

YKK AP Integrated Report 2020



YKK AP Value Creation

“No one prospers without rendering benefit to others.”

YKK’s Founder, Tadao Yoshida named this philosophy the “Cycle of Goodness” and made it central to all business activities as he built the YKK Group into what it is today.

Our mission at YKK AP is to carry on this philosophy and provide our customers with windows and other architectural products to lead healthy and comfortable lifestyles.

Going forward, we will continue refining the technical skills we have accumulated over the years to offer products that will bring happiness to people around the world.



Chapter 1 YKK AP Value Creation

YKK Group and YKK AP Principles	04
History of the YKK AP Business	06
The Value Creation Process at YKK AP to Support Sustainable Growth	08

President’s Message	10
Stakeholder Dialog	12
SDGs in Our Value Chain	16
Sustainability Management System	18

Chapter 2 Business Overview and Growth Strategy

YKK AP Business Introduction	20
Interview: Aspirations for a Living Architectural Culture at YKK AP	28



The photograph shows our Saitama MADO (window) Plant. The distinctive facade uses our APW 330 vinyl windows.

Chapter **3** Sustainability Management

Feature: Taking on the Labor Shortage Problem	31		
<i>Monozukuri</i> Perspective	36	<i>Monozukuri</i> and Products	44
<i>Monozukuri</i> Practice	38	<i>Monozukuri</i> and Environment	46
<i>Monozukuri</i> and Sales	40	Human Resource Development that Supports <i>Monozukuri</i>	49
<i>Monozukuri</i> and Installation	42	Corporate Governance	52

Chapter **4** Corporate Data

Directors and Audit & Supervisory Board Members	54	Major Awards	58
YKK AP in Numbers	56	Company Outline	59

YKK Group and YKK AP Principles



| YKK Philosophy |

CYCLE OF GOODNESS® “No one prospers without rendering benefit to others.”

As an important member of society, a company survives through coexistence. When the benefits are shared, the value of the company’s existence will be recognized by society. When pursuing his business, YKK’s Founder, Tadao Yoshida was most concerned with that aspect, and would find a path leading to mutual prosperity.

He believed that using ingenuity and inventiveness in business activities and constantly creating new value would lead to the prosperity of clients and business partners and make it possible to contribute to society. This type of thinking is referred to as the “Cycle of Goodness” and has always served as the foundation of our business activities. We have inherited this way of thinking and have established it as the YKK Philosophy.

Tadao Yoshida believed in sharing the benefits derived from ingenuity applied in business activities between customers, business partners, and the company itself. This “Three-Party Sharing” would please customers and business partners and encourage them to choose YKK. This management style, a demonstration of the “Cycle of Goodness,” remains at the core of today’s YKK AP.

YKK’s Founder

Tadao Yoshida

(1908-1993)

Born in Uozu, Toyama in 1908. Founded the precursor to YKK, San-S Shokai, in 1934, and began the production and sales of zippers. He expanded the use of machinery in zipper manufacturing and established automated production. He created a company with a unique form, a zipper manufacturer engaged in integrated production from raw materials to finished product, and dedicated his life to the manufacture and sales of zippers and building materials.

YKK's founder, Tadao Yoshida made the "Cycle of Goodness" the central philosophy of all business activities. Based on this philosophy, and in keeping with the times, Tadahiro Yoshida, the second YKK president and first president of YKK AP, established the Management Principle, "YKK seeks corporate value of higher significance." At YKK AP, we carry on this philosophy and provide our customers with windows and other architectural products so they can lead healthy and comfortable lifestyles.

YKK AP's Founder
Current Corporate Advisor

Tadahiro Yoshida

Joined Yoshida Kogyo K.K. (current YKK) in 1972. In 1990, established and became president of YKK Architectural Products (current YKK AP). After serving as president of YKK, and as representative director and chairman (CEO) of YKK and YKK AP, he gave up his representation and became a director for both companies in 2018. In June 2020, he retired from his director positions and became a corporate advisor for both companies. He has built the window business, facade business, and other businesses that became the foundations of today's YKK AP.



Seeking corporate value of higher significance, YKK will pursue innovative quality in the seven key areas.

| YKK Management Principle |

“YKK seeks corporate value of higher significance.”

The YKK Group Management Principle is based on the philosophy of the “Cycle of Goodness” and states: “YKK seeks corporate value of higher significance.” YKK Group companies seek to delight our customers, earn the high regard of society and make our employees happy and proud. We are improving the quality of our products, technology, and management as the means to achieve this. We make fairness the fundamental standard for all YKK Group business operations, and this is the basis for our management decisions.

The Management Principle inherits Tadao Yoshida's philosophy and was formulated in 1994 by Tadahiro Yoshida, who was the president of YKK and YKK AP at the time. It epitomizes our resolve to relentlessly strive toward creating value based on fairness, which forms the fundamental standard of all our decisions.

History of the YKK AP Business

1957-1989

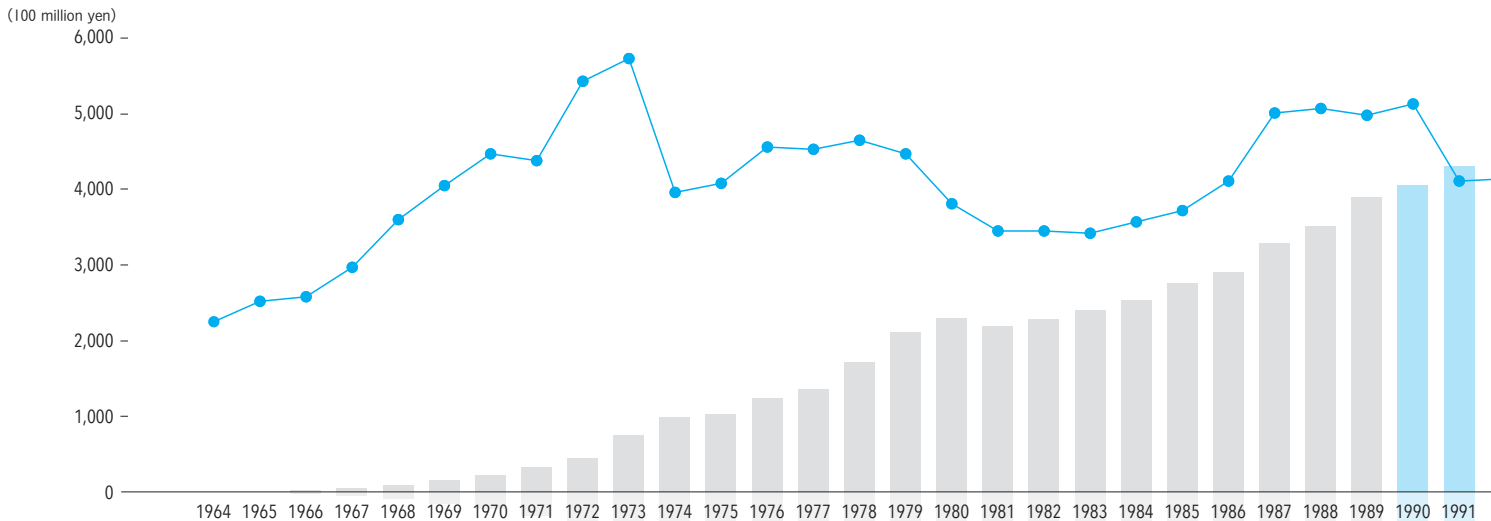
Architectural products business begins







Yoshida Shoji Co., Ltd., the company that would eventually become YKK AP, was established in 1957 to undertake the sales and exports of zippers manufactured by Yoshida Kogyo K.K. (current YKK). In 1959, the company began aluminum casting and extrusion operations, marking the beginning of YKK Group's involvement with architectural products. In 1966, the company launched sales of the residential aluminum product "High Sash". This helped to popularize aluminum sashes, which, thanks to the ease of processing and mass production, could meet the large-volume residential demand of the high economic growth period. The company continued to expand its range of products, from insulating glass to sashes and curtain walls for commercial buildings and exterior products.

1990-2004

The founding of YKK AP

In 1990, YKK Architectural Products (abbreviated to YKK AP) was founded out of its parent company, Yoshida Shoji Co., Ltd., as the core company of the YKK Group's architectural products business. Tadahiro Yoshida (current a corporate advisor) was named its first president, and the company shifted from a mass-production/mass-market product-out approach to a market-in system, which sought to respond to diversifying customer needs. In 2003, YKK's architectural products manufacturing divisions were integrated in order to unite the architectural products business within the YKK Group into a single body. Business expansion continued overseas and the structure of the company called YKK AP was built.



1959	Aluminum casting and extrusion work begin	
1961	Manufacture and sales of interior aluminum architectural products begin	
1962	Manufacture and sales of aluminum window sashes begin	
1976	Our first overseas affiliate, YKK Industries (Singapore) Pte. Ltd. (current YKK AP Singapore Pte. Ltd.), established	
1983	Manufacture and sales of vinyl sashes begin	
1986	YKK Alumico Indonesia (current PT. YKK AP Indonesia) is established as the first overseas plant with an integrated production system	

1990	The company is renamed YKK Architectural Products Inc. (YKK AP)	
1990	Sales of EXIMA system sashes for commercial buildings begin	
2002	The company is renamed YKK AP Inc.	
2003	YKK's Architectural Products Manufacturing Group is integrated into YKK AP Inc. and the architectural products business of the YKK Group becomes a fully integrated organization	
2003	Sales of SYSTEMA series of system sashes for non-residential buildings begin	

The “AP” of the company name stands for “Architectural Products,” which embodies a promise to “always continue pursuing the highest levels of art and technology, two elements that have formed the basis of architectural culture throughout history.” The AP business began in 1959 by leveraging the knowledge of aluminum material that had been gained in zipper manufacturing. Since then, the company has continued to meet the needs of customers through different eras, and to develop and provide products that offer new value that had previously not been identified by markets. 2020 marks the 30th anniversary of YKK AP’s founding. Although the Japanese construction industry is on the decrease, as symbolized by new housing starts, the company has continued to expand business based on its foundational aims and is growing steadily.

2005-2010

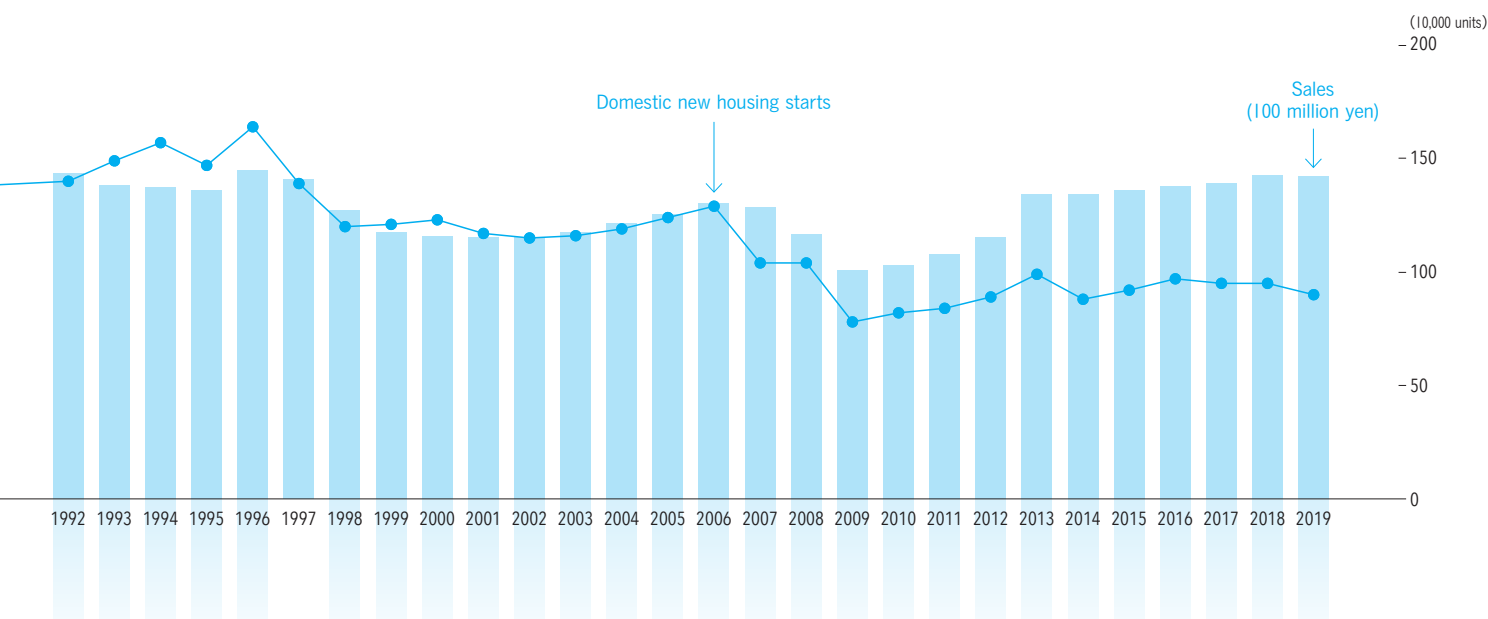
From sash manufacturer to window manufacturer

The company set out to transform itself from a sash manufacturer to a window manufacturer. It turned away from its business supplying knockdown style sashes and began to provide finished window products. The window business brand APW series was launched, driven by a desire to improve windows in Japan. In 2007, YKK AP America Inc. took the lead in sales of residential vinyl windows, and in 2009 the APW 330 residential vinyl window was launched. The company worked to popularize vinyl windows throughout Japan. In 2008, YKK AP FACADE Pte. Ltd. was established in Singapore, marking the group’s definitive move into the facade business.

2011-

A company committed to products and manufacturing

In June, 2011, Hidemitsu Hori was appointed as a president. Our policy is to be “a company committed to products and manufacturing,” or, in other words, *monozukuri*. In order to keep developing the window business, efforts were directed at popularization activities such as the building of dedicated MADO (window) Plants in each region and APW Forums. In addition to windows, exterior products and remodeling and renovation products were added and the company worked to bolster its engineering capabilities in the commercial products business and market share has continued to grow. The company strives for sustainable growth by rolling out businesses and products that solve increasingly diverse social issues.




- 2005** Proclamation to promote insulating glass residential windows
- 2006** The window business brand APW series is launched 
- 2008** YKK AP FACADE Pte. Ltd. established 
- 2009** Sales of APW 330 vinyl windows begin 

- 2011** Operations begin at the Saitama MADO (window) Plant 
- 2012** Sales of the Venato electronic smart door begin 
- 2014** Sales of the LUCIAS series of exterior products begin 
- 2014** Sales of the FRAME+ seismic retrofit frame begin 
- 2015** Sales of the door remodeling product Kantan Door Remo (easy door remodeling) begin 
- 2016** YKK AP R&D Center is opened 

The Value Creation Process at YKK AP to Support


YKK Philosophy

CYCLE OF GOODNESS®
 “No one prospers without rendering benefit to others.”



YKK Management Principle

“YKK seeks corporate value of higher significance.”



YKK AP Business

Responding to the social issues and needs of the time through seven businesses



Social Issues/Needs

- Shifting demographic and household trends
- Residential housing policies
- Resources and energy
- Environmental issues
- Lifestyle
- Regional revitalization
- Crime and disaster prevention
- Health and comfort
- Labor shortages
- Abandoned houses

Etc.

Sustainable Growth

The Fifth Mid-Term Management Plan

(FY 2017 - FY 2020)

Achieve actual growth of business in accordance with the Mid-term Management Plan

Mid-term Management Vision

Technology Oriented Value Creation

| Primary Management Focus |

- Product appeal & proposal capability
- Technology & manufacturing capability
- Human resource development

Business Policy

Sustainable growth of the AP business through added-value and demand creation

| Key Measures |

- | | |
|-----------------------------------|--|
| ● Residential Business | Promote windows with high thermal insulation performance |
| ● Exterior Business | Reinforce sales through expanding products range and increasing product appeal |
| ● Renovation Business | Create demands and boost growth |
| ● Commercial Products Business | Increase engineering capability and promote high thermal insulation products |
| ● Overseas AP Business | Reinforce business foundation and expand business in the target market |
| ● Facade Business | Expand presence of Facade business |
| ● Business Process Re-engineering | Standardize and optimize business process |

The Value in the YKK AP Business

Our business creates value for society. This leads us to achieving SDGs and realizing our mission and vision.

YKK AP Mission

To devote everything we have to the culture of architecture and train our sights on the future.

YKK AP Vision

From living spaces to urban spaces, YKK AP has kept pace with the times and leads the way into the future.

The social value in our business

● Customers

Providing healthy, comfortable, safe, and secure lifestyles through high-performance and highly functional products



● Society

Providing sustainable products and mechanisms that create mutual benefit for business partners and communities



● Employees

Providing opportunities for growth and fulfilling workplaces



SDGs

Helping to achieve SDGs and aiming for a sustainable society

SUSTAINABLE DEVELOPMENT GOALS



President's Message

Seeing the future through SDGs and

President Representative Director

Hidemitsu Hori

Joined YKK in 1981. Served in North America from 1989 to 2006. After returning to Japan in 2006, served as YKK AP Vice President of Corporate Planning and Director and Senior Vice President of Business Groups, before reaching his current post in 2011.

From rising consumption taxes to natural disasters, the construction industry faced many challenges in FY 2019. Among them was the coronavirus pandemic, which not only threatens the health and lives of countless people, but has also plunged the world into an economic crisis. We must also anticipate a major impact on our business, too, but we nonetheless are prioritizing the health and safety of all our employees, suppliers, and partners by working on measures to stop the spread of infection.

Crises like this that force change on societies are bound to happen again. We have to be prepared to adapt to such societal transformations in order to survive. Key to this is embracing sustainable viewpoints through such prisms as SDGs (Sustainable Development Goals) and ESG (Environment, Society, and Governance). In April 2020 we established a Sustainability Promotion Department to bolster our efforts toward medium to long-term business continuity and sustainable growth.

Business Performance in FY 2019

Vinyl windows make a bigger impact on domestic sales

In FY 2019, vinyl windows were a growing presence in sales results. Even as the new housing starts decreased, the APW vinyl window series reached one million units in sales, driving an overall increase in sales. Ten years ago, vinyl windows accounted for only 9% of the total number of residential windows shipped by our company. Since then, the windows have enjoyed impressive growth, with the number tripling over that decade.

Growth strategy through value creation

Despite the sense of crisis engendered by the decreased new housing starts, the exterior and renovation businesses have been showing robust growth, and this is expected to continue going forward. In exterior business, demand for lightweight aluminum fences has been expanding ever since the 2018 Osaka earthquake. We continue to expand our offerings of privacy fences that block lines of sight but allow air to pass. We are also working to spread awareness of our company and products amongst local contractors and remodeling companies that undertake remodeling work, through such opportunities as the Renovation Forum.

In our commercial products business, we are looking to direct our efforts toward renovations. As well, in building construction, aluminum sashes are still generally the



surviving in revolutionary times

standard, and we aim to meet market needs by providing aluminum and vinyl composite windows and vinyl windows with high thermal insulation performance.

Overseas companies are performing well

Overall, our overseas companies are performing well. Especially in the U.S., demand for sashes and curtain walls for commercial buildings is growing, and residential vinyl windows are on the rise. In 2019, a unit curtain wall company was affiliated with our group, aiming for the further expanding the business.

In China, we are at last starting to see the shape of our business model. We began operations there in 1999, but until now the majority of our business was with small and medium-sized regional companies. Recently though, the people networks that we have developed and the quality of our products are starting to make an impact, and sales to nationally-owned companies and large corporations are increasing. With a different social background than Japan, people in China are heavily committed to investing in their residences. Including remodeling, in Japan many consumers seek to improve usage value, while in China the focus is more on housing investment in order to improve property values, and our products are being recognized for the value they provide in this way. Going forward, we are looking to direct our efforts to the sales of door products and other products.

Future YKK AP initiatives aimed at sustainable growth

FY 2020 is the last year of the Fifth Mid-Term Management Plan, which began in FY 2017. We have met most of the targets laid out in the plan, but the effects of the coronavirus pandemic led to the cancellation of events aimed at attracting customers, a curtailing of face-to-face sales, and the telework by employees. In order to continue providing customers and business partners with information in such an environment, we are working to disseminate information through the Web and other means. As people are spending more time in their homes, they may be thinking about their residences more, and we want to direct information to these people.

Diversifying to achieve further growth

One of the key points of the Mid-Term Management Plan is human resource development. Here, an important theme is employee diversity. As well as supporting the

performance of young people and women, we are aiming to encourage the active participation of our veteran employees and promote diversity.

Diversity also refers to ideas and ways of thinking. In the past, when there was a single set of shared values, the older generation served as models, but nowadays we need the ability to respond flexibly and take on a diverse range of values. We are a manufacturing company but “things” in society, specifically services, are developing at breathtaking speed. We have to step outside our own environment, and young people especially need to improve their own awareness by seeing and experiencing things outside our industry and in other countries. The question is, how do we bring together our own knowledge and experiences and apply them to *monozukuri*? We want to provide training that fosters diversity so as to foster employees capable of sharp and incisive ideas.

Employee motivation is also very important. Without it, companies can fall apart very quickly. A manufacturing company is not built up by individual heroes. Rather, it creates value through the work of teams. This means we need our employees to be proactive.

Refining the YKK AP brand

This is the thinking behind the key phrase, “brand on the outside, pride on the inside.” Raising the value of the YKK AP corporate brand is bound to raise employee motivation. To raise the level of the brand, employees must have pride in their work. Consumers choose companies in which employees take pride in their work. In order to foster such pride, it is important to have an SDGs perspective. I want employees to understand how their own work contributes to society, and take pride in that work.

Returning to basics and aiming for sustainable growth

Currently, our industry is in the grip of what might be called an “ice age.” It is precisely because of this difficult environment that we should return to basics and think about how we should respond. 2020 marks the 30th anniversary of our company's founding. I want to make this milestone year one in which we bring to full fruition the ideals of our founding. At the same time, I want to make this year to envision the future YKK AP and keep moving forward, every day.

Stakeholder Dialog

People-friendly and sustainable YKK AP products

Megumu Murakami and Chieko Kawai

(Vice President, Corporate Communications, YKK AP)

The Japan Research Institute, Limited
Senior Manager, Center for the Strategy of Emergence

Megumu Murakami

Hired into the Industrial Bank of Japan (current Mizuho Bank) after graduating from the Faculty of Law, Kyoto University, before joining the Japan Research Institute in 2003. Specializes in ESG (Environment, Society, and Governance) investment support, climate change risks and finances, etc. Her recent work, *SDGs Nyumon* ("Introduction to SDGs"), has been published by Nikkei Business Publications, Inc.

