

Energizing the Office of the Future

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Daiwa House Opens Japan's First Self-Sufficient Office Using Renewable Energy

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The need for greater sustainability has been thrown into sharper focus since the landmark Paris Agreement, used to cue diverse initiatives to tackle climate change, entered into force on November 4, 2016. With more of the world urbanizing as economies grow, the demand for office buildings is rising, as well as the need for energy to power them. These trends challenge governments and the private companies that construct these buildings to find more sustainable solutions.



Introducing Japan's First Energy-Self-Sufficient Office

Construction firm Daiwa House Industry Co. Ltd., Japan's largest homebuilder, believes that future office buildings should be both energy-efficient and energy-self-sufficient. This philosophy has culminated in the opening of Japan's first energy-sustainable office building in Saga City, Saga Prefecture, in 2018.

The experimental Daiwa House Saga Building is recognized as a net zero energy building (ZEB) because the amount of renewable energy it produces is greater than the amount it consumes. The facility is also awarded the highest five-star rating on the Building Energy-Efficiency Labeling System evaluation scale developed by Japan's Association for Housing Performance Evaluation and Indication.

As a mark of further validation, Japan's Ministry of Economy, Trade and Industry has

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Increasing Renewable Energy Generation

The Daiwa House Saga Building relies mainly on solar energy to power office lighting, equipment and air conditioning. When the sun shines exceptionally brightly and the solar power panels produce more electricity than is required, surplus energy is stored in advanced lithium-ion cells developed by Eliiy Power. Conversely, the system draws power from these cells to compensate for any shortfall in electricity when the sun dims.



The lithium-ion storage batteries, made in Japan, are the first in the world to pass the international certification body TÜV Rheinland's product safety test.

While this method of renewable power generation enables the building's energy independence, if the solar panels and storage batteries should fail to provide sufficient electrical capacity at any time, the building still has backup power supply from the electric power companies on standby.

Reducing Energy Consumption

Typically, air-conditioning units account for the bulk of electricity consumed by a building, so to reduce the Saga Building's energy footprint, Daiwa had to install a more efficient heating and cooling system. The solution is a hybrid air-conditioning system that utilizes well water and solar heat.

Pumped from underground, the well water remains at a consistent temperature of approximately 15°C, which is low enough to cool the building during hotter spells, while in cold weather solar energy warms the water to heat the building.



A Progressive Global Commitment

Building on recent achievements, Daiwa's commitment to sustainability took another leap forward on March 1, when it joined both the EP100 (energy efficiency) and RE100 (renewable energy) global initiatives of the Climate Group, the first homebuilder and construction company in the world to do both at the same time.

Under the initiatives, Daiwa has committed to improve its energy efficiency by 50 percent by 2030, and to double its efficiency by 2040 (relative to 2015 levels). Also by 2040, the company aims to meet 100 percent of its power needs with renewable energy.

Daiwa's decision to pursue these global goals speaks to the Japanese builder's drive to be a responsible player in the construction sector—one that fuels its never-ending quest for progress with ESG (Environmental, Social and Governance) principles at the core.

Built in Japan, Shared with the World

The completion of the Daiwa House Saga Building caps a track record of more than 100 ZEBs built by Daiwa, the most of any construction firm in Japan. To continue that success, Daiwa intends to share these innovative architectural and energy technologies not only with Japan's prefectures, but with the rest of the world.

Constructing Japan's first energy-self-sufficient office building may be the company's greatest achievement yet, but in-time, greater accomplishments will come through the many facilities—existing and new—that stand to gain from Daiwa's shared expertise.

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