

Environment



Pursue cutting-edge environmental initiatives to realize a sustainable society through our business activities

Objectives

- We will efficiently utilize energy, water and raw materials and reduce greenhouses gases in our business activities.
- We will strive to create a smart community with efficient transportation and distribution systems as well as electricity and water use.
- We will expand the use of renewable energy in buildings and residences.
- We will proactively provide buildings and residences certified as being environmentally and socially responsible.

Key performance indicators

- KPI 9** Energy use/CO₂ emissions
- KPI 10** Waste generated/water used
- KPI 11** Number of projects recognized with CASBEE (new construction design)/Development Bank of Japan (DBJ) Green Building certifications
- KPI 12** Solar power output
- KPI 13** Area of green on roofs and walls
- KPI 14** Rate of annual adoption for energy conservation level 4
- KPI 15** Rate of annual adoption for *soleco* system
- KPI 16** Rate of adoption for high-efficiency appliances (hot water heaters/LED equipment/ultra-water-conserving toilets)
- KPI 17** Small- and medium-sized building renovations/condominium renovations
- KPI 18** Rate of use of Japan-grown timber

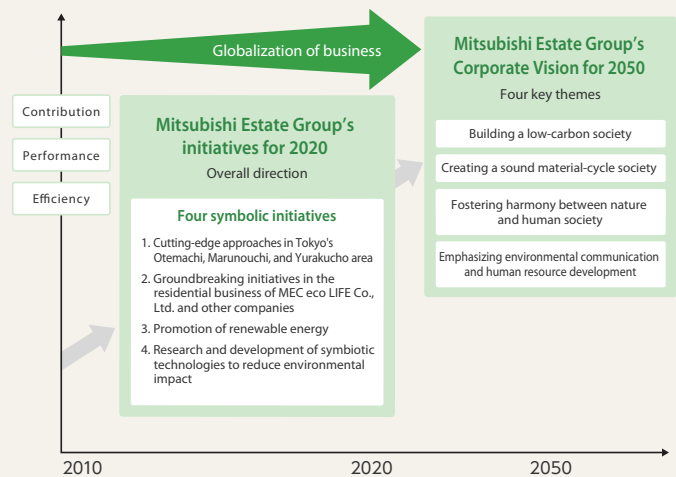
街の力を、
地球の力に。

The Mitsubishi Estate Group environmental logo features the slogan, "For Sustainable Cities, For the Sustainable Earth."

Long-Term Environment

Mitsubishi Estate Group Long-Term Environmental Vision

The Mitsubishi Estate Group has established the Mitsubishi Estate Group Long-Term Environmental Vision, based on the Mitsubishi Estate Group's Basic Policy on the Environment, to constructively address environmental issues going forward. This vision clearly lays out the Group's stance on actively contributing to society by reducing environmental impact.



Mitsubishi Estate Group Basic Environmental Policy

The Mitsubishi Estate Group has established the Mitsubishi Estate Group Basic Environmental Policy, which is based on its corporate mission. The entire Group works together to implement sound environmental management.

Mitsubishi Estate Group Basic Environmental Policy

The Mitsubishi Estate Group has developed an environmental management system and strives to protect the environment by promoting environmental initiatives and reducing environmental impact, as well as complying with all environmental laws and regulations. Mitsubishi Estate is determined to ensure that its business activities play a leading role in the development of sustainable communities.

1. Building a low-carbon society

We are proactive about the efficient use of resources and energy, and encourage the use of renewable energy to contribute to the creation of a low-carbon society.

2. Creating a sound material-cycle society

We strive to reduce, reuse, and recycle in every stage of our business, including planning, development, design, construction, management and dismantlement, in order to contribute to building a sound material-cycle society.

3. Fostering harmony between nature and human society

We endeavor to foster new cultural values and to practice environmental responsibility by demonstrating concern for biodiversity and developing attractive urban spaces that harmonize with the surrounding natural environment, thus helping to build a society that lives in harmony with nature.

4. Promoting environmental communication

We proactively provide information on the environment and communicate with society on a broad range of issues in our efforts to coordinate and cooperate with a wide range of stakeholders.

5. Increasing employees' ecological awareness

In our efforts to increase employees' awareness of environmental conservation issues and ensure highly effective environmental activities, we provide environmental education and awareness programs, aiming to develop an ecologically aware workforce.

