 m^2



Design Features:

Project Characteristics

The Colored Glazed·Colorful series products are applied to the roof of the building. The project can achieve a self-sufficiency rate of 100% of the energy consumption of building lighting. And combined with the 220V/ 150KW DC bus microgrid system, 48V lead carbon energy storage system 48 KW and the 30kw DC lighting system，it is a technologically first-class DC intelligent microgrid system.

Energy Saving

The Colored Glazed·Colorful series products are applied to the roof of the building. The project can achieve a self-sufficiency rate of 100% of the energy consumption of building lighting. And combined with the 220V/ 150KW DC bus microgrid system, 48V lead carbon energy storage system 48 KW and the 30kw DC lighting system，it is a technologically first-class DC intelligent microgrid system.







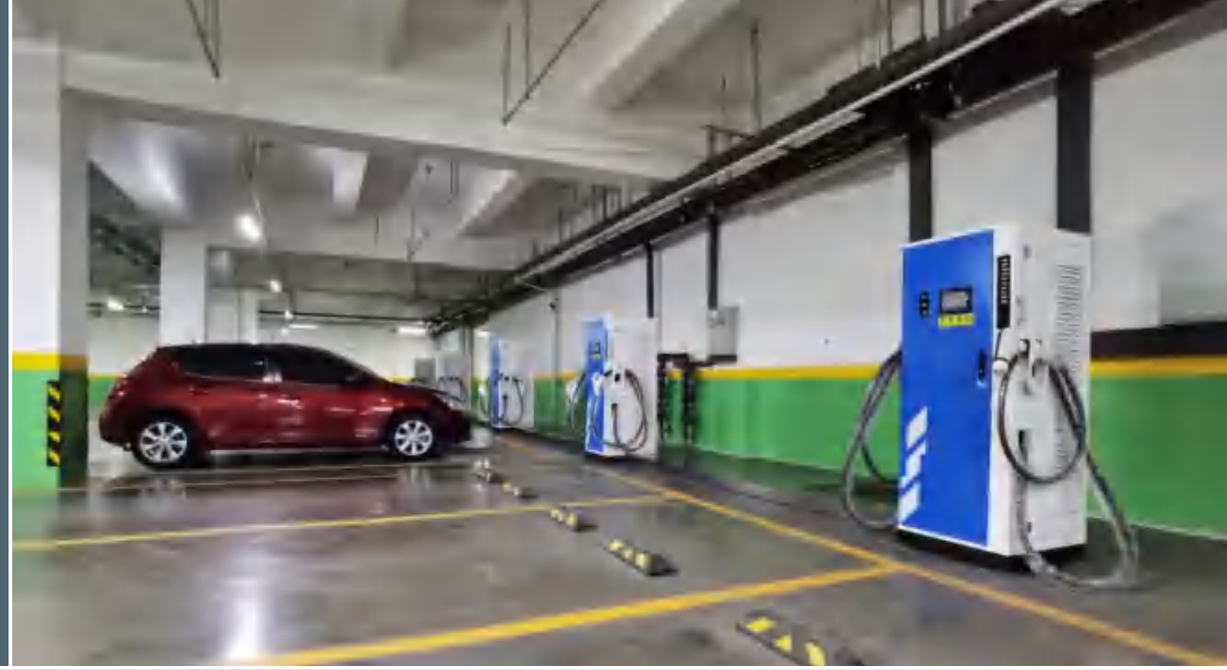
Tongmei Group's Entrepreneurship Center Project

◇ DC Intelligent Microgrid System ◇

Time：2020

Location：Datong·Shanxi

Capacity：380 kW



Design Features：

Project Characteristics

DC intelligent microgrid demonstration project. The project design with DC power supply as the center, flexible access to photovoltaic, energy storage and other power sources, and at the same time for the DC charging piles and DC lighting provide DC energy, fully integrate energy control parameters and energy information, realize various forms of energy coordinated control and comprehensive energy efficiency management, and build an AC-DC hybrid microgrid with multi-point access, network sharing, and demand awareness. Improve the utilization efficiency of distributed energy, reduce energy loss, realize the organic integration of energy "supply and demand integration" and "flow" of solar power , distributed energy storage, electric vehicle and smart grid technology, and better reflect the green and low-carbon concept.







