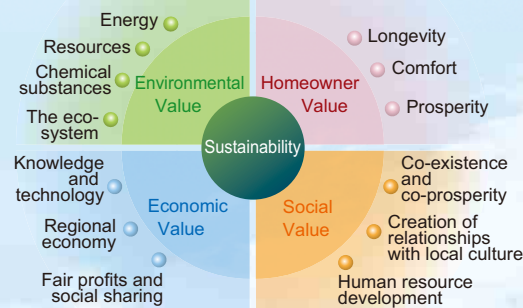


The “Green First” home is an embodiment of our “Sustainable Vision.”

For fifty years since our inception, all Sekisui House employees have been working in unison toward common goals, earned the trust of our customers and developed strong relationships with them. Over this long period of time, we have maintained our solid commitment to offering quality housing products to satisfy our customers. In the Sustainable Vision we announced in 2005, we provide a summary of our past initiatives and present our vision for the future. We will continue our determined pursuit of homebuilding focusing on “comfortable living—now and always” in order to accelerate the process toward a sustainable society.

13 guidelines based on our 4 values (enacted in 2006)



Sekisui House prioritizes an approach to homebuilding that balances the four key values of the environment, economy, society and residential homeowner needs. Through our thirteen guidelines, we hope to realize this aim as we move to improve the sustainable nature of our corporate activities going forward.

Sustainable Vision

Sekisui House firmly believes that a sustainable society is a society based on a balanced, global eco-system where all people can live in comfort in the future. In addition to contributing to the development of a sustainable society through the provision of high quality housing solutions, Sekisui House aims to become a positive generator of comfortable living environments for homeowners, the community, and the environment.



1960
Sekisui House founded

Exhibiting model houses to convince customers of the quality and reliability of our housing products

1966: Showing our model house in Japan's first general housing exhibition site

The model house exhibition gave us an innovative marketing tool, as a model house allows prospective customers to see exactly how their home would look like, and check the interior and housing equipment in advance.



Enhancing the quality of production of components for prefabricated houses

1973: Winning the excellent plant certification

Our Shiga and Kanto factories became the first in the industry to be certified as excellent plants for quality control of prefabricated homes by the Minister of International Trade and Industry. This certification was introduced in response to the urgent need to improve the quality of prefabricated houses and protect consumers' interests.



1960

Introducing prefabricated housing products with enhanced design flexibility and comfort

1961: Launching the “Type B” home in market

We introduced new high-quality prefabricated housing products, which are built with factory-produced standardized components and thus can effectively shorten onsite construction time. The “Type B” prefabricated home was the first in the industry to use a meter module and aluminum sash windows. The construction method which we developed also enabled us to drastically augment the level of design flexibility and comfort.



1970

Ensuring high construction quality through internal quality control system

1973: Establishing Sekiwa Koji Group companies

To reinforce our project accountability system, we established Sekiwa Koji Group companies in Kobe, Hanna, Shiga and South Osaka (Sekiwa Koji was later renamed Sekiwa Construction). Today, the group's network extends nationwide, and supports the high construction quality of Sekisui houses as a member of the Sekisui House Group.



1961 Shiga Factory begins its operations.

1964 Sekisui House becomes the first prefabricated housing manufacturer in Japan to be certified as a “Contractor of Houses Eligible for the Housing Loan Corporation loans.”

1964 Direct sales system is introduced to replace the conventional distributorship system.

1970 Kanto Factory begins its operations.
1973 Yamaguchi Factory begins its operations.

1962 The permanent population of Tokyo exceeds ten million.

1963 Japan Prefabricated Construction Suppliers & Manufacturers Association is established.
1964 Housing Loan Corporation's prefabricated house certification program begins.

1966 Housing Construction Planning Act comes into force.
1970 Housing Loan Corporation begins to offer loans to purchase condominiums.

We have been working to protect the lives and possessions of homeowners, while successfully meeting the challenges of the times.

We have continued to provide safe, durable and comfortable living environments under our customer-specific design flexibility concept.

Sekisui House was established in 1960 against a backdrop of strong growth in demand for housing. We were the first in the Japanese housing industry to introduce meter modules, aluminum sash windows, and the “universal frame system” that allows flexible arrangement of bearing walls. With our prefabricated housing products that provide comfortable living spaces and allow a considerable degree of design flexibility, we have continued to play a leading role in the housing industry while preparing for mass production.

With a view to implementing our “customer first” policy to the fullest, in 1964, we switched to a direct sales system from the conventional distributorship system and have since assumed full responsibility over the entire process of our business, from contracting to housing construction and after-sales service.

In this way, we have continued our efforts to offer safe, durable and comfortable housing environments.

We are striving for greater customer satisfaction with the awareness that we and our customers are in the same boat.

A company is a gathering of people and all corporate activities require cooperative work. Specifically, homebuilding undergoes many processes before a completed house is delivered to its owner, which means that we have to ensure that all the parties involved act in close cooperation if we are to gain customer satisfaction.

At Sekisui House, all employees work together in a collaborative and cooperative manner as “crews sharing the same boat,” under our underlying corporate philosophy of “love of humanity.” The Sekisui House Association is comprised of group companies and partner building contractors and also shares the basic principle of our philosophy and joins our efforts to deliver high-quality housing products to customers. Some of our initiatives have been made possible only through group-wide involvement in the entire lifecycle of housing products, such as the “zero emissions” initiative that requires cooperation between production and construction personnel; and the “Everloop” program to repurchase and remodel homes for subsequent sale, which we are promoting in cooperation with Sekiwa Real Estate and Sekisui House Remodeling.

We have continued offering housing products as social assets with everlasting value.

During the period of high economic growth, mass-produced products flooded the marketplace, which brought about material affluence, but at the same time, gave rise to various consumer problems due to inferior quality. In the 1970s, problems also emerged in the housing industry, such as defects of prefabricated houses.

Against this backdrop, we promoted various measures to offer safe, durable and high-quality housing products to our customers and increase the reliability of prefabricated houses. For example, in 1973 our factories were certified as “An excellent plant for quality control of prefabricated homes” by the Minister of International Trade and Industry, and we established Sekiwa Koji Group companies—the core of our project accountability system, and in 1979 we began earthquake-resistance testing using an actual sized home.