Murakami: Today, I have come to the YKK AP Experience Showroom*¹ in Shinagawa, Tokyo, for a hands-on experience with YKK AP products. I would like to learn about the company's work with products and services that contribute to SDGs. First, tell me about your vinyl windows with high thermal insulation performance.

Kawai: I would like to show you some of our products that help reduce CO₂ emissions, an issue related to climate change. Let's go to the window performance experience zone.

Murakami: You can really feel how different types of window insulate you from the outside temperature. Vinyl windows have very good thermal insulation performance. Of course, the middle of the room is

warm, but even when you get close to the window you still don't feel the cold much.

Kawai: YKK AP developed everything, from the materials to the manufacturing equipments and the product itself. This integrated production system enables us to maintain our focus on quality. We work to develop products that match the behavior and thinking of people living with them, while also making them friendly to the natural environment.

Murakami: I have experience remodeling my own home. There were big temperature differences between the north-facing and south-facing rooms, so I wanted to change the windows to fix it. I was surprised that there were wider choices of material than I expected.

Kawai: We try to let end users know about the role of windows and at the same time inform contractors and other professionals who undertake reforms about our products. This way, people are able to choose products that contribute to healthier and more comfortable lifestyles. The company has been encouraging me to work from home, and I've set up a work desk in my house next to an internal window. The temperature and light levels are just right to make it a comfortable environment.

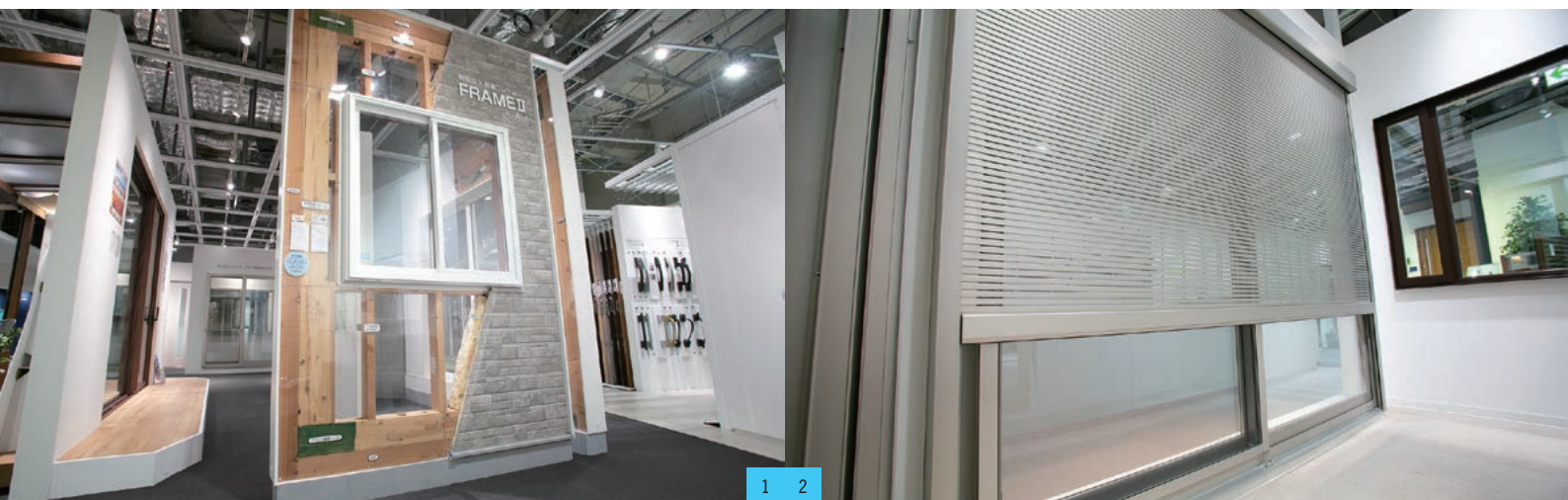
Murakami: I have heard that windows can help with quake-resistance of houses.

Kawai: Compared to columns and walls, windows used to be considered a weak point in terms of quake-resistance. But our "FRAME II" improve quake-resistance. By adding an quake-resistant wooden frame around the window, we are able to enhance quake-resistance without reducing the size of the window.

Murakami: In SDGs, one of the major tasks is improving resilience in the face of natural disasters. These days, responding to natural disasters such as earthquakes and typhoons is more important than ever.

Kawai: During Typhoon Faxai in September 2019, we saw windows being smashed by tiles that were blown off roofs. Adding shutters reduces the chances of such damage, and we saw an increase in sales.

Murakami: Many houses have storm doors that are pulled out of a stowage cabinet, but the types of



1 2

*1 YKK AP Experience Showroom is a showroom for professional users (by reservation only). <https://www.ykkap.co.jp/pro/taikan/> (Information in Japanese)

We have 13 showrooms across the country for the general public. The content of display differs among these showrooms. <https://www.ykkap.co.jp/sr/> (Information in Japanese)

*2 See the dedicated website for the "UPDATE GATE". <https://update-gate.jp/> (Information in Japanese)



In the window performance experience zone, visitors can experience how much heat could be blocked through different frames and glasses by touching various types of windows.

Products and services that combine both technology and art also draw people's attention.

Megumu Murakami

manual and powered shutters are increasing.

Kawai: Until recently, shutters have overwhelmingly been installed only on the first floor of single-family home as an anti-burglary measure, but more and more homes are having shutters equipped on the second floor to protect the windows. Powered shutters are very useful for the elderly in particular.

Murakami: Products and services that combine both technology and art draw people's attention. The UPDATE GATE*2, a door with built-in AI and face recognition, seems like something out of the future.

Kawai: This is an unreleased concept product, but it has face recognition that does away with the need for a key. Of course it is useful for crime prevention, but it is also convenient, for example, for persons who are

physically impaired. They can pre-register caregivers who visit them at their home so they don't have to open the door themselves. By adding touch panel functionality to windows and doors, residents can check the weather, train schedules, and other information.

Murakami: People can increase the value of their homes by adding various functions through remodeling and upgrades. With the aging of the population the problem of abandoned homes is receiving more attention, but such remodeling could offer a solution.

Kawai: Renovations aimed at improving the performance of existing homes can actually generate more value than a new build. You can improve quake-resistance structures and make windows larger, for a sense of openness. An old house can be transformed into a comfortable and charming home. As a manufacturer, our company promotes projects in which we provide materials and technology and encourage local contractors to work with us.

Murakami: Today's experience has helped me understand how the functioning of a house can be improved. Most people think about the largeness, room layout, and storage of a home, but when we actually move in, we realize that comfort issues, for example in terms of windows, make a big difference. In terms of natural environment initiatives, disaster responses, and other aspects, too, I think that going forward, more and more people will be looking at YKK AP products.



1. Our wooden quake-resistance frames FRAME II can be combined with our high-performance vinyl window APW 330 line. The frame allows windows to stay the same size while at the same time improving the thermal insulation and quake-resistance of the window opening, usually a structural weak point in a house.

2. Remote control slit shutters not only provide disaster and crime protection, but make day-to-day life easier as well. Adjusting the slits provides privacy from outside but still allows a measured amount of light and air to enter the room.

3. Kantan Mado Remo (easy window remodeling) is a product that encourages remodeling with a simple installation method that covers over the existing window frame. Windows can be replaced or made into double layers quickly and without needing to break the wall.

This conversation took place on March 23, 2020.

Stakeholder Dialog

YKK AP

Sustainability

Megumu Murakami and

(Senior Manager, Center for the Strategy of Emergence,
Japan Research Institute, Limited)

Hidemitsu Hori

(President Representative Director, YKK AP)



Murakami: When I visited the experience showroom, not only did I encounter the good performance of your products, but also noticed that many of the products can contribute to SDGs.

Hori: The value of our products might be hard to be delivered just by looking at them, but their value becomes clear when you actually experience them. I think that is why the experience showroom has been rated even more highly than we expected. Windows with good thermal insulation performance are known for saving energy, but they also provide health benefits, important in this time of the coronavirus pandemic.

Murakami: People's concerns have shifted.

Hori: That's right. People are becoming more interested in ventilation. An important theme is air flow, in which ground-level windows bring in good air and higher windows release interior air outside. Windows have an important role in maintaining health.

Murakami: I am never sure when to open the windows in pollen season.

Hori: We provide a lot of information related to windows

and doors on our website, including how to open and close windows and effective ventilation methods. As well, we are working on the development of doors with 3D face recognition and contactless handles. These are useful crime prevention technologies, but with the coronavirus pandemic, there are increasing numbers of people who want to avoid touching door handles, so we can expect demand to grow.

Murakami: Do you have products specific to overseas markets?

Hori: In the U.S., we produce and sell hurricane resistant windows. Since 1996, when hurricanes caused a tremendous amount of damage, certain standards have to be met in order to get insurance. In Japan, using shutters with high wind pressure resistance is an effective way to prepare for a typhoon.

Murakami: Products that save energy and protect against natural disasters also make a house feel safer and comfortable, which contributes to overall wellbeing.

Hori: As you suggest, how we live at home is more important than ever. The number of people working from home is skyrocketing. Our ways of living at home are changing. Instead of people working at the office and then spending their off-time at their houses, people are now working long hours in their houses. Interest is also growing in the performance and functions of a house. Until now, many people did not really know what their houses were like during the day, but now more and more people care about it and want to change the daytime brightness, temperature, and so on.

Murakami: You have also established headquarters operations in Kurobe, Toyama. What was behind that?

Hori: After experiencing the 2011 Tohoku earthquake and tsunami, we started thinking about our risk response should something happen in Tokyo, and so we established headquarters functions in Kurobe. In other words, it was a case of business continuity planning (BCP). As coronavirus infections have increased in Tokyo, our Kurobe Countermeasures HQ has been able to rapidly respond to the coronavirus problem, with excellent results. Another major plus has been that by moving to Kurobe, we have been able to remind ourselves why the YKK's founder, Tadao Yoshida, created the YKK Group. The winters are very cold there, but when the snow melts with the arrival of spring, the meltwater begins to flow and we have the opportunity to experience beautiful natural surroundings. It makes us realize that this natural environment is where true value resides. Conducting business for the sake of the local environment and for people was at the core of Tadao Yoshida's thinking.

Murakami: In Sweden, where efforts toward SDGs have been advanced, the environment is considered as the foundation for human lives and economic activity. You have this mindset long before the idea of SDGs arises.

Hori: Tadao Yoshida put many ideas into practice, including investing to protect the environment. Placing great importance on the natural environment, by planting trees around a factory to create a "factory within a forest," for example, is exactly the kind of thinking that Tadao Yoshida embraced.

Murakami: The idea of doing things "for the environment

Conducting business for the sake of the local environment and people was at the core of Tadao Yoshida's thinking.

Hidemitsu Hori

and for the people” is inherent in many of the 17 goals of the SDGs.

Hori: In that sense, we have already made much progress on them. Recently, however, we have also come to realize that we failed to anticipate natural disasters and other issues. The 17 individual SDGs are connected to our business in many ways, but this is not something that we can make the world appreciate or recognize. Rather, each individual employee must work to tie the goals to their business, and in that way, society will see and appreciate the value of that work.

Murakami: An example that we see from other companies is efforts to replace plastic products with better-quality products. In terms of SDGs, what was your company's purpose in switching from aluminum to plastic window frames?

Hori: Vinyl windows have good energy-saving and thermal insulation performance, but they are derived from petroleum, and so in terms of recycling, aluminum is easier to work with. Therefore, at this point in time, plastic helps to reduce CO₂ emissions, and the performance factor is important, but from the point of view of SDGs, any replacement material has to have good performance and also be good for the environment. It was at this point that we turned to wood materials. The wood must be from Japan, not imported. The reason for this is that traditional *satoyama* (cultivated woods) is disappearing, forests and human habitation are intermingling, and the forests are growing wild. What happens to these forests is of great importance in protecting the nation's land.

Murakami: Making use of lumber is attracting attention from a variety of perspectives.

Hori: Japanese cedar (*sugi*) stops producing oxygen after 20 to 30 years, so we have to harvest trees that are ready to be harvested, plant new trees, and regenerate the system. We are also thinking of planting Japanese cypress for our use. Wooden windows have good performance, but are difficult to care for. Looking to the future, we are working on solutions, such as placing coverings on the exterior, wood that does not need maintenance, and exploring different ways to use plant materials.

Murakami: From the point of view of the natural environment, we have raised our expectations for wood materials.

Hori: The ideal solution is recycling, in which, for example, 100 percent of the products we deliver to customers are reused, including the plastic. A question is, how do you recover the materials? Also, how do we reduce packaging when it comes time to ship? We want to firmly establish mechanisms that make sustainability consistent with economic activities.



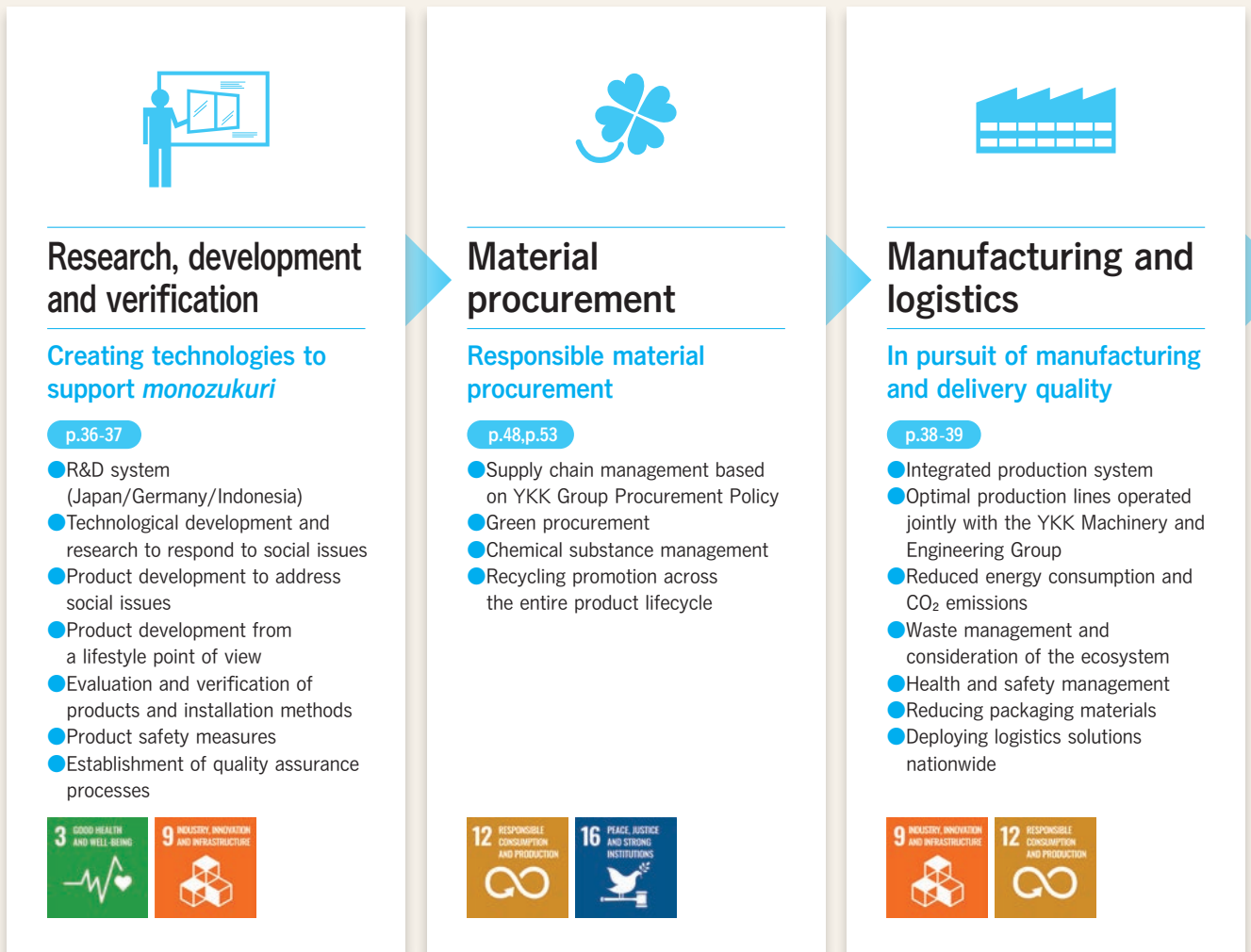
Megumu Murakami
Hidemitsu Hori



SDGs in Our Valur Chain

The YKK AP value chain for a more sustainable society

The “Cycle of Goodness,” which forms the foundation of our business activities, is in itself contributing to the development of a sustainable society. While continuing to provide architectural products that bring joy to our customers, YKK AP is also engaged in resolving social issues.



Foundations supporting our value chain

Corporate governance

p.52

Compliance

p.53

Risk management

p.53

About the SDGs

The Sustainable Development Goals (SDGs) were adopted by the United Nations in 2015 and are comprised of 17 goals and 169 targets to be achieved by 2030. The SDGs require actions to be taken by everyone involved, from corporate entities to government agencies and the country as a whole.

SUSTAINABLE DEVELOPMENT GOALS

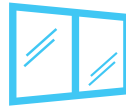


Sales

Product appeal and proposal capability

p.40-41

- Technical proposals to address social issues
- Development of tools to propose technologies (simulators for thermal insulation and air flow, VR)
- Enhancement of product exhibition facilities (experience, installation and technology)
- Awareness-building activities for professional users at various forums and events
- Design proposals utilizing BIM



Installation

In pursuit of greater installation quality

p.31-35,p.42-43

- Research, development and proposals of labor-saving installation methods and jigs
- Installation training and certification systems organized by field engineers for building contractors
- Improvement of installation skills and quality led by the YKK AP Group Installation Cooperative



Product use

User-friendly and social-friendly products

p.44-45

- Healthy, comfortable, energy-efficient
- Disaster prevention and quake-resistant products
- Products for remodeling projects
- Maintenance by certified technicians
- Provision of information to customers
- Release of environmental information and environmental labels
- Improve product traceability



Human resource development

p.49-51

Health management

p.51

Environmental management

p.46-48

Sustainability Management System

YKK AP Sustainability Management System

ESG	Seven core subjects of ISO26000	Key issues	Key initiatives
G	Organizational governance	Corporate governance	<ul style="list-style-type: none"> Decision-making mechanisms as an organization Internal controls
		Compliance	<ul style="list-style-type: none"> Observance and education of compliance regulations Strengthening of compliance system based on the YKK Group's compliance standards, the YKK Global Criteria of Compliance (YGCC).
		Risk management	<ul style="list-style-type: none"> Establishment, implementation, and use of business continuity plan (BCP) Coordination of risk committees (Quality Committee, Foreign Trade Control Committee, Crisis Management Committee, Information Security Committee, Technical Asset Management Committee) Building systems to prevent the occurrence of product defects and improve response when defects do occur
S	Human rights	Respect for human rights	<ul style="list-style-type: none"> Respect for human rights Respect for fundamental labor rights Equal employment opportunities Harassment prevention
	Labor practices	Human resources / benefits and welfare	<ul style="list-style-type: none"> Promotion of work style reform (optimized work hours management, promotion of diverse work styles) Building and operating a fair human resources system Continual employment of a fixed number of employees Enhancement of welfare, childcare and family care services
		Health and safety	<ul style="list-style-type: none"> Promotion of work style reform (optimized work hours management, promotion of diverse work styles) Establishing safe and comfortable workplace environments Training on health and safety, facilities safety inspections
		Human resource development	<ul style="list-style-type: none"> Establishing human resource education and training systems Improving training of global human resources Improving training of engineering human resources Improving human resource development systems
		Diversity and inclusion	<ul style="list-style-type: none"> Building environments that enable diverse human resources to perform well Promotion of women's advancement in the workplace Promotion of hiring of persons with disabilities Creating a welcoming workplace for LGBTQ employees Reassessing compulsory retirement systems and promoting active participation of veterans
	Fair operating practices	Corruption prevention and fair competition	<ul style="list-style-type: none"> Management and handling of supplier governance information Implementation of regulations on political funding and other gift exchanges Management of contact with competitors Observance of the Subcontract Act Implementation and monitoring of rules and guidelines
		Responsible political involvement	<ul style="list-style-type: none"> Exclusion of antisocial forces Implementation and monitoring of rules and guidelines
		Promotion of social responsibility in our value chain	<ul style="list-style-type: none"> Promotion of Green Procurement Purchasing of sustainable products Encouraging construction industry technicians to join social insurance programs
		Respect for property rights	<ul style="list-style-type: none"> Research and development at domestic and overseas R&D centers Respect for intellectual property rights
	Consumer issues	Fair marketing, information and contract fulfillment	<ul style="list-style-type: none"> Customer information service Strengthening initiatives based on customer feedback Observance of laws and regulations
		Protection of consumer health and safety	<ul style="list-style-type: none"> Elimination of harmful chemicals Comprehensive product safety measures Creation and distribution of Owner's Manuals Expansion of methods and information provision across the entire product lifecycle Research, development, manufacturing, and provision of products and technologies that contribute to safety and security
		Sustainable consumption	<ul style="list-style-type: none"> Research, development, manufacturing, and provision of sustainable products and services Promoting the use of recycled materials
		Consumer services and support; resolution of complaints and disputes	<ul style="list-style-type: none"> Improvement of traceability Continuous improvement of manufacturing and delivery quality Customer information services (enhancement of customer support pages and information dissemination systems) Strengthening initiatives based on customer feedback (maintenance, after-sales service, etc.)
Community involvement and community development	Community involvement	<ul style="list-style-type: none"> Engage in community contribution activities (support/cooperate with activities of local organizations, support disaster measures/recovery, etc.) 	
	Education and culture	<ul style="list-style-type: none"> Educational support for future generations Information dissemination to support healthy and comfortable lifestyles Working with the YKK AP Group Installation Cooperative to foster Installation technicians Supporting cultural activities 	
	Health	<ul style="list-style-type: none"> Proposal of healthy and comfortable lifestyles through thermal insulation products, etc. Regulations on harmful chemicals 	
	Social investment	<ul style="list-style-type: none"> Support disaster measures/recovery Energy-saving measures during a natural disaster 	
E	Environment	Pollution prevention	<ul style="list-style-type: none"> Prevention of pollution caused by the release of air pollutants, wastewater, waste, harmful substances or other reasons (risk reduction and reinforcement of measures) Initiatives to prevent pollution across the entire product lifecycle Participation in environmental activities
		Sustainable use of resources	<ul style="list-style-type: none"> Development, manufacturing, and provision of sustainable products and technologies Reduction of energy use, such as electricity, fuel, etc. Waste reduction and recycling promotion Reduction of water use Reduction of paper use through digitization promotion Contributing to the building of sustainable towns
		Climate change mitigation and adaptation	<ul style="list-style-type: none"> Reduction of greenhouse gases Switching from heavy oil to natural gas (LNG) Prevention of losses related to climate change; climate change mitigation measures Research, development, manufacturing, and provision of products and technologies adapted for climate change
		Environmental protection; recovery of biodiversity and natural habitats	<ul style="list-style-type: none"> Consideration for the ecosystem (protection and monitoring of endangered species) Measures against water intake and wastewater risks Reducing waste; appropriate waste disposal management Research, development, manufacturing, and provision of materials and products that take into consideration the environment and ecosystems

Under the YKK Philosophy and Management Principle, YKK AP is engaged in creating a sustainable society. Based on the ISO 26000 CSR system and SDGs, we have organized and identified key issues (materiality) from environmental, social and governance perspectives. For each issue, we have appointed four executive vice presidents to supervise manufacturing, sales, engineering, and administration. These executive vice presidents are responsible for establishing what initiatives are required to meet the 169 targets of the SDGs, and actively promote work on those initiatives.

