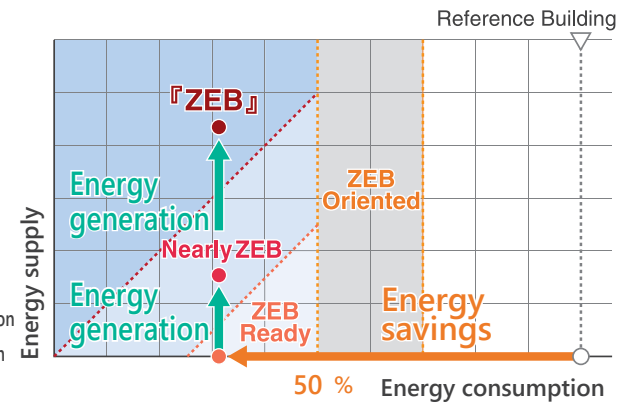


**Energy generation**

**One step up to ZEB by improved performance in energy generation.**

Medium-rise and high-rise buildings in city centers that have limited space for the installation of photovoltaic power generation panels are unable to easily secure quantities of generated power (as energy creation). For such buildings, it is difficult to achieve "ZEB" beyond "ZEB Ready". The T-Green® Multi Solar system can generate power efficiently even installed on vertical surfaces (ex. external wall and window) and improve energy generation performance. Therefore the system contributes to progress in ZEB level (Nearly ZEB or 『ZEB』).

- 『ZEB』 : Reduce over 100% of energy consumption of reference building by energy savings and creation
- Nearly ZEB : Reduce over 75% of energy consumption of reference building by energy savings and creation
- ZEB Ready : Reduce over 50% of energy consumption of reference building by energy savings

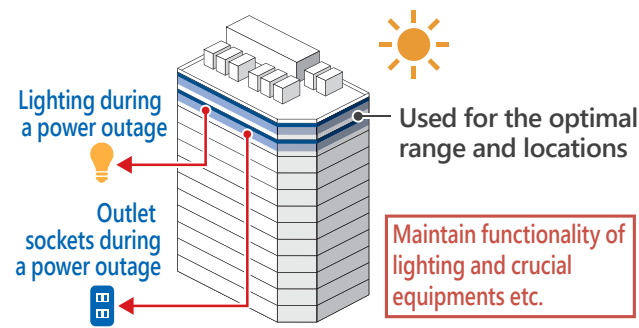


**Disaster response**

**Can be stand-alone power supply in the long-term power outage, providing security in the event of a disaster.**

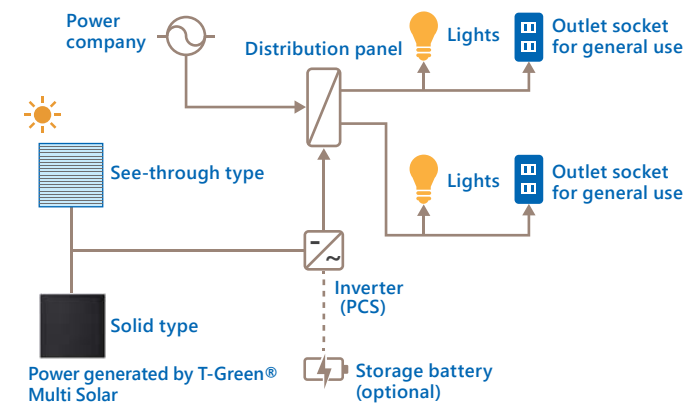
T-Green® Multi Solar can serve as a stand-alone power supply for BCP※1 and LCP※2 in the event of a long-term power outage caused by a disaster. The materials have the same durability as general exterior cladding materials, are easy to install and the system can continue to generate power for 30 years or more. The system can contribute to countermeasures against the disaster prevention, mitigation and resilience, not just for the building but for the community as a whole. Combining the system with a storage battery can provide an even more stable power supply.