Japan saw an increase in energy consumption and experienced two oil crises during the 1970s, which highlighted the need to reduce energy use to conserve finite resources. During this period, the Japanese housing industry shifted its focus from solving housing shortages to improving housing quality, through amenities, design, and environmental friendliness. Sekisui House catered to the newly arising needs of society and created new values by developing new products, including the PSH-21 passive solar house and homes suitable for people with disabilities.

Addressing the energy problem by promoting the use of natural energy

1982: Launching the new model “PSH-21”

We began marketing the PSH-21 passive solar house model that uses natural sunlight and wind power for air-conditioning purposes and thus requires less energy, while providing a comfortable living environment. This product was the first in the industry to be certified as an excellent home for energy saving by the Minister of Construction in 1985.



1980

Anticipating the needs of an aging society

1981: Building Japan's first model house for people with disabilities

We undertook the construction of a model house for people with disabilities to cooperate with the “Project of the Prefectural Residents’ Council to Promote Kanagawa Tomoshibi Movement,” an initiative launched to help people with disabilities live independent lives.



- 1985 Hyogo Factory begins operations.
- 1986 The first “Lifelong” Model Home opens.
- 1987 “IS STAGE” model launched.
- 1987 Customer Center opens.
- 1988 The Rokko Island City opens for occupancy.
- 1989 The first “Sekisui House Visiting Day” held.

Building a friendly community

1977: Beginning the sale of subdivision lots in the “Common Life Osayuki” town

The rapid economic growth accelerated the inflow of population to urban areas, increased the number of nuclear family households, and resulted in a loss of community. In an effort to solve this social problem, we began selling subdivision lots in a new town, which we named “Common Life,” out of our desire to create a community where residents enjoy interactions with their neighbors.



Enhancing seismic performance to protect lives and possessions

1979: Conducting the industry's first earthquake-resistance testing using an actual sized home

We were the first in the Japanese housing industry to conduct earthquake-resistant testing using an actual sized home, in which we simulated the motions of the Miyagi earthquake that occurred in 1978.



- 1974 Sekisui House B is certified for its superior quality by the Minister of Construction under the performance certification program for Industrialized houses.
- 1976 Sekiwa Real Estate established.
- 1973 Performance certification program for Industrialized houses established.
- 1973 The first oil crisis occurs.

- 1980 Shizuoka Factory begins its operation.
- 1982 Ten-year manufacturer's warranty program introduced.

- 1979 The second oil crisis occurs.
- 1979 Act on the Rational Use of Energy (Energy Saving Act) comes into force.

- 1980 New Housing Development Project begins at the initiative of the Ministry of International Trade and Industry.
- 1981 New seismic design standards introduced.
- 1985 Vienna Convention for the Protection of the Ozone Layer adopted.



The “Green First” home is an embodiment of our “Sustainable Vision.”

Our commitment to sustainability has led us to the “Green First” model.

We will contribute to the creation of a sustainable society by offering homes that last for generations.

As our society has changed from quantity-oriented to quality-oriented, people’s needs for housing products have become more specific and diversified. Today, customers see greater value in individuality than in uniformity and universality. In the 1990s, environmental problems, which had been discussed mainly in the context of resource depletion and environmental pollution, began to take on a more multifaceted and global nature, against the backdrop of the growing threats of global warming, biodiversity loss and ozone layer destruction.

It was under these circumstances that we announced our Environmental Future Plan for eco-friendly management in 1999—a first in the industry. Following this plan, we announced our Sustainable Vision in 2005, in which we declared our determination to prioritize sustainability in conducting corporate activities and promote homebuilding in a manner that balances four key values: the environment, society, economy and residential homeowner needs. In this way, we have been working for environmental conservation by way of meeting our obligations to society, while striving for greater customer satisfaction by

offering a more comfortable living environment and enhancing basic housing features such as seismic resistance, durability and thermal insulation capacity.

It is our responsibility as an Eco-First Company to promote eco-friendly housing.

To put our Sustainable Vision into practice, we have taken various measures, for example, drawing up an Urban Development Charter, developing SHEQAS, our proprietary seismic vibration absorption system, and launching the Everloop program to repurchase and remodel homes for subsequent sale. These efforts earned us the prestigious Eco-First Company designation in 2008. In fact, we were the first housing manufacturer in Japan to be awarded this title. As a leader of the housing industry, we are obligated to meet the high expectations of society. In 2009, we began marketing our “Green First” line of eco-friendly homes, a culmination of years of our homebuilding efforts which bring comfort, economic efficiency and environmental friendliness to homeowners. We have since been making company-wide efforts to promote sales of the Green First model.

Creating better housing through cooperation between research personnel and residents

1990: Establishing the Comprehensive Housing R&D Institute

This institute was established as part of the commemoration of the 30th anniversary of Sekisui House. Here, participatory style research is underway to explore new lifestyles.



1993 Cumulative total of houses we have built since our inception

Combining future-oriented environmental technologies with our housing products

1997: Launching the Solar Σ.A model onto the market

It was when environmental awareness was not as acute as today in society that we began selling our Solar Σ.A model equipped with photovoltaic power generation system as standard. Our proprietary roof-integrated photovoltaic power generation system won high praise which helped us greatly in sales of this system.



Committed to ensuring a healthy air environment to address the “sick house syndrome” problem

2001: Applying the strict Fc0 and E0 standards for formaldehyde emissions to all our interior finishing materials

In our efforts to ensure healthy living for all, we introduced the strictest emissions standards to conserve air quality even before we were required to take measures for the protection of air quality under the Building Standards Act.

1990

The 1-million-home milestone is achieved.