Related targets of SDGs															Page numbers in this booklet		
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	
															16.7	17.1	p.52-53
			4.a						10.3						16.5		p.53
										11.b	12.4	13.1					p.37,53
				5.1			8.5										p.49-50
				5.4			8.5										p.50-51
		3.3	4.7				8.8										p.50-51
			4.4	5.5			8.2										p.49-51
				5.5			8.5	10.3									p.50
															16.5		p.52-53
															16.5		p.52-53
		3.9	4.4								12.6						p.53
															16.5		p.36
											12.4 12.8						p.41,45
		3.3									12.4	13.1					p.44-46,53
						7.3				11.6							p.44,48
											12.8						p.37,41,45
										11.6			14.1			17.17	Posting on company's websites*
			4.4														p.40-43
		3.9															p.41,44
																17.17	p.53
		3.9			6.3						12.4 12.8		14.1	15.1			p.39,46-48
					6.3 6.4	7.3					12.2 12.5 12.8			15.1			
						7.3					12.2 12.8	13.1 13.3					
											12.4		14.3	15.1			

* <https://www.ykkap.co.jp/company/en/contribute/>
<https://www.ykkap.co.jp/company/jp/sustainability/environment/report2020/community/community05.html> (Information in Japanese)

Residential Business

Proposing comfortable lifestyles with windows and doors

Focusing on our first Japanese window brand APW series, we propose comfortable lifestyles through entrance doors and windows. We aim to improve the thermal insulation and safety of windows and doors, and thereby help create a house-friendly and people-friendly society.

Main products



Windows



Entrance doors/sliding doors



Interior doors/partitions



Window shutters

Business strengths

- Wide range and variety of high thermal insulation windows that contribute to healthy and comfortable lifestyles
- Disaster prevention and mitigation products which support for earthquake and typhoon resistant houses with under the key words “safe and secure”
- IoT lineup with a focus on security

Challenges

- Decline in the housing starts
- Product development and proposal menu to meet changes in lifestyles and work styles
- Worse-than-anticipated natural disasters such as large-scale typhoons

Focus themes

- Development of value added products
- Expand product development and proposal menu to meet changes in lifestyles
- Expand range of disaster prevention and mitigation products

FY 2019 Summary

Under the Fifth Mid-Term Management Plan, promoting windows with high thermal insulation performance was a core activities policy. Especially, vinyl windows helped drive our business. We shipped more than one million units in a year for the first time ever, which is 110% of the previous year. Most notably, our high performance triple insulating glass vinyl window APW 430 rose to 132% of the previous year.

The ratio of vinyl windows against our total residential window shipping units (the rate of vinyl window use) was 26.2%, while the ratio for high thermal insulation including aluminum-vinyl composite windows was 63.8%, marking a shift toward high thermal insulation. As a result, net sales were 101% of the previous year's level.

Business strategy going forward

We shall redouble efforts on product development under the themes of “safe and secure” and “health and comfort” in preparation for frequent natural disasters and in response to lifestyle changes such as an increase in at-home work due to the coronavirus pandemic. As well, to help customers realize the value of these products, we are working to expand our proposal menu and, at the same time, provide new proposal content linked to changes in employee work styles.



Vice President
Sales & Marketing
Akira Uozu

The value we want to contribute to society through our business

So far in the residential business, we have focused on improving resident health and asset values, and have been working on proposal activities for high thermal insulation windows with a focus on vinyl windows. Going forward, in response to drastic changes in living environments, we are conscious of the importance of proposals that take into account, more than ever, safety, security, health, and comfort. We anticipate that in terms of both work and private life,

people will be spending more time at home, and customers want their homes to be the safest place they know. To that end, as well as high thermal insulation windows that help maintain comfortable temperatures, we will engage in comprehensive proposal activities for value-added products, such as shutters with high wind pressure resistance that protect against increasingly frequent typhoons.

Through our products and services, we will continue to be a manufacturer that delivers safety and security with windows and contributes to communities and society.



Exterior Business

Proposing spaces that make living more comfortable

Uniting house and garden and creating new value around windows, entranceways, and property lines. We are providing product series that make it easy to fully coordinate the entire residential property and each family's lifestyle.

Main products



Balconies



Carports



Gates & fences



Terraces



Exterior materials

Business strengths

- Ability to provide fully coordinated proposals for buildings and exteriors
- Market creation with products for garden space proposals and comfortable exteriors and buildings
- Easy selection with products organized into luxury, mid-grade, and standard types

Challenges

- Improve sales with dedicated locations, specialized sales/development personnel
- Improve cost competitiveness by building manufacturing and supply systems in response to the areas demand
- Expand business area by enhancing public exterior products and sales

Focus themes

- Improve proposals for fully coordinated solutions for buildings and exteriors of detached homes to house makers and home builders
- Expand sales of exterior products by sales enhancement through exteriors contractor channels
- Improve cost competitiveness by optimizing manufacturing and supply systems by product/channel

FY 2019 Summary

In the exterior market, demand for replacements and repairs rose due to natural disaster occurred in 2018. This resulted in a sharp year-on-year performance boost in the first half of the year. However, later in the year consumption motivation amongst end users fell dramatically with the raised sales tax in October 2019, and the spread of the coronavirus disease, resulting in a major year-on-year decline. Regarding the annual sales, the market environment was worse than the previous year, but our sales strengthening efforts through product appeal and proposal capabilities achieved good results and net sales stayed at 100% of the previous year.

Business strategy going forward

We will continue to focus on reinforcing sales through expanding product range and increasing product appeal as our business key measure as laid out in the Fifth Mid-Term Plan, and also strengthen organizations and systems corresponding to sales channels. As well, we will work to fully establish sales channels in order to increase sales via total coordination proposals for buildings and exteriors. With an eye toward sustainable growth, we will be enhancing initiatives exteriors in the commercial sector, in addition to residential exteriors, new construction, additional installations, and renovations sectors.



Vice President
Exterior Business

Masato Shinozuka

The value we want to contribute to society through our business

Through our exterior business, we want to provide health, comfort, energy savings, energy creation, safety, and other benefits to customers and society. As well, we seek to develop and popularize environmentally friendly products. An example of this is our non-formaldehyde products, developed as healthy products for residents. The wood powder and polypropylene that are the main raw materials are recyclable and Earth-friendly. We also offer products that help shield

the sun to maintain comfortable room temperatures, save electricity, and reduce energy consumption. Products that can generate electricity by mounting solar panels. Products that help ensure safety, with hand railings to support people on garden approaches with steps. And, products that reduce CO₂ through greening.

In this way, our product lineup is helping to solve social issues. Going forward, we will direct more of our efforts into developing products that create value for customers and contribute to society.



Renovation Business

Bringing new value to residences and buildings

We want to bring value to old residences and buildings that exceeds the value of a new construction. With our renovation product installation methods that we ourselves have developed, we work actively to improve the design, thermal insulation, convenience, and quake-resistance of windows and doors.

Main products



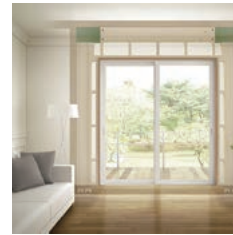
Window remodeling



Door remodeling



Building renovation



Quake-resistance retrofitting

Business strengths

- Full lineup of remodeling products for single family home windows and doors
- High thermal insulation for single family home windows and doors
- Renovations of multi-family condominiums and buildings

Challenges

- Create demand by further raising awareness of remodeling opportunities for single family home windows and doors
- Promote renovation proposals for the housing performance improvement
- Strengthen engineering and further expand thermal insulation product lineup for condominium and building renovations

Focus themes

- Create demand with energy efficiency, quake-resistance, disaster prevention, and disaster mitigation proposals for single family homes
- Enhance ability to handle private condominium areas when renovating condominium and commercial buildings
- Promote window and door thermal insulation for residential and non-residential buildings when renovating condominium and commercial buildings

FY 2019 Summary

In terms of single family homes, we greatly extended contacts with local contractors while boosting net sales of remodeling products, centered around Kantan Mado Remo (easy window remodeling), Kantan Door Remo (easy door remodeling), internal window products, shutters, and more. As for condominiums and building renovations, we responded to growing demand in multi-family residential buildings and educational facilities driven by subsidies and increased budgets while strengthening our engineering systems.

As a result, net sales for the business as a whole were 106% of the previous year.

Business strategy going forward

We will conduct business and work to strengthen our engineering and proposal capabilities centered on windows and doors, and thereby contribute to the improvement and reform of living environments, under the themes of safety, security, health, and comfort. In single family homes, we will strive to create demand by proposing parts-replacement remodeling and renovation for the housing performance improvement, by making use of energy-saving products, quake-resistant products, and disaster prevention and mitigation products.

As well, in condominium and building renovations we will launch products for private condominium areas, further promote thermal insulation, strengthen initiatives directed at non-residential buildings, and bolster our organization in the Tokyo Metropolitan and Kansai regions.



Vice President
Renovation Business
Toshiki Kikui

The value we want to contribute to society through our business

Renovation refers to construction work that maintains the still good parts of an existing building. It can improve the performance of buildings such as residences, to a better-than-new state, and thus increase their value. By mitigating summer heat and winter cold, saving energy (low energy input and low energy consumption), preparing for earthquakes and other disasters, and extending the life of a building, we provide healthy, comfortable, safe, and secure

living environments and help realize a sustainable society.

Since 2017, we have been running the Renovation demonstration project for the housing performance improvement, in which we carry out renovation for the housing performance improvement, in particular, the thermal insulation and quake-resistance of existing house, and demonstrate that the value of a residence can be changed through its windows and doors. By using such initiatives to communicate to society at large, we can help solve social issues such as abandoned houses.



Commercial Products Business

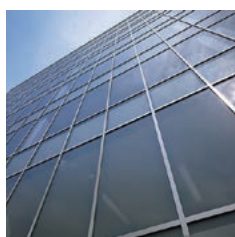
Windows and curtain walls for creating beautiful and functional urban spaces

Not only does the building construction sector affect the shape of cities, it can also help achieve a low-carbon society. With flexible manufacturing and supply, we provide value added solutions such as facade designs and energy savings for office buildings, condominiums, schools, medical facilities and more.

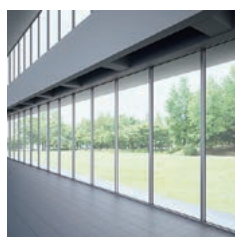
Main products



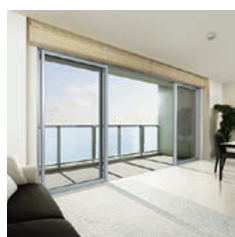
Office building windows



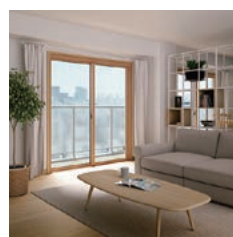
Curtain walls



Building entrances



Windows and doors for residential buildings



Remodeling products

Business strengths

- Strong product line appreciated by users for long term, including office building windows, curtain walls, etc.
- Strong sales and proposal capabilities owing to a network covering the whole country
- Technology capability to handle challenging projects

Challenges

- Respond to market changes due to shrinking population, natural environment, social environment, and other effects
- Labor shortage due to aging of skilled workers
- Expand business fields

Focus themes

- Development and introduction of products and services that meet market needs for thermal insulation, fire-resistant, disaster prevention, ventilation, safety, etc.
- Productivity improvements using IoT
- Further expansion of existing businesses and initiatives for new business

FY 2019 Summary

The commercial building construction market has shrunk year-on-year due to a slowing down of retail and lodging facility builds as Olympic projects were completed and special demand ceased. On the other hand, April 2019 saw the full-scale launch of individually certified products under ministry certification of fire-resistant facilities (hereafter referred to as fire-resistant products).

In this business, we worked to strengthen our ability to apply our fire-resistant commercial products to different structures through quality assurance, product development and information dissemination and use. As well, we continued to bolster our high thermal insulation products by introducing the fire-resistant products "BGH67" which is a specified vinyl window for hotel guest rooms. We also brought heat-resistant, tempered, insulating glass aluminum-vinyl composite windows to the market. However, we were unable to overcome the market slump and sales were 98% compared to the previous year.

Business strategy going forward

While strengthening our sales capabilities based on the engineering capabilities demanded by the commercial products business, we will further expand our fire-resistant products, organize our high thermal insulation products, and bolster our product lineup to meet changes in market needs in terms of disaster prevention, ventilation, and safety. On the manufacturing and supply side, we will work to boost business competitiveness and implement supply systems with shorter lead times and online order placement.



Vice President
Commercial Business
Hiroiyuki Seguchi

The value we want to contribute to society through our business

Building construction involves different applications, parts, and usage environments. Our mission in the commercial products business is to focus on quality and provide products, technologies, and installation that can be used safely and securely for long periods, and thus contribute to improving the value of buildings. In response to changing customer needs in the face of a shrinking population and changes in the natural and social environments, we are working to enhance customer

satisfaction by offering new products and services.

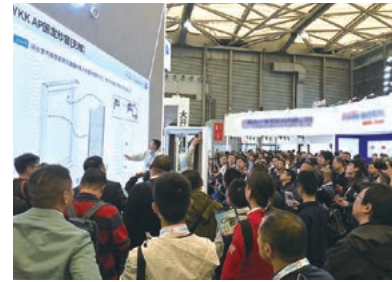
Construction sites are facing labor shortages, and we are seeing significant issues such as the aging of installation technicians and the low retention rate of young technicians. We are helping to solve this industry-wide social problem. Together with the YKK AP Group Installation Cooperative, we promote the training of the young technicians through the YKK AP Installation Skills Training Academy, and are also developing products and installation methods that require less labor.



Overseas AP Business

Operating businesses suited to individual countries and regions

The requirements for architectural products such as windows, doors, and curtain walls differ from country to country and region to region due to varying climates, cultures, and other factors. In order to respond to these needs, we are globally expanding our product development, technology and proposal capabilities fostered in Japan.



Business strengths

- Global businesses established in 10 countries and regions, including the U.S., China, and Asia
- Product development, localized manufacturing and sales system suited to the climate, customs, and culture of each country or region
- Technology and manufacturing support system from Japan

Challenges

- Global response capabilities in Japan's headquarters functions (compliance, risk management, governance)
- Enhance sales, customer relations, and business processes by further establishment of business model in growing China and Asia markets
- Build management systems for stable, sustainable growth by establishing recruitment, training, and enhancement programs for local management candidates

Focus themes

- U.S.: Early create synergy effect with Erie Architectural Products Inc., which we acquired in December 2019
- China: Improve speed and efficiency through the establishment of YKK AP Co., Ltd., which integrates manufacturing and sales
- Taiwan & ASEAN: Rebuild the business model in South Asia regions to develop new customers and sales channels and implement further growth strategies

FY 2019 Summary

In the U.S., as well as implementing our sales strategy with the opening of our west coast office, we acquired Canada's Erie Architectural Products Inc. in December 2019, and built a foundation for further expansion of our curtain wall business. In China, the AP business saw increased orders due to enhanced proposal capabilities in the major real estate development market. In Taiwan and Indonesia, we bolstered order receiving in luxury markets and worked to expand sales by strengthening product appeal. However, due to the effects of the coronavirus disease, overseas net sales, including the facade business, were 98% of the previous year.

Business strategy going forward

Under the Fifth Mid-Term Management Plan, we have committed ourselves to "Reinforce business foundation and expand business in the target market". In FY 2020, we restructured overseas companies' capital and changed the business management system. Going forward, as well as clarifying areas of responsibility and authority, we will work to accelerate business deployment and strengthen governance. In countries in which we are already present, we will expand sales areas and channels, proactively launch new products, and expand new business areas. We will also review expansion into new countries and regions and work for the further growth of the overseas AP business.



Executive Vice President
International Business
Kozo Nagaki

The value we want to contribute to society through our business

Ever since we established our first overseas company in 1976 in Singapore, we have grown to have a presence in 10 countries and regions and employed over 4,000 people overseas. In order to deliver products to customers that are tailored to the climate, culture, and needs of the various countries and regions, we conduct business operations by extending roots into the local communities. In every country and region, through *monozukuri*, we build motivating

workplace environments, work for the prosperity of our customers and business partners based on the "Cycle of Goodness," and thereby contribute to society.

Under the Sixth Mid-Term Management Plan starting from FY2021, we will proactively invest in the business so that we can deliver our high-quality and environmentally friendly products to even more customers around the world and further contribute to the development of each country and region.



Facade Business

Taking on the challenge of difficult, cutting-edge facades

YKK AP FACADE Pte. Ltd., located in Singapore, undertake total project management, including attractive architectural facade design, engineering, procurement, and construction.

Line of business

- High-rise and complex curtainwalls
- Design, construction and sales of related products

Business strengths

- Technology capabilities responding to diverse facade designs
- Engineering capabilities to make realistic proposal possible
- Communication capabilities to understand and realize what is wanted

Challenges

- Cost competition with both global and local businesses
- Respond to further diversification in materials and applications
- Establish multiple locations

Focus themes

- Introduction of ICT using Building Information Modeling (BIM)
- Expand proposals of green building-related technologies for the renovations sector
- Pursuit of optimized proposals through pre-construction (front loading)

Business strategy going forward

There are still many analog aspects within our business processes, and so we will shift to processes centered on digital technology, and propose and implement optimal and efficient solutions based on an accurate understanding of the needs of stakeholders.



President,
YKK AP FACADE Pte. Ltd.

Tetsuya Onodera

The value we want to contribute to society through our business

Beautiful architecture is a soothing presence and an integral part of our lives. As the face of buildings, facades play a key role in this. We anticipate that in the future buildings, there will be a strong emphasis on not only reducing the environmental impact and mitigating disasters, but also considering health and having antibacterial functions to protect against infectious diseases such as the coronavirus.

Going forward, architecture possibilities will greatly expand and the role of the facades that surround buildings will become more important, and will thus make many contributions to meeting these needs.



Industrial Products Business

Supporting industrial sector with high-quality aluminum profiles

We provide high-quality extruded aluminum based on our knowledge of materials, profile designs, extrusion molding and surface treatment, processing, etc., and our advanced technology capabilities we have fostered in the manufacturing of aluminum building materials.

Line of business

- Components of machinery and equipments
- Architectural components
- Auto parts
- Sustainable products

Business strengths

- Integrated production from casting, extrusion, and to surface treatment at 4 manufacturing locations in Japan
- Own large-scale extruders including 14-inch (6,500 ton) and 10-inch (4,000 ton)
- Stable quality and delivery

Challenges

- Differentiate to compete in a sluggish and highly competitive market
- Added-value proposals via win-win relationships with business partners in a business environment of soaring personnel and materials costs
- Engage in the transportation sector which is another mass market as the construction sector

Focus themes

- Expand sales by making the fullest use of YKK AP's facilities and alloys acquired in architectural products manufacturing
- Proposals to meet market needs for processing and surface treatments, etc.
- Expand sales in non-architectural products sectors, with a focus on passenger vehicles

Business strategy going forward

There are a large number of competitors in the construction sector and competition is fierce. Therefore, we will establish a solid position as a favored manufacturer by continuing to accurately meet customer needs. In the non-architectural products sector, we will integrate manufacturing, sales, and engineering and expand our field of business in order to meet the requirements of business partners different from architectural products sector.



Vice President
Industrial Products

Atsuhito Baba

The value we want to contribute to society through our business

Our industrial products business has approximately 20 years of experience and history. Throughout that time, we have consistently delivered the materials and components best suited for our business partners' *monozukuri* needs. The rise in popularity of highly recyclable aluminum profiles not only contributes to the creation of a recycling-based society, but also helps to reduce product weights. We believe our business can contribute to weight reductions and energy savings in automobiles and trains in the transport sector and play a key role in achieving the aims of SDGs. Going forward, we will provide healthy and comfortable lifestyles to the end users who use products containing our materials, and thus play a role in solving social issues.



YKK AP Business Introduction

Research & Development

Value creation through the eyes of professionals and consumers

We have consolidated our research, development and verification activities to Kurobe city in Toyama. Building speedy and timely product development systems, we implement *monozukuri* processes in the pursuit of high quality and advanced technology.



Business strengths

- Manufacturing and production technology engineers gathered in Technology Headquarters in Kurobe, Toyama
- A flat organization and environment which allows young and veteran engineers to freely exchange of ideas
- Product development, verification, and proposals/dissemination cycles running by three technology centers, YKK AP R&D Center, Value Verification Center, and Partners Support Studio

Challenges

- Long-term engagement based on the customer point of view, from the first product use to maintenance and remodeling
- Build Product Lifecycle Management (PLM) process to pursue enhanced profitability and development efficiency
- Human resource and engineer development to strengthen overseas business and differentiation based on technology

Focus themes

- Respond to social changes and demands such as energy efficiency, easy-installation, and disaster prevention and mitigation
- Promote development of platforms and modules
- Provide beneficial information to users throughout the entire product lifecycle

FY 2019 Summary

Product Development Division, which takes on the function of our company's product development, have engaged in front-loading model development and PLM building, while pursuing the four "qualities" (products, worksite, usage, information) from the customers' point of view and committing itself to an onsite, hands-on approach. The result of these efforts was the introduction of a number of products that met market demands, including the APSWORD NEO series of aluminum-vinyl composite windows for both residential and commercial buildings, the development of comprehensive proposals covering both buildings and their exteriors, fire-resistant products for commercial buildings, and our GR wind-resistant shutters series. Also, through strengthened collaboration between three technology centers, the Partners Support Studio completed in March 2019, the YKK AP R&D Center, and the Value Verification Center, we focus efforts simultaneously on development, evaluation and verification, and technology proposals and information sharing.

