

# CSV Strategies

— Creating Shared Value through Business —

## 1 Promoting net-zero-energy housing P.23

Contribute to customer healthy life expectancy and the environment by realizing high-quality living not constrained by energy problems



## 2 Preserving biodiversity P.29

Protect ecosystem networks through use of sustainable natural capital that considers impacts on business



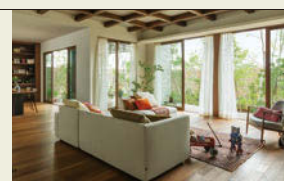
## 3 Maintain and improve technological development, manufacturing and construction quality P.33

Realize maximum customer satisfaction through superior quality and leading technologies



## 4 Extend lifespan of houses and enhance after-sales support P.37

Long-term support of customer lifestyles through Group company collaborations. Link to improved value of housing and resource recycling



## 5 Promoting diversity and developing human resources P.43

Aim to become a sustainable corporate group generating high added value while encouraging diverse employees to realize their potential and respect one another



## 6 Developing overseas business P.49

Contribute to the preservation of the environment and the promotion of safe, secure and comfortable global lifestyles through the expansion of high-quality and sustainable housing and urban development



# 1 Promoting net-zero-energy housing

Contribute to customer healthy life expectancy and the environment by realizing high-quality living not constrained by energy problems

Main stakeholders: Customers, partner companies (equipment manufacturers, etc.), energy supply companies

## Backdrop

### Japanese Government Targeting Implementation of ZEH as the Standard for Newly Built Housing by 2020

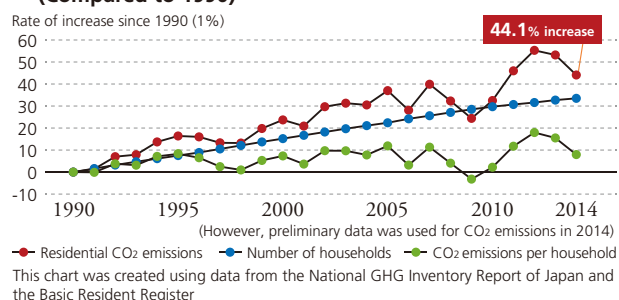
CO<sub>2</sub> emissions must be reduced globally to control global warming. At COP21 (the Framework Convention on Climate Change, 21st Session of the Conference of the Parties to the United Nations) held in Paris in 2015, Japan committed to reducing greenhouse gas emissions 26% by 2030 compared to 2013 levels. To achieve this, we must achieve a substantial 39.9% reduction in the residential sector.

To reduce home energy consumption and control CO<sub>2</sub> emissions, the Japanese government is promoting the spread

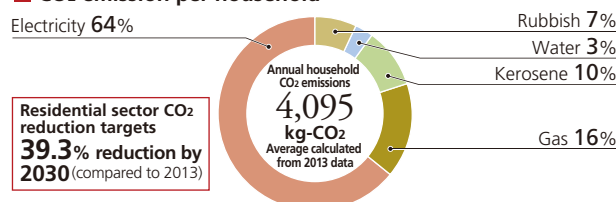
of net-zero-energy housing (ZEH) enabling zero net energy consumption through the utilization of high energy-saving performance photovoltaic systems and fuel cells. To this end, the government is targeting the implementation of ZEH as the standard for newly built housing by 2020.

The spread of ZEH and “smart towns” that optimize energy consumption on a community-wide scale are extremely promising in terms of resolving energy problems and disaster response.

### ■ Rising CO<sub>2</sub> Emissions in the Residential Sector (Compared to 1990)



### ■ CO<sub>2</sub> emission per household



Excludes automobile (gasoline and oil) data from the National Institute for Environmental Studies and the Greenhouse Gas Inventory Office of Japan

## Approach

### Our goal

### Promoting the Green First Strategy Focused on Environmental Friendliness, Comfort and Economy

Sekisui House's responsibility as a housing manufacturer is to contribute to the resolution of important social issues including energy and environmental problems while aiming to promote sustainable business.

Positioning energy conservation as one of our basic functions, we proactively propose Green First newly built detached homes and energy-saving and energy creating remodeling and renovation

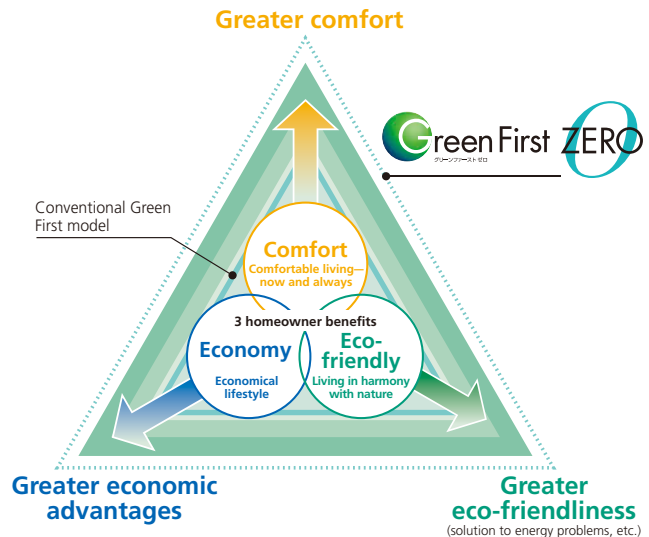
for existing homes. These proposals enhance home comfort and economy while significantly reducing energy consumption and contributing to the achievement of national objectives for the reduction of greenhouse gas emissions.

We aim to achieve the COP21 residential sector commitments with both newly built and existing homes.

## Anticipating Government Promotion of ZEH with Green First ZERO Homes

Since 2009, Sekisui House has provided homeowners with rich and comfortable lifestyles by promoting the spread of eco-friendly Green First homes that significantly reduce impacts on the environment. In response to various conditions, including the customer's family structure, lifestyle and housing site conditions, we propose optimal combinations of photovoltaic systems, fuel cells and high-efficiency water heaters.

In May 2013, we launched sales of Green First ZERO in anticipation of government policies promoting ZEH. We are encouraging the spread of housing enabling the pursuit of lifestyle comfort without being limited by energy problems.



## Action policies

### ① Expanding Net-Energy-Zero Housing

We will develop aggressive proposal activities aimed at increasing the ratio of Green First ZERO sales to 80% by 2020. We will also promote ZEH in the rental housing Sha Maison and condominium businesses.

Furthermore, we will implement initiatives aimed at meeting the COP21 residential sector commitment in terms of existing housing.

**Increase ratio of Green First ZERO newly built detached housing to 80% by 2020**

**Reduce CO<sub>2</sub> emissions from newly built homes and existing low-rise rental apartments 39.3% by 2030 (compared to 2013)**

### ② Strengthen Energy-Saving and Energy Creating Proposals for Remodeling

We are also promoting Green First remodeling and renovations for existing housing to realize comfortable, eco-friendly living. The combination of home energy saving using high insulation and the latest equipment with energy creation using photovoltaic systems and fuel cells will significantly reduce existing home CO<sub>2</sub> emissions.

Sekisui House Remodeling handles detached houses, Sekiwa Real Estate handles rental housing and Sekiwa Construction Group handles general conventional method constructed housing and condominiums. All three promote aggressive proposal activities.

