

# Creating Shared Value (CSV) by Daiken Business

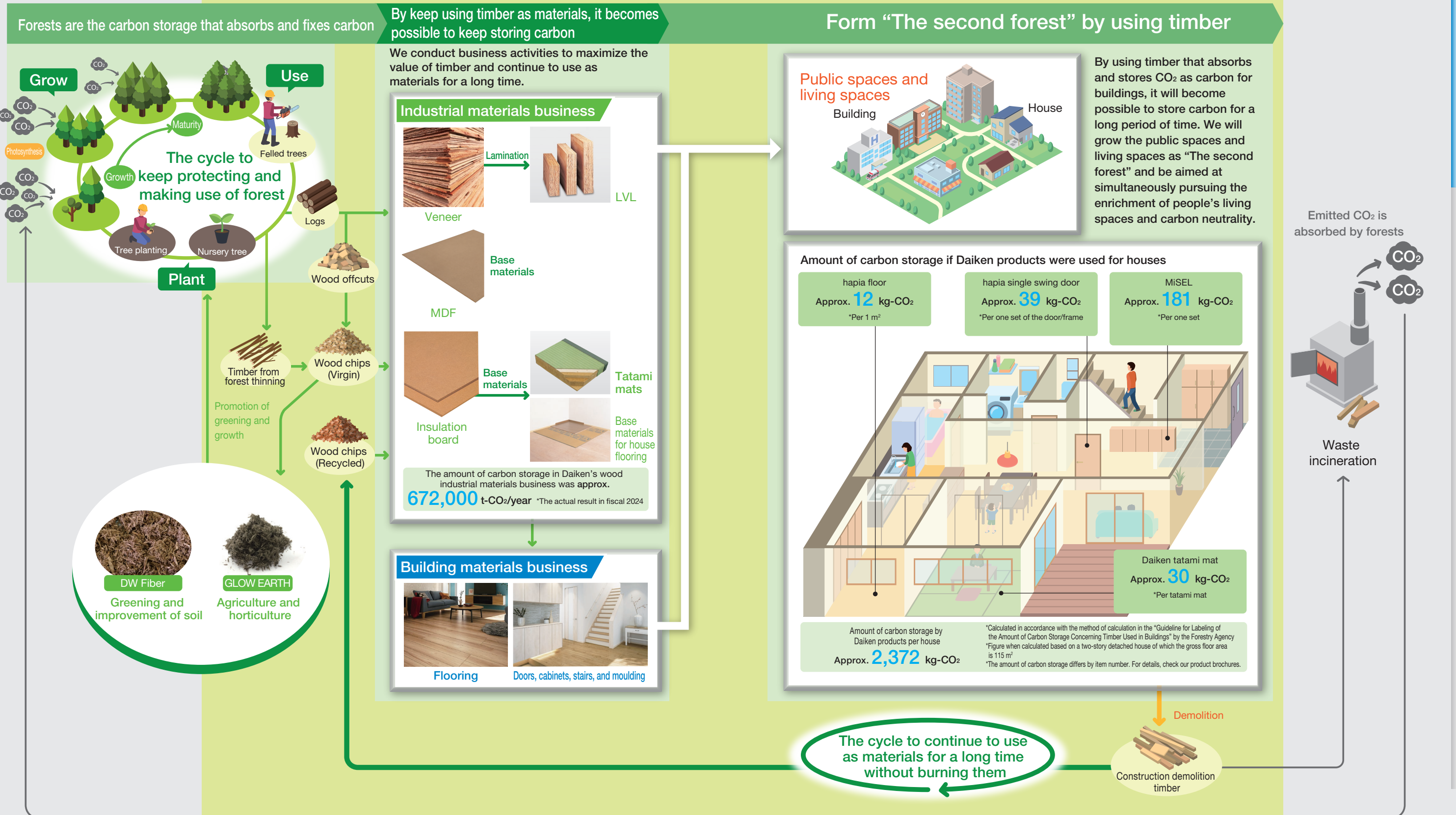
## 1 Expansion of the possibilities of wood materials

Social issues and needs

Utilize wood resources and contribute to carbon neutrality

CO<sub>2</sub> C Fix and store as carbon

CO<sub>2</sub>





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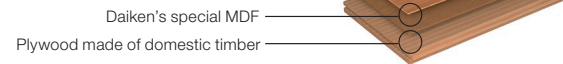
## Social issues and needs