Business strategy going forward

Amidst dramatic changes in the circumstances surrounding construction, we will strive to make thoroughgoing improvements in installation and worksite technologies and product technologies, while working to further improve development efficiency. We will particularly focus on the key words "safe, secure, health, and comfort," and work to build ongoing trust with users. We will propose, provide, and realize value connected to the tangible, the intangible, and services, while developing products for new construction, maintenance, and renovations. As well, we will work to provide more and better information to our customers and business partners through a variety of approaches, and thereby create even more fans of YKK AP.



Director, Vice President
Research & Development

Shuichi Mizukami

The value we want to contribute to society through our business

The windows and doors products and components that we provide have a large impact on the performance of a building, including thermal insulation, air flow and ventilation, daylighting, crime prevention, disaster prevention, and so on. Thermal insulation and air flow/ventilation are both directly tied to energy conservation within a building, and improving this can have a major impact on reduced CO₂ emissions, which is one of the pressing issues the world are facing today.

Also, improving thermal insulation performance is known to promote health by maintaining a comfortable room temperature. At the same time, fire and disaster prevention functions not only protect people's lives, they increase safety and security in society as a whole. Furthermore, the windows and doors are a key element in the design and appearance of buildings, and thus contribute to wellbeing and lifestyles. By developing and popularizing such products, we are helping to realize a richer, safer, more secure, and healthier society.



Manufacturing

Concentrating our technology capabilities to achieve higher-level quality

From the optimal materials for *monozukuri* to all components and manufacturing equipments, YKK AP builds integrated production systems in which we develop and produce all our products ourselves. We continue to devote ourselves to *monozukuri* and provide consistently high-quality products.



Business strengths

- Technology capability through equipments, and line design that involves the YKK Machinery & Engineering Group from the product planning stage
- Market competitiveness from order receiving to supply under the windows business model, and YKK AP's specific vinyl window automation and labor-saving technology
- Concurrent product development and quality assurance by integrated production from materials to parts, glass, and fabrication

Challenges

- Optimize *monozukuri* and rebuild manufacturing and supply systems to adapt to future market shrinkage
- Develop labor-saving technology to prepare for falling populations in the future (production lines, transportation and delivery, installation)
- Respond to rising cost of materials (efficient supply chains, controlling usage volumes through recycling and reduced packaging)

Focus themes

- Total cost reductions through product-based *monozukuri* reform, from materials procurement to supply
- Responding to business environment changes (streamline equipments, workers, and materials)
- Implement work style reforms through continued business process improvements

FY 2019 Summary

In the Fifth Mid-Term Management Plan, we set out a policy of "Build production system to increase product value and withstand changes in the business environment", and we worked on key initiatives to improve profitability of new products and streamline equipments, workers, and materials. Particularly in FY 2019, we strengthened our manufacturing and supply systems in response to increased production of vinyl windows by expanding and rebuilding production lines in our Hokkaido Factory and Tohoku Plant. We also worked to improve profits and reduce manufacturing costs with the introduction of the Venato D30, a core product series in our entrance doors that was launched in FY 2019.

Business strategy going forward

Based on the principle of "stronger production lines can change *monozukuri*" in terms of manufacturing and supply, we have improved made-to-order production and increased automation/labor-saving on production lines. In the supply chain, we worked to improve deliveries (lead times), service, and quality while continuing to reduce costs. Going forward we will further work on *monozukuri* reform by promoting the use of AI and robot technologies and deploying and integrating them on all products and lines, with the end goal being the creation of manufacturing and supply systems that can respond strongly to changes.



Director,
Executive Vice President
Manufacturing
Kazuo Matsutani

The value we want to contribute to society through our business

Manufacturing Division, which is in charge of our company's manufacturing, aims to improve efficiency and reduce energy consumption through systematic updating of building infrastructure and facilities, as well as developing labor-saving facility technologies and deploying logistics measures across the country. The result is a strengthening of our manufacturing and supply systems as well as a greater consideration of the environment. In addition, by developing more sustainable materials, improving packaging reduction and recycling

technologies, and other initiatives, we can provide products that allow people to live in safety, security, and comfort, and thereby contribute to the building of a sustainable society.

As a manufacturing company, our strength lies in our *monozukuri* sites. As well as building work environments that motivate employees and encourage their active participation, we work to further improve health and safety of workplace. With the idea of "exceptional safety", which shows employees' safety is irreplaceable, we take initiatives to eliminate industrial accidents through intrinsically safe environments.



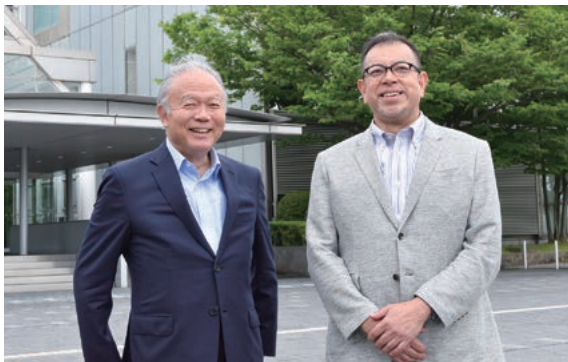
Interview

Aspirations for a Living Architectural Culture at YKK AP

Interview/Photos
Nikkei Architecture
Former Chief Editor

Hiroshi Miyazawa

Mr. Miyazawa served as an editor at Nikkei Architecture for approximately thirty years and chief editor for four. He is now an independent editor, illustrator, and writer. He visited the YKK Group's architectural projects in Kurobe City, Toyama Prefecture, and asked YKK AP corporate advisor Tadahiro Yoshida about his thoughts on architecture.



Mr. Miyazawa (right) and Mr. Yoshida (left) stand in front of the YKK50 Building

Miyazawa: I cannot think of another architectural products manufacturer in Japan that demonstrates the quality of its own products in its own buildings, like your company has done. Also, all the buildings have wonderful spaces, and from the exterior to the buildings themselves, they are very well maintained and managed. I suppose you can't keep on doing this without affection for architecture. Mr. Yoshida, I understand that you played a leading role in creating this architecture. The first project was the Maezawa Garden House designed by Mr. Fumihiko Maki, is that right?

Yoshida: That's correct. Mr. Maki was the first famous architect from whom we commissioned a design.

The Maezawa Garden House was planned as an international dormitory for the overseas employees to stay at. Among the candidates for the architect, and considering Mr. Maki's experience in overseas and his architecture studies in the U.S., I thought he would be the best for this project.

In the beginning the project was half the size of what it eventually became, and people told me I was a fool if I thought that Mr. Maki would accept such a small project outside a major city. But when I reached out to him and we met face-to-face, I told him that even though the project was small we really wanted to make a special, outstanding building, and we had a very good conversation. I was greatly encouraged when he told me that architects don't just want to build big buildings, and that he would take the commission because the project was so interesting.

During the design process, too, Mr. Maki did his very best to take on my input and feedback. It was truly my blessing to have met him.

The story behind the Passivetown project

Miyazawa: I think that the recent Passivetown project is highly significant in the world of architecture. There are many architects who are not sure how to use vinyl windows, especially in multi-family residential buildings, but your company is showing them how. Not to mention, Mr. Maki is the architect for the second block. That was a big surprise.

Yoshida: When we were starting the project, Mr. Maki was the first person I spoke to. I was sure he wouldn't be interested, but felt I had to at least let him know what we were doing. He said he was indeed interested, and that he needed to learn about passive design now to prepare for ten, twenty years in the future.

Miyazawa: So you did not ask him for a design. (laughing)

Yoshida: No. At the time Mr. Maki didn't have any engineers in his office familiar with passive design, but he did introduce me to Professor Masayuki Mae of The University of Tokyo, and we started working together.

Miyazawa: The first block was undertaken by Yuichiro Kodama, unquestionably the country's leading expert in passive design. You made an agreement for Mr. Maki to take on passive design on the second block, and Miwa Mori, who studied passive design in Germany, would undertake the third block renovations. I thought the whole strategy was very well developed, but in hindsight, the results have been quite unexpected. When did you first start thinking about the project?

Yoshida: There were old company condominiums on the site. I thought that if we were going to rebuild here, we should build company condominiums with a theme suitable for the times. As energy conservation and ecology had become global issues, I decided that passive design should be that theme. In order to actually

“The Kurobe architectural project that I dreamed about is finally a reality.”

Hiroshi Miyazawa

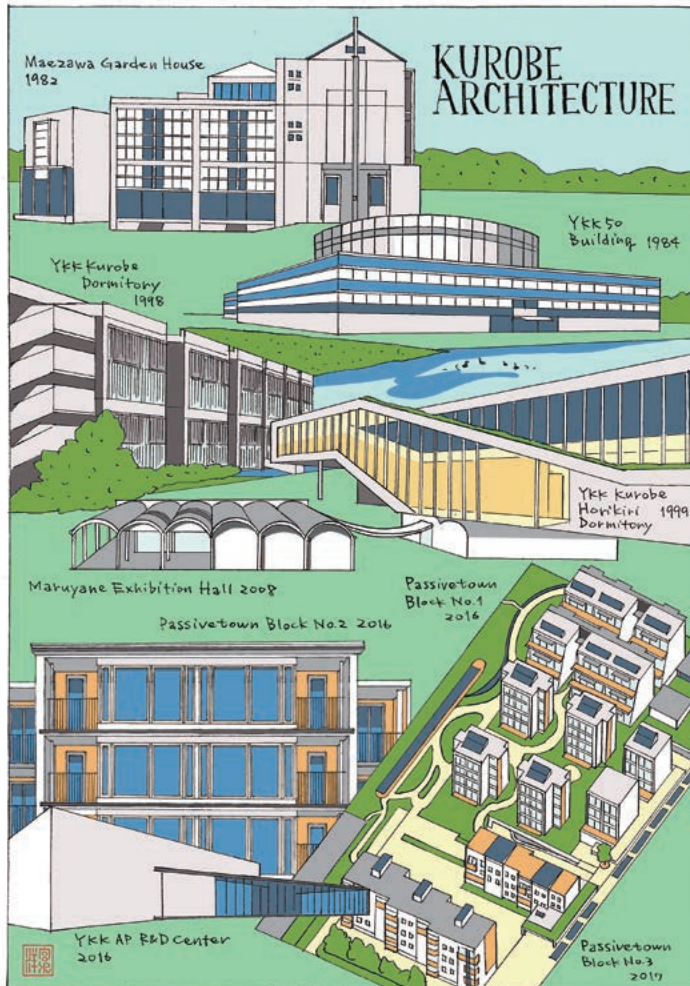


Illustration by Hiroshi Miyazawa

(Starting from the top of the illustration)

●**Maezawa Garden House...**Design: Fumihiko Maki / Completion: 1982; Built as a guest house and research facility. Awarded the JIA (The Japan Institute of Architects) 25 Years Award in recognition of the building's contribution to the region.

●**YKK50 Building...**Design: YKK Project Team (Tadahiro Yoshida, Toshihiko Kimura, Seiichi Endo, Shuichi Kitamura, Hidetoshi Ono, Sadao Takasu) / Completion: 1984; Building complex including office space, exhibition halls, international conference rooms, and more. Has undergone multiple renovations in 2006 and other years.

●**YKK Kurobe Dormitory...**Design: Herman Hertzberger, Takeo Ozawa / Completion: 1998; single-person dormitories for male and female employees of the YKK Group. The only building in Japan designed by the Netherland's famed architect, Herman Hertzberger.

●**YKK Kurobe Horikiri Dormitory...**Design: teonks (Takeo Ozawa, Kaori Suehiro, Nobuko Suehiro) / Completion: 1999; single-person dormitories for female employees of the YKK Group.

●**Maruyane Exhibition Hall...**Design: Hidetoshi Ono, Akihiro Yoshida / Completion: 2008; Facility open to the public that showcases the YKK Group's *monozukuri* technology and history, the philosophy of founder Tadao Yoshida, and more. The distinctive arched roof of the oldest factory building at YKK's Kurobe Manufacturing Center was given a new lease on life and re-used here.

●**Passivetown...**The first block Design: Yuichiro Kodama / Completion: 2016. The second block Design: Fumihiko Maki / Completion: 2016. The third block Design: Miwa Mori / Completion: 2017. Landscape Design: Shunsaku Miyagi. The complex is notable for the different passive design methods used by the different architects in their designs. The first and the second block are new constructions, while the third block was a renovation project using existing buildings.

●**YKK AP R&D Center...**Design: Nihon Sekkei, Inc. / Completion: 2015. The building is the showpiece of the Technology Headquarters and sports a distinctive facade combining transparent and silver-color aluminum surfaces.

build something, you need to pursue the technology. We launched a project in which we invited outside specialists such as Professor Takashi Inoue of Tokyo University of Science to form a Passive Design Performance Evaluation Committee, which would assess the designs submitted by architects.

In constant pursuit of windows that are integral to our lives

Miyazawa: So were the performance assessments integrated into the plans from the beginning?

Yoshida: It would be ended leniently if we did not assess the designs. The results of the assessments become reference for those who followed. It is also valuable information for a window manufacturer such as ourselves. I kept giving our company's engineers issues and urging them to solve them. I dare say a lot of employees grumbled about me always having my way. But when they looked at me with disgruntled expressions, I thought to myself, "Maybe this is a good thing. I'll go with this. I've played the 'hated' manager." (laughing)

YKK became a strong company because it managed to establish high-quality zipper production technology. But what about YKK AP windows? The company isn't at that point yet. But I am positive we will get there; we just have to keep at working on the windows.

Miyazawa: So there's still work to be done, is that right? Finally, from June of this year you were assigned as a corporate advisor. Going forward, what are your hopes for YKK AP?

Yoshida: Our company makes windows, which are an integral part of people's lives. High-level themes are important, too, but I want them to tackle themes that are closer to people's interests, such as energy issues and durability. Wood material is one example, too. This is closely tied to the core nature of food, clothing, and shelter in Japan.

Miyazawa: In the Passivetown project, the fourth, the fifth, the sixth block are set to begin. I'm looking forward to two years from now, when I can look back and remember this conversation.

Yoshida: Sure, after two years.

This conversation took place on June 22, 2020.



Sustainability Management

We will execute management from a sustainability perspective based on the YKK philosophy of the “Cycle of Goodness”



Feature: Taking on the Labor Shortage Problem

In Japan, the manpower decline in the construction industry is an increasingly serious problem caused by the aging of our society, and the labor shortage faced by the construction industry is a major societal problem. In response, YKK AP is undertaking a number of initiatives, including the development of easy-installation products and human resource development. We are working on these initiatives not just within the company, but increasingly joining with partners to help solve the issue on a society-wide level.

A construction industry impacted by the aging of society

The number of people employed in the construction industry continues to fall from its peak of 6.85 million in 1997. By 2018, this number had fallen to 5 million, an approximately 27% decline. Furthermore, the labor force continued to age, with almost 1/3 of the workers being 55 or older. On the other hand, workers 29 or younger made up only 10% of the total, meaning that not only must we secure and train human resources to support the construction industry in the medium- and long-term, we must urgently develop and popularize easy-installation products that make it possible to complete projects with a limited number of workers.

In the face of this labor shortage, the construction industry is undertaking a range of initiatives. The industry in general is promoting countermeasures and advocating the increased use of i-Construction with IoT technology and the hiring of foreign workers, and in April 2024, work style reforms will be introduced.

As well, with the growing sophistication of construction technology in recent years driven by factors such as the growth in house functionality and thermal insulation, we also need to train human resources in these new technologies.

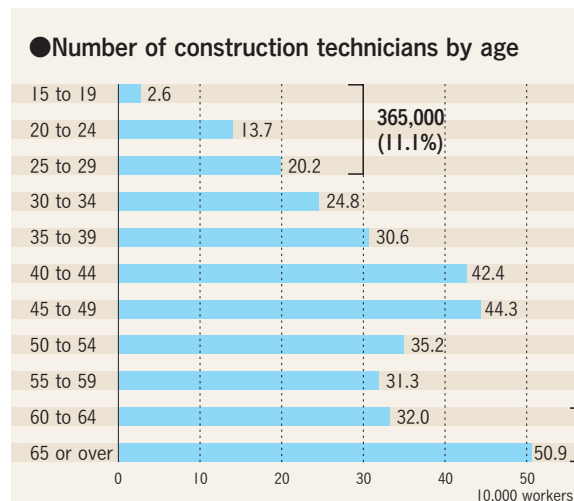
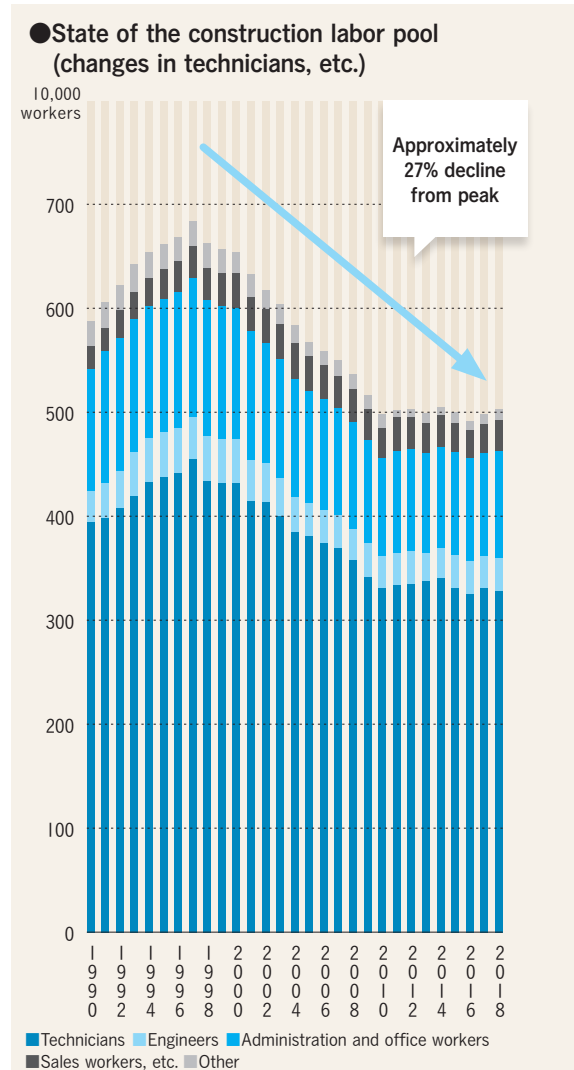
YKK AP's initiatives

Our company manufactures windows and doors that help to enrich people's lives. Through our manufacturing, we have implemented a range of initiatives to take on issues faced by the construction industry. Especially we have focused on easy-installation, labor-saving installation, and human resource development.

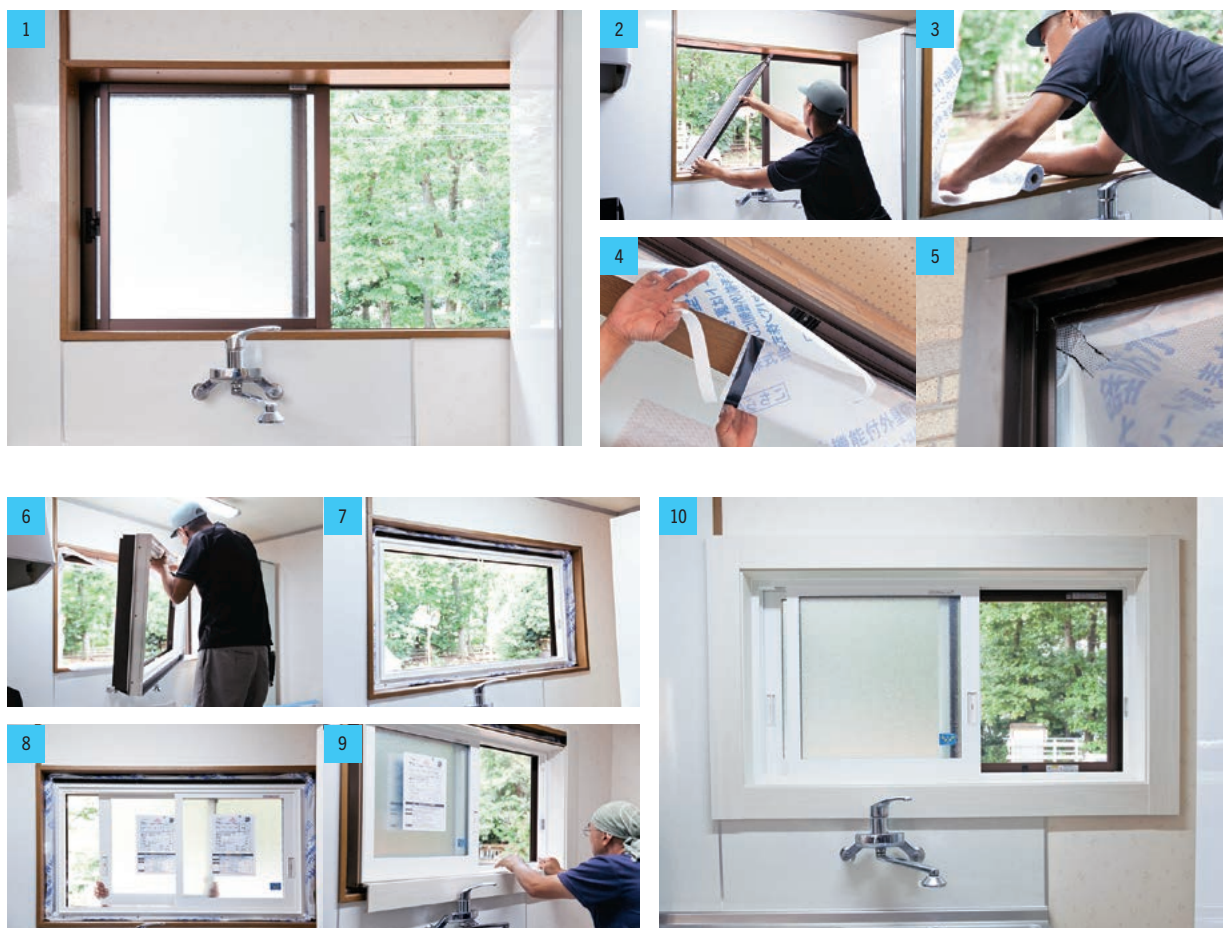
In order to solve the problems of skills transfer and human resource development in the industry, it is important not only to develop easy-installation products and technologies within the company, but also to engage in cooperative and creative responses with professional users, business partners, and other outside parties.

In 2013, we launched the Installation Skills Training Academy to train sash and curtain wall installation technicians. Further, in 2019 we opened the Partners Support Studio in Kurobe, Toyama as a facility to propose technology to professional users, and in 2020, DO SPACE Ageo was established in Ageo, Saitama, as an installation technology training facility for exterior specialists.

With these various initiatives, we believe that we can help solve societal issues, develop the industry, and raise customer satisfaction.