2000

Incorporating cutting-edge technologies to reduce environmental impacts, whilst creating a comfortable living environment

1996: Launching the Centrage Σ model onto the market

Providing a high-performance heat insulation system and insulating multi-layered glass as standard, Centrage Σ is characterized by its spacious open design and energy saving efficiency. Multi-layered glass and insulated aluminum sash windows were made standard on all our new build detached houses in 2000, and so were the next-generation energy saving features in 2003. In this way, we have expanded the scope of our efforts to ensure a balanced approach to comfortable living, economic efficiency and environmental friendliness.



Creating a pleasant housing environment that is also attractive to other living creatures and conserving biodiversity at the same time

2001: Beginning activities under our “Gohon no ki” landscaping concept

We offer a green living environment that allows residents to enjoy interactions with birds and butterflies by planting native and indigenous tree species in home gardens. By creating green space that imitates the traditional Japanese *satoyama* landscape, we also aim to conserve local biodiversity.



Promoting resource recycling to the fullest, by leveraging the Sekisui House Group’s ability to exercise control over the entire lifecycle of our housing products

2002: Achieving zero emissions at all our factories

Zero emissions were achieved at all of our factories in Japan. We also extended our resource recycling efforts to new build construction sites in 2005, After-sales Service Division in 2006 and remodeling project sites in 2007.



1995 SHAWOOD housing business begins.
1997 The Housing Dream Factory (a large-scale experience-based facility) opens.
1997 Tohoku Factory begins its operations.

1999 U-trus system launched.
1999 Next-generation energy saving features are made standard on the GRENIER-DYNE model.
1999 Environmental Future Plan announced.
1999 Environment Promotion Department established.

2002 Universal design standard established as a first in the industry.
2003 Next-generation energy saving features are made standard on all new build detached houses.
2003 Roof tile photovoltaic power generation system launched onto the market.
2003 Seismically-isolated home launched onto the market.

1990 Action plan for global warming prevention established.
1992 Earth Summit held in Brazil.
1992 New Energy Saving Standards announced.

1993 Environmental Basic Act comes into force.
1994 Project for Development of Housing that Brings Greater Value to Life, launched by the Ministry of International Trade and Industry.
1995 The Great Hanshin-Awaji Earthquake occurs.
1997 The Kyoto Protocol adopted.

2000 Recycling-oriented housing technology development project, started by the Ministry of International Trade and Industry.
2000 Housing Quality Assurance Act comes into force.
2001 Law on Promoting Green Purchasing comes into full force.
2002 Construction Materials Recycling Act comes into full force.



Introducing the latest environmental technology to our housing products

2005: Adopting fuel cells for the first time in the Japanese industry in our subdivision lots for sale in Tokyo



Placing sustainability at the core of our corporate activities
2005: Announcing the Declaration of Sustainability

We declared our determination to carry out corporate activities in a manner that balances four key values: the environment, society, economy and residential homeowner needs, thus contributing to the creation of a sustainable society.

Building communities that last for generations as assets of society

2005: Formulating the Urban Development Charter

We are committed to building communities that grow increasingly attractive over time.

Contributing to the preservation of the global environment while offering comfortable standard of living

2009: Launching the "Green First" line of eco-friendly homes

The "Green First" home brings to customers a high level of comfort, economic efficiency and environmental friendliness in a manner that best suits individual site conditions and lifestyles. We will promote the sales of this product as the standard home of a sustainable society.



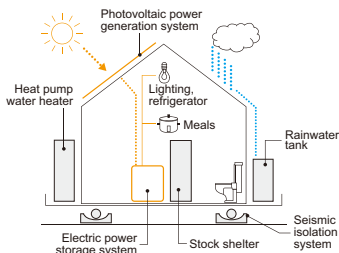
2010
Cumulative total of houses we have built since our inception

The 2-million-home milestone is achieved.

2010

Ensuring self-sustained lives during ordinary times and in times of emergency
2004: Launching energy-saving and disaster-resistant homes onto the market

We introduced a new disaster-resistant home that is equipped with advanced features to secure living space, water and food, and energy and thus allows a self-sustained life even after a disaster occurs. A photovoltaic power generation system and rainwater tank help residents live a pleasant eco-life during ordinary times.



- 2004 Sekisui House Remodeling Co., Ltd. established.
- 2004 Sekisui House is authorized to dispose of construction site waste across multiple prefectures by the Ministry of the Environment.
- 2005 CSR Committee established.
- 2005 CSR Office established.
- 2005 Action Plan 20 initiative launched to achieve the commitments of the Kyoto Protocol.

- 2005 The Kyoto Protocol takes effect.
- 2006 Basic Act for Housing comes into force.

Creating a new market of revitalized homes by shifting the focus from flow to stock
2007: Launching the Everloop home repurchase program

As part of our efforts to reuse valuable resources, we buy back from Sekisui House owners their homes, and completely renovate them for resale. Renovated homes are covered by our warranty that is equal in substance to that applied to our new builds. Therefore, new owners can move in to the renovated home without anxiety.

- 2006 Sustainable Design Laboratory opens.
- 2006 Action Plan 20 initiative commended by the Minister of the Environment for its contribution to the prevention of global warming.
- 2006 Global Warming Prevention R&D Institute established.
- 2006 Human Resources Sustainability initiative begins.
- 2006 Diversity Development Team formed.
- 2007 Zero emissions goal achieved in four areas: factories, new build construction sites, after-sales service sites and remodeling project sites.
- 2008 Carbon Neutral House equipped with fuel cells for residential use launched onto the market.
- 2008 Sekisui House becomes the first government-certified Eco-First Company in the construction and housing industries.
- 2008 Sekisui House cooperates in building the Zero Emissions House for the G8 Hokkaido Toyako Summit.

Launching the FairWood procurement initiative to ensure sustainable wood use

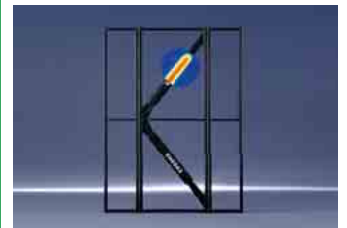
2007: Establishing internal Wood Procurement Guidelines

In cooperation with our business partners and environmental NGOs, we are promoting eco-friendly wood procurement for multiple purposes: discouraging illegal logging, conserving the biodiversity and local communities of logging sites, and preventing global warming.