Proactively use domestic timber and keep forests to be healthy

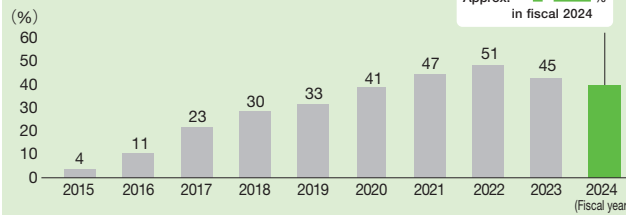
### Promote the use of domestic timber with special MDF that offers excellent water resistance

The Daiken Group took advantage of the expertise cultivated as the leading flooring manufacturer and Daiken's unique MDF technology that offers excellent water resistance and surface smoothness, proceeded with the development of flooring substrates combined with domestic timber, and has made many improvements. Use of domestic timber in fiscal 2024 decreased to 42% because of the change in base materials for primary products; however, we will continue to proceed with product development that will draw out the appeal of domestic timber and promote the use.

#### Cross-section image of flooring substrates made from domestic timber



#### Utilization of domestic timber for flooring substrates



### Expanding the scenes to utilize domestic timbers with the wood hardening technology

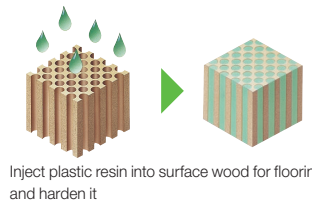
With Daiken's unique WPC\* technology to harden wood tissues by injecting plastics into and filling the tissues, it has become possible to offer flooring that uses domestic natural wood for decorative surface materials with excellent surface strength. Because many domestic tree species are soft materials, low durability in using them as flooring was an issue, but by taking advantage of this technology, we will expand the use of domestic timber while meeting the needs of using local materials.

\*WPC: The abbreviation for Wood Plastics Combination

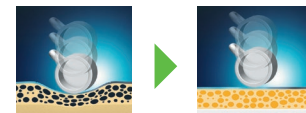
Results of the commercialization of local materials with the WPC technology  
**30** prefectures



WPC flooring



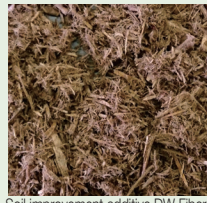


Inject plastic resin into surface wood for flooring and harden it



By filling plastic resin, it demonstrates strength against dents and scratches

### New use application development of wood materials

Under the conceived idea of using domestic timber as wood fibers, we used wood fibers made of fibrillated unused materials and timber offcuts and developed DW Fiber and GROW EARTH as the organic soil improvement additive and horticulture materials. These products will contribute to our initiatives for the conservation of healthy forests and carbon neutrality as the environment-conscious materials that realize the resource circulation that wood harvested in a forest becomes the culture medium, helps the growth of the next plants, and returns to the soil again.

	DW Fiber	GLOW EARTH
Characteristics	<ol style="list-style-type: none"> <li>It is lightweight and has good workability</li> <li>Plant activation by adding fulvic acid</li> <li>It is hard to fly apart and excellent in durability</li> </ol>	<ol style="list-style-type: none"> <li>It can be processed as combustible trash</li> <li>It is lightweight and can be used on the roof of a building</li> <li>It can be cultured alone by suppressing the growth inhibitors</li> </ol>
Application	<p>Outdoor facilities, mulching in landscape gardening, and soil improvement (to be used for civil engineering work)</p>  	<p>Rooftop planters and flower growing Vegetable garden spaces (Vegetables) Balcony/room cultivation</p>   

As the new method to use open spaces in urban areas, we commercialized the vegetable garden system using GROW EARTH in April 2023. We provide one-stop support for the planning and management of urban vegetable gardens and contribute to the improvement of the value of buildings by creating wellness spaces.



MINNA NO ECO SAIEN system <https://www.daiken.jp/ecofarm/>

## 2 Effective utilization of unused resources

### Social issues and needs

Utilization of unused resources toward the sustainable production

### Expansion of the utilization of unused resources using non-combustible materials that offer excellent durability

Daiken developed DAILITE, the world's first new industrial material using an unused resource, volcanic ash as the major raw material, which has the performance that could not be realized with conventional inorganic materials, such as lightweight, high strength, and fireproof, and started selling it in 1997. In the beginning, DAILITE was mainly used as a bearing surface material to enhance strength of houses but we now propose to use it as the non-combustible and well-designed wall materials and louver materials.



A noncombustible wall material with a deep curved design made of DAILITE base material GRAVIO EDGE



A noncombustible moulding made of DAILITE base material GRAVIO LOUVER



Volcanic ash, an unused resource available in the natural world



## 3 Contribution to well-being

### Social issues and needs

Proposal for comfortable spaces that realize physical and mental well-being and a fulfilling life

### Creating spaces where everyone can spend time with peace of mind

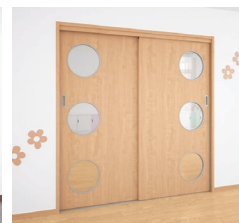
With our product lineup that can finely respond to the needs of users, such as elderly facilities and houses in which home care is conducted, we provide living spaces where people can spend time with peace of mind even when they get older. In addition, by taking advantage of the know-how on the development of these products and deploying the product group for kindergartens and childcare facilities where safety and comfort are further required, we will support the resolution of various issues required in each facility.