Source: Estimates by the Japanese Ministry of Land, Infrastructure, Transport and Tourism based on Japanese Ministry of Internal Affairs and Communications "Labor Manpower Survey" (2018 average).



Kantan Mado Remo (easy window remodeling) installation steps

Expanding easy-installation products

According to the Monozukuri White Paper issued by the Japanese Ministry of Economy, Trade and Industry (METI), skills are tacit knowledge that is difficult to transfer and learn via manuals. With the aging of society, the construction industry is facing an aging workforce and labor shortages, and therefore demand is growing for simple products and technologies that do not require practiced skills on the construction site.

■ Kantan Mado Remo (easy window remodeling)

A window remodeling product using a cover installation method so that the new window or door can be mounted over the existing frame, without removing that frame. With traditional methods, installation requires to break the wall, which produces noise pollution and dust, demands a lot of time, and increases costs.

But with Kantan Mado Remo (easy window remodeling) products, the new window can be installed over the frame using the cover installation method. This has the advantage of reducing unnecessary costs such as scaffolding, and enabling workers to install one window in only about half a day. This results in less labor being required from installation technicians compared to traditional methods, and helps ensure smooth completion even in the face of labor shortages.

Also, in conventional cover installation methods, sealant has to be injected into the gap between the existing frame and the new frame, the efficacy of which depends on the skills of the installation technician. However, with Kantan Mado Remo (easy window remodeling), the airtight sheet is easily attached with the non-sealant cover installation method,

and this assures installation quality regardless of individual installation skills. Thus, the method shortens installation period, reduces the installation technician's workload, and ensures quality.

Our company offers a range of easy-installation products in addition to Kantan Mado Remo (easy window remodeling).

■ Kantan Door Remo (easy door remodeling)

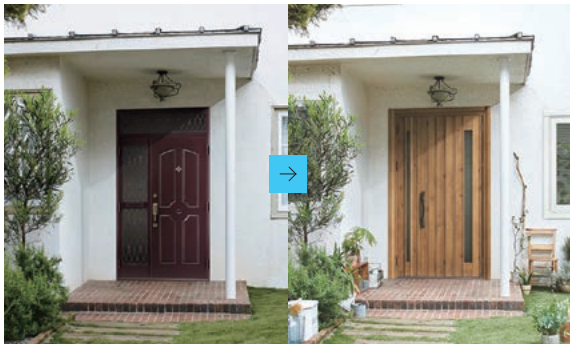
This easy-installation product enables door remodeling without wall work using the same cover installation method as Kantan Mado Remo (easy window remodeling). Restoration work for wall is not required after the door is replaced and the installation can be completed in approximately one day.

■ Kantan Mado Remo (easy window remodeling) Shutter

Residents often find it difficult to open and close shutters. When remodeling to make shutters easier to open and close, the storage cabinets and the wall have to be removed and the exterior wall needs to be rebuilt, which significantly increases work time and costs. However, using the cover installation method of this product, there is no need to break down either the cabinets or wall, and therefore installation only takes about three hours.

■ Solarea Enclosures

Our Solarea enclosures for terraces and balconies reduce the number of screw types by half, and the total number of screws by three quarters. Sections requiring sealant are consolidated and areas around water collection components are kept dry, resulting in a 20% reduction in sealant volume. Installation period is reduced and quality is improved compared to former products.



Kantan Door Remo (easy door remodeling)



Kantan Mado Remo Shutter (easy window remodeling)



From the left: Solarea Enclosure, Relarea Wall, Non-welding method for commercial building sashes

■ Relarea Walls

Conventionally, exterior walls are made with concrete using wet installation methods and require multiple types of works. This causes quality gap depending on the skills of the installation technicians. This product requires only dry installation for the aluminum frame structure, and thus provides more consistent quality

■ “Non-welding method” for commercial building sashes

Mortar injection wet installation is a new sash installation method that replaces traditional welding methods. Instead of welding, the sash is fixed to the building by injecting resin which is secured by the hardening of the material. Not only does this method do away with the need for the electrical power used in welding, it reduces fire risk and spark protection owing to no use of fire. As well, the method is not affected by the weather, which contributes to stabilize project schedule.

Support jigs contribute to labor-saving

In recent years, windows are required not just to serve as openings between the outside and inside of homes, but also to provide high-level functions such as high thermal insulation and fire-protection. Accordingly, the weight of windows has grown, which increases the burden not only on workers but also at the transportation stage.

We are developing support jigs as a way to ensure safety and efficiency during transportation and installation, while at the same time ensuring product quality. These jigs also deliver labor-savings and serve as a response to the aging workforce.

When transporting glass or assembling sash screens, we have to consider worker safety and the possibility of glass breakage due to the fallen sash. Assembling heavy sash screens imposes burdens on workers, especially elderly and female workers.

In response, we have developed the KT001™ Assembly Support ①. The suction pump secures the glass, enabling workers to transport and assemble the glass without directly touching it. This is not only safer; it improves quality by helping to avoid marks and scratches from work tables or floors. This support equipment can carry up to 80 kg in weight, enabling a single worker to handle heavy items with little trouble.

Also, we have developed support jigs for the installation of large-opening products that are particularly hard to handle for workers. These jigs reduce heavy lifting labor and include an easy hand crane ② that helps with loading and unloading from trucks, a glass conveyor that can carry self-supporting large-size glass ③, and a hoisting jig for scaffolding that lifts and turns glass panes ④. The use of such support jigs can reduce labor requirements from six workers to three, and contributes to reduce workload in both distribution and installation.



②

③

④

Human resource development to support the next generation

Skill transfer and human resource development are essential to *monozukuri* and the construction industry. The YKK Group is aware that in this aging society, passing on skills to the next generation is one of our most pressing issues. For these reasons, human resource development was identified as a primary point in the YKK Group's Fifth Mid-Term Management Plan.

As an initiative to foster installation technicians, in 2013 we established the Installation Skills Training Academy (see p.43) jointly with the YKK AP Group Installation Cooperative, which is made up of our company and sash and curtain wall installation companies across Japan. The academy is an initiative to train sash and curtain wall installation technicians in six years, whereas normally it takes ten years to become full-fledged. It creates opportunities for seasoned installation technician veterans to impart their knowledge and skills to young workers.

In addition, we launched the Human Resource Development Project in FY 2018, based on themes of organization building, human resources strategy formulation, and "Fostering

Talent" to achieve sustainable growth. HR Development Project initiatives are aimed not just at developing our own employees, but also the human resources of our partnering distributors who sell our products to builders and contractors. One of these initiatives is a training program for architectural product distributors where succession planning is an issue. "Regional Architectural Product Training (Beginner)" is aimed at relatively inexperienced employees of these distributors, to impart knowledge and skills such as construction basics and assembly, installation, and adjustment with courses on both classroom and practical skills. Another initiative is "Sales Enhancement Training", which is aimed at middle or lower level sales representatives of distributors, coaching smooth communication techniques when dealing with the builders and contractors who are the distributors' business partners.

Going forward, we will continue to see human resource development as a foundation of sustainable growth, and keep on working on this issue both within and outside the company.



"Sales Enhancement Training" and "Windows and Architectural Products Training (Beginner)" conducted by HR Development Project



Installation Skills Training Academy



Exterior view of the Partners Support Studio

Co-creation with partners to accelerate problem solving

To solve the labor shortage, it is important to create solutions not just within the company, but together with external partners. We are currently accelerating external partner cooperation.

One example is our participation in the big wood panel project. YKK AP supplies vinyl windows to Wood Station Corporation. The company engages in “big wood panel” construction, in which wood panels are used in all aspects of wood-structure construction, from framework to primary waterproofing. The integrated panels are produced at the factory and then assembled on site. This reduces construction period, labor, and manpower, and helps ensure the construction quality remains consistent. Overall, the number of days required for building house is dramatically reduced.

In 2019, we opened the Partners Support Studio, which is a facility that presents proposals to professional users based on our technology and quality, takes up issues faced by these professional users, and offers solution. At the facility, we provide information about product installation, quality at time of use, and technology through installation seminars and other means. As well, we take on feedback from builders and develop products in response. For example, in July 2019, the Partners Support Studio hosted joint installation verifications together with installation technicians from MADO (window)

Shop window remodeling businesses.

In January 2020, we opened our DO SPACE Ageo, with the goal of the training and improving the skills of exterior products technicians and imparting installation techniques. The facility’s role is to provide human resource development and skills improvements for installation technicians, especially for those who are new to exterior installation and have not previously handled YKK AP products. Other roles include developing and implementing curriculum to maintain high level of quality against diversified products and installation. Also, this facility takes a role in providing a space where our company and exterior installation technicians can work and create jointly.

We are also focus on joint research and other initiatives in cooperation with universities and research institutions. For example, in 2019, we joined up with Carnegie Mellon University in the U.S. to launch an industry-academia joint research project to develop windows and doors installation technology and improve productivity using robot and IT technology (see p.42).

Going forward, we will continue to help solve the society-wide labor shortage problem by working on transferring skills and developing new technologies.



Joint installation verification at the Partners Support Studio, with installation technicians and our R&D staff



Exterior view of DO SPACE Ageo



Installation skills training at DO SPACE Ageo

Monozukuri Perspective

The perspective of the consumer, the perspective of the professional user, and the needs of society. At YKK AP, we value all these perspectives in our research, development and verification in *monozukuri* processes.

While the value being sought differs according to market and business, we pay careful attention to every facet of quality and engage in *monozukuri* that provides new value to the people who live and gather in the places.

Research, development and verification systems

Pursuing high quality and advanced technology at three Kurobe technology facilities

Kurobe City in Toyama serves as our Technology Headquarters. The YKK AP R&D Center, Value Verification Center, and Partners Support Studio combine to provide a one-stop source of technology information and product value proposals. The Partners Support Studio was established in March 2019. The studio facilitates problem sharing among professional users and solves product, technology, and installation issues.

As well, the Central Research Laboratory is one part of our Survey, Research and Development Division. Here, surveys, research and verification tests are conducted in fields necessary to business, including window engineering and architectural physics. Members of the Central Research Laboratory work on joint projects with external research institutes to further research that can lead to business expansions and create new value in the future in two locations, in Tokyo and Kurobe. Our Central Testing Center, part of our Evaluation and Verification Division is certified by the Japan National Laboratory Accreditation (JNLA) system and fulfills the standards set by the International Organization for Standardization and the International Electrotechnical Commission for testing laboratories. A quality assurance system is established at the center through strict testing from a third-party stance as well as a trusted testing system.

Strengthening our global R&D organization and sharing information about warm, cold, and hot and humid climates in each region

Approximately 370 employees are gathered at the YKK AP R&D Center in Kurobe and involved in research, development, verification, and testing. They delve into research and deepen their knowledge in their specialized fields to deliver high quality *monozukuri* and propose advanced technologies.

Overseas, in 2017 we established the YKK AP R&D Center (Germany). The facility helps to further raise the high added-value of vinyl windows with a focus on surveys and research of advanced European technology in fields such as functional parts and high-performance glass. As well, the center issues surveys of trends in IoT technology and electric products in the residential industry, as well as other advanced functional parts.

In 2018, we established the YKK AP R&D Center (Indonesia), which carries out surveys, research and product development on windows and doors and energy efficient construction methods suitable for hot and humid areas. Another research theme of the center is passive design, which addresses global warming with designs that provide a comfortable living environment while minimizing energy consumption.

Information accumulated and shared between warm-climate Japan, cooler Germany, and hot and humid Indonesia helps us develop optimal products.

●Three technology facilities



YKK AP R&D Center

Creation of technological information

Cooperative research to meet new needs and resolve issues



Value Verification Center

Evaluation and verification of products

Evaluation and verification of quality and technologies



Partners Support Studio

Proposal of technologies

Proposal of quality, technologies, and installation methods based on products

Responding to opinions and requests from professional users



Improving products through feedback

Building stronger relationships with professional users with a one-stop location to provide everything from technology proposals to value proposals

●Global R&D organization



Germany (Wuppertal)

Surveys and research on advanced European window technology

- Surveys and research on functional parts and windows and doors thermal insulation
- Advanced technology surveys aimed at high added value



Indonesia (Tangerang)

Research and development of windows for hot and humid areas

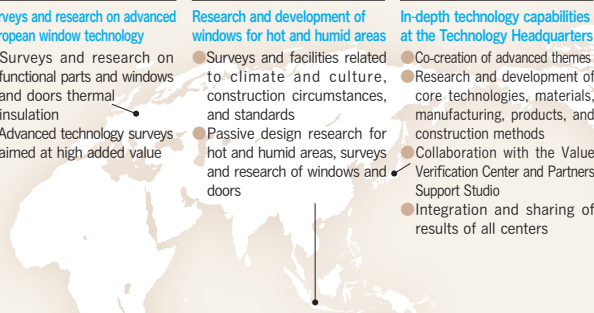
- Surveys and facilities related to climate and culture, construction circumstances, and standards
- Passive design research for hot and humid areas, surveys and research of windows and doors



Japan (Kurobe)

In-depth technology capabilities at the Technology Headquarters

- Co-creation of advanced themes
- Research and development of core technologies, materials, manufacturing, products, and construction methods
- Collaboration with the Value Verification Center and Partners Support Studio
- Integration and sharing of results of all centers



User verification

Integrating user needs and opinions into product development

The Value Verification Center is where we verify product value from a user's perspective. The value of the product under development is verified through various tests, including: "user verification" which is to check how the product is used with consumer monitors, "field verification" in which various usage environments are recreated, "analysis and simulation" and "installation verification".

In the user verification process, we enlist monitors that include people of both genders and various age groups, such as children, adults and the elderly, as they all have different physical attributes. We ask them to operate the products so that

we can check the products' safety and usability.

As well, we collaborate with The National Institute of Advanced Industrial Science and Technology and other institutions to carry out verification and surveys in order to prevent accidents and injuries in the house. As well as working with outside experts to create new innovations and solve problems related to safety and security, we also endeavor to disseminate that information to society at large.

Based on facts from real-life situations, we turn information on safety and ease of use into explicit knowledge and use it to develop products that incorporate more consumer perspectives.



Home interviews



Monitor verification



Verification of ease-of-use by diverse people



Old age simulation

Product safety

Formulation of the Product Safety Basic Policy and information disclosure on product accidents

Our company formulated the YKK AP Product Safety Basic Policy in 2008 in order to help establish a culture of product safety as promoted by the Japanese Ministry of Economy, Trade and Industry (METI) and to provide our customers with safety and security. Under this policy, we have engaged in efforts to construct a company-wide product safety system and to swiftly and appropriately handle any product accidents that may occur. In 2009, based on this policy, we began publishing information on our website regarding product accidents that

were reported to government agencies, such as METI and the Consumer Affairs Agency. With these efforts, we are striving to prevent similar accidents from reoccurring.

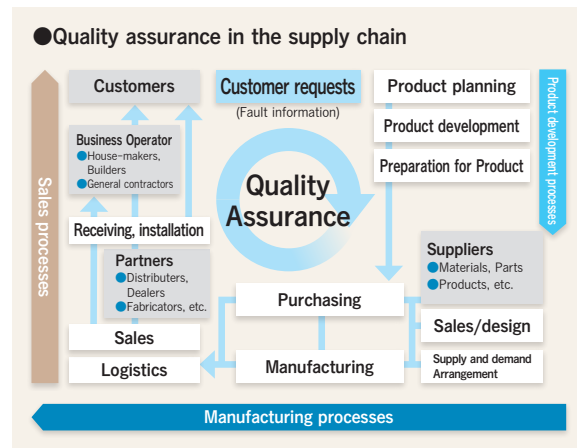
Additionally, YKK AP was selected as the recipient of the METI Minister's Award at the Best Contributor to Product Safety Awards (sponsored by METI) in 2017. This was the third time we won a METI Minister's Award, and we were certified as a Gold Contributor to Product Safety as a result.

Establishment of quality assurance processes

Quality assurance across the entire supply chain

In April 2019, we established our Quality Assurance Department, with the goal of further enhancing quality from order receiving and mass production to post-release, in addition to the product development process. To assure quality from the customer's point of view, we promote quality assurance processes across the entire supply chain, from product development to production and sales. Product and manufacturing quality is assured through periodic audits and, when required, the issuing of remedies and directives.

As well, we work to centralize quality assurance information gleaned from customers and business partner feedback in the form of requests, faults, inspections, and repairs. This further helps us assure quality from the customer's point of view. This information can help us quickly fix faults and avoid faults before they occur, and also be integrated into product development processes in order to enhance customer satisfaction.



Monozukuri Practice

YKK AP implements an integrated production system for in-house development and production, encompassing everything from materials to manufacturing facilities and products. We have established processes to consistently offer high-quality products, including elemental technologies for the development of various materials such as aluminum and vinyl; recycling technologies suited to the environment; and even the construction of logistics, sales, and manufacturing systems. We are aiming for greater levels of quality by being committed to such *monozukuri* efforts in our business.

Creation of an integrated production system

Inheriting the DNA of our founder to deliver high-quality *monozukuri*

Our company has an in-house system to develop and produce materials, components and manufacturing equipments that are ideal for *monozukuri*. For our main products such as vinyl windows, we order the glass sheets from a glass manufacturer, but we do the processing ourselves to create Low-E and triple insulating glass. Furthermore, we also manufacture our own screws, vinyl components and the netting for insect screens. As we manufacture all this in-house, instead of outsourcing everything, we can develop new technologies, ensure quality and adjust costs by looking at the supply chain as a whole.

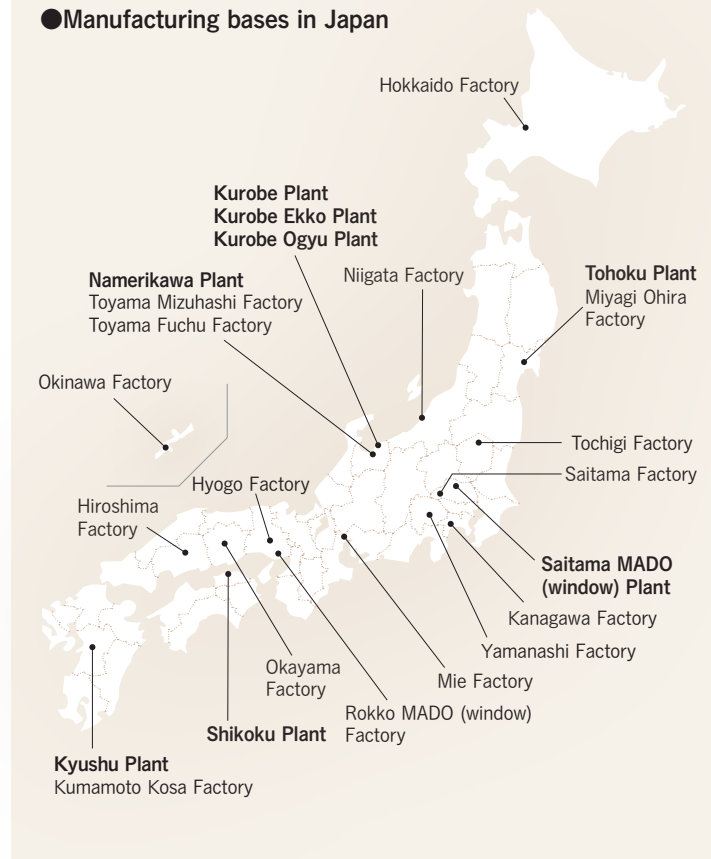
This dedication to quality can be traced back to YKK's founder, Tadao Yoshida. In the 1940s, the U.S. was seen as an industrially advanced nation and, wanting to compete with their fastening products, Tadao spent 2.5 times the company's capital at the time to import U.S.-made machinery. He studied the machinery and then created his own improved versions to build the foundations of the YKK Group. This spirit has been passed down through the generations and has taken root in the teaching to "start at the source" — to pursue not only the end product but also its materials and manufacturing machinery. We will continue to protect this spirit and deliver high-quality *monozukuri* in the future.

Logistics

Announcing voluntary activities for "White Logistics" promotion

With a growing shortage of drivers, the distribution industry is facing rising delivery costs and difficulties in ensuring stable distribution. Our company supports the White Logistics Movement promoted by the Japanese Ministry of Land, Infrastructure, Transport and Tourism and others, and has submitted to the secretariat a declaration of voluntary activities aimed at sustainable distribution. We will continue to work for greater efficiency and productivity in the distribution.

● Manufacturing bases in Japan



Health and safety

Engaging in health and safety efforts that prioritize the health and safety of our employees

In order to ensure that all our employees can work safely, we comply with laws and regulations and conduct safety inspections for our manufacturing equipments according to the YKK Group Safety and Health Standards. Only those that pass the inspection are allowed to be used. However, safety measure technologies are improving year by year, and additions and changes are frequently being made to laws, regulations and the Safety and Health Standards. As a means to keep up with such changes, we began to conduct the Periodic Equipment and Machinery Safety Inspection once every three years starting from FY 2017. To do this, we created a database of the 7,455 (as of June 2020) pieces of equipment and machinery used by all manufacturing lines. Inspections are carried out systematically based on this database as we aim to make our equipments fundamentally safer.

In terms of health initiatives, we are working to reduce noise and combat high temperatures to create healthy and comfortable working environments. Noise produced by the cutters and processing machines and high-temperature environments can be highly stressful for the working employees. We are working to address these issues, such as by covering the noise sources with various sound absorbing materials and introducing air conditions and air conditioned clothing. Efforts that prove to be effective are then carried out at manufacturing facilities nationwide.

We are engaged in such continuous efforts to prioritize the health and safety of our employees.

●Overseas manufacturing bases



Suzhou Factory

YKK AP (Suzhou) Co., Ltd.



Shenzhen Factory

YKK AP Co., Ltd.



Mysore Factory

Bhoruka Extrusions Private Ltd.



Tangerang Factory

PT. YKK AP Indonesia



Yangmei Factory

YKK AP Taiwan Co. Ltd.



Dalian Factory

Dalian YKK AP Co., Ltd.



Ontario Factory

Erie Architectural Products Inc.



**Dublin Factory
Macon Factory**

Dallas Factory, Cincinnati Factory
YKK AP America Inc.

●At the root of YKK AP *monozukuri* is the integrated production system



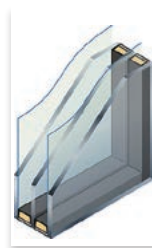
Materials

We produce materials in-house: for aluminum, from melting process to extrusion molding and surface treatment; for vinyl, from mixing raw materials to extrusion molding.



Components

We produce everything from accessories and functional parts to screws and insect screens.



High-performance glass

We process our own high-performance and high-functioning insulating and triple insulating glass.

Machinery and Equipment

We develop our own manufacturing lines, equipments and process management systems and utilize them in our domestic and overseas plants.



Processing, assembling, packaging

Our APW series products are produced in our carefully controlled plants, from preparing the glass to manufacturing the components and assembling the windows, thereby ensuring high performance.