Improving housing safety with our government-accredited seismic resistant structure

2007: Introducing the SHEQAS seismic vibration absorption system

The SHEQAS system is based on a technology of our own development that converts seismic energy into heat energy and absorbs building movement. Also, the system largely reduces building deformation, and thus can prolong the life of housing products.



- 2010 "Smart house" demonstrative experiment begins.
- 2010 IC tag-based next-generation zero emissions system introduced nationwide.
- 2010 "New B60 System" structural frame developed and announced.
- 2010 "Gururin Dannetsu" high-efficiency heat insulation system developed and announced.
- 2010 "Slow Living" design concept for a more comfortable lifestyle announced.
- 2011 Sekisui House begins to implement modal shift for transport of iron frames.



- 2008 The Ministry of the Environment launches the Eco-First program.
- 2008 High-quality Stock Housing (SumStock) Promotion Council established.
- 2009 The national government launches the Long-term Quality Housing Certification Program.

- 2010 Challenge 25 Campaign begins.
- 2010 The tenth meeting of the Conference of the Parties to the Convention on Biological Diversity (COP10) convened.
- 2011 The Great East Japan Earthquake occurs.

The “Green First” home is an embodiment of our “Sustainable Vision.”

We will continue concerted efforts toward the creation of a sustainable society by focusing on our “Green First” concept.

Our “Green First” model is constantly evolving. With this product, we will continue to cater to the demand of the times.

During 2010, we successfully reduced CO₂ emissions from houses, which is mainly attributable to our “Green First” eco-friendly home characterized by outstanding comfort, economic efficiency and environmental friendliness. To be specific, we achieved a 49.4% reduction in CO₂ emissions from the 1990 level. The Green First home is not only energy-efficient, but also capable of producing energy with its photovoltaic power generation and fuel cell systems. Orders for the Green First houses account for 70.6% of all the orders received for new build detached houses. As well, 19% of the orders for low-rise apartments for leasing are for the “Sha-Maison Green First” model that is also equipped with photovoltaic power generation system.

We will remain committed to working towards the creation of a sustainable society while addressing the needs of customers and society by promoting eco-friendly homebuilding. We believe that by doing so, we will be able to meet our obligations to society to create a better tomorrow.

- Safety, peace of mind
- Homeowner health

Comfort

Comfortable living
—now and always

3 Homeowner Benefits

Economy
Economical lifestyle

Eco-friendly
Living in harmony with nature

- Long-term Quality Housing

- Utility cost reduction

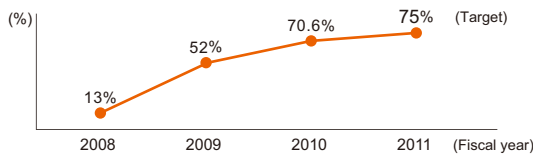
- Reduction in CO₂ emissions
Zero emissions

- “Gohon no ki” landscaping concept

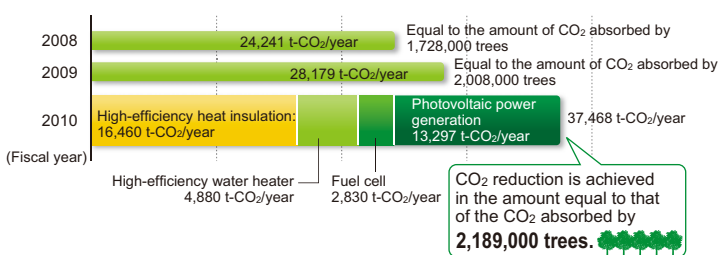


2011

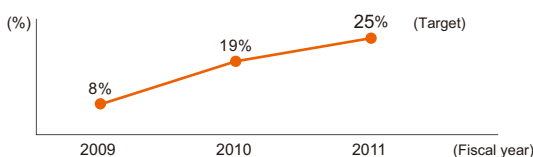
■ Ratio of the “Green First” model to all the new build detached houses



■ Amount of reduction in CO₂ emissions from new build detached houses



■ Ratio of the “Sha-Maison Green First” model to all the low-rise apartments for leasing



Social issues to be addressed

Response to the needs of the aging society and falling birth rate

Use of energy without depending on fossil fuels

Use of sustainable forest resources

Preventing global warming



Spreading the use of photovoltaic power generation and fuel cell systems
We are promoting the use of the "Green First" features in our new build detached houses, the "Sha-Maison" low-rise apartments for leasing, and condominiums for sale. We are also striving for reduction in CO₂ emissions through our eco-friendly housing remodeling program.



Promoting the use of "Gururin Dannetsu" heat insulation system
This system allows us to achieve greater comfort and energy saving efficiency by installing heat insulation materials in ceilings, walls and floors in our own original way so that heat insulation effect extends to the entire home smoothly and efficiently.



Joining demonstrative experiments of smart houses
In our effort to facilitate the development of housing products capable of producing energy instead of consuming it and launch such products in the market as quickly as possible, we have been engaged in various "Japan's first" and "world's first" projects, which are geared towards a low-carbon society.

Leading the Challenge 25 Campaign

As a leading housing manufacturer in the industry, we have joined a new nationwide movement to prevent global warming. We will continue our group-wide efforts to spread our "Green First" concept and promote remodeling in a manner to enhance the ability of houses to save and produce energy.

Making the Carbon Neutral House features our standard

We take positive measures to promote the sales of the Carbon Neutral House model that is equipped with photovoltaic power generation and fuel cell systems as standard and thus emits no CO₂. (This goal is expected to be achieved in fiscal year 2050.)

Ensuring healthy and comfortable living



Promoting the Chemicare design
We have continued to participate in the Chemi-less Town project (demonstrative experiments using prototype houses), an initiative launched to reduce the use of chemical substances in houses. We will promote the use of our Chemicare design to protect children (who usually spend longer hours at home than adults) from being affected by chemical substances.



Encouraging the "Slow Living" design concept
In our "Slow Living" housing design, we provide an open space between the outer and interior areas out of our desire to slow the pace of life. We propose ways to enjoy a pleasant life based on our research on factors that contribute to comfortable living.



