

HIGHLIGHT 1

Mitsubishi Estate Group Medium- to Long-Term Greenhouse Gas Emissions Reductions Targets Approved by Science Based Targets (SBT) Initiative

Setting Appropriate Targets Based on Scientific Evidence to Contribute to the Realization of a Sustainable Society

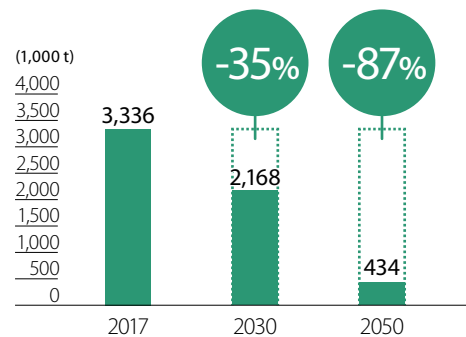
In 2019,*1 Mitsubishi Estate instituted The Mitsubishi Estate Group Medium- to Long-Term Greenhouse Gas Emissions Reductions Targets for the entire Group, aimed at realizing a sustainable society with a low-carbon footprint. These targets were approved by the SBT initiative*2 for being based on scientific evidence for limiting the increase in temperature to well below 2°C above pre-industrial revolution levels, as aimed under the Paris Agreement. The Group aims to achieve these goals by actively adopting new technologies and promoting the development of real estate with high environmental performance. The Group will also redouble its efforts to introduce renewable energy, thereby contributing to the realization of a sustainable society.

*1 Formulated and published in March 2019, gaining SBT initiative approval in April

*2 The Science Based Targets initiative is a collaboration between the World Wide Fund for Nature (WWF), CDP, the UN Global Compact, and the World Resources Institute (WRI) to encourage corporations to set targets in order to achieve the target of limiting the rise of temperature to well below 2°C under the Paris Agreement.

Target

Mitsubishi Estate Co., Ltd. commits to reduce absolute scope 1+2+3 GHG emissions 35% by 2030 and 87% by 2050 from a 2017 base-year.



Examples of the Mitsubishi Estate Group's Greenhouse Gas Emissions Reduction Initiatives



A full-scale rendering of the Tokyo Tokiwabashi Project

1 Promoting Acquisition of Environmental Certification

Tokyo Tokiwabashi Project Building A to Acquire SITES® Environmental Certification

For the Tokyo Tokiwabashi Project Building A, a project scheduled for completion in 2021, the Mitsubishi Estate Group has implemented a range of initiatives to reduce environmental impact, such as using green electricity for 100% of the power for the water garden and plazas on the premises of the building, in an effort to create a property that is both people and environmentally friendly. With these initiatives, the project aims to acquire the SITES® certification, the first for a city center complex building development project in Japan.

* Sustainable Sites Initiative (SITES®): a rating system administered by Green Business Certification Inc.™ (GBCI®) (USA) to certify projects with sustainable landscapes. Projects are evaluated from the three perspectives of design (conservation of water resources, soil and plantings, and human health and well-being), construction (material recycling and protection of the air environment during construction), and operation (management plan and explanations to users).

2 Developing Real Estate with Low Environmental Impact

Taking Measures for a Net Zero Energy Building (ZEB) at Miyako Shimojishima Airport Terminal in Okinawa

Opened in March 2019, the Miyako Shimojishima Airport terminal is Japan's first-ever airport terminal that has earned a Net Zero Energy Building (ZEB) rating. The Group has incorporated a range of sustainable, energy-saving measures. It was designed based on a plan that will make primary energy consumption around 68% less than a comparable structure built to the national standard, and for which the project was accredited with the ZEB Ready rating by the Agency for Natural Resources and Energy of Japan's Ministry of Economy, Trade and Industry. It has also earned the highest ranking of the Building-housing Energy-efficiency Labeling System (BELS), and is the first airport terminal in Japan to actively adopt CLT* as a structural material for its roof.

* See page 22–23 for details.



3 Installation of Solar Panels on Properties Managed by the Group

Installation of Solar Power Panels on Condominiums ("soleco" system)

The Group provides an environmental system known as "soleco" at condominiums it develops. The system combines high-voltage collective power reception with solar power systems to help reduce electricity costs for condominium units and shared areas, making it an environmentally and economically friendly solution.