Wuxi Bonton Technology Headquarters

◇ Existing Building Renovation ◇

- BIPV Energy-saving Renovation of Existing Buildings.

Design Features:

Project Characteristics

Two BIPV application forms, photovoltaic + window wall and photovoltaic + sunshade, were designed and applied on the south facade. In the project, 235 Gain Solar glass series products were used for photovoltaic + window walls, and 430 Gain Solar customized sunshade products were used for photovoltaic + sunshade, with an installed capacity of 41kw and an installation area of about 470 square meters. While not changing the exterior wall of the building, the power generation rate is guaranteed, and it plays the role of thermal insulation, energy saving and sunshade. At the same time, the different arrangement specifications and the unique appearance of the glass series products make the building more aesthetic. The overall design takes into account good power generation performance, decorative performance, thermal insulation performance, and sunshade performance, realizing the perfect combination of photovoltaics and buildings.

Energy Saving

A total of 41KW photovoltaic building materials are installed in the energy-saving building, which can provide about 26,000 kWh of green electricity for the building every year, which is equivalent to reducing 25.92 tons of carbon dioxide emissions, 0.78 tons of sulfur dioxide emissions, and 7.07 tons of dust.



Time：2022

Location：Wuxi·Jiangsu

Capacity：41 kW

Installed area：470 m^2





Hebei CPPCC Office Building Reconstruction Project

◇ Existing Building Renovation ◇

Time：2013

Location：Shijiazhuang·Hebei

Capacity：453 kW

Installed area：4500 m^2



Design Features:

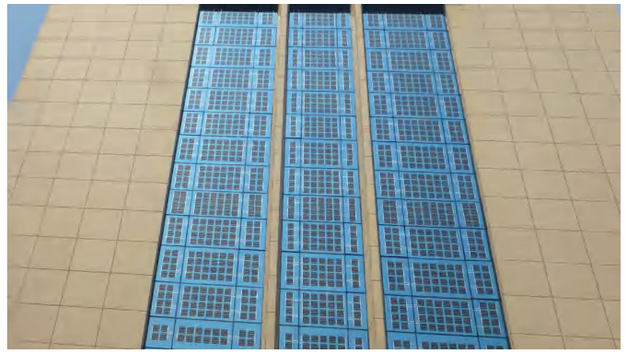
Specific Modification Points

This project is the first demonstration project of BIPV transformation among provincial institutions in the country, involving the roofs and walls of 8 buildings including the main office building of the Hebei Provincial Political Consultative Conference, the office building of the Democratic Party in Hebei Province, and the main building of the Hebei Provincial People's Congress. The total installed capacity is 453.69 kilowatts. The new construction method of "inventory optimization and new construction upgrade simultaneously" is an important way to implement green development in the construction field and solve major livelihood problems. Promoting the green transformation of existing buildings will be an important development direction of urbanization and urban development.

Renovation Investment-profit Analysis

A total of 4,500 square meters of BIPV products were installed in the first BIPV project of the party and government organs in Hebei Province. The average annual power generation of the project is about 520,000 kWh, which is equivalent to reducing carbon dioxide emissions by 520 tons.







Toyota Motor PV Carport

◇ PV + Carport ◇

Design Features:

Project Characteristics

Fashionable and beautiful solar carport design, which are angled panel modules installed on the ground rather than on a rooftop to provide the green energy for public.

Energy Saving

The average annual power generation of the project can reach 14,000 kWh, which is equivalent to reducing carbon dioxide emissions by 14 tons.



Time: 2015

Location: Changshu · Jiangsu

Capacity: 13 kW

Installed area: 130 m^2



Tianjin Automobile Research Center Charging Station

◇ PV+ Solar Carport ◇

Design Features:

Project Characteristics

The project is composed of three basic modules: photovoltaic, energy storage and charging pile. By "using light to nourish pile", new energy, energy storage and intelligent charging can be coordinated and supported, which is a high-tech green charging mode. Based on the integrated optical storage and charging system, it can reduce the use of traditional energy, reduce the emission of polluting gases, and improve the utilization of clean energy.