Logistics

We have an effective and flexible delivery system in place.

●YKK AP White Logistics voluntary activities declaration

Using pallets, etc.

Increase ratio of pallet stacking over bulk stacking and work to reduce loading time

Originator provides advance shipping and receiving information

Provide shipping and receiving information in advance to make cargo sorting and inspections more efficient

Consolidating pickup and dispatch

Propose joint deliveries with other companies to improve delivery efficiency

Consolidate delivery days

Promote alternate-day deliveries to reduce the number of deliveries

Discontinuing or suspending driving in extreme weather

When adverse weather occurs or is expected to occur, confer with distribution operators and avoid making unreasonable transportation requests

Using larger vehicles

Consolidate transport to reduce the number of trips

Monozukuri and Sales

YKK AP is working to foster the company's proposal capabilities, just as it does with product appeal. Including vinyl windows, architectural products have seen a rapid move toward increased functionality in recent years. In this context, more than ever we need the sales and proposal capabilities to communicate the product benefits brought to the whole house, such as health and energy savings.

Showrooms

Showrooms across the country enable customers to see, touch, and experience our products

We have established showrooms across the country to enable customers in every part of Japan to actually see, touch, and experience our products. The showrooms are more than just product displays. Rather, customers can feel for themselves the actual performance and effects of the products, and this communicates how important it is to carefully select a window and the functionality it provides. Specialized advisors propose the best product to meet the customers' needs and problems, and thus help customers build their home and create a better lifestyle.

With the cooperation of Toto Ltd. and DAIKEN Corporation*, we operate 13 collaboration showrooms across the country, which are one-stop showrooms for plumbing, flooring, and window products. As well, we have established the YKK AP Experience Showroom in Shinjuku, Tokyo, for construction business professionals. The showroom includes a thermal insulation experience room located inside a chilled warehouse space cooled to 0 to 5°, typical winter temperatures. The room contains five spaces with different windows and thermal insulation specifications, and helps deepen understanding of YKK AP window performance through direct experience.

In addition, we have exhibition facilities such as P-STAGE and presentation rooms, which offer points of contact for a large number of regional customers.

* Some showrooms are jointly operated with TOTO Ltd.



Top: Showroom Okayama (TOTO, YKK AP Okayama Collaboration Showroom), opened in March 2020
Bottom: Showroom Sapporo experience exhibition

●YKK AP Showrooms around the country



Forums

We host a range of forums for professional users

In order to let more people know about the role our products can play in solving social issues and promoting healthy comfortable lifestyles, we have to first deepen understanding of our products amongst the professional users who are our business partners. To this end, we organize a range of forums for professional users. Our APW Forum and Presentation (since FY 2012) series further promotes and popularizes vinyl windows with high thermal insulation performance. In FY 2019, APW Forum and Presentation events for builders and architectural offices were held in 11 major city venues. As well, Renovation Forums (since FY 2015), which aim to further popularize performance-improved renovations of single family homes, were held in six major city venues. Finally, 35 APW Forum and Renovation Seminars were jointly held for the first time in FY 2019. In total, we ran events at 52 locations for 5,444 companies and 9,303 individuals. As well as the above, we host Exterior Forums (since FY 2019) for exterior contractors etc, and ARCHITECTURE MEETS... (since FY 2017) for general contractors, construction offices, and similar, as well as other events to disseminate information to partners in various businesses.

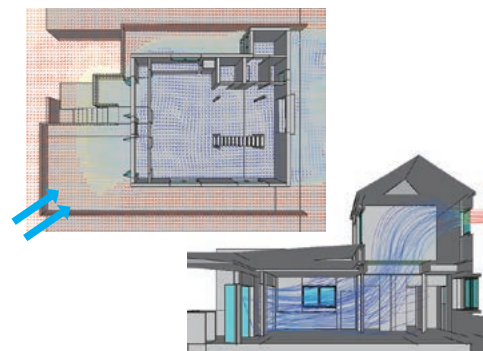
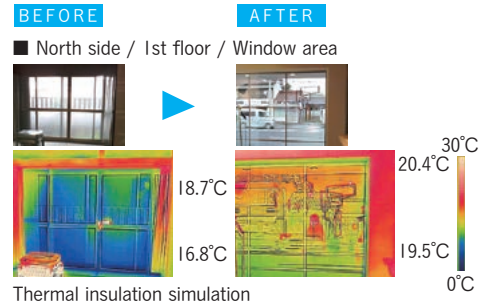
In FY 2020, we have to suspend such group events due to the spread of the coronavirus disease (COVID-19). Under these circumstances, we instead ran Web-based promotions under the title YKK AP RELATIONS NEXT, with the idea of taking business partner and customer relations to the next stage. One of these promotions is our Web-based Live Stream Forum series, which began in June 2020. The series targets professional users involved in home building and renovation, and provides live streams of talks by experts in fields such as new construction, used housing, real estate markets, disaster countermeasures, and exteriors. In the future, we will disseminate information helpful for new lifestyle and housing.



Top: October 2019 ARCHITECTURE MEETS... (Tokyo)
Bottom: Screenshot from the June 2020 Live Stream Forum

SE (Sales Engineers)

We provide customers with optimized proposals with simulations including thermal insulation, air flow, and sunlight



Air flow simulation



Sunlight simulation

One of our company's strengths is our sales engineers. Posted around the country, they work as salespeople who can provide technology proposals. Our 51 sales engineers belong to the Product Development, Residential Business, Research & Development, and are located in 14 locations around the country. To make technology proposals, these engineers must understand the importance of windows not just in terms of window performance, but also in the context of the entire residence. The engineers conduct air flow simulations to determine how air flows through the house and what kinds of windows and window positions will most effectively improve that flow. They also use thermal insulation simulations and sunlight simulations to propose thermal insulation products and the optimal layouts for that particular customer. In recent years, the engineers have begun to focus on exterior products as well.

We also conduct employee training to enable our sales representatives, and not just sales engineers, to make technology proposals. We encourage our sales representatives to acquire Energy Saving Architecture Consultant certification, and so far 934 employees have been certified.

Monozukuri and Installation

Simply manufacturing YKK AP products is not enough to get them to the customer. It is only when they are installed in houses or buildings that they begin to function. Even for the same product, the way it is installed has a large impact on quality. As society ages and the number of veteran skilled workers continues to fall, we continue to work on maintaining quality.



APW installation training

FE (Field Engineers)

We operate our own qualifications system and continually refine our technology capabilities

Our 38 field engineers belong to the Field Technical Center (FTC), Fabrication Technology in Manufacturing, and are dispatched to 13 locations around the country. When a fault occurs in an area, the field engineers are sent to the site to investigate the cause and develop a response. They are the engineers who contribute on the front lines of the business. As well, they provide technical instruction seminars for builders and architectural product distributors, undertake fault prevention education, and engage in awareness-raising activities.

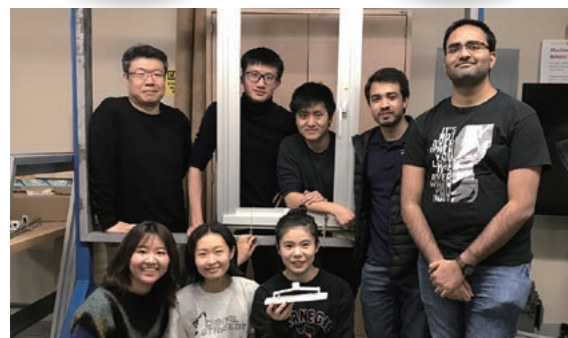
As engineers, they need established targets in order to refine their technology capabilities, but there are no national, public, or private qualifications for the field engineer role. So, in order to provide consistent quality and services to our customers, the education working group of the FE Operations Improvement Review Committee, which began in FY 2016, established an internal qualifications system. Initiatives for qualifications system began in FY 2017, and the basic concept and details of the system were refined and improved. The system was launched in FY 2018, and since then eight engineers have qualified for First Level, and six for Third Level.

Making installation more efficient

Joint research with U.S. university on new installation methods using robots and IT

The installation methods for standard commercial building sashes and knock-down curtain wall installation have barely changed in over four decades. With concern growing over construction site labor shortages, productivity improvements are becoming an urgent issue. Demand is also growing for shorter construction periods in Japan and overseas.

In response, in May 2019 we signed an agreement with Carnegie Mellon University of the U.S. to undertake joint research of technologies for installing windows, doors, curtain walls and other fixtures into buildings. The goal of the joint research is to develop new installation technology for windows and doors using cutting-edge robot and information technologies on the worksite, and thereby boost installation productivity and quality. To that end, we are investigating virtual reality (VR), augmented reality (AR), and mixed reality (MR), researching new methods to secure fixtures to buildings, and bringing out innovations in windows and doors installation technology. The five-year research project will continue until April 2024 and research new labor-saving installation systems that are speedy, accurate, safe, and low cost.



Our company researchers and the fenestration team undertake technology R&D for windows, doors, and frames

Installation Skills Training Academy

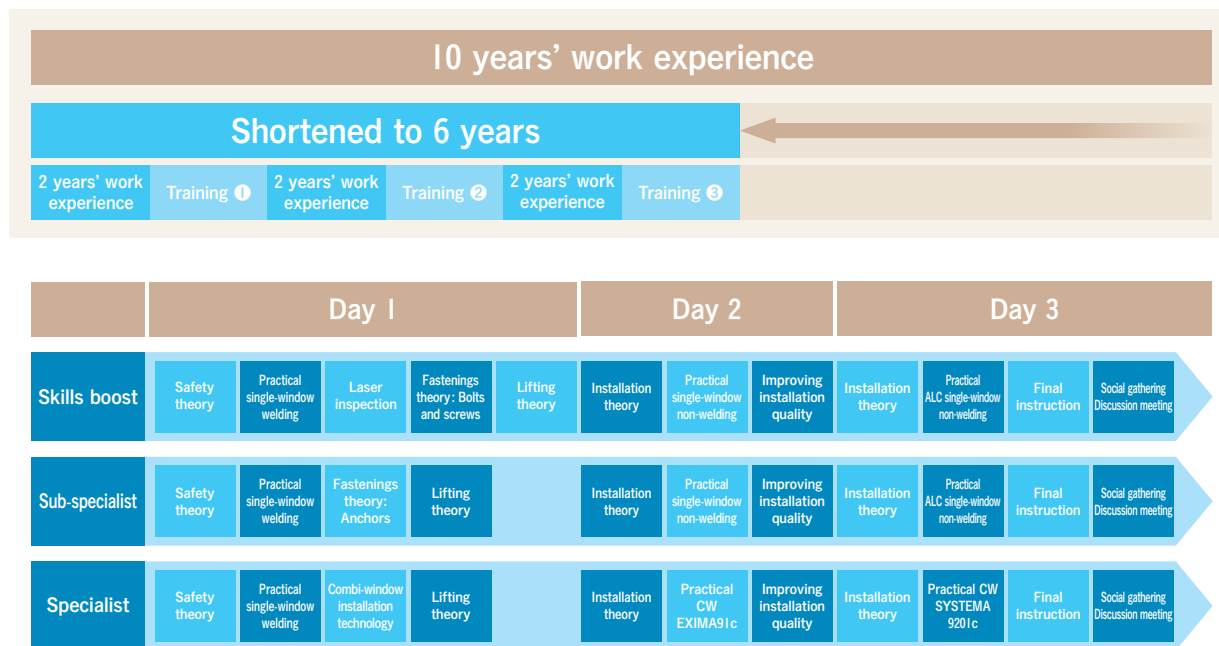
We tackle human resource development and skills transfer issues faced by the construction industry

In 2013, we established the YKK AP Group Installation Skills Training Academy jointly with the YKK AP Group Installation Cooperative, which is made up of partners from across the country, including sash and curtain wall constructors. It is said that it normally takes a full ten years to acquire the skills

for sash and curtain wall installation. Our Training Academy trains technicians in as little as six years, with trainees divided into standard, intermediate, and advanced levels, with training in each level in two years. By FY 2020, the Academy had accepted 311 trainees. Going forward, we will cooperate with the Installation Cooperative to focus on human resource development and skills transfer issues faced by the construction industry as a whole.

Note: The FY 2020 Installation Skills Training Academy program has been cancelled.

●Curriculum



Installation guidance for overseas fabricators

Teaching Japanese *monozukuri* technology for consistent worldwide quality

As we deploy our businesses around the world, we must maintain the same level of Japanese installation quality in each overseas country. To this end, we dispatch our employees and Installation Cooperative members to overseas locations to provide installation guidance and training.

In Taiwan, where we have a high share in luxury condominiums market, in 2017 we established an Installation Skills Academy for members of the Installation Cooperative that is made up of local installation business partners. Combining classroom and practical instruction, the initiative is aimed at teaching Japanese *monozukuri* and raising the base level of local technicians. One point of the training is follow-up sessions which check to see if safety awareness, consideration, and quality accuracy are within proper ranges (specified values), and whether installation techniques show improvement (whether the theory has been understood and implemented).

In China we aim to strengthen system sales, which is a characteristic of our China business and includes domestic

product development, integrated production of profiles and components, and processing/installation guidance. To do this, we have established two installation training centers in Shenzhen and Suzhou in order to develop human resources for window processing and installation. In Indonesia, too, we undertake installation training in order to improve the technical skills of local installation workers.



Teaching wooded wedge installation methods onsite in Taiwan

Monozukuri and Products

With its diverse line of architectural products, from windows that make living spaces more comfortable to doors, exteriors, and facades that help create a more beautiful urban landscape, YKK AP points the way to greater possibilities in windows, doors, and nearby spaces. In terms of climate change and disaster countermeasures, health, comfort, and design, the needs of customers and society are diversifying, and we are responding with products matched to differing climates and cultures both in Japan and overseas.

Product range (Japan)

Product lineup that helps solve social issues through high thermal insulation, disaster prevention, and more

Our company is rolling out products in each business field based on key measures. In the residential business, in order to further enhance window thermal insulation product appeal and respond to current color trends, we added a black (interior and exterior) option to our APW 330 vinyl windows color lineup (launched April 2020). As well, we are offering a full lineup of our APW 430 fire-resistant window, high performance triple insulating glass vinyl window (launched April 2020). In recent years, typhoons are growing in size and range. In response, we are rolling out wind-resistant products, such as our GR wind-resistant shutters (launched June 2020) with 1.5 times the wind resistance of former models, and our APSWORD NEO-R aluminum-vinyl composite windows (launched August 2019), which boast high watertight performance, high wind resistance, and high thermal insulation performance.

In the exterior business, demand for lightweight aluminum fences has been expanding ever since the 2018 Osaka earthquake, and in response we have been expanding our privacy fence options (launched April 2020). In addition, we are working harder to promote our LUCIAS Balconies (launched September 2017), the shapes and dimensions of which are designed with the consideration for safety and security. They help to prevent accidents resulting from falling objects and

children climbing on the balcony.

In the commercial products business, we are expanding our lineup of fire-resistant products. We are specification introducing more differentiated products, including a new version of the largest double-sliding window in the industry, the BGE3I (launched July 2020), and SYSTEMA curtain walls that provide a unified surface appearance of fire-resistant and non-fire-resistant units.

In the renovation business, we are stimulating demand for retrofits with such products as Kantan Mado Remo (easy window remodeling) GR wind-resistant shutters (launched June 2020) that provides disaster mitigation and prevention. In commercial building renovation we are expanding our range of fire-resistant products offerings (as in our new construction business), and developing new cover installation methods for entrance doors.

As well, we are focusing more attention on ventilation as a countermeasure to the coronavirus disease. We are increasing information dissemination and proposals for products that have ventilation functions, such as our “window with ventilator” that enable ventilation even when the window is closed and entrance door air flow designs that enhance entranceway ventilation.



APW 330 black (interior and exterior)



SYSTEMA Curtain Wall



LUCIAS Balcony and LUCIAS Fence



Kantan Mado Remo (easy window remodeling) GR wind-resistant shutters

Manuals

Making manuals easier to understand and improving convenience with QR codes



Owner's Manual - Windows and Doors Version

For our end-user customers, we publish Owner's Manuals describing how to use and maintain products, mostly for wooden houses. We distribute these guides through construction companies to owners and users. These Owner's Manuals and other documentation are produced after user verification assessments conducted by our Value Verification Center have checked that, for example, the instructions meet safety requirements and are easy to read. The information is organized so that it can be intuitively grasped, and presented simply, correctly, and safely.

We also produce product installation manuals that are easy for installers to read and understand. In recognition of these efforts, the Venato D30 and Venato D30 Fire-resistant Door installation manuals received the General Category Excellence Award at the Japan Manual Contest 2019 sponsored by the Japan Technical Communicators Association.

Another initiative we are working on is printing QR Codes on labels affixed to products. We are building a system in which QR Codes can be scanned by a smartphone or similar device to quickly access usage and maintenance instructions.

Note: "QR Code" is a registered trademark of Denso Wave Incorporated.

Product range (Overseas)

Product rollouts that meet the needs of each country/region

Our overseas business is characterized by business deployment and product development that is matched to the climate and culture of the individual countries and regions.

In the U.S., we offer a full lineup of sashes, unit curtain walls, and other architectural products for commercial buildings with added-value features such as high thermal insulation and hurricane protection. In addition, we added Erie Architectural Products Inc. to the group in December 2019, and are using the company's unit curtain wall technology to shorten construction period and mitigate the skilled labor shortage; both of these



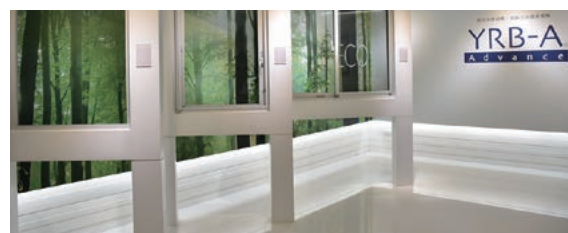
Hurricane-resistant product ProTek® in the U.S.



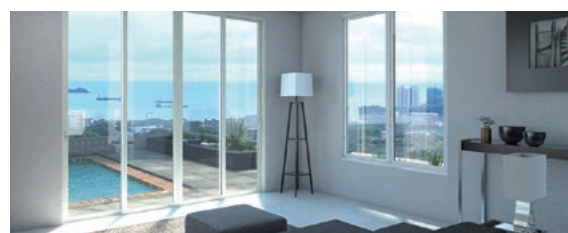
Aluminum window [thermal-break type] LD Series for condominiums in China

have been increasingly sought after in the U.S. construction market in recent years. In China, we are working to build product appeal so we can take the lead in market changes such as energy conservation and specifications standards. In Taiwan, which is beset by frequent, large-scale typhoons, we are rolling out products to meet customer needs, with a focus on YRB-A sashes that feature the industry's best watertight performance. In Indonesia, in addition to our core product, NEXSTA, which targets the luxury market, we are meeting market needs by introducing products for the growing mid-range market.

With such products, we are contributing to the health, comfort, safety, and security of people living in these countries and regions.



High watertightness core products series YRB-A in Taiwan



Core product series NEXSTA for luxury condominiums in Indonesia

Monzukuri and Environment

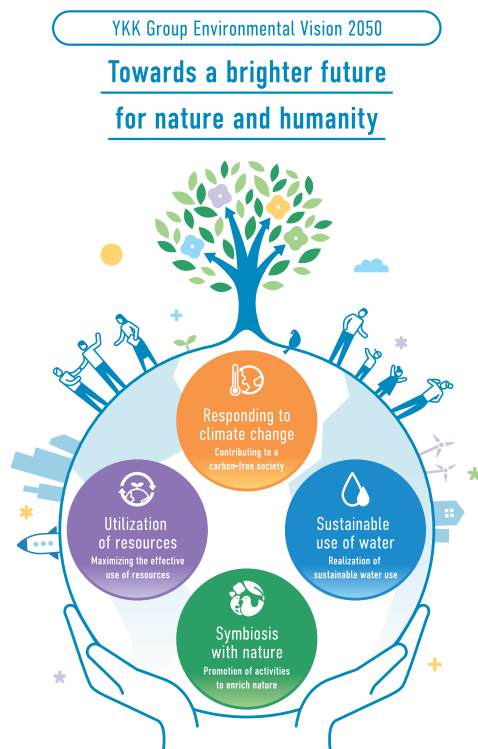
The YKK AP vision for 2050 is to become a company that produces zero environmental burdens across all product lifecycles within our business. We will strive to do so by promoting the use of products that help reduce CO₂ emissions across society, thereby reducing energy use, and minimizing the amount of CO₂ emissions throughout our supply chain, from procurement to disposal.

YKK Group Environmental Vision 2050

Long-term environmental management through backcasting

In order to reach a higher level of environmental management throughout YKK Group, in April 2019 we formulated our YKK Group Environmental Vision 2050, which maps out the long-term direction of our environmental initiatives.

We have set out four areas of focus: Responding to climate change, Utilization of resources, Sustainable use of water, Symbiosis with nature. For each of these, we have laid down predictions and goals for 2050, identified and described our major tasks in terms of environmental measures, and reflected them in our environmental action plans.



Measures against environmental risk

Strengthening our response to climate change risks

At our company, the YKK AP Environmental Policy Board Committee, chaired by the president, formulates and approves environmental policy and strategy from a management perspective, ensures that the company adheres to environmental regulations and agreements, and seeks out risks and opportunities in our business operations. In FY 2019, we became a supporter of the Task Force on Climate-related Financial Disclosures (TCFD). Through this, we will analyze the impact of climate-related risk scenarios and opportunities on our business and finances, and incorporate this analysis into our management strategies.

Environmental management systems

Continuously raising the level of environmental management throughout the company

Our goal is to have full environmental compliance and environmental management systems, and we conduct annual internal environment audits of both. With regard to compliance, we have adopted a compliance checklist based on laws that apply to the company, and use this checklist for audits. We implement a double-check system, with “internal environmental audits” undertaken at each company location, and a “mutual internal environmental audit” at a company-wide level. Finally, we invite a third-party external auditing organization to conduct a further audit. By horizontally sharing points of concern and positive examples, we work to raise the level of environmental management throughout the entire company.

Currently, all our locations in Japan and ten locations overseas are ISO 14001 certified. In addition to operations management that conforms to the standards, we make effective use of environmental management systems as tools to achieve environmental management goals such as social demand response, compliance, communication with regions/communities/employees, and environmental impact reduction.

SBT certification

Energy conversation and reuse to meet SBT targets for greenhouse gas reductions

The Science Based Targets (SBT), part of an internationally run initiative, have become popular as a mechanism for companies to establish long-term CO₂ reduction goals to be

in line with the 2°C goal set by Paris Agreement. In 2019, we received approval for our goals to reduce the emission of greenhouse gases by our company (Scope 1 and 2) by 30% by FY 2030, and to reduce the emission of greenhouse gases in our supply chain (Scope 3) by 30% by FY 2030. To achieve this, we are implementing measures over the long term, with a focus on annual energy savings of 1.3% or more, fuel conversion, and the introduction of renewable energy.