## Impact of These Activities on the Company

ZEH housing significantly reduces CO<sub>2</sub> emissions and utility expenses, while supporting more comfortable living and homeowner healthy life expectancy. We emphasize these merits to the customer in an attempt to expand sales of housing products with high added value.

In addition, the remodeling and renovation of existing homes through the aggressive promotion of ZEH and energy conservation contributes to the accumulation of quality housing supply and is expected to expand business by stimulating potential demand.

## Risk management

### Risk 1

**Increased costs in line with making homes compliant with government ZEH standards**

#### Our response 1

The level of our standard specifications are high, so ZEH can be achieved at comparatively little extra cost. Furthermore, as a major housing manufacturer, we control cost increases through central purchasing, which reduces buyer burden. Additionally, with ZEH specifications, utility expenses are significantly lower, thus increased costs can be recovered in a comparatively short amount of time.

### Risk 2

**Declining demand due to decreases in subsidies or power purchase prices.**

#### Our response 2

We will enhance employee awareness and proposal capabilities and communicate not only the economic merits of ZEH, but also the increased quality of life in terms of health and eco-friendliness in an effort to stimulate needs. Absorbing part of the introduction costs as Company environmental promotion expenses will lessen the burden on customers.



# State of Progress

## ① Expanding Net-Energy-Zero Housing

### Activities Report

#### Promoting the Spread of Green First ZERO

We are making efforts to promote the spread of Green First ZERO in anticipation of the Japanese government objective of making net-zero-energy housing (ZEH) the standard by 2020. For customers with plans to build a new house, we explain the substantial reduction in utilities expenses and the entirely new level of comfort. We also renovate showrooms for exhibitions and hold seminars to emphasize the merits of Green First ZERO to customers.

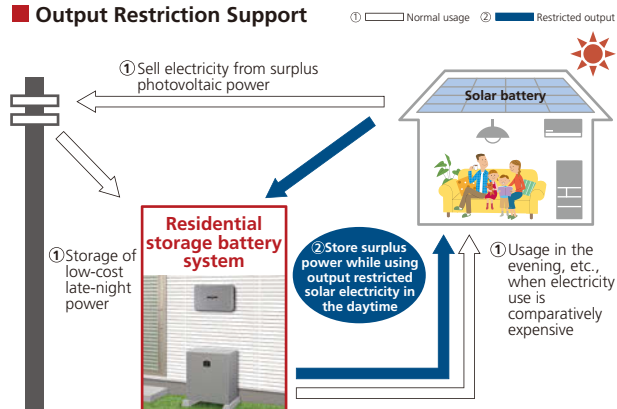
In FY2015, we aggressively proposed the net-zero-energy house support business to customers, which provides subsidies for new construction and purchase of ZEH homes. Sekisui Homes acts as an agent to assist with the subsidy application process. We made every effort to create manuals and policies and conduct study meetings for employees engaged in these duties.

#### Sekisui House is the First Housing Manufacturer to Launch Sales of “Green First Energy Storage Style” Corresponding to Photovoltaic System Output Restrictions

In accordance with January 2015 revisions to the Act on Special Measures Concerning Procurement of Electricity from Renewable Energy Sources by Electricity Utilities, some electric power companies restrict the output of residential photovoltaic systems. Output restrictions balance electric power supply and demand in the event there is a risk of wide-scale power outage when the power supplied by power stations exceeds demands at each power company. In response, Sekisui House launched sales of Green First Energy Storage Style in May 2015. This output restricting energy storage system for detached homes is the first of its kind sold by a housing manufacturer.

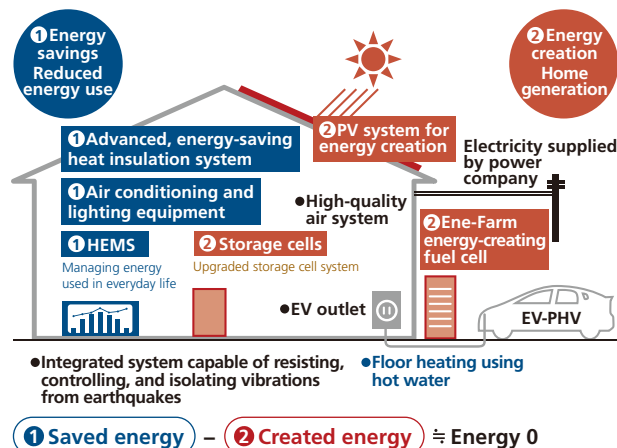
This product restricts output in afternoon hours when energy cannot be sold and automatically stores excess power, enabling nighttime or shared usage. Also, in the event of a power outage caused by natural disaster, or skyrocketing electric costs in the future, the photovoltaic system and storage battery ensure the supply of electric power, eliminating customer concerns.

#### ■ Output Restriction Support



#### ■ Green First Zero model

In addition to high insulation and energy-saving equipment, photovoltaic systems and other advanced energy-creating equipment aims to achieve net zero energy consumption.

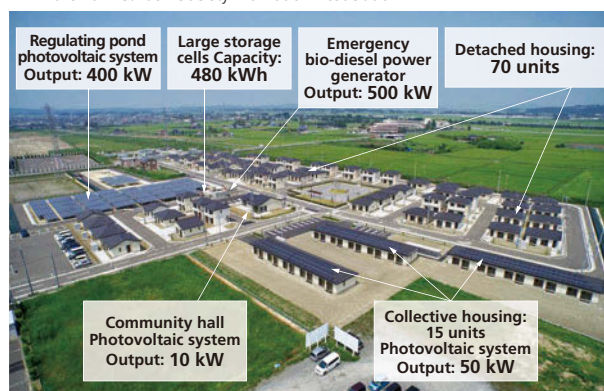


#### Residents Begin Moving in to Higashi-Matsushima City Disaster-Ready Smart Eco-Town, Featuring Japan's First Micro Grid

Sekisui House is developing “smart communities” in 16 locations across Japan with the aim of creating energy self-sufficient towns that are resilient to natural disasters.

The joint public-private project with Higashi Matsushima in Miyagi Prefecture constructed Higashi Matsushima Disaster-Ready Smart Eco-Town. This included the creation of Japan's first micro grid, which facilitates the mutual exchange of energy across properties. Supplying electricity from photovoltaic systems in nearby facilities such as disaster-ready public housing and hospitals reduces CO<sub>2</sub> emissions by 256 tons annually. Large storage cells ensure three days of electric power in the event system power is cut due to a natural disaster or other event. In August 2015, regional residents from temporary housing began moving in to the 85 disaster-ready public housing units (Yanagi no Me municipal housing). In May 2016, the town-wide system went into full operation.

Note: This project, subsidized by the Ministry of the Environment, is an “independent and distributed low carbon energy society creation” initiative conducted by the Low Carbon Society Promotion Association.



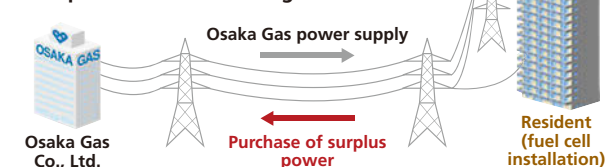
## World's First Fuel Cell-Equipped High-Rise Condominiums Make Use of Excess Electricity

Until now, space issues and power supply load instability due to occupant lifestyles prevented the introduction of fuel cells in collective housing. Working with Osaka Gas Co., Ltd., Sekisui House has introduced new miniaturized fuel cells in two high-rise condominiums currently being developed in Osaka. The ability to sell the fuel cell-generated electricity not used by residents is expected to reduce primary energy consumption approximately 25% compared to conventional condominiums.