Energy Saving

The average annual power generation of the project can reach 60,000 kWh, which is equivalent to reducing carbon dioxide emissions by 6 tons.





Time：2013

Location：Tianjin·China

Capacity：4.8 kW

Installed area：70 m^2



Seoul Noisy Barrier

- South Korea's First Photovoltaic Sound Barrier Project.

Time：2017

Location：Seoul·South Korea

Capacity：30 kW

Installed area：214 m^2

Design Features：

Project Characteristics

BIPV panels replace traditional sound barriers. Odd-numbered array method arrangement with unilateral lead out connecting wire, the design can fast connection and reduce loss and save space. Also the Bificial solar cell use can make 30% higher power generation in total,The installation angle realizes the self-cleaning function of the project.

Energy Saving

The average annual power generation of the project can reach 39,000 kWh, which is equivalent to reducing carbon dioxide emissions by 39 tons.





Solar Flower

Design Features:

The intelligent tracking solar flower system is a trinity solar power generation system integrating "power generation, inverter and energy storage". It uses an astronomical retrospective algorithm to automatically track the sun's position 24 hours a day, which improves the power generation efficiency by about 40% compared with conventional solar systems. It can be combined with an energy storage system to enable the device to operate independently of the grid to meet the needs of various occasions. The unique shape design makes the sun flower the most eye-catching existence in any place.









The Pixel House Project of Shenzhen University

◇ Solar Floor Tile ◇

Design Features:

Solar floor tiles are laid in the project courtyard, with special surface texture design. At night, the solar floor tiles will convert sunlight into colorful lights, decorating the entire building, creating a romantic and dreamy atmosphere.









More cases



Photovoltaic Carbon Neutral Green Buildings (2020)

Project location：Baoding, Hebei
Application：Rooftop,Facade, Hand Rail
Installed capacity：45KW
Installed area：350m^2



Chongqing University Sloping House Project（2021）

Project location：Zhangjiakou, Hebei
Application：Rooftop
Installed capacity：15.67 kW
Installed area：100m^2



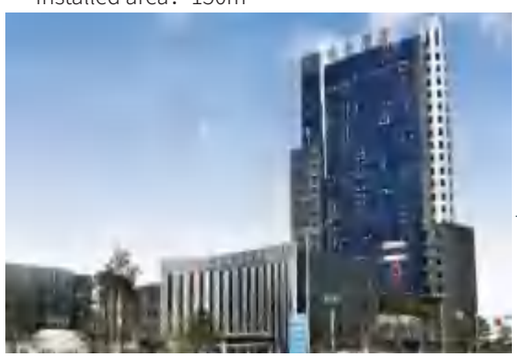
Tianjin University R-CELLS Future Smart House（2021）

Project location：Zhangjiakou, Hebei
Application：Metal rooftop
Installed capacity：30 kW
Installed area：150m^2



Shenyang Architecture-Zhejiang Normal University Natural Compound Building（2021）

Project location：Zhangjiakou, Hebei
Application：Facade
Installed capacity：12.39kW
Installed area：85m^2





Power Valley International Hotel（2008）

Project location：Baoding, Hebei
Application：Facade,Skylight
Installed capacity：300 kW
Installed area：4111 m^2



Suhong BIPV Building（2008）

Project location：Suzhou, Jiangsu
Application：Skylight
Installed capacity：7 kW
Installed area：120m^2



Jinan Garden Expo Park Photovoltaic Application Demonstration Project（2009）

Project location：Jinan, Shandong
Application：Skylight
Installed capacity：60 kW
Installed area：1000m^2



BIPV Fire Station（2010）

Project location：Baoding, Hebei
Application：Facade
Installed capacity：250kW
Installed area：2650m^2



Suzhou Industrial Park Moon Bay Building Square Curtain Wall Project（2010）

Project location：Suzhou, Jiangsu
Application：Sunshade
Installed capacity：20kW
Installed area：300m^2