※1 Business Continuity Plan  
 ※2 Life Continuity Performance



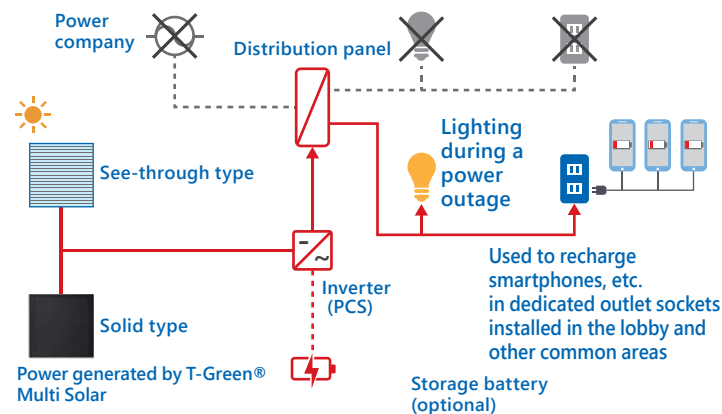
**During non-emergency times**

The power is consumed within the building together with power supplied by the power company.



**During a power outage**

Power generation from the photovoltaic system during the daytime is supplied to specific lights and outlet sockets.



※ Due to photography and printing factors, colors in product photographs may differ slightly from actual colors.  
 ※ Specifications and appearance are subject to change without notice due to developments and improvements.  
 ※ "Cell" in "cell conversion efficiency" refers to a photovoltaic cell element that is the basic unit in a photovoltaic panel.  
 ※ The electrical properties of photovoltaic cell are based on the prescriptions in JIS (Japanese Industrial Standard) C 8990. (AM 1.5, irradiance 1000 W/m<sup>2</sup>, temperature 25 degrees)

Power generating exterior system  
**T-Green® Multi Solar**

Power generation from the entire building,  
 Providing security for the entire town.



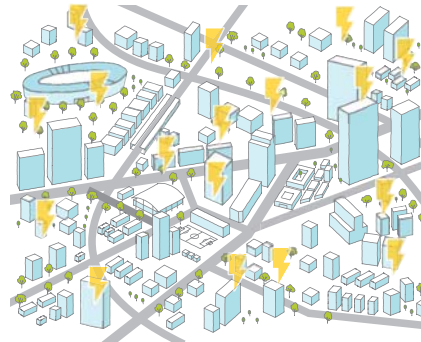
# T-Green® Multi Solar glass-integrated power generation system featuring outstanding design

Taisei Corporation has developed T-Green® Multi Solar, which makes effective use of the exterior of the building (walls and windows) to efficiently generate solar power. By sandwiching the solar cells with laminated glass, the exterior itself becomes a power generation system and can be installed in buildings of various sizes. This system is a stand-alone power source for individual buildings and can be used in the event of power outage enhancing resilience of the town as a whole.

※A product jointly developed with Kaneka Corporation, which has a reputation for solar cell technology.

## Advantages for customers

- Combines high power generation performance with outstanding design properties.
- Can be used as a stand-alone power supply in the event of a power outage caused by a disaster.
- Improved building asset value as a result of Sustainable Development Goals (SDGs) and Environmental, Social and Governance (ESG), etc. assessments and business continuity planning (BCP) measures.

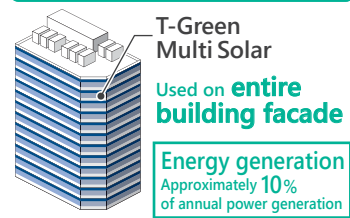


Providing power generating buildings enhance the resilience of the entire town.

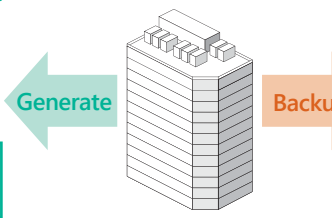
## External facade with power generation improves energy generation performance and enhances disaster response capability.

Medium-rise and high-rise buildings in city centers have small rooftops often filled with various MEP equipments. Therefore it is impossible to secure space for the installation of photovoltaic panels. T-Green® Multi Solar can generate power not only on horizontal surfaces but on the vertical surfaces (both walls and windows) that are exposed to sunlight. This is the revolutionary exterior system which does not adversely affect the building appearance and improves the energy generation performance. It can also be used to provide an emergency power supply in the event of a disaster.