This initiative was adopted from the Ministry of Land, Infrastructure, Transport and Tourism's Fiscal 2015 Second

Sustainable Building Leadership Business initiative.

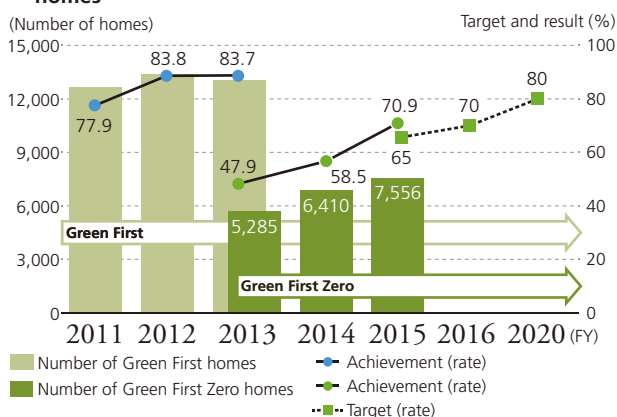
### Surplus Power Purchasing Scheme



## Key performance indicators (KPIs)

Indicator	Unit	FY2011	FY2012	FY2013	FY2014	FY2015	Definition and remarks
Green First ZERO	%	—	—	47.9	58.5	70.9	Ratio within Sekisui House detached housing
Amount of CO <sub>2</sub> reduction compared to 1990	t-CO <sub>2</sub>	39,372	42,074	50,256	43,015	41,599	Reduction of residential CO <sub>2</sub> emissions from new detached homes compared to 1990 levels (amount and %)
Rate of CO <sub>2</sub> reduction compared to 1990	%	51.3	55.7	61.5	73.4	75.5	

### Growth in the number of Green First and Green First Zero homes

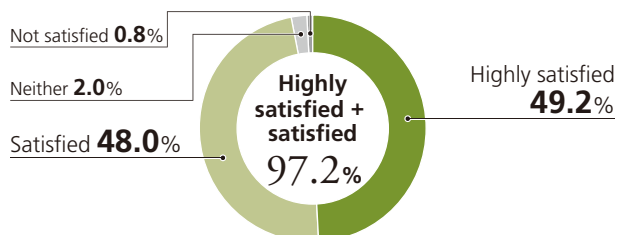


### Sekisui House ZEH Occupant Customer Satisfaction

#### Overall satisfaction (evaluation includes utilities expenses)

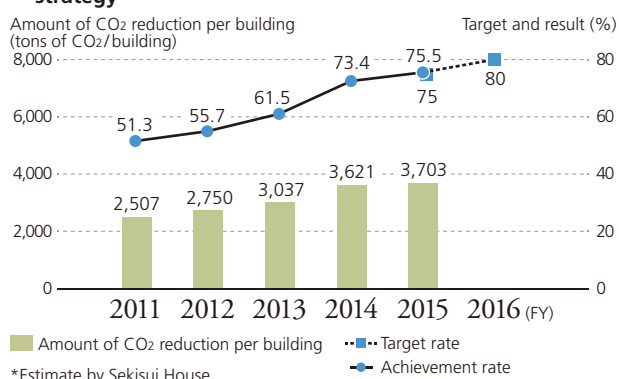


#### Satisfaction with housing comfort (comfort evaluation)



Note: Survey questionnaire taken one year after move in (March 2015; N = 516)

### Reduction in CO<sub>2</sub> emissions achieved by the Green First strategy\*



## Evaluation

Green First ZERO ratio was 70.9%, which exceeded the target (65%). CO<sub>2</sub> emissions declined compared to 1990 in line with a decrease in the number of units supplied, and the reduction per building increased, resulting in a 75.5% reduction in CO<sub>2</sub> compared to 1990 and achievement of the target (75%).

Customer satisfaction (highly satisfied + satisfied) was solid, surpassing 95% for the second year in a row in terms of both overall satisfaction and satisfaction with housing comfort.

## Future Initiatives

Sekisui House will strive to expand the sales ratio of Green First ZERO detached homes realizing comfort, economy and eco-friendliness to 80% by FY2020 while aiming to implement ZEH in Sha Maison low-rise rental housing and condominiums.

We will also strengthen initiatives to reduce CO<sub>2</sub> emissions from existing detached and low-rise rental housing.

## ② Strengthen Energy-Saving and Energy Creating Proposals for Remodeling

### Activities Report

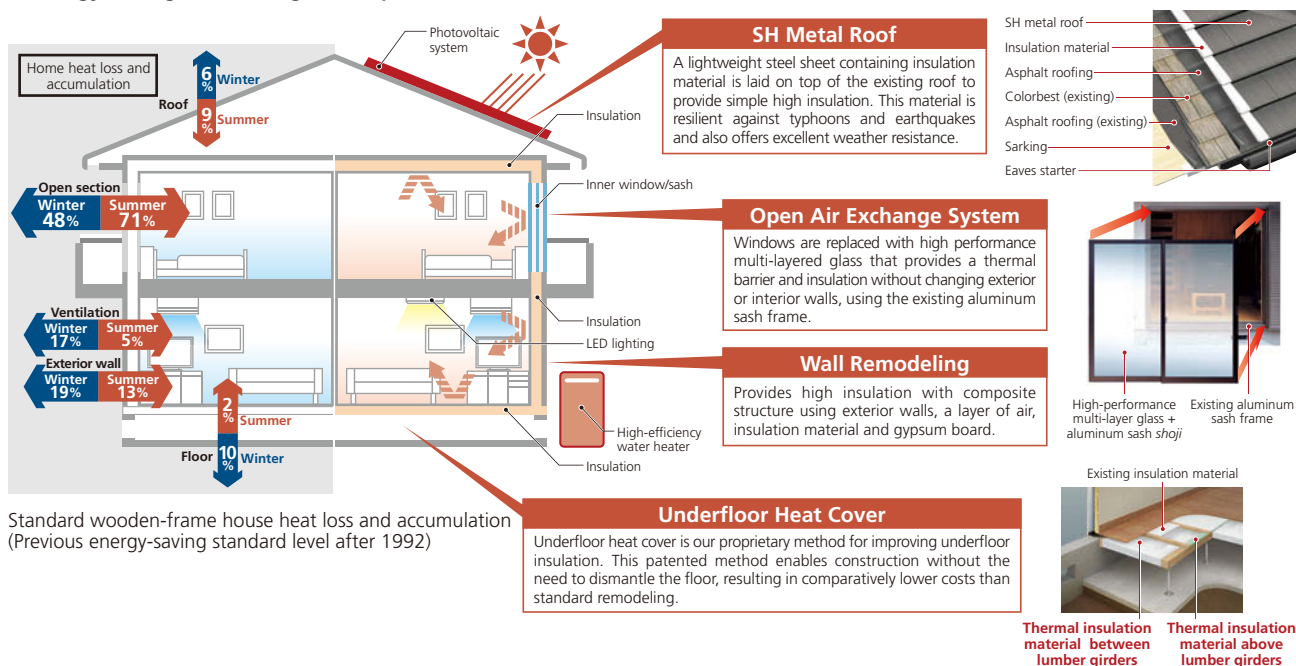
#### Promoting Green First Remodeling and Renovation Linked to Homeowner Healthy Life Expectancy

Sekisui House Remodeling proposes a variety of remodeling projects for detaching housing, rental housing and condominium owners based on the concept of “comfortable living—now and always.” In recent years, efforts have been focused on expanding Green First remodeling and renovation specifically targeting energy saving/generation and improved comfort.