Established on May 1, 2004
Revised on January 1, 2006 and April 1, 2010

al Vision and four symbolic initiatives

Four symbolic initiatives

Initiatives in Tokyo's Otemachi, Marunouchi and Yurakucho area



Contributing to redevelopment of a good urban environment with Otemachi Hotoria (Otemachi 1-1 Project)

Mitsubishi Estate is creating an environmentally friendly green space that is open to the community and adding other environmental features to reduce environmental impact in the Otemachi 1-1 Project, which aims to strengthen Otemachi's functions as a global business center.

The quality of the water in the Imperial Palace moat, which is adjacent to the project site on the west, has deteriorated significantly as a result of algae blooms attributable to a chronic lack of fresh water. Accordingly, in a joint project by the government and the private sector aimed at improving the water quality in the moat, a water purification facility for the moat¹ as well as some large-scale reservoirs² will be set up on the project site. Not only introducing facilities like this to lower environmental impact overall, this project has also been recognized with Platinum (Plan) 2013 status under the DBJ Green Building

certification program. Marunouchi Heat Supply Co., Ltd. will install a district cooling and heating sub-plant in the building, which will not only conserve energy in the district as whole, but also serve as a backup for other plants in the Otemachi area. The construction of an environmentally friendly community green space that takes biodiversity into account also earned certification from the Association for Business Innovation in harmony with Nature and Community (ABINC; urban development and SC category) and the Social and Environmental Green Evaluation System (SEGES).

We will continue to carry out initiatives that ensure the area harmonizes with nature.

1. Treatment capacity: About 500,000 m³/year
2. Capacity: About 3,000 m³



Number of projects recognized with CASBEE (new construction design)/Development Bank of Japan (DBJ) Green Building certifications

KPI 11 6/15 buildings and projects

Area of green on roofs and walls

KPI 13 About 31,100m²

Initiatives in the residential business

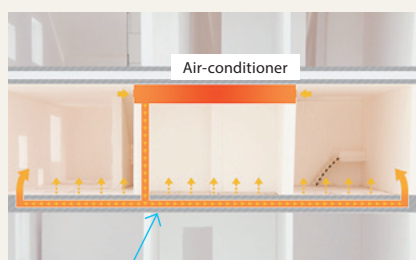
Floor chamber air conditioning validated at Setagaya House

In condominium units constructed with double flooring using the floor-first construction method,* the space between the double flooring is not divided by partitions but is instead an integrated space. Floor chamber air conditioning uses this space below the flooring to ventilate the entire unit with cooled or heated air.

Air that has been cooled or heated by the air conditioner blows out under the flooring and is sent to the individual rooms from a blowout grille installed in the floor of each room. Since the area under the

flooring is filled with cooled or heated air, the floors are never cold in winter since the area below the flooring extending under the entire unit is filled with warm air. This reduces vertical temperature differences in a room, with an effect similar to radiant heating. Moreover, floors in washrooms and bathrooms, where floor vents are not installed, do not get cold, and this could help to prevent health problems that come from sudden change in temperature.

In the Setagaya House, a condominium owned by Mitsubishi Estate, we have been conducting a test to verify the effectiveness of this method, looking at specifics such as lifestyle patterns and their relationship to system operation, methods of controlling temperature to address the differences in air conditioning load on the north side and south side, and the relationship with the ventilation system. In the remodeling work done to carry out the tests, Yamanashi-grown wood was used for the intermediate posts for partition walls and the plywood substrate for the double flooring.



Area below double flooring is used to blow out cooled or heated air

* Floor-first construction method: There are two methods of building double flooring in condominium units: (1) the walls-first method in which double flooring is laid after the partition walls are put up in the unit, and (2) the floor-first method in which the partition walls are put up on top of the double flooring once the double flooring has been laid out throughout the residence.



Promoting and popularizing renewable energy

Large-scale solar power generation facilities: Helping to build a recycling-oriented society with a lower carbon footprint

Mitsubishi Estate actively utilizes and introduces renewable energy to help build a recycling-oriented society with a lower carbon footprint. In February 2013, we started the construction of a large-scale solar power generation facility in Chiba Research Park, which extends over Sakura City and Chiba City in Chiba Prefecture. The first stage of this project covers an area of approximately 21,700 m², with a generating capacity of about 1 MW. The facility went on line in July. We are currently working on a plan to expand the facility to cover a site of about 67,000 m² with a total generating capacity of about 4 MW. We also began constructing another similar facility on a site

of about 15,300 m² in the Higashi Fuji Research Park located in Gotemba City and Oyama Town in Shizuoka Prefecture in May 2013. The facility, which has a generating capacity of about 1 MW, went on line in October 2013.

