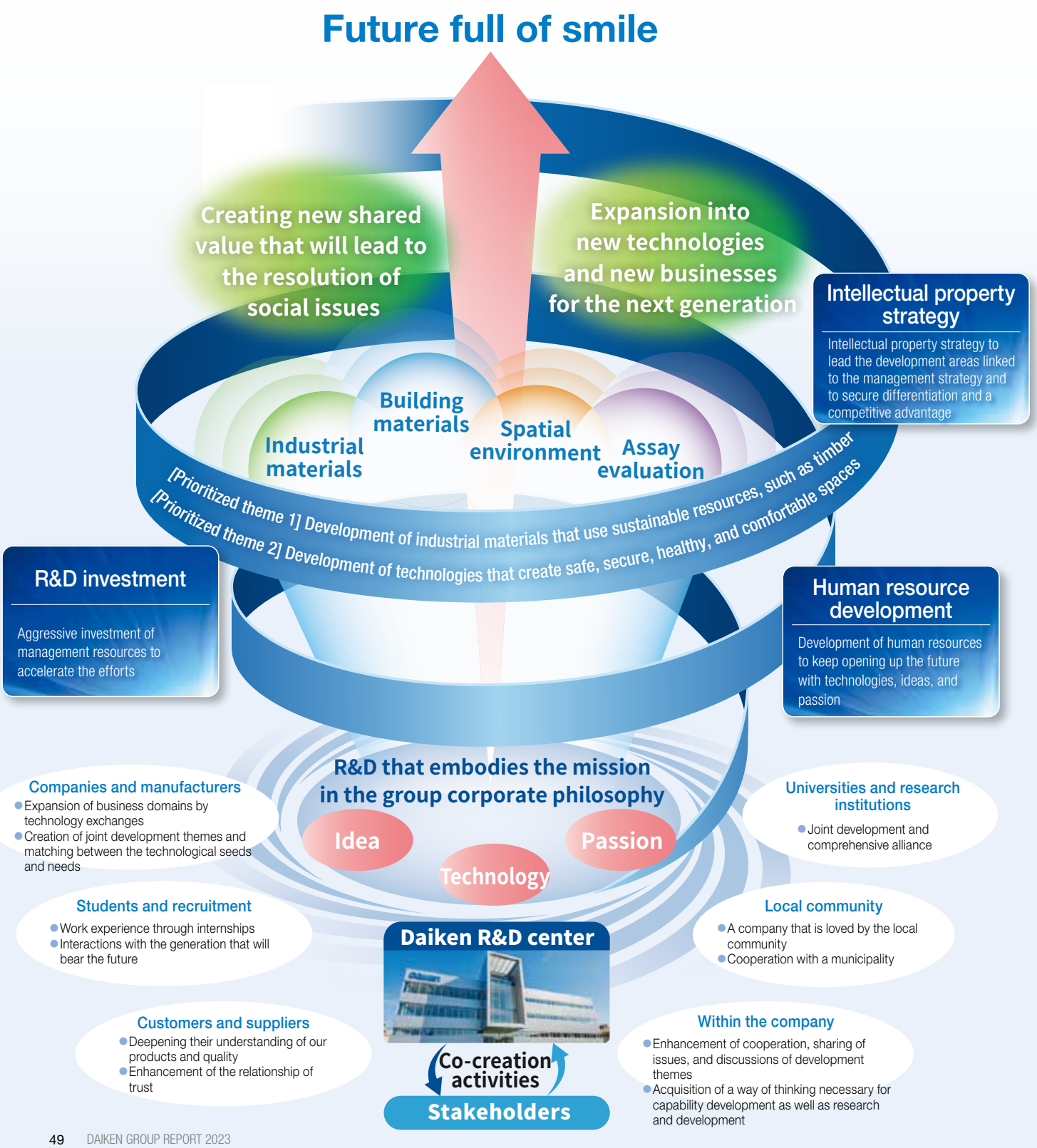
Research and Development

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.

Policy

- Development of new technology for the resolution of social issues, business expansion by aggressively using co-creation (open innovation), and the creation of new business toward the new generation
- Nourishment of a culture that admires and supports challenges by creating a mechanism to be able to challenge new business areas

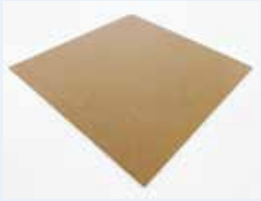


Development of technologies

Prioritized theme 1

Development of industrial materials that use sustainable resources, such as timber

We put effort into the development of technologies for industrial materials and building materials that effectively use timber with no waste. 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 new challenge in the existing business, we have been proceeding with the initiatives toward the establishment of the production technology for the ultimate environment conscious MDF (medium density fiberboard) for which adhesives using the raw materials for petrochemical products are not be used at all. This time, we succeeded at MDF prototype manufacturing using the adhesive made of the wood-derived component, which is the first step.
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.

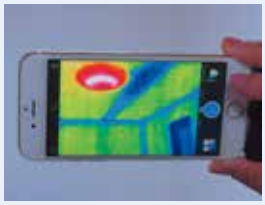


Prototype MDF that used a wood-derived adhesive

Prioritized theme 2

Development of technologies that create safe, secure, healthy, and comfortable spaces

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.
While further saving of energy in buildings is required toward the realization of a decarbonized society, we also have been focusing on research projects concerning temperature and humidity to simultaneously pursue the comfortableness of livelihood and the reduction of consumption energy by the functions of industrial and building materials.
While performance that people require for spatial environment changes with times, by always thinking what performance will be necessary in the future and proceeding with technology development of functional building materials, we will realize the creation of a safe, secure, healthy, and comfortable space.



Thermal image measurement

R&D theme

The R&D Center works on Ecology and Improvements in the Quality of Space in four sectors and promotes R&D that will contribute to a sustainable society.

Industrial materials

Further improvement of the existing industrial materials and development of industrial materials that will become a key to capturing new markets

- High functionality of the wooden boards and inorganic boards
- Technology development to use unused resources
- Wood building material utilization development in the new field
- 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 environment-conscious building materials
- Development of high functional paints and painting technology
- Development of new construction technique for building materials
- Adding a high value to wood building materials

Spatial environment

Development of spaces and building materials that will realize a comfortable life

- Development of energy-saving and indoor environment improvement technologies
- Analysis by simulation of the thermal, humidity, and cross-ventilation environment

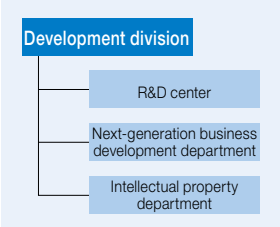
Assay and evaluation

Various measurements and analyses of spaces and building materials using the expertise cultivated in R&D

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

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. In fiscal 2023, various technological challenges were conducted under the new structure and a new technological bud came 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.

Trends in the R&D costs, Right holder scores, and Number of patents owned