Existing housing can be converted into ZEH through the

combination of a variety of remodeling work to improve home insulation, the installation of energy-saving equipment such as high-efficiency water heaters and air conditioners, and the addition of photovoltaic and energy storage systems. Green First remodeling and renovation not only improves a home’s environmental performance, economy and comfort, it prevents heat shock with better insulation and extends homeowners’ healthy life expectancy.

#### ■ Energy-Saving Remodeling that Improves Insulation



Standard wooden-frame house heat loss and accumulation (Previous energy-saving standard level after 1992)

## TOPICS

### Remodeling and Renovation Corner Established at Tohoku Sumai no Yume Kojo

Hands-on displays that facilitate learning and enjoyment of various technologies related to Sekisui House home construction have been established inside Company factories across Japan.

Specifically, we created the “Green First Remodeling and Renovation” corner at the Tohoku Sumai no Yume Kojo, which has been open since March 2016. This corner introduces Company initiatives related to detached housing remodeling handled by Sekisui House Remodeling and general conventional housing and condominium remodeling handled by Sekiwa Construction. Visitors can see an overview of Green First existing housing promoted throughout the Sekisui House Group.



Remodeling and Renovation Corner

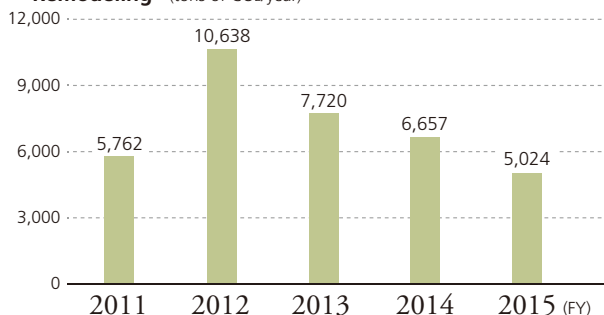
## Key performance indicators (KPIs)

### Energy Saving and Generation Remodeling Achievements\*

Energy saving and generation remodeling menu	FY2015 achievements
Photovoltaic power system installations	1,481 units
Energy-efficient bath fixtures	4,641 units
Open insulation reform	4,808 units
Ene-Farm (residential fuel cells)	295 units
Eco-Jozu (latent heat recovery gas water heater system)	3,344 units
Eco-Cute (heat pump water system)	862 units
Underfloor heat cover	2,565 units

Note: Sekisui House Remodeling Co., Ltd.

### CO<sub>2</sub> Reduction from Energy Saving and Generation Remodeling\* (tons of CO<sub>2</sub>/year)



Note: Sekisui House Remodeling Co., Ltd.

## VOICE

### Enjoying comfort for many years to come with the underfloor heat cover

Mr. and Mrs. N  
Chiba Prefecture



Every winter until now, our feet always felt cold even when using the stove. We had already switched to double-glazed windows, and when we considered the floor, we recalled the underfloor heat cover introduced to us by the Sekisui House representative. When we saw the samples, the insulation looked quite thick and effective, so we decided to go ahead and have it installed. Sekisui House did a really careful job on the construction, which only took two days to complete. The installation was performed underneath the floor, so there was no need to move heavy furniture and other items in our house. The whole process was easy and we never had to lift a finger.

Since the remodeling, the entire room quickly heats up even when we set the stove 2–3 degrees lower. There is no longer any need to keep the stove on for long periods of time, which caused our gas bill to go down—this is very helpful in terms of our household finances. We are extremely satisfied with our new, more comfortable lifestyle.

## Evaluation

We substantially improved home floor insulation performance and promoted the spread of underfloor heat covers that contribute to homeowner healthy life expectancy (up 164% compared to the previous fiscal year). The effects of lower electricity purchase prices and postponed renewable energy connections caused photovoltaic power systems to decline (down 50%), but the adoption of Ene-Farm and energy-efficient bath fixtures rose (up 61%).

## Future Initiatives

We will strive to promote Green First remodeling and renovation to contribute to the reduction of CO<sub>2</sub> from existing housing. We will also focus efforts on proposals and adoption of “*sukoyaka*” remodeling\*, initiatives linked to homeowner healthy life expectancy, including improved insulation, high-efficiency equipment installation and other energy saving and generating remodeling.

Note: For details, see CSV Strategy 4, p. 39

## Promoting CO<sub>2</sub> Reductions throughout the Home Lifecycle

Sekisui House ascertains CO<sub>2</sub> emission levels not only when a resident moves in, but throughout the home lifecycle, from the purchase of building materials to factory production,

transportation, construction and demolition. We continually engage in activities linked to CO<sub>2</sub> reduction proposals and implementation.

Indicator	Unit	FY2011	FY2012	FY2013	FY2014	FY2015	Definition and remarks
Total energy input*1	TJ	2,851	2,830	3,542	3,039	3,061	Amount of energy input at the various stages of development and design, factory production, transportation, construction and demolition
CO <sub>2</sub> emitted during development, design, factory production, construction and demolition*1	t-CO <sub>2</sub>	119,969	114,780	148,329	126,209	130,482	Amount of CO <sub>2</sub> emitted at these stages per fiscal year
CO <sub>2</sub> emitted during transportation*2	t-CO <sub>2</sub>	39,967	38,959	45,815	37,749	36,499	Amount of CO <sub>2</sub> emitted at these stages per fiscal year

\*1 Starting in FY2013, energy input by Sekisui House's consolidated subsidiaries in Japan (40 companies) and Sekisui House Advanced Manufacturing (Shenyang) Co., Ltd. was added to the total energy input. Also, starting FY2015, main overseas subsidiaries were added to the total.

\*2 Starting in FY2013, in addition to specified consigners based on the Act on the Rational Use of Energy, the amount of CO<sub>2</sub> emitted during product shipments by Sekisui House Advanced Manufacturing (Shenyang) was added to the total.



## 2 Preserving biodiversity

# Protect ecosystem networks through use of sustainable natural capital that considers impacts on business

Main stakeholders: Suppliers (tree growers, landscapers and wooden building materials manufacturers) and customers

## Backdrop

### Affecting Urban Ecosystems with Landscaping

As greenery declines due to advancing urbanization, greening initiatives are spreading throughout Japan. Effective landscaping in urban areas not only preserves ecosystems, but also invigorates communities by creating relaxing spaces for people, enables the collection of rainwater to prevent urban flood damage and provides a variety of other functions. These various green efforts, known as “green infrastructure,” are now attracting attention as the basis for resolving a wide range of social issues.

Landscaping is an indispensable element of housing. Each year, the majority of landscaping consists of planting garden trees. However, garden and non-native species are often selected for their attractiveness and ease of care. These are not always appropriate for sustaining local birds and insects, nor are they adaptable to Japan’s climate, and they tend to have low resistance to pests. To protect local ecosystems, the selection of tree species for planting must take the ecosystem into consideration.