Scopes 1 and 2

About the Scopes

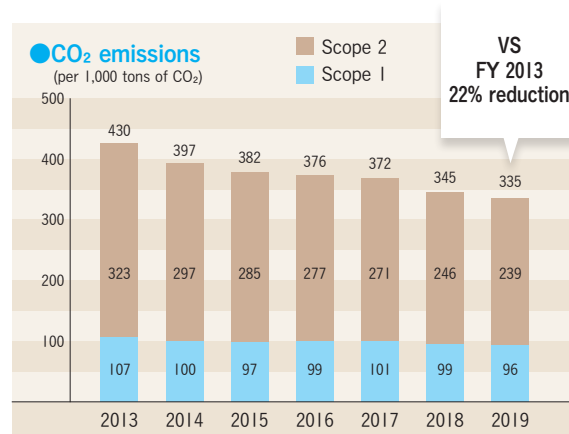
- **Scope 1**...Direct greenhouse gases emissions from fuel burned by own company
- **Scope 2**...Indirect greenhouse gases emissions from electricity used by own company
- **Scope 3**...Indirect greenhouse gases emissions from across own company's supply chain (excluding Scopes 1 and 2)

Reducing company CO₂ emissions by reducing energy consumption rate

In an effort to reduce the amount of CO₂ emissions produced by our company, we are promoting investments in energy-efficiency operational improvements, and energy-saving activities undertaken by all our employees. In FY 2019, we made energy-efficiency related investments of approximately 300 million yen (based on our company's Environmental Accounting Guideline). With this, we improved productivity by updating and automating production equipment and realized greater efficiency by updating major equipment such as lights, pumps, air conditioning and transformers.

In terms of operational improvements, we not only shared examples of energy-saving efforts that are being conducted at various manufacturing plants across Japan, we also visualized the state of progress at each location and encouraged everyone involved to see their efforts through to the end.

With these activities, we have reduced CO₂ emissions at our company (Scopes 1 and 2) by 22% compared to FY 2013.



Scope 3

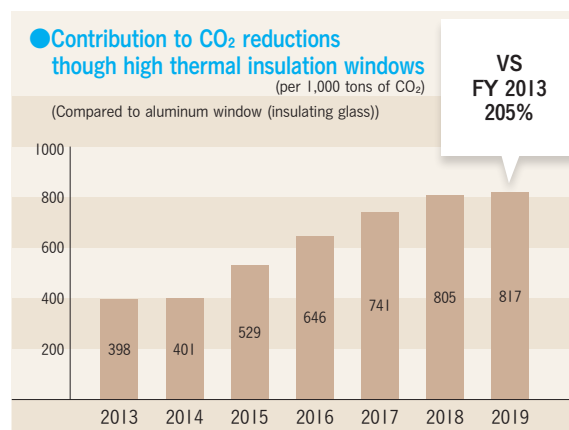
Efforts to reduce CO₂ emissions throughout our supply chain by promoting vinyl windows

We are working to visualize CO₂ emissions throughout our supply chain. In the "purchased products and services" category, raw material procurement accounts for nearly 90% of our Scope 3 CO₂ emissions. In particular, the procurement of aluminum (from mining to refining to overseas transportation), which we use to make aluminum window frames, is significantly affecting the numbers. By increasing the ratio of reclaimed aluminum base metal use and promoting vinyl windows, we continue to reduce CO₂ emissions throughout the supply chain.

At the product-usage stage, we are helping to reduce CO₂ emissions in offices and homes by popularizing vinyl windows. In FY 2019, our reduction contribution was 205% of the FY 2013 level, and we will contribute to further reductions by increasing the adoption of vinyl windows.

In addition, we are also actively promoting the diversification of product transportation methods, Under the Eco Rail Mark system organized by the Japanese Ministry of Land, Infrastructure, Transport and Tourism and Japan's Railway Freight Association Eco

Rail Mark Office, we have been recognized as an Eco Rail certified company. For transportation over land, we have introduced double-trailer trucks, which enhances loading efficiency by increasing the amount of cargo to 1.8 times the original load. With an efficient and flexible transportation system, which includes modal shifts and the implementation of large-capacity trailers, we will aim to continuously reduce CO₂ emissions linked to distribution.



3Rs

Promoting the 3Rs to build a recycling society

Our company is engaging in 3R activities (reduce, reuse, recycle waste) in order to achieve a circular economy.

In terms of waste produced in our business activities, we aim to improve our recycling rate (zero landfill) and reduce the production of waste by 30%, and are working to turn waste into valued resources, recycle waste, and improve yield rates.

As well, we are striving to recycle resources throughout product lifecycles by procuring recycled materials, reducing packaging materials, recycling post-use waste, and other means.



* 3Rs: Reduce, Reuse, Recycle

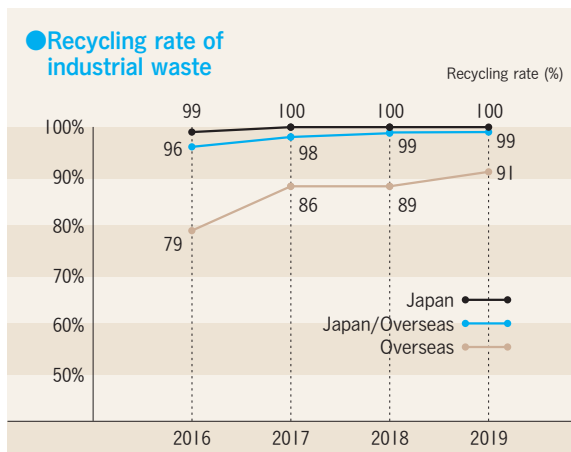
Increasing and maintaining our recycling rate

Achieving a 99% recycling rate and zero emissions in Japan and overseas

Our company's definition of zero emissions is to maintain a "recycling rate of over 97% for the waste produced in our business activities." Up to this point, we have been conducting surveys on the state of industrial waste production at final disposal and promoting a shift to recycling.

In FY 2019, we worked on figuring out how to recycle plastic waste (vinyl remains, shredded offcuts, composites), that normally would be disposed of, and achieved a recycling rate of 100% for industrial waste coming from domestic manufacturing sites. At our overseas manufacturing sites, we worked on converting sludge into a valued resource, and improved the recycling rate from 89% in FY 2018 to 91%.

Through these initiatives, for Japan and overseas in total, we have achieved a 99% recycling rate and zero emissions. We will continue to improve our recycling rate by sharing information on recycling conducted at our locations in Japan and overseas and horizontally rolling out example cases.



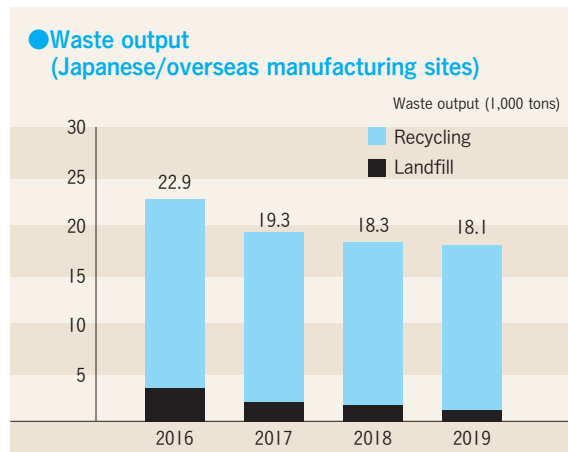
Waste reduction

200-ton reduction of waste output in Japan/overseas Making the effort to reduce waste

In FY 2019, we increased waste output from our Japanese manufacturing sites by 92 tons compared to FY 2018. This marked a 16% reduction (by shipment) from our baseline year of FY 2013. In FY 2019, we reduced waste amount by transforming waste into resources with value, such as converting wood chips into fuel. However, we also saw increases in waste production, due to valuable products such as waste plastic and glass scrap that were discarded as waste.

At our overseas sites, in FY 2019 we saw a reduction in waste of 300 tons compared to FY 2018. YKK AP America Inc. reduced waste by transforming sludge into a resource with value.

Going forward, we will further reduce waste production by improving yields in the production process, reducing packaging materials, and other means.



Human Resource Development that Supports *Monozukuri*

At YKK AP, one of the key points of the Fifth Mid-Term Management Plan is human resource development. When Tadao Yoshida, founder of YKK, spoke of the vision he had for the company, he likened the company to a forest that is made up of all kinds of trees, from old and venerable trees, rich and knowledge, to young, scarcely more than saplings. In the same way, YKK AP strives to be a company in which all employees draw on and express their unique characteristics and talents. In recent years society has grown more diverse, and we are working to create environments in which a diverse workforce can actively participate in the company.

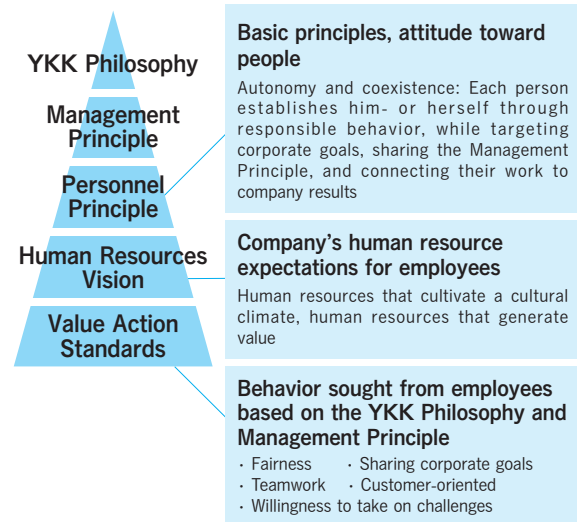
Employment

A further commitment to performance-based meritocracy, based on fairness, job (role), and autonomy

Based on the twin ideas of autonomy and coexistence, the YKK Group creates systems and environments in which each and every employee can demonstrate their full potential, regardless of age, gender, educational background, and so on. The goal is to create a “Forest Organization,” a company in which every employee feels that he or she is a manager, and in which everyone grows strong together as a group, like a forest that is made up of independent trees. To create value as such an organization, we work to develop human resources and realize truly fair personnel systems.

As well, since FY 2012, the YKK Group (Japan) has been engaging in the Work Style transformation project. To date, we have been running a re-hiring system for employees over the age of 60. From FY 2013 to FY 2025, we will be gradually raising the mandatory retirement age to 65, in anticipation of abolishing it altogether.

In Japan, in terms of reforming our personnel systems, we are further focusing on results and merit in terms of roles, based on fairness, job (role), and independence, while aiming for equality of roles, results, and treatment regardless of age,



gender, educational background, or nationality. The company supports independent working styles by clarifying the expected working methods and the abilities and experience needed to perform roles, and provides opportunities for employees to forge their own careers and put forth their own intentions.

3-Year Professional Program

Developing professional human resources with training focused on hands-on installation

YKK AP (Japan) runs a “3-Year Professional Program” for new employees to turn them into fully professional personnel within three years. The first year of this program consists of production line work training, installation management training, and classroom study (technical courses and installation estimations studies). As manufacturing employees, trainees are taught *monozukuri* fundamentals and core product knowledge. In the second year, trainees receive on-the-job training and off-the-job training at their place of posting to further extend their product knowledge and business skills as they work to becoming full-fledged engineers and sales persons.

The Architectural Product Training (Beginner) Course and Follow-up Training for technical personnel and Architectural Products Installation Practice for sales personnel impart basic knowledge about building materials and construction. Trainees attend lectures about window types and performance, building

structures and window installations, materials, reading drawings, and more. Furthermore, they also take part in hands-on training in the disassembly and assembly of sashes, the installation of residential and commercial sashes, adjustments, maintenance, and remodeling products. The curriculum combines classroom and practical training to deepen understanding and impart the required basic knowledge and skills.



Fourth-year employees from across the country who have completed the 3-Year Professional Program attend the *Mitose no Kai* (Three-year Meeting).

Promoting diversity

Creating new value with comprehensive systems to encourage the advancement of women in the workplace



Career Development Support Program group training

Our company promotes diversity in order to create new value. We face challenges in Japan, such as a small number of female managers compared to the number of female workers, and a lack of women aiming for managerial positions. In response, we are working to develop environments that encourage the active participation of women. In the YKK AP (Japan) Action Plan of 2016, we set a target of 30% more female hired workers by FY 2020 and having 130 women managers or higher and 460 women assistant managers by the end of FY 2020.

In concrete terms, we have put into place such measures as hourly annual leave and sick/injured child care leave, and raising the maximum age of children for childcare leave. As well, across the entire company we are working to take on board proposals and reforms from a female point of view, in all sectors including sales, manufacturing, and engineering. In terms of fostering female leaders, we run the Career Development Support Program that sets out medium-term training and development plans between worksite supervisors and female employees, as well as introducing OJT and mentoring systems to provide advice from various range of viewpoints. We run group training for employees aiming to become leaders and managers, helping to foster leadership awareness, deepen understanding of the role of manager, and provide opportunities to plot future careers.

At the same time, we actively encourage male employees to take childcare leave. In FY 2019, 49.2% of eligible employees did so, a high level by Japanese national standards. We are building work environments and systems, such as flextime and telework, which we believe make work easier for employees, and thus boost productivity while creating new value.

Work style reform

We are building healthy and flexible environments that enable employees to maintain work-life balance

In FY 2018, YKK AP (Japan) established the Work Style Reform Committee, chaired by Executive Vice President Kosuke Iwabuchi.

Work style reform involves three major themes: (1) Use of satellite offices and promotion of remote working; (2) Standardization to reduce processes requiring personal effort; and (3) Reassessment of operations to reduce wasteful work.

By building on these themes we hope to promote non-location-specific working styles, make it easier to take paid leave, reduce mistakes in operations, strengthen governance, improve operations efficiency, and reduce overtime.

In April 2019, we established telework duty regulations, and in the same year organized Telework Days 2019*. This initiative helped us to smoothly roll out telework in response to the 2020 Declaration of a State of Emergency in response to the Novel Coronavirus Disease.

As well, in order to improve implementation, we had all departments provide "targets declarations for employees," which were promoted and managed by the Work Style Reform Committee.

*Work Style Reform is a national campaign sponsored by Japanese the Ministry of Internal Affairs and Communications, the Ministry of Health, Labour and Welfare, the Ministry of Economy, Trade and Industry, the Ministry of Land, Infrastructure, Transport and Tourism, the Cabinet Secretariat, the Cabinet Office, the Tokyo Metropolitan Government, and related organizations, using the opportunity offered by the 2020 Tokyo Olympic and Paralympic Games. Starting in 2018, our company has participated for two years running.

Business leaders development Graduate school dispatching and MOT/ MBA overseas studies

With the goal of creating new value and strengthening our businesses, we select young employees through open recruitment and dispatch them to graduate schools and research institutes in Japan and overseas, and provide support for the acquisition of doctoral degrees, MOTs, and MBAs. This effort is aimed at developing the next generation of YKK AP leaders, through specialized knowledge acquisition and research into windows-related advanced technology, management, history, and design, and by leveraging skills cultivated in competitive overseas environments. As of June 2020, 23 employees have been sent to undertake such studies.

Health management

Considering employee and family health as a management issue, and promoting prevention measures

Our company considers employee health to be a management issue. In order to implement and also clarify our health management initiatives inside and outside the company, we issued a Health Declaration that further promotes better health management for our employees. In Japan's Certified Health & Productivity Management Outstanding Organizations Recognition Program we were recognized, for the second year in a row, as a particularly outstanding enterprise engaging in efforts to advance health management, and were certified as one of the "White 500" organizations in the large enterprises category.



Health declaration

YKK AP Inc. aspires to become a company where all employees are able to work with pride and pleasure. We believe that a prerequisite for achieving this goal is for all our employees and their family members to maintain and improve their mental and physical health, which will enable every employee to demonstrate their unique qualities and capabilities to the maximum, propel our company's growth, and contribute to society. Based on this concept, our company, the Health Insurance Society, employees and their families are united in their endeavors for health promotion.

For details, visit our website
<https://www.ykkap.co.jp/company/jp/sustainability/health/>
(Information in Japanese)

Promoting employee health maintenance

We run employee health maintenance programs in collaboration with external organizations

YKK AP (Japan) runs several initiatives to promote the maintenance of employee physical and mental health. One of these is our health consultation service, both inside and outside the company, where employees can get advice, either in person or by phone or email. Inside the company, employees can consult with industrial physicians at business locations or with physicians, public health nurses, and nurses at health management centers. We also cooperate with external organizations to provide mental health care for employees. As well, we provide face-to-face, email, and phone counseling not only to employees, but also their cohabitant families as well. This program promotes employee health maintenance by enabling employees to consult with counselors about workplace relationships that tend to cause stress, as well as concerns about their own future and career.

Activities to reinforce the Management Principle

We take advantage of various opportunities to penetrate the Management Principle amongst employees

The YKK Group undertakes activities to reinforce the Management Principle so as to strengthen the foundations of the YKK Philosophy, Management Principle, and Core Values (value which each and every employee respect and practice, and also daily action standards), so that they are implemented and disseminated, and that all employees move toward the same vector.

As a concrete example, "talking sessions" are held at our various locations between supervisors and staff in which participants share actual cases, and employees consult with supervisors to review their own cases using the "Core Values implementation check sheet." In this way, it is hoped that all employees can experience the YKK AP way and thus foster a sense of unity that enhance corporate value.

● Core Values



Improving employee management participation awareness

We promote employee management participation awareness with shared profits

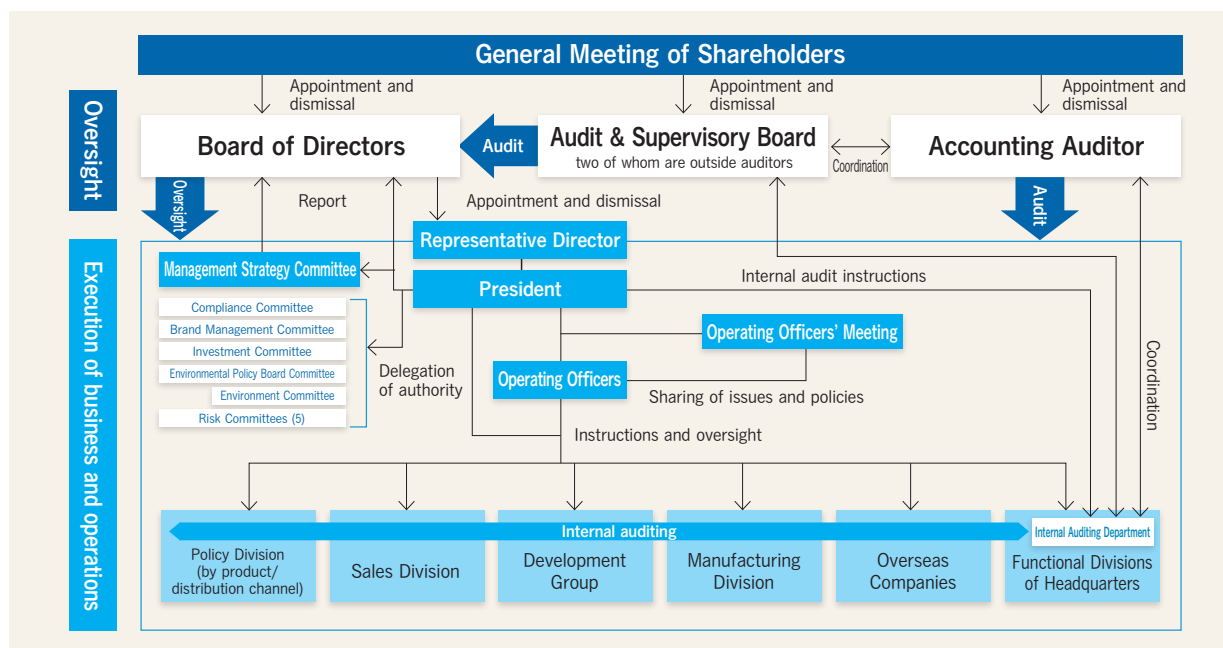


YKK's Founder, Tadao Yoshida, stated that "employees should participate in company management and share in its prosperity," and also that "stock is a certificate for participating in business." Based on his management philosophy, the YKK Group (Japan) established the Employee Stockholding Association, with the goal of encouraging management participation by employees and building their wealth. Approximately 80% of YKK's qualifying employees participate in the association, and they are the company's largest shareholder. Approximately 2,500 people attend meetings held twice a year in over 30 locations around Japan. By providing the opportunity for members to talk directly to executives, the meetings help raise management participation awareness.

Corporate Governance

As we inherit the philosophy of the “Cycle of Goodness,” we strive to enhance our corporate governance system in an effort to further enrich our corporate value. Our company’s basic approach to corporate governance involves several organizations and systems. The Board of Directors serves to make decisions on important matters, such as the company’s management policy, and serves as an oversight function. The Audit & Supervisory Board, meanwhile, is the company’s auditing organization. The final component of the company’s basic approach is the Officer System, a framework that helps the company promote the execution of business and operations.

Our system ensures that the execution of duties by the Directors of the Company is in line with laws, regulations and the Articles of Incorporation



● Systems concerning the execution of duties by Directors of the Company and the Directors of its subsidiary companies

(1) System for ensuring the execution of duties by the directors is in line with laws, regulations and the Articles of Incorporation, and other systems to ensure appropriate business operations at the company

The directors adhere to the board of directors’ regulations, comply with regulations pertaining to the performance of director duties, and execute operations appropriately in accordance with the principle of the separation of duties. The company has established a Compliance Committee to maintain a compliance system for the company and its subsidiary companies. Additionally, a Compliance Director has been appointed, who reports to the company’s other directors and the audit & supervisory board members on the development of the compliance structure and compliance with laws, regulations, and the Articles of Incorporation, among other items. The company’s directors regularly participate in compliance training programs by lawyers and other professionals. They also submit written oaths pledging to comply with laws and regulations in performing their duties as directors.

(2) System for storing and managing information related to the execution of duties by directors of the company

The company, in line with its document control regulations, information security regulations, and other internal regulations, sets specific periods for retaining important documents (including electronic records) and implements appropriate document control.

(3) Regulations and other systems for addressing the risk of losses by the company and its subsidiary companies

The company appointed its Chief Risk Management Officer (CRO) and established its Quality Committee, Foreign Trade Control Committee, Crisis Management Committee, Information Security Committee, and Technical Asset Management Committee to promote risk management at YKK AP. The CRO and the committees continue to develop and apply appropriate regulations.