Solar power output

KPI
12 About **3,010kW/14 sites**



Chiba Research Park



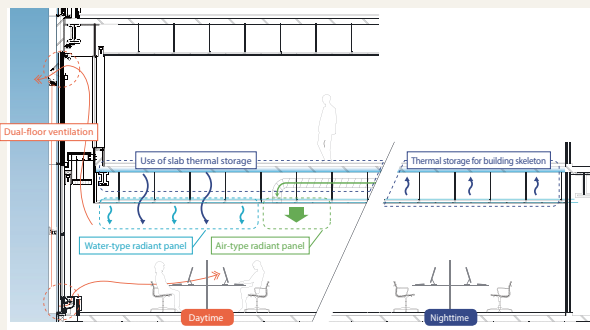
Higashi Fuji Research Park

Pursuing R&D into environmentally symbiotic technology

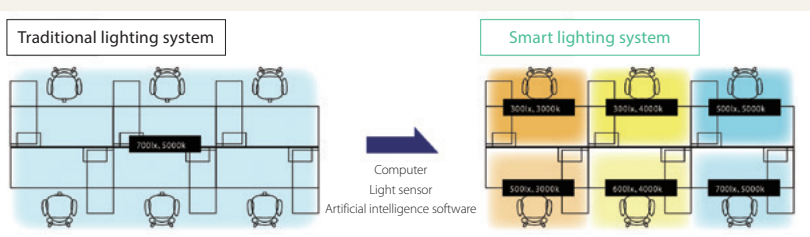
Kayabacho Green Building, a next-generation office building with cutting-edge technology

Located in Chuo Ward, Tokyo and completed in May 2013, the Kayabacho Green Building is a model next-generation office building—Mitsubishi Estate Group's answer to the question of how next-generation offices should function. It features cutting-edge technologies that ensure a balance between comfort and energy conservation, including the Group's own internally tested hybrid radiant air conditioning system, a smart lighting system that provides optimally individualized lighting for each person's work, and an innovative system that presents energy-use data in a visual format to keep office workers motivated to conserve energy.

We are verifying the effectiveness of these technologies on-site with this project and will continue to carry out research and development on technology that can be fully deployed in other office buildings.



Space with smart lighting system



Reducing environmental impact

Diverse initiatives to improve environmental performance of condominiums

Mitsubishi Jisho Residence Co., Ltd. employs the Five Eyes process to ensure the quality of its residences, and Eco Eyes is one of the five. The company is taking various approaches to improving environmental performance.

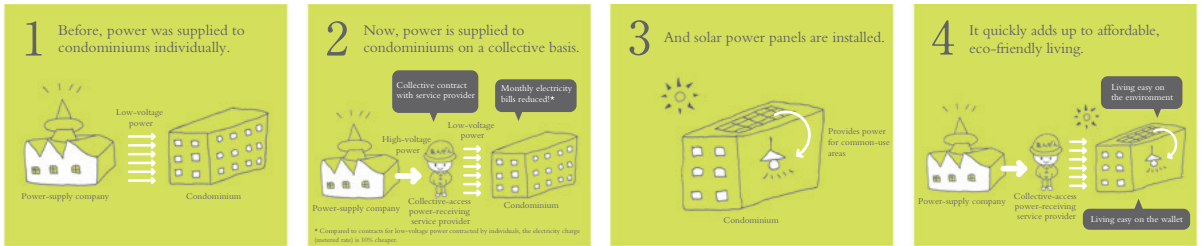
1. Soleco power systems save electricity and money

Soleco is an environmental system that balances environmental friendliness with affordability by reducing electricity costs for condominium units and shared areas. This is achieved by combining high-voltage collective power systems with solar power systems in condominiums.