Cases of adopting the building materials for the living spaces where elderly people live



A wide sliding door that can be easily accessed by a wheelchair



A door that is considerate of children's safety

#### Won the KIDS DESIGN AWARD

\*Designs to support comfortable raising of children



Ceiling sound absorbing panel

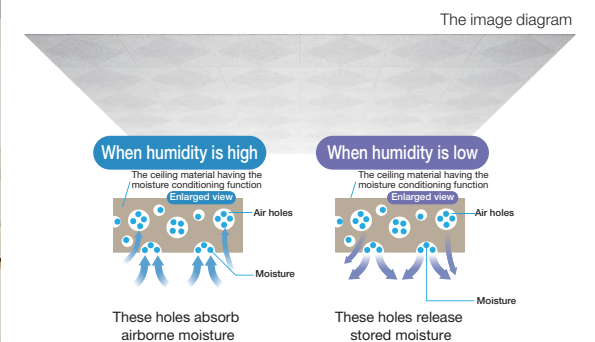


### Proposal of the comfortable living environment

Because of the high airtightness associated with the improvement of the energy-saving level in houses, problems of humidity, odors, and sound have become apparent. As the response to such indoor problems, we propose the ceiling material with humidity control/deodorant/sound absorbing performance. It realizes three-dimensional design where shade and shadow stand out compared to general wallpaper-covered ceilings. It also has moisture conditioning performance, deodorant performance, and sound absorbing performance to suppress the echo of unpleasant sounds and healthily and comfortably produces the entire space.



Ceiling material with humidity control/deodorant/sound absorbing performance



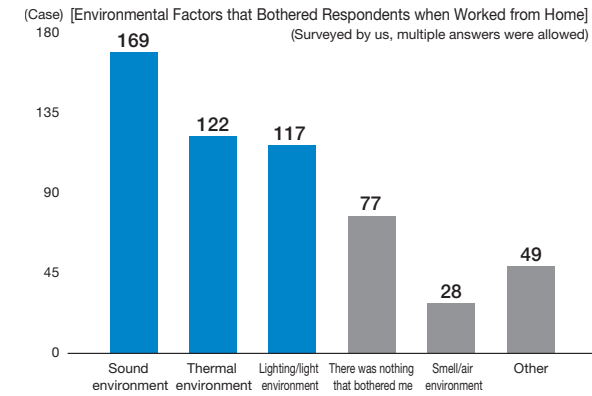
An indoor drying comparison experiment <https://www.daiken.jp/buildingmaterials/ceiling/cleartone/case02/roomdrying.html>



# Creating Shared Value (CSV) by Daiken Business

## Improvement of Quality of Life through sound

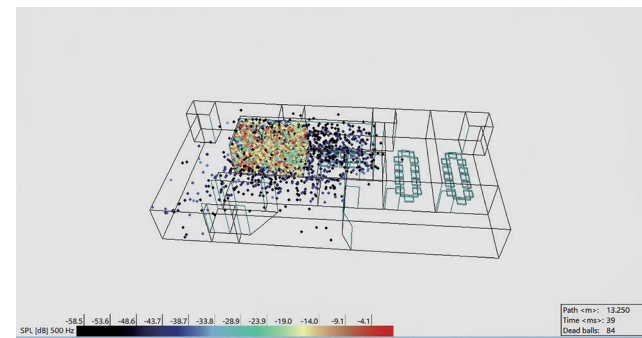
In pursuing comfort of the living spaces, Daiken has been engaged in acoustic products since the 1980s and faced various sound issues. Since then, with the accumulation of technologies and know-how on sound research for 40 years, we not only develop products having soundproof and sound absorbing functions but also propose spaces to realize the optimal sound environment. By a wide variety of our products and proposal capabilities, such as full-fledged sound creation aimed at the high soundproof function and high-quality sound vibrations for playing a musical instrument or a theater room as well as soundproofing work to solve the problems of sound and the speaking voice in living spaces, such as a living room and a bedroom, we aim at realizing a comfortable living environment.