Installation of Solar Panels on Large-Scale Commercial Complexes

Beginning in April 2016, certain Premium Outlets operated by Mitsubishi Estate-Simon switched to renewable energy using Renewable Energy Certificates for a portion of their energy use. The company has also introduced a carport-type solar power generator for captive consumption and uses the privately generated electricity for the communal areas at two Premium Outlet complexes. By implementing these measures, the company is working to reduce energy consumption and greenhouse gas emissions.

HIGHLIGHT 2

Promoting Utilization of CLT to Further Expand Use of Japan-grown Timber

Contributing to the Environment and Society by Using Japan-grown Timber

Japan's forests account for some two-thirds of the country's land mass, and 40% of these forests are said to be planted. Many such forests were planted after World War II, and today more than half of these planted forests are five decades old or more, having reached their harvestable age. Expanding the use of timber sourced from these forests not only helps promote Japanese forestry, but is also thought to contribute to the preservation of Japan's natural, indigenous forests.

It is against this background that the Mitsubishi Estate Group has promoted the use of Japan-grown timber in construction projects for many years, including the active use of small-diameter trees and timber from forest thinning in 2x4 wooden-frame houses.

CLT PARK HARUMI Exhibition Hall



CLT material image (courtesy of the Japan Cross Laminated Timber Association)

Expanding Timber Usage Opportunities—CLT in Large Structures Such as Airports

Cross laminated timber (CLT) is a wooden building material that the Mitsubishi Estate Group has increasingly utilized in recent years.

CLT consists of large-dimension wooden panels formed by laminating layers of sawn lumber perpendicular to one another. This building material has been developed since about 1995, primarily in Austria. Compared with conventional wooden panels, its strength is more stable, and it also offers outstanding heat insulation. It is gaining attention as a structural material that will expand the applications of timber since it can be used not only for low-rise detached housing, but also for large-scale structures such as condominiums and office buildings. It also has the advantage that any waste can be put to use as biomass fuel or pallet material.

Mitsubishi Estate formed the CLT Unit, a dedicated department in the Residential Business Planning Department, in fiscal 2017. The unit is working on research and development aimed at commercialization of CLT and has already implemented several projects.

Projects Utilizing CLT



CLT PARK HARUMI Pavilion



CLT PARK HARUMI

In December 2019, Maniwa City, Okayama Prefecture, Kengo Kuma and Associates, Mitsubishi Jisho Sekkei, and Mitsubishi Estate Home began the joint CLT PARK HARUMI. This project will build a facility in Harumi, Chuo-ku, Tokyo, with design supervised by Kengo Kuma and Associates using CLT produced in Maniwa City.

The facility will be used as a site for the dissemination of culture and information for approximately one year, until autumn 2020, to communicate the attractions of CLT. After that, it is planned to relocate the facility for use in the Hiruzen Highlands in Maniwa City. The project will represent cyclic exchange of natural and cultural resources between the city and regional areas by realizing the application of the CLT panels in a relocatable, sustainable construction system.



PARK WOOD Takamori— Rental Apartments in Izumi-ku, Sendai City

PARK WOOD Takamori, a 10-storey condominium complex completed in Sendai City in February 2019, is Japan's first-ever high-rise building using CLT as a flooring material. From the design stage onward, features such as fire resistance, sound proofing, and earthquake resistance were repeatedly verified to realize a hybrid wood and steel-frame structure through the use of fireproof coatings and other materials.

This project has helped to amass the processes and know-how in design and construction required for building using CLT, thus allowing the Mitsubishi Estate Group to utilize CLT in other projects going forward.



PARK WOOD Takamori



Check in lobby using CLT as structural material for the roof



Miyako Shimojishima Airport Terminal

Miyako Shimojishima Airport Terminal opened in March 2019 on Miyako Island, Okinawa, where there is abundant nature. It is the first airport terminal in Japan to utilize CLT as a structural material for the roof and uses the greatest quantity of CLT of any building in Japan (as reported by the Japan Cross Laminated Timber Association). The CLT was produced with regional wood designated by Okinawa Prefecture, thereby contributing to the vitalization of the regional forestry industry. The project has also implemented a range of energy-saving measures and earned the Net Zero Energy Building (ZEB)* recognition, the first for airport terminals in Japan.

* See page 21 for details.