### The Importance of Ensuring Legal Traceability in Lumber Procurement

Lumber is an important housing material used for structural components as well as on the interior and exterior of homes. Sekisui House uses more than 300,000 cubic meters of lumber each year. However, as wood is a raw material of biological origin, among the tens of thousands of materials used in housing, we recognize the importance of ensuring lumber traceability, especially when considering the complexity of distribution channels.

Of particular importance is carefully confirming that lumber used does not come from illegal logging. In recent years, logging exceeding the allowable limit to meet strong demand in foreign countries and illegal logging and distribution, including logging in prohibited areas such as protected forests, timber theft and smuggling are becoming major problems. Illegal logging causes wide-spread destruction of ecosystems and exacerbates global warming, which not only impacts the function of multifaceted environmental protections for forests, but also has an adverse impact on broader society as it harms the lifestyle of local residents, creates instability in the lumber market and timber resource valuation, and hinders sustainable forest management.

## Approach

### Our goal

### Establish and Spread Ecosystem Preservation throughout Society Driven by the Supply Chain

Sekisui House, Japan’s largest manufacturer and supplier of prefabricated housing, is also one of Japan’s largest landscape gardeners, planting nearly one million trees each year. Our selection of tree species has a major impact on market trends. From this perspective, Sekisui House promotes tree planting to contribute to the protection of regional ecosystems and focuses efforts on sustainable lumber procurement linked to the protection of global biodiversity.

Natural capital and ecosystem services such as planting and lumber require a long time to mature and recover. Furthermore, these initiatives cannot be completed by one company alone. We steadfastly maintain activities with suppliers based on long-term scenarios and inculcate an understanding of value among customers through the provision of rich and comfortable lifestyles, all of which is aimed at spreading these activities as societal trends.

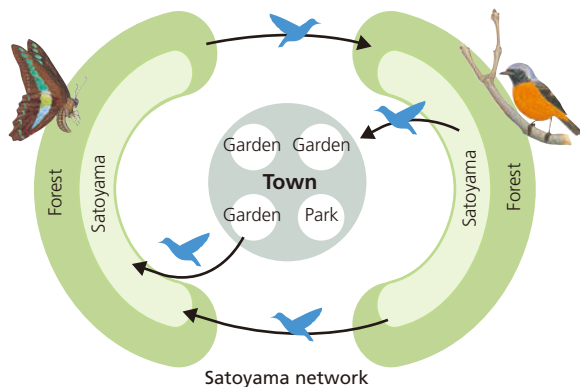


## Action policies

### ① Promoting Indigenous Species in Consideration of Regional Ecosystems through the *Gohon no Ki* Greenery Project

Since 2001, Sekisui House has promoted gardening and landscaping activities known as the *Gohon no ki* greenery project. This involves the proactive proposal of indigenous species able to provide a high level of support for local creatures in consideration of the ecosystem as opposed to the frequent and exclusive use of garden or non-native species.

In terms of project implementation, we collaborate with a network of local tree growers and landscapers to ensure the provision of indigenous species where traditionally there have been few available on the market. We will propose to consumers the richness of life in harmony with living creatures and the significance of environmental conservation.

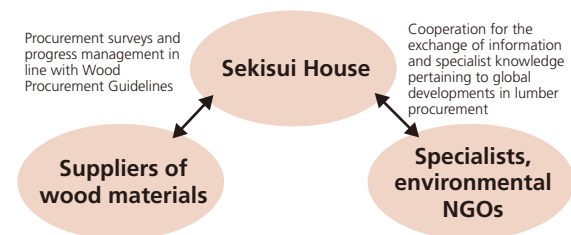


### ② Promoting the Use of Legal and Sustainable FairWood Lumber

Sekisui House procures FairWood\* lumber and wood products that are friendly to local communities and the forest environment in logging areas to enable the use of sustainable lumber.

FairWood procurement is legal and based on 10 Wood Procurement Guidelines established from the perspective of ecosystems and resident lifestyles in logging areas. Each year, procurement surveys are conducted targeting approximately 50 suppliers of wood materials to ascertain where their timber is felled and milled and to confirm its legality. This information is then converted into numerical data used to manage ongoing progress in this area. These initiatives attempt to expand the use of FairWood by enhancing supplier consciousness of procurement routes while promoting awareness among trading companies further upstream in the supply chain.

\* Advocated by the Global Environmental Forum and FoE Japan, an international environmental protection NGO.



## Impact of These Activities on the Company

Promotion of the *Gohon no ki* project enables the realization of housing with high home value through proposals to customers offering comfortable lifestyles surrounded by abundant nature. In addition, it strengthens the recognition that housing appearance that changes over time due to green growth is helpful to enhancing home value—even in the case of green common areas in rental housing—creating rich urban spaces.

Furthermore, in the lumber procurement area, the process of conforming to our guidelines heightens supplier awareness of each company's procurement process and facilitates increasingly precise traceability information on the lumber handled by each supplier. As a result, the market for high-quality FairWood steadily expands leading to the spread of sustainable lumber.

## Risk management

### Risk 1

**Proposals similar to *Gohon no ki* spread throughout the industry, leading to a relative decrease in the value of our proposals.**

#### Our response 1

We will make use of many years of collaborations with our landscaper network to aggressively promote tree species proposals in line with market needs, while attempting to differentiate ourselves through total exterior designs delivering higher customer satisfaction by improving our design proposal capabilities and strengthening our construction system. As a result, the continued proposal of new value will further drive the ecosystem-friendly greening market.

### Risk 2

**Tighter international regulations will restrict logging, exports and distribution, disrupting the stable procurement of lumber.**

#### Our response 2

As logging area trends and other breaking news is monitored by local environmental NGOs, we will obtain information from a network of global environmental NGOs and promptly share it with suppliers of wood materials to enable the preparation of revisions to preferred lumber supply systems.

# State of Progress

## ① Promoting Indigenous Species in Consideration of Regional Ecosystems through the *Gohon no Ki* Greenery Project

### Activities Report

#### Ongoing Promotion of the *Gohon no Ki* Project

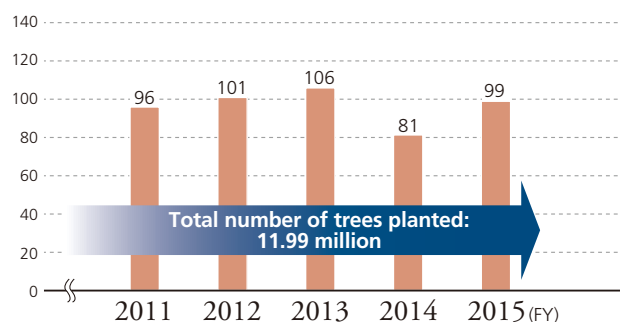
Sekisui House is promoting tree planting that is friendly to regional ecosystems based on the *Gohon no ki* project. In FY2015, 990,000 trees were planted in the gardens of newly built and

rental housing across Japan, for a total of 11.99 million trees planted since this initiative began in 2001.