Focusing on the "Smart Universal Design" concept
We are positively promoting our "Smart Universal Design," which combines the advantages of universal design that provides safety, reliability and ease of use without compromising outer appearance, with sophisticated space design and a sense of pleasantness. (Our "Smart Universal Design" won the Good Design Award 2010.)

Developing "in-home health management support system" for the elderly

We are engaged in R&D* of an "in-home health management support system" that assists elderly people in maintaining their health at home with ease by use of a communicative robot technology (RT) system.

*The R&D project is commissioned by the New Energy and Industrial Technology Development Organization (NEDO), and Sekisui House works with the Chiba Institute of Technology in conducting the project.

Protecting biodiversity



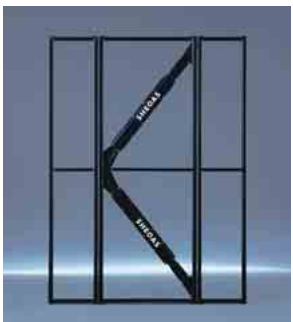
Carrying out a beautification project under the "Gohon no ki" landscaping concept
We are striving to promote environmentally conscious living and help expand ecosystem network through our *Gohon no ki* landscaping concept, which aims to enable harmonious coexistence with surrounding nature.

Planting 1,000,000 trees a year
We are aiming to plant 1,000,000 trees a year to create a green living environment where people can enjoy a comfortable, satisfying life.



Promoting FairWood procurement
We continue our efforts to enhance the level of FairWood procurement in cooperation with our domestic and overseas suppliers and environmental NGOs. By FairWood, we refer to eco-friendly and socially-fair wood products, such as wood products from certified forests and Japanese wood products.

Prolonging the life of housing products



Extending the life of houses by our earthquake-resistant, seismic-dampening and seismically isolated structures
We will further improve our earthquake-resistant structure that adds to the durability of a building and prevents it from collapsing; the seismic-dampening structure that reduces shakings of buildings by dampening earthquake ground motion energy; and seismically isolated structure that separates the building from earthquake ground motion.



Promoting the Everloop program to repurchase and remodel homes for subsequent sale
We are implementing the "Everloop" program, making the best use of the durable structure of our housing products that age with almost no loss of quality.

Enhancing the level of resource recycling through our zero emissions initiative

We are expanding our R&D efforts to develop new recyclable materials and continue to play a leading role in the zero emissions initiative of the housing industry.

Building towns that successive generations can call their home by offering pleasant living environment and communities

We will continue working to build towns where greenery grows year on year and helps protect biodiversity in step with the maturing of the towns.



Promotion of efforts toward biodiversity protection



Creation of high-quality housing stock by increasing the lifespan of houses



Revitalization of communities



Accelerating the process toward the practical use of the smart house concept in anticipation of housing and lifestyles of the near future

With an aim to “make home a venue to produce energy,” we are promoting several advanced projects toward the creation of a low-carbon society.

In order to accelerate the shift to natural energy and enjoy the benefits of state-of-the-art energy producing/saving systems, and communication/information networks that continue to evolve, we have been conducting R&D on housing that can accommodate these advanced features and have been collaborating with different industries. To fulfill our responsibility as a housing manufacturer, we are engaged in several projects in areas of new environmental technologies such as smart networks and smart houses under partnership with the national government and other industries. In doing so, we are striving to create a living environment suited to a sustainable future.



“Kankan kyo” prototype wooden house is built in the Yokohama Minato Mirai 21 district (SHAWOOD model). Total floor area: 266.28 m²



We measure the degree of comfort and determine how the home's life can be prolonged.

We conduct testing of the communication standards for exchanging data between the home and the electric car.

Participating in the Smart Network Project, an initiative commissioned by the Ministry of Internal Affairs and Communications

Communicating the excellence of the Japanese smart house technology to the world and offering the comfort of new future-oriented housing based on the “Kankan kyo” prototype house which integrates our “Green First” concept and cutting-edge network technology



The Smart Network Project was adopted by the Ministry of Internal Affairs and Communications in June 2010 to conduct demonstrative experiments for the development of communication standards, thereby accelerating the process toward the creation of a low-carbon society, supported by electric vehicles and the smart grid

(next-generation power distribution grid) to be deployed in the future. This project was joined by four managing companies—NTT DOCOMO, NEC, Sekisui House, and NAMCO BANDAI Games—and eight other companies, which together conducted demonstrative experiments. Sekisui House undertook the building of the Kankan kyo all-electric Green First prototype house in the Yokohama Minato Mirai 21 district and examined how much CO₂ emissions could be reduced by the “centralized home maintenance log system,” (a device that can prolong the life of a home), and by a sensor system designed to ensure effective use of natural energy.

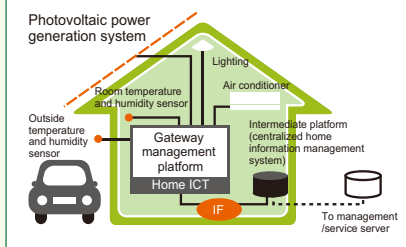
The project site was opened to the public in conjunction with the APEC Summit held in November 2010 in Yokohama, to publicly communicate the ideal future lifestyle and the comfort of next-generation housing.

(Experiment period: from November 2010 to March 2011)

*The project site will be open to the public until March 2012. If you wish to visit the site, please apply at the following website.
<http://www.sekisuihouse.co.jp/snpj-kankankyo/>

“Home/EV Network” Group’s demonstrative experiment

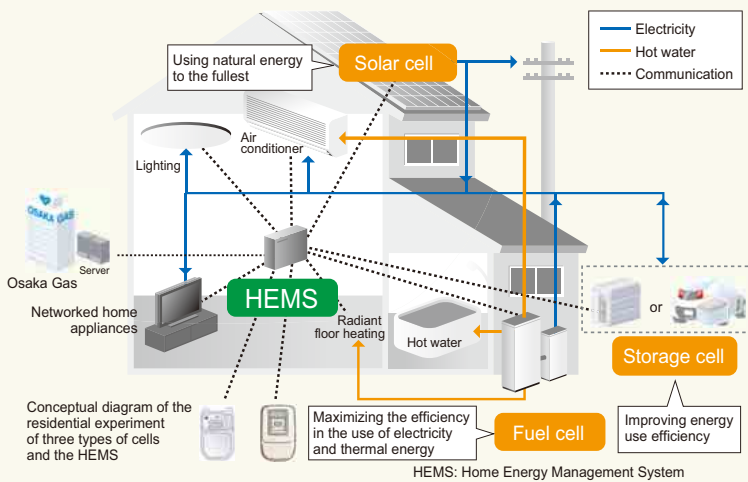
Sekisui House undertook the testing of the integrated in-house network system from the viewpoint of a resident.



