



FACTS AT A GLANCE

Company: Mitsubishi Kakoki Kaisha

Website: www.kakoki.co.jp

Description: Mitsubishi Kakoki Kaisha is an all-round engineering company that designs plants and machinery across a wide spectrum of industrial sectors, including water and atmospheric pollution prevention and other environmental control systems, steel, city gas, petrochemicals, semiconductors, electronics, nuclear power, food, and pharmaceuticals.

Industry: Chemicals & Petrochemicals

Country: Japan

PRODUCTS USED

- EYEPID®
- EYEPIPE®
- EYESUPT®
- EYEPIECE
- EYELIST®
- EYEexport3D
- EYEVIEW-LT

KEY BENEFITS

- Reduction of design time
- More efficient procurement through streamlined BoM system
- Reduction of on-site modifications through clash checking
- Single point of access to all operational and engineering information
- Production costs reduced and quality improved through the ability to access 3D model on-site

MITSUBISHI KAKOKI KAISHA USES EYECAD® TECHNOLOGY TO REDUCE PRODUCTION COSTS

3D piping system reduces design time, streamlines procurement, and reduces on-site modifications

IDENTIFYING GOALS

Mitsubishi Kakoki Kaisha, Ltd. (MKK) was established in 1935 to meet Japan's need for domestically manufactured chemical machinery at a time of overdependence on imports. Since then, MKK has grown steadily as an all-round engineering company supplying plant and machinery to a wide spectrum of industrial sectors, including water and atmospheric pollution prevention and other environmental control systems, steel, city gas, petrochemicals, semiconductors, electronics, nuclear power, food, and pharmaceuticals. Today, MKK regularly wins lump sum turnkey contracts for plant, facilities and machinery, from planning and design through to manufacture, fabrication, installation, and construction.

One of MKK's corporate goals is full commitment to leveraging the wealth of advanced technology, know-how, and experience it has built up and honed over the years in order to deliver attractive products, technologies, and services of the highest possible quality.

OVERCOMING CHALLENGES

As part of its commitment to technological innovation, MKK and Intergraph® started working together in 2008 to implement a range of 3D plant design tools in the EYECAD® range, including piping design tool, EYEPIPE® and piping design support system, EYESUPT®.

"We selected Intergraph as our partner as EYECAD has a range of powerful features and is very easy to use, so we knew we could deploy it very quickly," according to Junki Saito, a member of the piping design group in MKK's Plant Design Division.

"EYECAD was an excellent match for the size and scope of our business, and the full support in Japanese was very important."

Prior to 2008, MKK had been using a 2D CAD system for piping support design, and in the fabrication process, used the standardized support in each type and created its layout plan in the 2D system. However, this required great care to install the supports on-site.

Since installing EYESUPT, MKK has been aiming to apply 3D-based design of piping support to all phases of each project. EYESUPT automatically outputs individual design for procurement, and automatically assigns spool drawings with support and layout numbers. Layout plans are integrated into the piping assembly drawing, rather than the 2D system.

Working together with Intergraph, MKK developed its own system to automatically check the piping support. The system accepts data such as text data of a spool drawing and BoM data of a piping support exported from EYECAD. Based on this data, the system checks if there is inconsistency between each drawing and materials, and if the interval of placement of supports complies with the company standard.

Additionally, a piping construction progress management system (called P2S2) was also developed to manage intuitively the progress on site with EYECAD 3D modeling data saved in a mobile terminal. To input the construction progress, a user needs only to tap the 3D model on the mobile terminal, while saved progress data can be visualized in the 3D model.

Once all required data has been input into P2S2, construction progress such as prefabrication, onsite layout, thermal insulation, painting, trace, line-check, and pressure test can be viewed graphically and delivered smoothly to post process, resulting in lean construction management.

"The mobile terminal allows us to check everything quickly on-site. When connected to the internet, we can manually write the modification items on terminal and email it for instant instructions - saving us much time," said Saito.

REALIZING RESULTS

"EYECAD solutions had already reduced our design time, however these customizations are also helping us to streamline procurement, and reduce on-site modifications with clash checking," according to Saito.

"Access to the 3D model on site through the mobile terminal is also reducing our production costs and improving the quality of construction management."

MOVING FORWARD

MKK and Intergraph will continue to work together to maximize the value that MKK receives from the system.

"Intergraph is continuously updating EYECAD, so I would advise anyone else using this system to understand these updates and work with Intergraph to apply them to your business for maximum effectiveness," Saito concluded.

KEY CONTACT

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ABOUT INTERGRAPH

Intergraph helps the world work smarter. The company's software and solutions improve the lives of millions of people through better facilities, safer communities and more reliable operations.

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