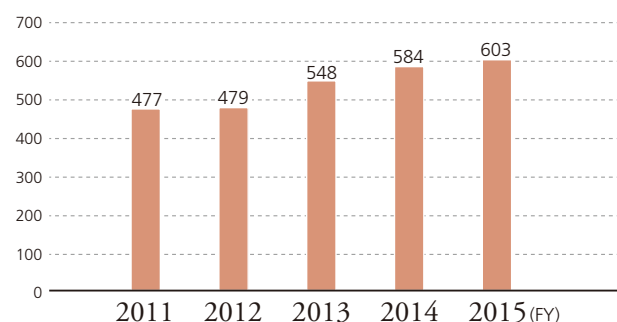
### Key performance indicators (KPIs)

Indicator	Unit	FY2011	FY2012	FY2013	FY2014	FY2015	Definition and remarks
Number of trees planted annually	Tens of thousands	96	101	106	81	99	Number of trees planted in Sekisui House gardening and greening

#### ■ Number of Trees Planted Annually (Tens of thousands)



#### ■ Exterior Construction Work Net Sales (Hundreds of millions of yen)



### Evaluation

A decrease in the number of detached housing starts is causing a decline in the number of trees planted. However, customers have come to appreciate the benefits that greenery provides—such as comfort, a distinctive appearance, and townscapes that grow more attractive over time—even for rental housing and condominiums, which has promoted an increase in tree planting and higher quality greening proposals.

As a result, exterior construction work, including greening and tree planting, has risen to ¥60 billion per year in net sales.

### Future Initiatives

The spread of highly insulated sashes have further expanded openness enabling better views of gardens from windows, which in turn enhances property value and leads to significantly enhancing homeowner comfort.

To this end, we decided to conduct a survey on the comfort greening provides homeowners, as well as its relationship to butterfly varieties in the gardens. The survey, which is unusual in Japan, will look at a wide variety of butterfly varieties in individual gardens to promote the visualization of ecosystem preservation and customer comfort.

### VOICE

NPO Japan Butterfly Conservation Society  
Yasuhiro Nakamura,  
Executive Director

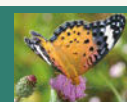


The green trees growing in gardens and parks are connected to a variety of living things. An average of more than 20 varieties of butterfly can be seen in gardens, where the greenery of the garden plays an important role for wild living things.

If *Gohon no ki* initiatives are expanded, gardens will become linked, connecting urban and suburban areas to create a green network. If these connections are widened, even more creatures will be able to exist in stable environments, enabling this network to fulfill a critical role above and beyond preservation of the ecosystem.

By simply planting indigenous species in gardens, and doing so on a wide-scale, initiatives to recover biodiversity will lead to higher awareness and concern for the natural environment of humans, I look forward to the full-scale implementation of these initiatives.

We are conducting the Garden Butterfly Survey in conjunction with Sekisui House.  
<https://butterfly-garden.jp/sekisuihouse/>



## ② Promoting the Use of Legal and Sustainable FairWood Lumber

### Activities Report

Sekisui House procures wood based on the following standards.

#### 10 Wood Procurement Guidelines

1. Source wood products from areas with relatively low risk of illegal logging.
2. Source wood products from areas without sensitive ecosystems.
3. Do not source wood products from areas where local ecosystems are seriously damaged due to large-scale logging of natural forests.
4. Do not use endangered species for wood products.
5. Minimize CO<sub>2</sub> emissions when producing, processing, and transporting wood products.
6. When logging wood products, avoid conflict with local communities and refrain from unfair labor practices.
7. Source wood products from areas of controlled logging, so as not to exceed the rate of forest regeneration.
8. Source wood products from domestic forests where well-planned forest management is in place to conserve ecosystems.
9. Source wood products from plantation forests that are managed so as to promote conservation and ecosystem development.
10. Use recyclable wood building materials.

#### Ranking wood products according to their level of compliance with the procurement guidelines

Depending on their total score, procured wood products are classified into four ranks, from high to low: S, A, B, and C. Minimally acceptable scores are set for Guidelines 1 and 4, as we place a high priority on these two items.

Total score (maximum 43 points)	Rank
34 and above	S
26 to 33	A
17 to 25	B
Below 17	C

#### Promoting the Introduction of FairWood in Consideration of Producing Area Economies

In consideration of cultivating agroforestry and other sustainable community forestry from the responsibility for potentially affecting logging areas through numerous suppliers of wood materials, we do not set individual procurement targets for the sole adoption of certified wood. However, detailed inspections of all wood indicates that certified wood (including certified processed wood) accounts for 98% of structural wood material and 59% of individual interior installation.

#### Shawood Pure Domestic Timber Premium Model Receives "Wood Design Award" from the Ministry of Agriculture, Forestry and Fisheries

Amid an increasing focus on the problem of illegal logging in countries around the world, the destruction of mountain forests in Japan where logging cannot be conducted is becoming a problem. To contribute to improving this situation, Sekisui House promotes the adoption of domestic materials. In 2013, in conjunction with the Wood Utilization Point System promoted by the Ministry of Agriculture, Forestry and Fisheries, we launched sales of the Shawood Pure Domestic Wood Premium Model using select domestic brand wood for the columns and beams.

During the period this system was in effect until September 2015, we received orders for 520 houses. In December 2015, we received the "First Wood Design Award" from the Ministry of Agriculture, Forestry and Fisheries.

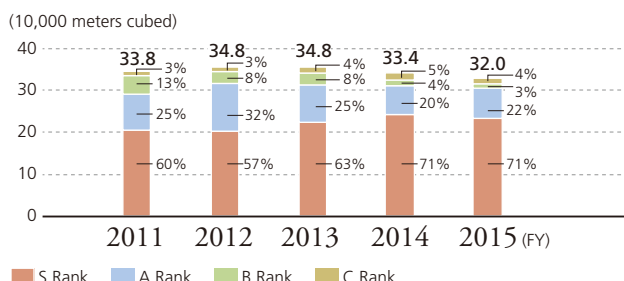


Shawood Pure Domestic Timber Premium Model

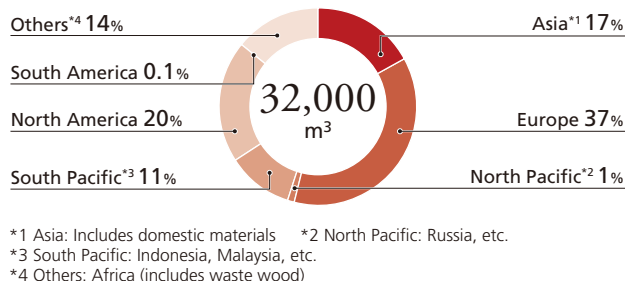
### Key performance indicators (KPIs)

Indicator	Unit	FY2011	FY2012	FY2013	FY2014	FY2015	Target	Definition and remarks
Ratio of Rank S and Rank A wood products as defined by the Wood Procurement Guidelines	%	85	89	88	91	93	95	Sekisui House survey of about 50 companies supplying main wooden building materials

#### FairWood Procurement Volume and Rank Breakdown



#### Percentage of Wood Products by Region



### Evaluation

In FY2015, the percentage of management target S Rank and A Rank wood increased two points over the previous fiscal year to 93%, demonstrating a clear increase in supplier management precision.

### Future Initiatives

Going forward, Sekisui House will continue to strengthen alliances with suppliers. We will also proactively disseminate information through the FairWood Research Institution, comprising international environmental NGOs and leading operators to make public our own accumulated data.