The sensor allows residents to check and optimize power consumption within the house. Residents can control the room environment using a cellular phone.



The home controller makes energy information visible and controls housing equipment.



◀HEMS display (example)
The display shows the energy information of the household such as the amounts of electricity generated, stored and purchased; amount of hot water in storage;

as well as the eco-energy ratio that measures the efficiency of energy use. In this way, the HEMS encourages the household to save energy and verifies the result of its energy-saving efforts.

Launching the next-generation smart house model as a first in the Japanese detached housing market

Building houses equipped with three types of cells in the “Low-carbon Town”

We built the “Green First” eco-friendly, next-generation smart houses in “Eco Life Square Mishima Kiyozumi” in Mishima City in Shizuoka Prefecture in cooperation with Shizuoka Gas. Eco Life Square Mishima Kiyozumi is a low-carbon town where all the twenty-two houses are provided with smart house features, namely the *ENE FARM* fuel cells for residential use, solar cells, and HEMS (ECO management system). Some of the houses we built in this town are also equipped with lithium storage cells for residential use and serve as a model for “local energy production for local consumption.” We are the first company in Japan to sell detached houses equipped with the three types of cells (fuel, solar and storage cells for residential use) and introduce CO₂ emissions trading in the residential sector.

We built and sold seven houses out of the twenty-two houses in the Eco Life Square Mishima Kiyozumi. (Experiment venue: Mishima City in Shizuoka Prefecture/Construction completed in March 2011)



Energy saving efficiency is tested on the “Green First” houses designed to withstand a cold climate.

The closed grid is powered by natural energy (wind and photovoltaic power generation).



Engaged in the world’s first community-wide residential experiment of smart grids powered by natural energy

We have started participating in an experiment of wind power generation with storage cells on a wider scale

Currently, the world’s first demonstrative experiment of smart grids powered by a wind power generation plant and equipped with large-capacity storage cells is underway in Rokkasho-mura, Kamikita-gun in Aomori Prefecture, led by Japan Wind Development. As a partner of Panasonic Electric Works, we have participated in this experiment to determine the efficiency of the smart grid system powered mostly by natural energy, and built the “Green First” houses designed to withstand a cold climate. We are examining to what extent these highly airtight and insulated houses, assisted by the HEMS, can reduce energy consumption and respond to energy needs, while conducting surveys and taking necessary measures to achieve an optimal balance between the “needs on the side of the electricity supplier” and the “comfort on the side of the electricity consumer (residents).”

(Experiment venue: Rokkasho-mura, Kamikita-gun in Aomori Prefecture/Experiment period: from September 2010 to July 2012)

Implementing Japan’s first community-wide “Smart Energy House” experiment

We are engaged in Japan’s first three-year residential experiment of carbon neutral living to put smart energy technology into practical use by 2015.

We are implementing Japan’s first residential experiment of the Smart Energy House jointly with Osaka Gas. This house employs the latest technologies, such as a photovoltaic power generation system, solid oxide fuel cells (SOFCs), lithium cells for residential use, and HEMS/information technology, and is based on our “Green First Premium” model that uses both gas and electricity. The Smart Energy House brings greater comfort to residents while reducing energy consumption by achieving high efficiency in electricity and heat management (production, storage and use). In conducting this experiment, we aim to establish state-of-the-art energy management and control technology that enables the house, along with an electric car, to achieve zero net CO₂ emissions.

(Experiment venue: Oji-cho in Nara Prefecture/Experiment period: from February 2011 to March 2014)



New challenges for homebuilders and expectations toward the spread of eco-friendly homes



Dr. Takashi Akimoto
Professor, Architecture and Building Engineering Department
College of Engineering
Shibaura Institute of Technology

[Dr. Akimoto specializes in construction equipment, especially air-conditioning devices, as well as thermal and air environments. As an expert in environmental-impact-reducing technologies and next-generation construction equipment, he serves as a member of many important committees and is a lecturer and writer.]

The Great East Japan Earthquake inflicted devastating damage. Especially, the subsequent nuclear power plant incident gave rise to serious consequences that affected the whole of Japan. The electricity shortages caused by the earthquake have highlighted the importance of introducing distributed energy source systems, especially the smart grid system, and developing technologies to use renewable energy under the national energy policy. Sekisui House has continued to play a leading role in the development of next-generation housing. For example, they have achieved great success in their attempts to combine Japanese traditional culture with a variety of technologies that bring greater comfort to daily lives in their demonstrative experiments conducted in the Sustainable Design Laboratory in Kunitachi City in Tokyo and in the “Kankan kyo” prototype house in the Yokohama Minato Mirai 21 district. The technical excellence they have fostered over the years enables them to steadily launch new eco-friendly housing products equipped with photovoltaic power generation and fuel cell systems that are widely accepted in today’s society. I hope Sekisui House will promote a well-balanced approach to meet the new challenges with these innovations and continue persistent efforts to make eco-friendly homes more widely available in society.



Chemi-less Town Project

Conducting joint research to offer healthy housing to future generations and improving indoor air quality through industrial-academic collaboration

Though the Japanese Building Standards Act was amended in 2003 to reinforce control over formaldehyde emissions, sick building syndrome still remains a serious threat to human health, especially for people with allergies. We recognized the importance of improving indoor air quality and started taking measures to reduce formaldehyde emissions prior to the amendment of the Building Standards Act. In 2007, we established our own chemical substances guidelines, and have since been leading the industry in efforts to reduce volatile organic compound (VOC) emissions from building materials.