Rate of annual adoption for soleco system

KPI 15

75%



2. Various techniques enhance insulation effectiveness

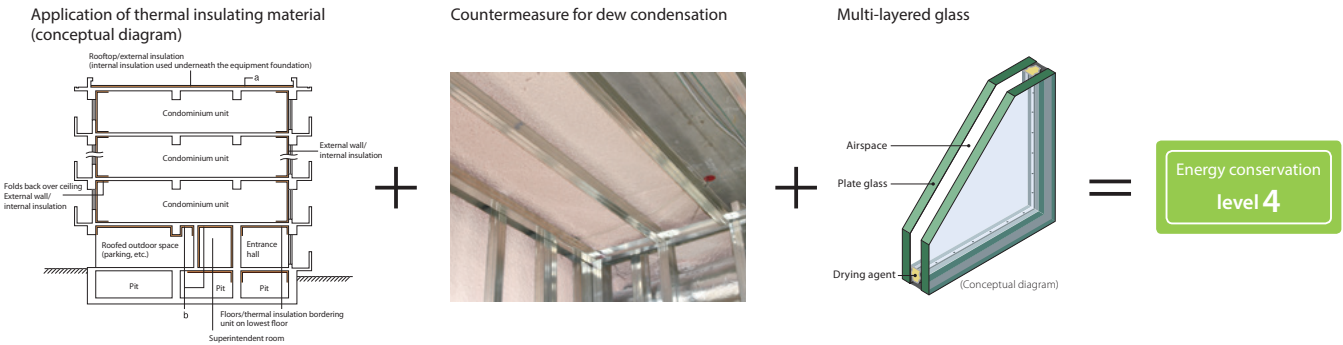
We have incorporated a range of techniques to enhance insulation effectiveness, such as applying external and internal insulation, taking measures to prevent dew condensation and using multi-layered glass. The result was a residence product worthy of energy conservation level 4 in the next-generation energy conservation standards established by the Japanese government in 1999.

In line with the 2013 energy conservation standards for residences that went into full effect on April 1, 2015, we aim to earn insulation performance level 4 and primary energy consumption level 4 for all the residences we design.

Rate of annual adoption for energy conservation level 4

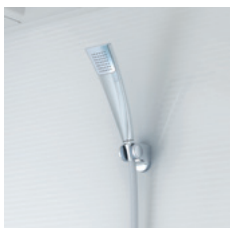
KPI 14

86%



3. Highly efficient devices save energy

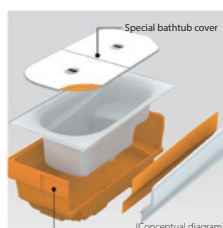
Shower head conserves hot water



Faucets conserve hot water



Bathtub retains heat



Toilet conserves water



Rate of adoption for high-efficiency appliances (hot water heaters/LED equipment/ultra-water-conserving toilets)

100%/78%/78%

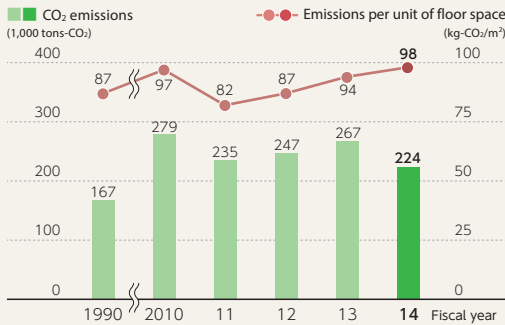
KPI 16

Building a society with a lower carbon footprint

Building management programs reduce CO₂ emissions

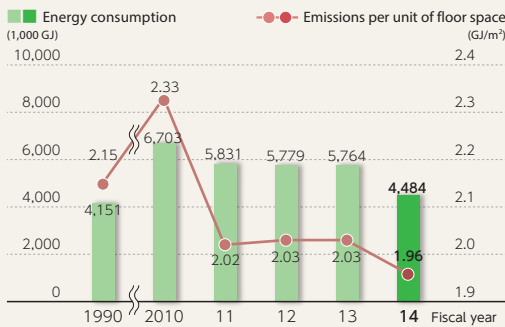
The energy consumption of Mitsubishi Estate's 23 ISO14001-certified buildings* in fiscal 2014 is shown in the graphs below. In fiscal 2015, Mitsubishi Estate continues to work to reduce energy consumption in each building, targeting the stricter of either a 1.0% reduction compared to fiscal 2014 or the reduction mandated by city regulations such as the Tokyo Metropolitan Ordinance on Environmental Preservation.