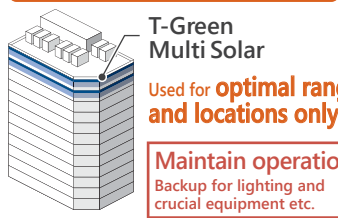
### Case 1: Advanced green building



### Conventional building



### Case 2: Correspondence to disaster

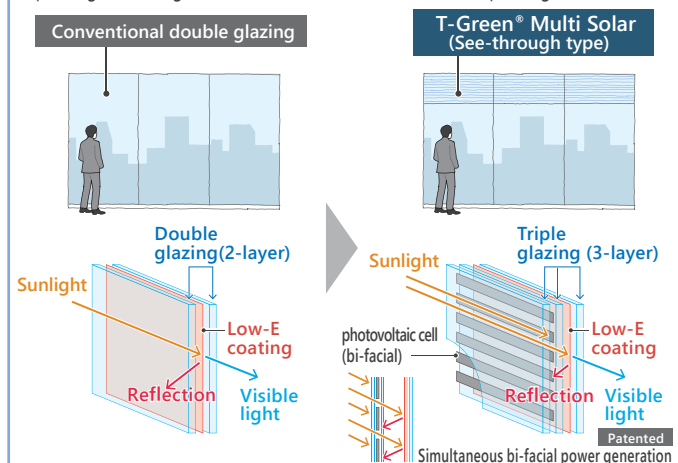


Exterior image of use for external facade

## Energy generation Two types available to match the exterior design

### See-through type combining daylighting with power generation

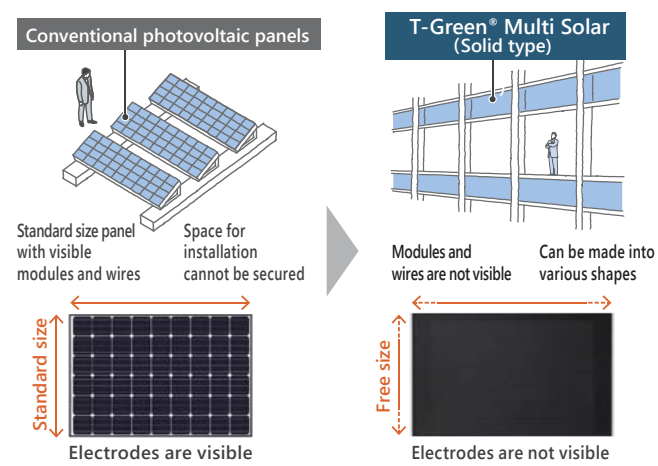
This is the world's first system embedded strips of double-sided photovoltaic cells in Low-E double glazing. In addition to the basic performance required for window glass (providing view, daylighting, thermal insulation and barrier) it also is a multifunctional power generation glass that can make simultaneous bi-facial power generation.



- Photovoltaic cells with greater than 20% cell conversion efficiency are placed in striped patterns and generate power while maintaining high transparency of glass (aperture ratio 50%).
- Simple and clear design that will not adversely affect the building's exterior design and cityscape.

### Solid type with outstanding design

Photovoltaic modules that can be used for external facing panels of various sizes. This is a photovoltaic facade panel having superior power generation thanks to high conversion efficiency cells and outstanding design ensuring electrodes and wires are not visible.



- Photovoltaic cells with greater than 20% cell conversion efficiency are used for the power generation sections, ensuring high power generation performance.
- Photovoltaic facade panels with outstanding design having well-designed invisible electrodes.

## Energy generation Innovative exterior system integrating daylighting, energy generation and outstanding design

See-through type installed in the upper part of windows can secure both an area to let light in and an area for power generation. Solid type installed on spandrels can maintain the facade design as it is and secure an area for power generation. Installation method of both types are the same as ordinary aluminum curtain walls, making construction easy and enabling various sashes to be used to match the facade design.



Interior image in case see-through type is installed



External appearance image in case two different types are installed

T-Green® Multi Solar can continue to generate power for 30 years or more and is ideal for exterior of office building, skylight of atrium etc. It can be adopted for newly constructed or renovated buildings of various scale. Taisei can handle the entire process from providing products to proposing cost-effective solutions (tailored to individual building sites, installation locations and objectives) to system construction and performance checks.\*

※Simulations can be conducted by projects in order to propose various options.