In 2007, we participated in the Chemi-less Town Project led by Chiba University to develop homes free from sick building syndrome and promote the spread of such homes.

Chemi-less House test home built for the demonstrative experiment (Outer appearance and interior)



Promoting research efforts with the belief that by reducing chemical substance emissions, we can directly contribute to protecting people against diseases.

Our aim in participating in the Chemi-less Town Project is to conduct R&D from the perspective of preventive medicine and develop a model town that minimizes the use of chemical substances, thereby preventing the development of sick building syndrome that can be controlled only by symptomatic treatment. In this project, we built the “Chemi-less House” test home on the premises of the Kashiwa-no-ha Campus of Chiba University where we are engaged in joint research with the university.



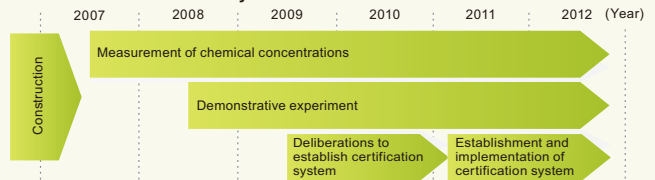
Testing and selection of building materials

*Chemi-less, Chemi-less House, Chemi-less Town are registered trademarks of the Center of Environmental Health Science for Future Generations (NPO).

Cooperating with a wide range of stakeholders to protect the health of children

Our “Chemi-less House” test home minimizes the use of chemical substances in consideration of the health of unborn babies and children who are more vulnerable to environmental impacts than adults. In this project, manufacturers of houses and building materials as well as medical personnel are jointly engaged in research. In building the test home, we examined chemical substance emissions from interior finishing materials as well as more than 200 types of building materials, including branderings, adhesives and heat insulation materials, and selected materials that met strict standards. We also regularly measure airborne chemical concentrations in the home.

Operational flow from demonstrative experiment to establishment of the “Chemi-less Certification” system



In developing a standard for harmful chemical substance emissions, we should focus on unborn babies who are the most susceptible to their impacts.



Dr. Chisato Mori, M.D.

Professor, Graduate School of Medicine Chiba University

[Dr. Mori is specialized in preventive medicine by means of environmental improvement. He studies the impact of environmental pollution on unborn babies, and explores improvement measures to prevent potential diseases.]

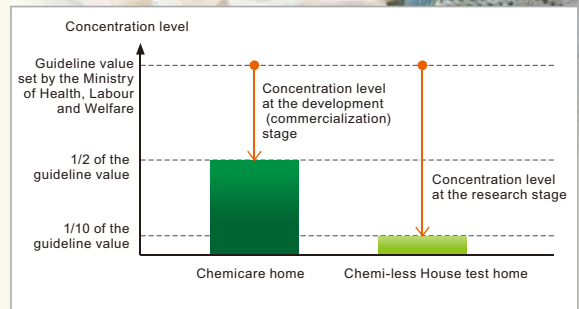
While the current law only regulates emissions of formaldehyde and chlorpyrifos as a means to prevent sick house syndrome, a great many other VOCs are present in indoor air. We see great difficulties in taking effective measures against these chemical substances because of the individual variations in the kind of chemical substances that cause allergic reactions and also in the level of susceptibility to chemical substances. For this reason, I propose regulating chemical substance emissions focusing on unborn babies who, at that stage of development, are more susceptible to the impacts of such substances than the rest of the life stages. By doing so, I believe most adults, including those with high susceptibility to certain chemical substances, can avoid the risk of developing sick building syndrome. Purchasing a house may be one of major goals of life for many people. However, we must not be satisfied with having our own house; instead, we should be more cautious of the house's potential impact on human health. Sick building syndrome, once developed, is very difficult to treat. So it is of critical importance to take preventive measures.

Reducing the VOC amount to the level far below the guideline value during the experiment, which made our test home the first detached house that was awarded the “Chemi-less (Prototype) Certification”

During the demonstrative experiment, we measured the levels of 116 chemical substances quarterly to check seasonal changes in the concentration of interior airborne volatile chemical substances. As a result, it was found that airborne total volatile organic compounds (TVOCs) in the bedroom, living room and kitchen of the test home remained at the constant year-round low level, less than one tenth of the guideline value (400 µg/m³) set by the Ministry of Health, Labour and Welfare. Consequently, our test home was awarded the “Chemi-less Certification” by the Association for Promotion of Chemi-less Town (NPO) in October 2009, becoming the first prototype detached house with sick building syndrome preventive measures to be given this award.



■ Sekisui House's guidelines for concentration of chemical substances



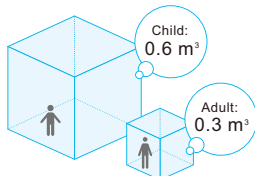
Developing the “Chemicare design” based on the results of the demonstrative experiment

■ **Developing the “Chemicare design” focusing on children who are more vulnerable to chemical substances than adults**

In November 2009, we began sales of the Chemicare line of homes, a housing product designed to maintain a healthy indoor air environment based on the results of the Chemi-less Town Project.

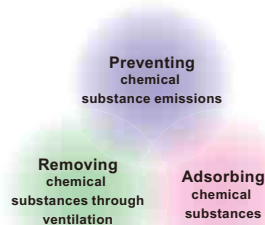
Everyday, we take in more air than any other substance: an average adult takes in about 15 m³ of air a day, while a child takes in about 9 m³, which corresponds to 0.3 m³ and 0.6 m³ per 1 kg of body weight respectively. This means that a child takes in about twice as much air as an adult. Our Chemicare home complies with our own guidelines for five chemical substances (formaldehyde, toluene, xylene, ethylbenzene and styrene), which set allowable concentrations of these substances at a level more than 50% less than the guideline value of the Ministry of Health, Labour and Welfare to protect children who are at a greater risk if exposed to these substances than adults. The Chemicare home is built with materials that meet these strict guidelines. The home also uses materials to adsorb formaldehyde in its plastered walls, tiles and ceilings, while our proprietary ventilation system combined with air-supply fans in the children’s room, bedroom, living room and dining room ensures a healthy air environment.

