

# Research and Development

The Daiken Group has positioned development of industrial materials using sustainable resources, such as timber, and technological development to create safe, secure, healthy, and comfortable spaces centering on the R&D center as the priority themes and has been proceeding with research and development aimed at creating new shared value that will lead to the resolution of social issues and expansion into new technologies and new businesses for the next generation. In addition, to speed up the far-sighted research and development and expand the domains, we proactively put effort into the co-creation activities with various stakeholders.

## Research theme

The R&D center promotes research and development that contribute to the resolution of social issues and a sustainable society from the standpoints of ecology and qualitative improvement of spaces.

### Industrial materials

**Improvement of the existing industrial materials and development of industrial materials that will become the key to capturing new markets**

- Technology development to use unused resources
- Development of industrial materials with low environmental load and introduction of them to the market
- R&D of industrial materials for new markets other than building materials

### Building materials

**Development of new secure and safe building materials that will be needed by society in the future**

- Development of labor-saving type building materials and techniques
- Development of building materials that simultaneously pursued design and performance
- Reduction of CO<sub>2</sub> in the entire product lifecycle, including manufacturing, transportation, and construction

### Spatial environment

**Creation of spaces that will realize a comfortable life**

- Analysis by simulation of the thermal, humidity, and cross-ventilation environment
- Development of energy-saving and indoor environment improvement technologies
- Research to reduce virus and molds

### Assay evaluation

**Various measurements and analyses using the expertise cultivated in R&D**

- Measurement of air quality
- Sound insulation performance evaluation
- Building materials' heat generation test
- Asbestos analysis



## Acquired the WELL Performance Rating for the first time in Japan

The R&D center acquired the WELL Performance Rating (WPR) in April 2024. This certification is the rating system specialized in indoor environmental quality in buildings, which was derived from the WELL Certification that measures and evaluates various functions that have an influence on people's health and well-being (physically, mentally, and socially well), and consists of the six perspectives of indoor air quality, water quality management, lighting measurement, thermal condition, acoustic performance, and experience by residents. The R&D center that acquired the certification this time is also used as the place of demonstration experiments on the solutions for the spatial environment that we appeal, and we could deepen our knowledge of the measurement of environmental performance in the actual offices.

By employees working in the well-being workplace environment, we will further improve our research and development capabilities and opportunities to create ideas and strive to develop products and services that grasp the customer and social needs in advance.



## Prioritized theme 1 Development of industrial materials that use sustainable resources, such as timber (Development of environment-conscious MDF)

Daiken Corporation has put effort into the development of technologies for industrial materials and building materials that effectively use timber with no waste since its establishment. As a challenge in a new field, we have been proceeding with the development of technology to utilize cellulose nanofibers (CNF) that are fibrillated timber at the nano-level. CNF has the characteristics that wood fibers used for the wooden fiberboard do not have, which leads to the new approach to the environmentally friendly new use application. In addition, as a challenge in the existing business, we have been proceeding with the initiatives toward the establishment of the production technology for the environment-conscious MDF (medium density fiberboard) for which adhesives using the petrochemical raw materials are not used at all. In fiscal 2023, we succeeded at MDF prototype manufacturing using the adhesive made of the wood-derived component and have currently been proceeding with the stable procurement of raw materials toward the start of manufacturing in fiscal 2026. Eventually, we will use plantation timber and aim to develop and launch MDF exclusively composed of natural materials. We will enhance the initiatives for research and development that will contribute to environmental friendliness and the SDGs with a focus on the technologies for the effectively use and recycling of wood resources.

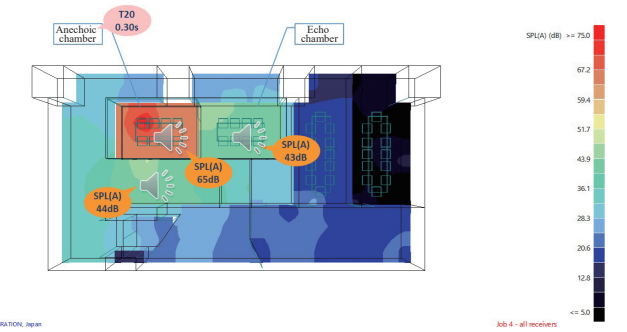


## Prioritized theme 2 Development of technologies that create safe, secure, healthy, and comfortable spaces (new sound design and development base)

In addition to the pursuit of the possibilities of industrial materials, we have been proceeding with research and development to give a new function to industrial and building materials. We grasp the spatial environment based on the assay evaluation technology, delve into it from the perspectives of the temperature, humidity, and sound environment that are essential when people spend time comfortably, and at the same time, we conduct assay evaluations toward making responses to harmful substances, such as asbestos and formaldehyde. In anticipation of the rollout in October 2025, construction of the acoustic experiment building, which will become a new development base for acoustic design, has been decided. We will conduct functional and performance experiments and evaluations, such as high-precision measurements based on the Japan Industrial Standards and analytical predictions of sound absorbing performance, soundproof performance, and floor impact sound. The concept of the sound environmental solution business to propose the improvement of the sound environment, such as offices, by taking advantage of our strengths in the development, manufacturing, and sales of architectural acoustic products that we have continued for over 40 years since 1982 and will proceed with the further expansion of the acoustic business at this development base as the core facility.



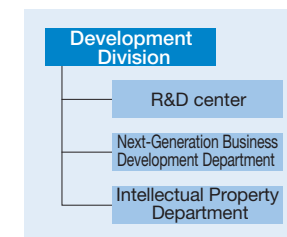
Okayama Factory



The sound environment measurement system

## Organizational structure toward the enhancement of intellectual property strategies and investment of management resources

In starting the medium-term plan GP25 3rd Stage in April 2022, we newly established the development division toward the acceleration of the initiatives for new businesses and by placing the R&D center, which is the core of technology development, the next-generation business development department, which is responsible for crystallization of new businesses toward the next generation, and the intellectual property department, which executes intellectual property strategies to make business and development strategies more effective, under the division, we enhanced our organizational structure. Currently, various technological challenges have been conducted under the new structure and a new technological bud has come out. To make the research and development capabilities, which are the sources of the Daiken Group's strength, robust, we proactively continue to invest management resources and lead to the medium- to long-term corporate value improvement.



\*Right holder score: One of the indices to evaluate the value of the entire patent group owned. The right graph shows values by indexing fiscal 2016, which is the benchmark, as 100 to indicate the changes over the years. Created by using Patent Result Co., Ltd.'s Biz Cruncher.