CSV  
Strategy

### 3 Maintain and improve technological development, manufacturing and construction quality

## Realize maximum customer satisfaction through superior quality and leading technologies

Main stakeholders: Customers, employees, partner companies (procurement, processing, distribution, and construction), factories, and residents living in neighborhoods surrounding construction sites

## Backdrop

### Construction Workers Now Fewer and Older—a Nationwide Problem Amid Demands for High-Quality Housing

The frequent occurrence of large-scale natural disasters across Japan in recent years has heightened the importance of housing's role as the cornerstone of life. However, in 2015, one scandal after another came to light in the construction industry, including the falsification of construction and product performance data having a direct impact on lifestyle safety and peace of mind. This caused anxiety to increase among consumers, whose confidence in construction quality was substantially shaken. The social responsibility of people working in the construction industry to "protect the lives and assets of residents" has

been called into question.

At the same time, one in three workers in the Japanese construction industry are aged 55 or older. As these older workers retire, the decline in the number of construction workers is expected to continue. Similarly, the shortage of workers in the transportation industry responsible for the distribution of materials is becoming increasingly serious. In light of these trends, it is critically important to recruit and train new employees while also improving the workforce retention rate.

## Approach

### Our goal

#### Creating the Highest Possible Quality for Maximum Customer Satisfaction by Leveraging Our Technological, Production and Construction Capabilities

Our goal as defined in the Sekisui House Group corporate philosophy is to meet customer needs with the highest levels of quality and technology. In collaboration with partner companies with whom we share a common destiny, we perpetually retain skilled employees and build structures that stably provide quality housing able to be

lived in and passed on to future generations providing safety, peace of mind and comfort. We aim for the highest quality in all house manufacturing processes and provide products and services that earn customer trust and satisfaction.

### Action policies

#### ① Realizing Heightened Safety, Peace of Mind and Comfort through Advanced Technologies

Sekisui House is pursuing higher levels of quality and performance in terms of basic safety and comfort, leveraging advanced technological and organizational capabilities accumulated for more than half a century. We lead the industry and will establish our product as the standard for Japanese housing.

#### ② Enhancing Production and Distribution Quality, Improving Operational Efficiency

Sekisui House promotes production line maintenance and automation for the stable provision of high-precision parts to make production more efficient and facilitate build-to-order production of various product types in small lots. We collaborate with distributors in an effort to make distribution more efficient.

#### ③ Strengthening Construction Site Capabilities through Collaborations with the Sekisui House Association

In conjunction with the Sekisui House Association (a voluntary organization comprising Sekisui House Group companies involved with construction and our partner building contractors), we make an effort to strengthen construction site capabilities by improving construction quality, communicating with customers and people living near the site and initiatives involving safety measures, clean construction sites, human resource development and work environment improvements.

## Impact of These Activities on the Company

We continuously develop new technologies from the perspective of whether or not they are useful to customers or contribute to society. Initiatives including the maintenance of equipment and systems and the retention and development of skilled human resources enable us to fulfill our mission to “protect the lives and assets of residents,”

and most importantly, to enhance the quality of production and construction. This enables us to realize customer satisfaction and amass high-value housing as stock for society. This will lead to enhanced corporate and brand value.

## Risk management

### Risk 1

#### Shortage of workers in the construction and transportation industries

##### Our response 1

We will promote production line maintenance and automation, engage in prefabrication (precutting, presetting, and partial assembly of components at the factory) and create systems that maximize labor force utilization through proper process planning and personnel allocation without excess or waste with the aim of conserving manpower and realizing efficiency and labor-reduction in production, distribution and construction at worksites. We are also making an effort to retain talented employees through training for young technicians operated by Sekisui House Training Schools, support for the development of multiple skill sets that can be deployed flexibly, maintenance of the work environment, enhanced welfare programs and a system for commending achievements.

### Risk 2

#### Quality risks associated with production and construction processes

##### Our response 2

We ensure quality in all housing manufacturing processes through observation of related laws and the establishment of our own rigorous standards. We also promote production quality risk management in conjunction with partner companies. In addition, we operate a Group-wide construction quality control system aimed at ongoing improvement activities, internal controls, the maintenance and storage of records and careful construction quality management of each and every home we build. This includes the “visualization” of quality information and other verification records using photos and the use of iPads running specialized applications for site foremen and construction managers (Sekiwa Construction, home construction companies). These initiatives aim to enhance timely construction site management and increase quality levels.

## State of Progress

### ① Realizing Heightened Safety, Peace of Mind and Comfort through Advanced Technologies

## Activities Report

#### SHEQAS Seismic Control System Certified by the Ministry of Land, Infrastructure, Transport, and Tourism

When an earthquake is transmitted to a building, it is shaken and deformed. There is a strong risk that the building deformation will be severe, damaging the structural frame, interior and exterior. Sekisui House's proprietary SHEQAS seismic control system converts seismic wave energy into heat energy to absorb building movement, and can reduce building deformation by approximately 50%. The SHEQAS damper, comprising a special high-damping rubber, maintains its efficacy through repeated earthquakes and aftershocks realizing housing in which residents can continue to live with peace of mind. In FY2015, 94% of our homes were fitted with SHEQAS.



We developed Hybrid SHEQAS, which significantly enhances design flexibility through the use of a SHEQAS Frame combining a load-bearing wall and a seismic-control wall offering the same level of seismic-control capability. This enables open plans incorporating larger windows and doors.

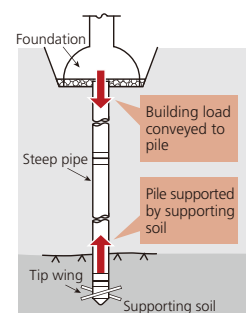
#### Airkis High-Quality Indoor Air System

Air pollution is becoming a serious problem at present. In terms of indoor air quality, from early on we focused attention on the health impact of chemical substances in our construction materials. We were the first to conduct research on healthy indoor air environments. As a result, we developed the Airkis high-quality indoor air system, which takes into consideration the fact that children are more susceptible to the impact of air pollution than adults. Using Airkis in

the homes reduces indoor concentrations of five major chemical substances to less than 50% of the guideline value set by the government. In addition to reducing chemical substances, we are also engaged in ventilation and air purification to improve the overall quality of air environments. To this end, we developed proprietary ventilation and air conditioner systems. In FY2015, 85% of our homes were fitted with Airkis.

#### Achieving Safety and Rapid Construction with “Shark Pile Method” Soil Reinforcement

Developed in 2015, the “shark pile method” is a new way to strengthen soft soil during foundation work. This method has been certified by the Minister of Land, Infrastructure and Transportation. Sekisui House made an ingenious change to steep pipe piles that are driven into the ground. The tips of the steel pipe piles were widened to increase the load-bearing capacity of each 1.5–2 times that of conventional piles. This method facilitates rapid construction as it reduces the number of piles used and time required to drive each of them into the ground, while maintaining the necessary degree of strength. This method can also be used for large-scale construction projects and the construction of four-story housing with stricter design standards. In FY2015, after switching to the shark pile method in August, we used it to create foundations for 510 homes across Japan.



Shark pile method

## Key performance indicators (KPIs)

Indicator	Unit	FY2011	FY2012	FY2013	FY2014	FY2015	FY2016 targets
SHEQAS seismic control system installation ratio (steel-framed two-story detached housing)	%	58.5	75.0	87.0	89.0	94.0	95.0
Airkis high-quality indoor air system installation ratio (steel-framed detached housing)	%	67.4	76.3	77.8	80.0	85.5	90.0

## Evaluation

Many customers opted to install the SHEQAS seismic control system, which protects during earthquakes and enables freedom in planning, as well as the Airkis high-quality indoor air system, which is the only one of its kinds offered by a housing manufacturer. In FY2015, SHEQAS was installed in 95% of steel-framed detached housing, while Airkis was installed in 85% of steel-framed detached housing. Both increased 5% compared to the previous fiscal year.