(4) System for ensuring that the execution of duties by directors of the company and its subsidiary companies is efficient and effective

The company introduced the Operating Officer System to ensure the faster execution of business and operations via the separation of management and execution. While directors devote their energies toward optimizing operations across the company, operating officers assume responsibility for and authority over executing individual businesses and operations in accordance with the policies that the board of directors has resolved. The company established the Brand Management Committee to discuss and draft important policies from a professional perspective. The company established its Management Strategy Committee to improve the efficiency of deliberations by the board of directors. The directors hold thorough discussions on important matters and establish an Investment Committee for particularly important investment cases before reaching official resolutions. The company established its Environmental Policy Board Committee to determine environmental policies and measures for the company and oversee the promotion of environmental policies. In addition, Business Execution Division of the Environment Committee promotes policies and manages their progress.

Compliance

Maintaining and strengthening the compliance system under the philosophy of the “Cycle of Goodness”

The YKK Group considers compliance to be responding to societal demands. In addition to abiding by laws, regulations, and internal rules, the company complies with social norms demanded of it when conducting business activities. We have established a Compliance Promotion Office and work to strengthen compliance initiatives based on the YKK Group’s compliance standards, the YKK Global Criteria of Compliance (YGCC). Concrete measures being undertaken in FY 2020 include revising the YKK AP edition of the YGCC, establishing the education curricula, and strengthening monitoring.

Building compliance systems based on the YGCC: FY 2020 highlights

1. Building a promotion system

- Introduced the system to key locations in Japan and overseas and established YGCC via promotion unit support
- Revised the YKK AP version based on YGCC 3.0 (disseminated to all locations)
- Gained understanding of compliance state in each location through YGCC self-inspection and internal auditing

2. Establishing compliance education

- Provided opportunities for two hours or more of compliance education per year
- Promoted education in specialized sectors, led by each specialized department and committee

3. Further strengthening monitoring

(Management system, working conditions, working environment, health and safety, environment, fair operating practices, contract construction work)

- PDCA action through YGCC self-inspection (once per year)
- YGCC internal auditing (once every two years*), fostering and training of internal auditors for mutual audits

*In some case, once every three years.



We distribute the YKK Group Compliance Book to all employees as a tool to facilitate greater understanding, awareness, and receptiveness of the YKK Group Code of Business Conduct, which is used across the world, and to encourage behavioral changes that stem from attitude transformations.

Whistleblowing system

Safe consultation and reporting system for employees to stop labor-related illegal acts and internal corruption

The YKK Group whistleblowing system was introduced to deter the occurrence of illegal acts and respond to them quickly if they arise at any time within our business activities. By doing so, we aim to create an even stronger compliance-adhering structure. Our system enables our workers in Japan, including temporary workers and contractors, to anonymously consult and report on workplace environments, working hours, or cases of internal corruption. We have established internal and external hotlines for personnel to consult on such issues as harassment, psychological concerns, and health.

Risk management

BCP initiatives strengthening our response to disasters and pandemics

All locations in Japan and overseas have completed drawing up business continuity plans (BCP) in preparation for natural disasters and other risks. We conduct scheduled drills, and in FY 2019, we ran workshops, seminars, and recovery drills in five locations considered vulnerable to potential disasters such as the Nankai Trough Giant Earthquake or Tokyo Metropolitan Earthquake. We are preparing stockpiles at business locations believed to be vulnerable to tsunamis or flooding.

Also, prompted by the 2011 Great East Japan Earthquake and BCP requirements, we moved a portion of our headquarters’ function to Kurobe, Toyama. In April 2016, we completed the transfer of over 200 employees, largely from administrative departments such as the Human Resources Department, Accounting & Finance Department and Intellectual Property Department. Our aim in moving departments that were concentrated in Tokyo to Kurobe was to mitigate risks in the event of a disaster and also to increase cooperation and communication between different departments to further enhance technological prowess, development capabilities and product appeal.

In response to the coronavirus pandemic, in February 2020 we established a countermeasures HQ in Kurobe, led by the company president. Owing to all these initiatives, the Company was able to avoid major chaos, follow government guidelines, and roll out business continuity responses. We are prioritizing the safety of our employees and business partners by promoting work-from-home and online conferences, cancelling events, and other measures.

Procurement guidelines

Fulfilling our social responsibilities throughout our supply chain with our procurement policy

●YKK Group Procurement Policy

Ever since YKK’s founding, we have based our business activities on the conviction, under the “Cycle of Goodness” YKK Philosophy, that an enterprise is an important member of society, that it must thereby coexist with other elements of society, and the value of its existence will be recognized by the benefits it shares with society. The belief behind this is that no one prospers without rendering benefit to others. We carry out business activities with the aim of bringing mutual prosperity, and our intent is that innovative ideas and inventions will result in business expansion for the YKK Group, which in turn would bring prosperity to customers and business partners, and thus benefit all society. This is none other than our execution of corporate social responsibility.

Directors and Audit & Supervisory Board Members

(as of June 2020)

Representative Directors



Chairman
Representative
Director

**Akira
Yoshida**

March 1977: Joined Yoshida Kogyo K.K. (current YKK)
1988 to 1995: Served in the U.S.
April 2004: YKK Vice President
April 2009: YKK Senior Vice President
June 2011: Director
YKK Director, CFO Senior Vice President
April 2012: YKK Director, CFO, Executive Vice President
April 2019: YKK Director, Vice Chairman, CFO
June 2020: Chairman Representative Director (currently)
YKK Director (currently)



President
Representative
Director

**Hidemitsu
Hori**

March 1981: Joined Yoshida Kogyo K.K. (current YKK)
1989 to 2006: Served in the U.S.
April 2007: Vice President
April 2009: Senior Vice President
June 2009: Director, Senior Vice President
June 2011: President Representative Director (currently)

Directors



Director
Executive Vice President,
Business Process Re-engineering

Fumio Niizeki

March 1977: Joined Yoshida Kogyo K.K.
(current YKK)
April 2012: Vice President
June 2014: Director, Vice President
April 2016: Director, Executive Vice President
April 2019: Director, Executive Vice President,
and Operations (currently)



Director
Executive Vice President,
General & Administration

Kosuke Iwabuchi

March 1986: Joined company
1996 to 2009: Served in the U.S. and China
April 2009: Vice President
April 2016: Executive Vice President
June 2016: Director, Executive Vice President
(currently)



Director
Executive Vice President,
Manufacturing

Kazuo Matsutani

March 1981: Joined Yoshida Kogyo K.K.
(current YKK)
April 2009: Vice President
June 2016: Director, Vice President
April 2018: Director, Executive Vice President,
and Manufacturing (currently)



Director
Executive Vice President,
Renovation Business

Wataru Otani

March 1981: Joined Yoshida Kogyo K.K. (current YKK)
April 2001: YKK Vice President
April 2004: YKK Senior Vice President
June 2004: YKK Director, Senior Vice President
April 2009: YKK Director, Executive Vice
President (until June 2018)
June 2018: Director, Executive Vice President
(currently)



Director
Executive Vice President,
Sales & Marketing

Shinichiro Yamaji

March 1981: Joined company
April 2009: Vice President
April 2017: Executive Vice President
June 2020: Director, Executive Vice President
(currently)



Director
Vice President,
Research & Development

Shuichi Mizukami

July 1985: Joined Yoshida Kogyo K.K.
(current YKK)
April 2009: Executive Chief Engineer
April 2010: Vice President
June 2020: Director, Vice President
Research & Development (currently)



Director
Chairman, YKK Corporation

Masayuki Sarumaru

March 1975: Joined Yoshida Kogyo K.K.
(current YKK)
1977 to 1994: Served in the U.S.
June 1999: YKK Vice President
April 2003: YKK Senior Vice President
April 2008: YKK Executive Vice President
June 2008: YKK Director,
Executive Vice President

June 2011: YKK President Representative Director
April 2017: YKK Vice Chairman Representative Director
June 2017: Hitachi Chemical Co., Ltd.
External Director
(until June 2020)
June 2018: YKK Chairman
Representative Director (currently)
June 2020: Director (currently)

Audit & Supervisory Board Members



Audit & Supervisory Board
Member (outside)

Susumu Miyoshi

April 1970: Joined Japan Airlines Co., Ltd.
April 2001: Executive Officer of same
April 2004: President of the Americas branch of same
April 2009: Senior Managing Executive Officer of same
February 2010: Retired from same
June 2011: YKK AP Outside Audit & Supervisory
Board Member (currently)



Audit & Supervisory Board
Member (full-time)

Hisao Miyamura

March 1978: Joined Yoshida Kogyo K.K.
(current YKK)
2002 to 2008: Served in China
April 2008: YKK Vice President (until March 2018)
June 2018: Full-time Audit & Supervisory
Board Member (currently)



Audit & Supervisory Board Member
YKK Corporation Audit & Supervisory
Board Member (full-time)

Kiyotaka Nagata

March 1979: Joined Yoshida Kogyo K.K. (current YKK)
April 2008: YKK Vice President
April 2009: YKK Executive Chief Specialist
June 2013: Outside Audit & Supervisory Board Member
YKK Full-time Audit & Supervisory Board
Member (currently)
June 2016: Audit & Supervisory Board Member
(currently)



Audit & Supervisory Board
Member (outside), Mori Hamada
& Matsumoto Partner Lawyer

Takashi Miyatani

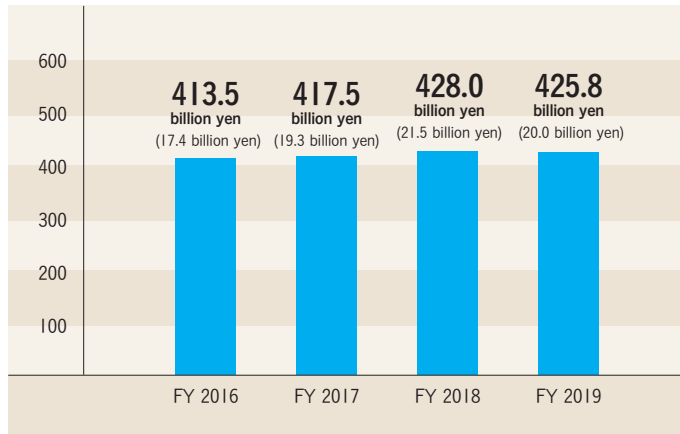
April 1991: Registered as a lawyer
(Daini Tokyo Bar Association)
January 1998: Mori Sogo(current Mori Hamada
& Matsumoto)
Partner Lawyer (currently)
June 2007: YKK AP Outside Audit &
Supervisory Board Member
(currently)

YKK AP in Numbers (Results from FY 2019 unless specifically stated)

Main Financial Data

Net sales

425.8 billion yen

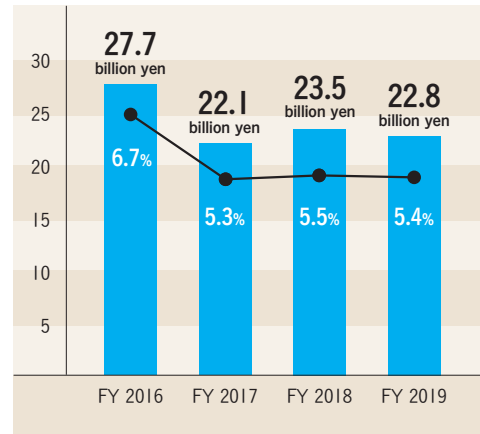


Figures in parentheses indicate eliminations of transactions within the Group

	FY 2016	FY 2017	FY 2018	FY 2019
Japan Sales	358.6 billion yen	365.6 billion yen	376.4 billion yen	374.5 billion yen
Overseas Sales	72.3 billion yen	71.3 billion yen	73.0 billion yen	71.3 billion yen
Overseas Comparison	17%	16%	16%	16%

Operating income/Operating income margin

22.8 billion yen



Capital investments



21.1 billion yen

R&D expenses



8.89 billion yen

Japan locations

199 locations

Overseas presence

10 countries/
regions

Japan
manufacturing locations

24 locations

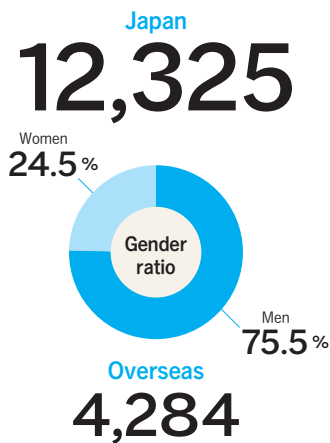
Overseas
manufacturing locations

11 locations

Main Non-Financial Data

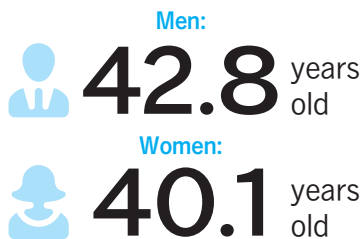
Number of employees

(as of the end of March 2020)



Average age

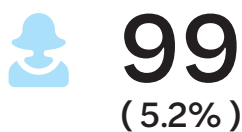
(as of April 1, 2019)



Note: Data from YKK AP Group (Japan)
Note: Includes Japanese employees working abroad

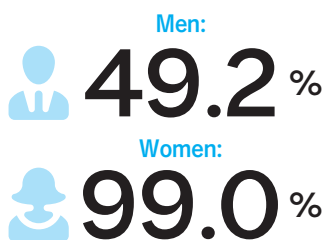
Women in management positions

(as of the end of March 2020)



Note: Data from YKK AP alone (Japan)
Note: Includes Japanese employees working abroad

Rate of employees who take childcare leave



Note: Data from YKK AP alone (Japan)

Employment rate of persons with disabilities

(FY 2019 average)

2.26 %



Note: Data from YKK AP alone (Japan)
Note: Includes Japanese employees working abroad

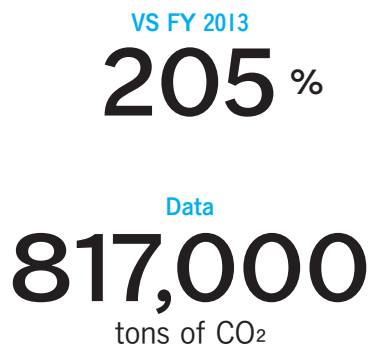
Rate of employees who take paid leave

78.4 %



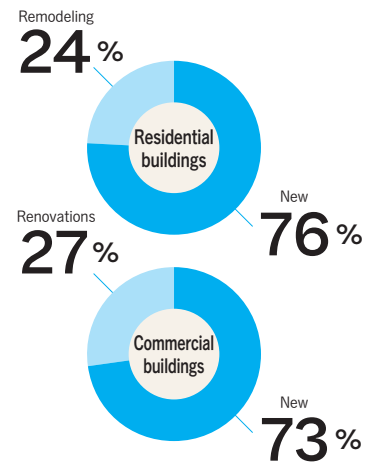
Note: Data from YKK AP Group (Japan)

Contribution to CO₂ reductions though sustainable products



Note: Data from YKK AP Group (Japan)

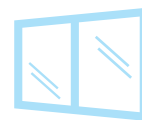
Ratio of new constructions to remodeling projects



Note: Data from YKK AP Group (Japan)
Note: Based on net sales

Rate of vinyl window use

26.2 %



Note: Data from YKK AP alone (Japan)

Occurrence rates of accidents that required time off from work

(over four days)



(Figures represent the frequency of industrial accidents that occurred over a sum total of one million working hours and those that resulted in death or injury.)

Note: Data from YKK AP alone (Japan)

Major Awards

YKK AP Kyushu Plant

Japan Association for Safety of Hazardous Materials
Chairman's Award
Excellent Hazardous Materials Business

Japan Association for Safety of Hazardous Materials
April 2019

YKK AP Kurobe Ogyu Plant YKK AP Kurobe Ekko Plant

FY 2018
Workplace Occupational Safety Awards
Special Award of Excellence

Japan Aluminum Association
May 2019

YKK AP

"100 Best Companies Where Women Actively Take Part" 2019
4th Place in Diversity Category

Nikkei Woman and Nikkei Womenomics Project
May 2019

Bringing new value to old buildings that exceeds the value of a new construction:
Renovation Demonstration Project for the Housing Performance Improvement

Renovation of the Year 2019
Grand Prize in the Open Category

Renovation Council
December 2019



PT. YKK AP Indonesia

PROPER
(Environmental rating program for companies)
Green (Excellence Award)

Ministry of Environment and Forestry (Indonesia),
January 2020

Windows & Doors locking monitoring system mimott
Thermal insulation entrance door Venato D30
EXIMA 3I panel screen for preschool facilities(WSI0EW model panel screen)

Kids Design Award 2019
Category: Design that helps with raising kids

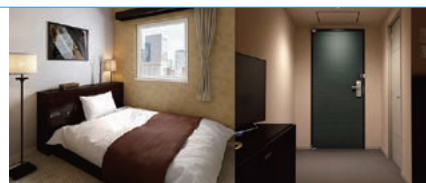
NPO Kids
Design Association
August 2019



Vinyl windows and guest room doors for hotels: HOTEL MADO and HOTEL DOOR

Good Design Award 2019

Japan Institute of Design Promotion
October 2019



YKK Taiwan Co., Ltd. AP Business (current YKK AP Taiwan Co., Ltd.)

"Manufacturer of the most desirable architectural products and facilities for use in an ideal home"
Window Sash Category: 1st Place for the 8th consecutive year

Taiwan Building Aesthetics Cultural and Economic Association; an incorporated association
November 2019



Installation Manual:
Thermal insulation entrance doors
Venato D30
Venato D30 Fire-Resistant Door

Japan Manual Awards 2019
General Category Excellence Award

Japan Technical Communicators Association
August 2019

YKK AP Hokkaido Division
Development and promotion of high performance triple insulating glass vinyl windows that contribute to energy conservation in wooden homes

2019 Hokkaido Energy Conservation and New Energy Promotion Award
Energy Conservation Category Grand Prize

Industrial Promotion Office,
Hokkaido Economic Department
October 2019

YKK (China) Investment Co., Ltd. AP
Business Division
(current YKK AP (China) Investment Co., Ltd.)

2020 China Real Estate Top 500
Top 10 Suppliers: System Windows
East China, Northeast Region:
1st Place for the 3rd consecutive year

China Real Estate Association, Shanghai E-House Real Estate
Research Institute, China Real Estate Evaluation Center
March 2020

Residential Window Sash: 1st Place for the 9th consecutive year
Residential Entrance Door: 1st Place for the 4th consecutive year
Commercial Building Aluminum Sash and Curtain Wall: 1st Place for the 15th consecutive year
Gates, Fences, and Walls: 1st Place
Carports: 1st Place

2019 Ranking of the Most Desirable Architectural Products and Equipment Manufacturers (Nikkei Architecture)

A reader survey asking about preferred products from architectural product and equipment manufacturers
November 28, 2019 issue



Residential Window Sash: 1st Place for the 4th consecutive year
Residential Entrance Door: 1st Place for the 4th consecutive year

2019 Ranking of the Most Desirable Architectural Products and Equipment Manufacturers (Nikkei Home Builder)

A reader survey asking about preferred products from architectural product and equipment manufacturers
December 2019 issue



Windows & Doors locking monitoring system mimott

Household Appliance Grand Prize 2019
Gold Prize, IoT Home Security Category

Kaden Watch, a news site specializing in large household appliances, Gakken Plus goods information magazine GetNavi
March 2020 issue

Company Outline

Corporate Name	YKK AP Inc.
Headquarters Address	1, Kanda Izumi-cho, Chiyoda-ku, Tokyo, 101-0024, Japan TEL: +81-3-3864-2200
Foundation	July 22, 1957
Accounting Period	March 31 of every year
Description of Business	Design, manufacturing, installation and sales of the following products:
	<ul style="list-style-type: none"> ● Residential Products Windows, shutters, storm doors, window screens, window grills, residential electrical products, front entrance doors, side entrance doors, bathroom doors, interior doors, interior stairs, wood flooring, balcony, patio doors, awning, gates, fences, carports, cladding products, insulating glass, etc.
	<ul style="list-style-type: none"> ● Commercial Products Windows, doors, curtain wall, steel products, remodeling products, storefront products, landscape products, etc.
	<ul style="list-style-type: none"> ● Others Aluminum profile products, manufacturing machinery, architectural parts, etc.
Construction Work Permits	Licenses issued by the Minister of Land, Infrastructure, Transport and Tourism Public engineering, construction engineering, scaffold/construction/concrete work, stone work, roof work, electrical work, piping work, tile/brick/block work, steel construction work, sheet metal work, glass work, waterproofing work, interior finishing, landscape gardening, fittings work
Main Banks	Mizuho Bank, MUGF Bank, Hokuriku Bank
Domestic Affiliated Companies	YKK AP Okinawa Inc., Pros Inc., Iwabuchi Inc., YKK AP Ruxy Inc.
Overseas Affiliated Companies	YKK AP FACADE Pte. Ltd., YKK AP Singapore Pte. Ltd., YKK AP FACADE Vietnam Co., Ltd., YKK AP America Inc., Erie Architectural Products Inc., Erie Architectural Products USA, Inc. YKK AP (China) Investment Co., Ltd., Dalian YKK AP Co., Ltd., YKK AP Co., Ltd., YKK AP (Suzhou) Co., Ltd., YKK AP Hong Kong Ltd., YKK AP Taiwan Co., Ltd., PT. YKK AP Indonesia, YKK AP MYS SDN. BHD., YKK AP (Thailand) Co., Ltd., Bhoruka Extrusions Private Limited

Editorial Note

Thank you for reading the YKK AP Integrated Report 2020 to the end.

Society and people's lives have been changed dramatically by the coronavirus disease (COVID 19). Our own business activities are undergoing a transformation as well. Given these circumstances, we believe more than ever that even unlisted companies like ourselves need to proactively disclose information and provide fair and accurate information to our stakeholders. This integrated report is the result of that belief.

We hope this YKK AP Integrated Report 2020 will help readers gain a better understanding of our company. Going forward, we will work to keep improving the report by taking in your opinions and suggestions.

YKK AP Integrated Report 2020

Extent of Coverage	YKK AP Inc. YKK AP Domestic Affiliated Companies YKK AP Overseas Affiliated Companies
Period Covered	FY 2019 (April 1, 2019 to March 31, 2020) Note: This report partially includes information outside the coverage period Note: As of November 2020, the Company has temporary suspended events to attract customers, training meetings, and so on.
Date of Publication	November 2020
Inquiries	YKK AP Inc. Corporate Communications 1, Kanda Izumi-cho, Chiyoda-ku, Tokyo, 101-0024, Japan TEL: +81-3-3864-2321 e-mail k_ykkap@ykkap.co.jp https://www.ykkap.co.jp/en/



* F H 2 0 - 2 0 7 - 1 *

 YKK AP Inc.

(NO|XAAAF-H20-207-1)