CO₂ emissions and CO₂ emissions per unit of floor space from Mitsubishi Estate's ISO14001-certified buildings



* CO₂ emissions are calculated using the emissions coefficients determined for individual electrical power suppliers, reflecting actual status.
 * The number of ISO-certified buildings may change each fiscal year due to renovations and sales/purchases.
 * The data for 1990 includes buildings prior to renovations (such as the former Marunouchi Building).

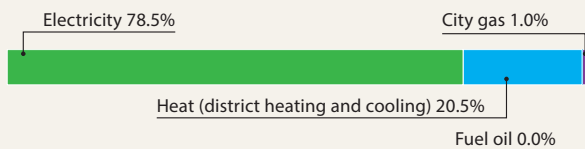
Energy consumption and energy consumption per unit of floor space in Mitsubishi Estate's ISO14001-certified buildings



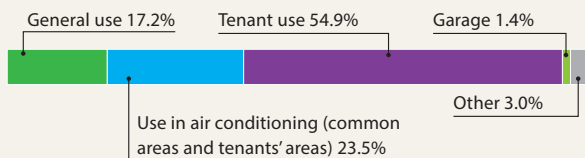
* The number of ISO-certified buildings changes each fiscal year due to renovations and sales/purchases.

Collaborating with tenants to conserve energy

Fiscal 2014 energy consumption by use (for 23 ISO14001-certified buildings)



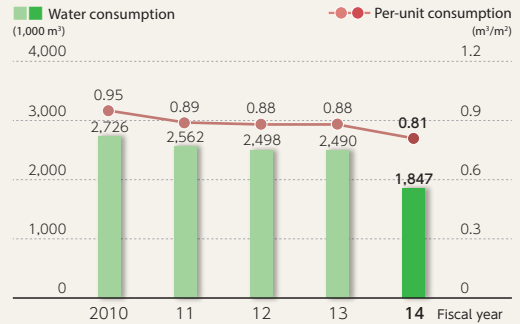
Fiscal 2014 energy consumption by application (for 23 ISO14001-certified buildings)



Helping society to recycle more

Effective consumption of water resources in buildings

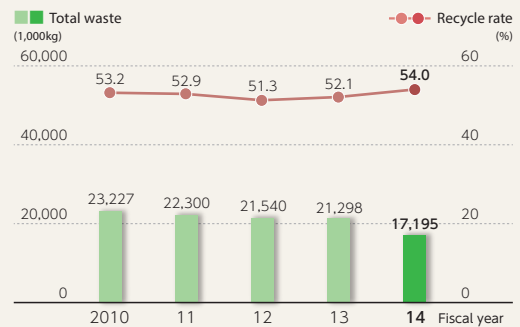
Water consumption and water consumption per unit of floor space in Mitsubishi Estate's ISO14001-certified buildings



* Number of buildings included in scope of data may differ by fiscal year due to renovations and sales/purchases.

Waste reduction and recycling initiatives in buildings

Total waste and recycle rates for Mitsubishi Estate's ISO-certified buildings



* Number of buildings included in scope of data may differ by fiscal year due to renovations and sales/purchases.

Mitsubishi Estate Group's environmental data

Energy use and CO₂ emissions reported under Japan's Energy Conservation Law (fiscal 2014)

	Overall	Office buildings	Commercial facilities	Hotel	Other
Energy use (1,000 kl/year)	245	183	45	11	7
Unit consumption (kl/m ² per year)	0.038	0.037	0.059	0.067	0.011
CO ₂ emissions (1,000 t-CO ₂ /year)	482	359	87	21	14
Unit consumption (t/m ² per year)	0.074	0.072	0.116	0.129	0.024
Number of target facilities (buildings)	118	58	16	8	36
Floor area (1,000 m ²)	6,476	4,964	757	163	592

* Compiled for main buildings for which information on energy-saving measures is reported in compliance with the Energy Conservation Law (excluding some small buildings).
 * This table is prepared on the basis of the information submitted by Group companies in compliance with the Energy Conservation Law, with some additions, and may differ from the actual figures submitted.

Energy use/CO₂ emissions

KPI 9

245,000kl/482,000t a year

Waste generated/water used

KPI 10

43,637t/5,161,000m³ a year

* Compiled for the major buildings for which the Mitsubishi Estate Group reports information on energy-saving measures in compliance with the Energy Conservation Law.