New issues on sound have recently become apparent in offices, stores, and medical institutions. As one of the new business models, we have started activities toward the building of the structure to be able to make responses all in one, through the process from start to complete, such as design, planning, and consulting that will contribute to improvement of Quality of Life, as well as product development, procurement, manufacturing, and receiving material orders together with construction with the improvement of sound environment in mainly public and commercial buildings being the main axis. We expanded consulting for the sound environment, which had mainly addressed the noise problems that became apparent after constructing a building in the past, to the buildings before construction and set project managers who have technological knowledge on architecture as our new proposal targets. Accordingly, we can deploy our business fields, which remained in measurement/improvement proposals and material sales, to proposals of experience, such as consulting for the sound environment. We also explore new methods concerning the techniques to make proposals, such as using simulation software that can visually check the expanse of sound and sound insulation performance.



Installation of a product that suppresses reverberating sound in a meeting room

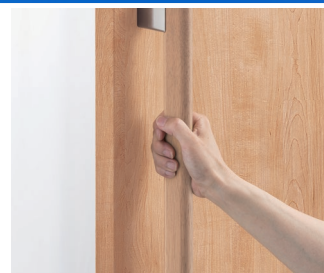


A simulation system to visually check the expanse of sound

## Expansion of the antiviral products

We focused on the antiviral function in the wake of the outbreak of the novel influenza in 2009 and started working on its development in 2011. In the following year, we put the antiviral function BIOTASK\* to practical use ahead of the industry. In and after 2020, in time with the needs for virus countermeasures in the COVID-19 crisis, we have expanded and improved the product group having the antiviral function with a focus on the products for facilities where a high level of hygiene management is required, such as elderly facilities, kindergartens and childcare facilities, and clinics. We will proceed with the research toward further technological development and the initiatives aimed at contributing to the reduction of virus threats.

\*BIOTASK: Our unique name for the antiviral function (our registered trademark)



A product having the antiviral function



Microorganism measurement room in the R&D Center

## 4 Challenge to creating new shared value

Social issues and needs

Building of a new business model through sustainable products

### Waste reduction by upcycling

As a new initiative toward the realization of a sustainable society, we cooperated with JR Central and JR Tokai Corporation and jointly developed the GRAVIO LOUVER US series (RECYCLED TOKAIDO SHINKANSEN ALUMINUM is used for the core material), which is an interior building material to sterically produce ceilings for station buildings and stores, made of aluminum recycled from Tokaido Shinkansen's decommissioned cars. As the energy necessary at the time of manufacturing RECYCLED TOKAIDO SHINKANSEN ALUMINUM can be reduced compared to newly producing aluminum, CO<sub>2</sub> emissions can be reduced by 97%, and it is a material that will lead to reducing the environmental load. Regarding the louver that we jointly developed this time, recycled Shinkansen aluminum is used for the core material for fixing to the ceiling and an eco-material, DAILITE, effectively using an unused resource, volcanic ash, and slag wool, which is a byproduct of steel production, is used for the base material for the decorative material. In addition to a highly sustainable product for which environment-conscious materials were combined, since local materials can be used for surface wood, it will contribute to the revitalization of local economy and forestry. While coexisting with local communities in the future, we will proactively proceed with the development of products that can contribute to the realization of circular economy by reusing resources as materials without disposing them.



An image of the construction on the ceiling of the station building



\*The logo of RECYCLED TOKAIDO SHINKANSEN ALUMINUM is JR Tokai Corporation's registered trademark.

## 5 Simultaneous pursuit of security and labor saving

Social issues and needs

Simultaneously realize a shortage of artisans/ securing of the safety of buildings

Shortening of construction periods and enhancement of disaster prevention by the development of labor-saving type products and techniques

To respond to the needs of making the ceilings of large public buildings anti-seismic because of the revision of the Building Standards Act after the Great East Japan Earthquake, Daiken developed a unique ceiling construction technique that makes it possible to make the ceiling anti-seismic while saving construction time and work. With this construction technique aimed at simultaneously pursuing the improvement of the safety and construction speed while a shortage of artisans engaged in construction is expected, we reduced the construction time and labor by approx. 25% compared to making the conventional ceiling anti-seismic. We also contribute to the enhancement of disaster prevention in Japan that is prone to disasters with our product development capabilities, such as the development of a ceiling system exclusively for hallways, which will become the evacuation route at the time of disaster, and the improvement of the aseismic performance of wooden houses by DAILITE, a bearing surface for wooden houses.

Rate of reduction of construction time and labor compared to making the conventional ceiling anti-seismic: **Approx. 25%**  
\*Estimated by our company



Our own anti-seismic ceiling construction technique

Number of households installing DAILITE (cumulative)  
\*Estimated by our company

Approx. **1,000,000**  
(As of the end of March 2022)

Approx. **1,050,000**  
(As of the end of March 2023)



DAILITE MS