■ **A child needs about twice as much air as an adult per 1 kg of body weight.**



Source: “Guidelines for Chemical Substances to Protect Health of Children,” Bureau of Social Welfare and Public Health of Tokyo Metropolitan Government

■ **Features of Chemicare homes**



■ **Measuring chemical substance concentrations using a method specified by the Ministry of Health, Labour and Welfare and issuing an “Air Quality Certificate” when delivering the home to customer**

Built with materials that meet our strict guidelines, our Chemicare home meets the chemical substance standards at the design stage. In addition to this, we take air in the living room and the children’s room upon completion of a home, have the air analyzed by a public laboratory, and issue an “Air Quality Certificate” that shows the results of the analysis to the customer when delivering the home.



Air is taken upon completion of a Chemicare home.



The air is analyzed by a public laboratory.



An “Air Quality Certificate” is issued.

■ **Promoting the Chemicare design nationwide**

The Chemicare design was developed as part of our efforts to promote our “Green First” line of houses. Sekisui House homes with the Chemicare design sold well in the Community Visiting Days held during fiscal year 2010.



We are developing a community of Chemicare homes in Kazusa no mori Chiharadai (Chiba Prefecture).

*It should be noted that the Chemicare home is designed to maintain indoor air environment that does not harm human health, and there can be no assurance that it will improve one’s health or keep one healthy.



Developing business overseas

Addressing the needs of the global market with our high-quality housing products and environmental technologies to spread our sustainable design concept

Since our inception, we have continued tireless efforts to develop high-quality prefabricated housing, advanced energy producing and saving technologies and resource recycling technologies, all of which have been highly recognized internationally and opened up opportunities for us to enter the overseas business market. Partnering with local developers and builders who agree with our home building policy, we have been implementing several projects in Australia, the U.S. and China to create sustainable homes and communities in a manner that harmonizes with the local climate and culture.



Creating the Australian version of *satoyama* under our “*Gohon no ki*” landscaping concept.

Camden Hills town in a beautiful green environment surrounded by a golf course (Artist’s rendering)

[Australia]

In our serious efforts to do business overseas, we first advanced into the Australian market. Currently three projects are underway in Wentworth Point, Camden Hills and Ripley Valley in the suburbs of Sydney and Brisbane on the east coast of Australia. In these projects, we are going to offer about 2,000 detached houses, 2,000 condominium units, and subdivision lots to build about 2,600 houses in a ten-year period, with the total sales expected to amount to approximately 200 billion yen. In Camden Hills in the suburbs of Sydney, the Australian version of *satoyama* is being developed and a community is under construction in a manner that harmonizes with the local climate and culture. Under our *Gohon-no-ki* landscaping concept, we are planting many local tree species to create a *satoyama* area, which will be visited by small animals and birds, and, with its water-retaining capacity and ability to send pleasant breezes to the residential quarter, will add to the value of the local environment, while providing an ideal venue to educate children about the environment.

The community will be provided with barbeque spots and jogging trails to attract residents and also with a “green linkage,” a promenade that allows residents to take a comfortable walk to visit neighboring residential quarters.

In 2010, we started the construction of two display homes that adopt our new “*n x Yutaka*” (*n* times richer) design concept.* Under this concept, we aim to create a community in which the residential area expands outward from the green space at the center.

*Our design method to create a sense of unity between a residential quarter and nature by arranging houses and trees in a manner that emphasizes linkage between the gardens (borders) of neighboring houses and the surrounding environment.



A display home equipped with a roof tile photovoltaic power generation system



Wentworth Point site where about 2,000 condominium units are offered for sale

Applying zero emission methods to the new factory in Australia

Precutting timbers at a factory is an effective way to ensure quality and reduce waste at construction site. However, even if timbers are precut at a factory, they still have to undergo many manual processing steps at construction site, and in some cases, generate a huge amount of waste, thus causing a problem. With our expertise and technical excellence that has enabled us to achieve zero emissions at our domestic factories, we will encourage sustainable activities at both production and construction sites.



A factory was opened in the vicinity of the Camden Hills construction site to precut timbers.

Integrating a green *satoyama* environment with the cultural landscape of China

[China]

In China, we will construct a factory in Shenyang for steel components and housing equipment, in order to assist in supplying high-quality prefabricated housing to various parts of China. Our plan is to create a *satoyama* landscape by increasing green space in line with our idea of community development. Each residential unit will be furnished with high-performance housing equipment and designed to have a lot of sunshine and good ventilation. In this way, we will provide high-quality housing complete with comfort, economic efficiency and environmental friendliness.



Low-rise apartment is built with our original construction technique. (Artist's rendering)



We will undertake large-scale community development. (Artist's rendering)

Adding value to communities with our own housing development concept and contributing to biodiversity conservation

[The U.S.]

As a community developer, we are participating in the "One Loudoun" complex development project in Washington D.C. and its vicinity and the "Cinco Ranch" large-scale housing land development project in the western part of Houston. In these projects, we introduce the concepts of "Japanese-style community development" and "Sekisui House-style community development" to bring additional value to the conventional American-style urban development. Under our *Gohon no ki* landscaping concept, we are striving to restore ecological networks and conserve local biodiversity by planting indigenous tree species, while actively preserving and transplanting existing trees. By doing so, we hope to ensure that local culture and memories embedded in the places will be passed down to future generations, thus developing mature communities with their own tradition and history.

By incorporating various elements of the Japanese traditional "road space" concept in the above development projects, we will create vigorous communities and improve their value as social assets as part of our efforts toward a sustainable society.



More than 1,200 subdivisions to be developed by the "Cinco Ranch" project (Artist's rendering)



Pleasant townscape to be created by the "One Loudoun" project (Artist's rendering)



By preserving and transplanting existing trees, we promote community development in a manner that protects the long-held value of the community for the future.