Re-building Business rejuvenates older small- and mid-sized buildings

Mitsubishi Jisho Residence Co., Ltd. entered the re-building business in May 2014, renovating older small and medium-sized buildings and then sub-leasing the buildings. In this business, Mitsubishi Jisho Residence obtains master leases on older buildings with high vacancy rates, carries out anti-seismic work and renovations, and then subleases the buildings to new tenants. After a set period of time, the buildings are returned to their owners.

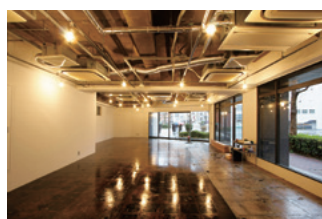
Such projects are intended to effectively use existing stock without resorting to the “scrap & build” approach, which has a heavy impact on the environment. Moreover, as Mitsubishi Jisho Residence covers the costs, it will facilitate anti-seismic retrofitting work in small- and mid-sized buildings which otherwise would not have sufficient financial resources for it. By supplying rental properties with value enhanced by anti-seismic work and renovations, the company also aims to help revitalize the neighborhoods around these properties.

In February 2015, renovation of the Park Rex Koamicho Building, the company’s third re-building project, was completed. Inspired by the concept of an office building with the comfort of a home, the building now offers three types of floors to lease—named “kitchen floor,” “living floor,” and “sun room floor”—each designed with different specifications.

Mitsubishi Estate hopes this business will meet social demand for effective utilization of existing infrastructure, and is aiming to renovate about 15 buildings in three years, and 30 within five years.



Before renovations (first floor)



After renovations (first floor)

Small- and medium-sized building renovations/condominium renovations

KPI 17 3 buildings/110 units

Fostering harmony between nature and human society

Expanding the use of Japan-grown timber: Project To Raise The Value Of Japan-Grown Timber

Mitsubishi Estate Home Co., Ltd. proactively uses forest thinnings and small-diameter trees for its 2x4 structural materials, aiming to expand the use of Japan-grown timber in wood-frame homes overall. The percentage of Japan-grown timber used in structural materials by the company now exceeds 50%, which is one of the highest among builders of 2x4 homes in Japan.

Mitsubishi Estate Home is also effectively utilizing and expanding its use of timber grown in Yamanashi Prefecture as part of the Project to Raise the Value of Japan-Grown Timber. The project works in affiliation with the “Experience Nature” Project, an activity that promotes

interaction between urban and rural residents in Hokuto City in Yamanashi Prefecture.

Mitsubishi Estate Housing Components Co., Ltd. promotes the use of Japan-grown timber in structural materials for single-family homes, and in August 2010 the company obtained FSC-CoC certification, an international standard for distinguishing sustainably-grown timber from other timber during the processing and distribution stages.

FSC® logo mark issued by the Forest Stewardship Council® certifies that the wood or fibers used in the product were produced from forests managed properly in terms of the environment, society and the economy. The mark provides a guarantee that the forest of origin was assessed by an independent third-party organization based on principles and standards stipulated by the FSC. FSC-N002014 <http://www.fsc.org>



Examples of use of Japan-grown timber

Rate of use of Japan-grown timber

KPI 18 Over 50%

Launch of the BIO NET INITIATIVE, an effort by The Parkhouse to protect biodiversity: “Business Innovation in Harmony with Nature and Community” certification acquired

Mitsubishi Jisho Residence earned certification from the Association for Business Innovation in Harmony with Nature and Community (ABINC) for The Parkhouse Nishi Shinjuku Tower 60 and three other condominiums. This certification program recognizes biodiversity initiatives in land use that are difficult to assess quantitatively and aims to promote land use that takes biodiversity into account.

The Parkhouse is Mitsubishi Jisho Residence’s flagship condominium brand. In these condominium development projects, the company plans the trees and plants for each property in a manner that will protect biodiversity, regardless of the property’s size and land area. Named BIO NET INITIATIVE, these plans are also carried out at The Parkhouse condominiums other than the buildings that were certified. This creates a green space that serves as a stopover for plants and animals by linking the surrounding green space with the street’s greenery. We expect these green condominium complexes to foster a community that supports diverse living creatures.

We will continue to create communities designed with environmental performance in mind with The Parkhouse condominiums.