State Key Laboratory of Photovoltaic Materials and Technology（2010）

Project location：Baoding, Hebei　　Application：Facade

Installed capacity：1400kW　　Installed area：11618m^2




Yingli Spain Sales and Service Center（2011）

Project location：Madrid, Spain　　Application：Facade

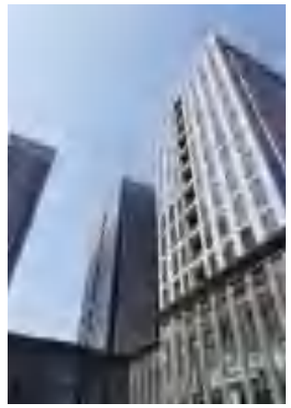
Installed capacity：14.4kW　　Installed area：205m^2

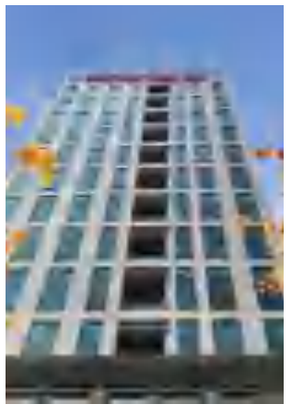



Hainan Yingli Office Building（2013）

Project location：Haikou,Hainan　　Application：Facade

Installed capacity：410kW　　Installed area：4000m^2





Yuansheng Power Valley Square（2014）

Project location：Baoding, Hebei　　Application：Facade

Installed capacity：400 kW　　Installed area：5114 m^2




Zhongguancun Fengtai Garden Mancheng Branch Garden Exhibition Center（2015）

Project location：Baoding, Hebei

Application：Facade

Installed capacity：100 kW

Installed area：1529 m^2

Jilin Vienna Hotel （2017）

Project location：Changchun, Jilin

Application：Facade

Installed capacity：175 kW

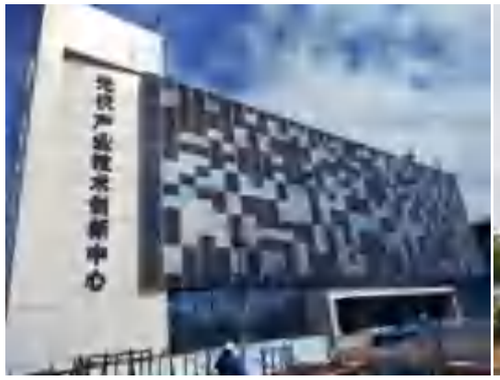
Installed area：1006 m^2




Noisy Barrier of Zero Carbon Development Institute（2021）

Project location：Baoding,Hebei　　Application：Facade

Installed capacity：5.73 kW　　Installed area：38.5 m^2





Qinghai Xining Photovoltaic Industry Technology Innovation Center（2018）

Project location：Xining,Qinghai
Application：Facade
Installed capacity：250 kW
Installed area：2500 m^2

Qinghai Hainan New Energy Regional Management Center（2018）

Project location：Qinghai
Application：Facade
Installed capacity：575kW
Installed area：3700m^2



South China-Politecnico di Torino Longhouse Plan（2018）

Project location：Dezhou,Shandong　　Application：Metal rooftop
Installed capacity：12kW　　Installed area：62m^2





Power Valley Low-Carbon Park (2014)

Project location： Baoding, Hebei
Application：Rooftop,Facade
Installed capacity/Installed area：
2390 kW/27692m^2

Guilinyang National Tropical Agriculture Park（2016）

Project location：Haikou,Hainan
Application：Skylight
Installed capacity：3850 kW
Installed area：23453m^2





Langfang Luneng Eco-city Modern Agriculture Park(2017)

Project location：Langfang, Hebei
Application：Skylight
Installed capacity：94 kW
Installed area：562m^2

Tai Tong Lychee Garden（2018）

Project location：Yuen Long, Hong Kong
Application：Skylight
Installed capacity：10.75 kW
Installed area：76m^2





Suzhou Xinggang Street Gallery Frame （2009）

Project location：Suzhou, Jiangsu　　Application：Skylight
Installed capacity：13 KW　　Installed area：200m^2





Yingli HQ Noisy Barriers（2011）

Project location：Baoding, Hebei
Application：Facade
Installed capacity：90 kW
Installed area：1100 m^2

Elevator Shaft（2015）

Project location： Ningbo, Zhejiang
Application：Facade
Installed capacity：12.4 kW
Installed area：120 m^2