## Future Initiatives

In FY2016, we are targeting a 95% installation rate for SHEQAS and a 90% installation rate for Airkis. We have also newly developed  $\beta$  system, the world's first steel rigid-frame construction for industrial housing and  $\beta$  SHEQAS, certified by the Minister of Land, Infrastructure and Transportation. In April 2016, we launched sales of flagship model "Biena Urban Fort" as a new standard for housing.

# ② Enhancing Production and Distribution Quality, Improving Operational Efficiency

## Activities Report

### Promoted Automated Production of Main Structural Components

All five of our factories manufacture original parts including pillars, beams, exterior walls and other major housing components. As Sekisui House builds detached houses to specifications tailored to each customer, the components we use also differ from one house to another. We promote maintenance and automation of our production lines to provide precision components offering stable performance and quality while attempting to engage in the efficient and labor-saving custom manufacturing of various product types in small lots. This enables the production line to operate around the clock and the establishment of a build-to-order system for accommodating customer-specific designs. Furthermore, as the new system enables component production to be optimally timed to match the construction schedule, it helps improve efficiency in both shipping and construction.

In FY2015, we engaged in preparation for enhancements and the transition to the " $\beta$  system" automated production line in response to an increase in orders for steel rigid-frame three- to four-story construction homes.



Industry-first automated production line produces a variety of frames to enable customer-specific design

### Promoting Distribution Efficiency through Collaborations with Distributors

Housing components built at our factories are gathered at seven distribution bases throughout Japan, where they are sorted and shipped to the appropriate construction sites. We are implementing a just-in-time inventory system that allows us to adjust the schedule and quantity of component shipments on-demand to optimally meet construction schedules. Furthermore, trucks dispatched from these distribution bases make rounds to collect waste materials and tools from each construction site and bring them back to the bases. To increase work efficiency at construction sites, the distribution bases are also used for assembling some of the housing components.

In recent years, social issues such as an insufficient number of truck drivers and expansion of the remodeling and renovation business is increasing the importance of distribution efficiency. Accordingly, in FY2015, we created a distribution improvement roadmap and began working activities. Information is shared with production divisions as well as the supplies division and each office in an attempt to standardize and improve the efficiency of distribution operations. In FY2016, we will strengthen collaborations with distributors and make distribution more efficient.

## Key performance indicators (KPIs)

Indicator	Unit	FY2012	FY2013	FY2014	FY2015	Definition and remarks
Breakeven point shipment area	%	100.0	100.9	102.4	98.5	Index utilizes FY2012 as 100

## Evaluation

Orders for  $\beta$  system products grew significantly, and parts with a high production load such as structural components and exterior walls increased, resulting in a temporary decline from FY2013. However, Company-wide improvement activities strengthened production capacity while maintaining high quality, with the improvement trend continuing from FY2015.

## Future Initiatives

We are promoting automation and enhancements on production lines at all factories. In April 2016, the beam production line at the Shizuoka Factory was completed. Major repairs to the original Dyne Concrete exterior-wall component production line at the Kanto Factory will be completed and operations are scheduled to commence in August. As a result, we will realize further productivity improvements.



### ③ Strengthening Construction Site Capabilities through Collaborations with the Sekisui House Association

#### Activities Report

#### “My Idea” Construction Improvement Proposal System

My Idea is a system we started in 1988 as a way for employees and building contractor partners to submit their suggestions for improvements. Sekisui House gives recognition and support to ideas covering a range of areas, such as improving the competence of construction workers or raising customer satisfaction levels. Once a year, the company solicits ideas for practical improvements in construction methods and new architectural techniques. An impartial panel of judges rates the ideas and awards certificates for the best submissions.

The 28th edition in 2015 saw 1,388 ideas come in from across Japan. Two Gold, nine Silver, one Environmental Bronze, and 33 Bronze awards were given out.

Through this system, we have received a total of 49,851 proposals, many of which have given rise to new tools, equipment, and construction methods. Award-winning ideas are introduced in our *Tsuchioto* newsletter and on our company intranet, so they can be shared with construction sites and among our employees and building contractor partners across Japan.



Gold prize: NB exterior wall adjustment tool invention



Gold prize: Floor ink 2 dispenser

#### Cultivating Young Technicians at School and Through Seminars

Sekisui House strives to pass on technologies to young technicians through employee training to maintain and improve construction quality and ensure stable construction capabilities into the future. These efforts include Sekisui House Training Schools directly operated by Sekisui House as accredited vocational ability development schools located in East Japan (Ibaraki Prefecture), Central Japan (Shiga Prefecture) and West Japan (Yamaguchi Prefecture). Young employees of Sekiwa Construction companies and our partner building contractors receive training on technologies and skills as well as the education and etiquette necessary for adults in society with the aim of cultivating human resources able to work at the front lines of our industry. One of the aspects of this school that differentiates it from others is, in addition to the knowledge and skills required for construction, employees also study the importance of the Sekisui House corporate philosophy in terms of realizing customer satisfaction. Trainees go on to become construction technicians and managers at locations throughout Japan.

After training, employees who participated in programs at each training center continue studying to improve their techniques and skills. We offer a diverse curriculum, including foundational training, training on interiors and exteriors and other specialized subjects. Employees are able to participate in ongoing training that corresponds to their experience and skill level.

#### Key performance indicators (KPIs)

Indicator	Unit	FY2012	FY2013	FY2014	FY2015
Construction workers (foundations, construction, carpentering)	People	10,249	10,899	10,518	10,393
Educational training center and school participants (total)	People	2,208	2,294	2,385	2,480
Employees who passed the Sekisui House Senior Technician exam (total)	People	14,301	14,458	14,607	14,808
Certified Construction Masters	People	205	312	318	305

#### VOICE

##### Winning the Gold Prize at the 28th My Idea Contest (2015)

Takayoshi Abeyama  
Sekiwa Construction Kinki



I won the Gold Prize for the NB exterior wall adjustment tool, a jig for accurately and quickly adjusting the level of exterior walls. Up to now, cover plates or bars were used by two people to adjust exterior walls, so I invented an electric tool that can be used by one person. Requiring only one person do the work saves labor and is more efficient, enabling the exterior wall to be lifted with little effort. It also prevents foundation and exterior wall damage (scratches and chipping).

Going forward, I will continue to think proactively about what tools I wish I had or that would enhance convenience. I will make an effort to transform these ideas into reality to increase construction quality and satisfy customers.

#### Evaluation

In FY2015, a total of 95 employees attended Sekisui House Training Schools: 31 employees participated in the building frame exterior course and 64 employees participated in the interior construction course. The retention rate for employees still with the company five years after participating in the training is extremely high at 90%. The power of youth invigorates worksites and contributes to enhanced construction capabilities. The number of employees expressing a desire to participate in this training rises each year.

#### Future Initiatives

In line with the increasing number of training participants, we are strengthening our acceptance preparation and post-training follow-up activities. In recent years, an growing number of women have shown an interest in these training opportunities, thus we are moving forward with dormitory remodeling and rebuilding in response to these needs. We have also established an applied skills course for trainee participants scheduled to commence in FY2016.