CASE STUDY: JAPAN ENGINEERING CORPORATION, JAPAN

INTERGRAPH®

FACTS AT A GLANCE

Company: Japan Engineering Corporation

Website: www.jec-web.co.jp

Description: With headquarters in Kitakyushu city, Japan Engineering Corporation addresses the design of facilities in industries such as gas, oil, chemical, nuclear, pharmaceutical, and food processing for both domestic and international customers. The company has more than 150 employees based in five locations across Japan: Fukuoka, Kanagawa, Osaka, Chiba, and Ibaragi.

Industry: Oil & Gas, Chemical, Nuclear, Pharmaceutical, Food

Country: Japan

PRODUCTS USED

- EYEPIPE®
- EYESUPT®
- EYELIST®
- EYEexport3D

KEY BENEFITS

- Minimize onsite remodeling
- Quick creation of Bills of Materials (BoM)
- Reduction of work hours associated with the production of spool drawings
- Reduction of work hours required to manage design changes

JAPAN ENGINEERING CORPORATION ACHIEVES CONSIDERABLE REDUCTION OF DESIGN WORK HOURS WITH EYECAD®

Deployment of 3D plant design CAD system across business leads to improvements in process effectiveness and flexibility

IDENTIFYING GOALS

Japan Engineering Corporation (JEC) is headquartered in Kitakyushu city and is responsible for the design of hundreds of facilities in industries such as gas, oil, chemical, nuclear, pharmaceutical, and food for a range of domestic and international clients.

Each year, JEC holds a competition, which is open to all employees, to discuss and share design plans submitted by young engineers selected from each office, with the aim of encouraging engineers to develop their knowledge.

With a corporate mission to "pursue innovation with dreams, hopes and courage, and improve our ability to develop a better environment to enrich people's minds", JEC continues to move forward as a company.

To perform various kinds of piping design work and reduce construction costs, JEC selected EYECAD® and standardized internally on this 3D CAD system to fit the requirements of each project.

OVERCOMING CHALLENGES

After receiving an order, JEC uses EYECAD to create a process chart and design budget, then selects a project team and holds a design kick-off meeting. The aim of the kick-off meeting is to discuss the recommendations that should be made to the customer, particularly in relation to design rules, confirming design specifications, early issue identification, and how costs might be reduced during the construction phase.

EYECAD is utilized to make a schedule of design works such as piping layout and various information tasks, as well as to create Piping Material Standards (PMS) and input information relating to equipment, structural, and floor ducts for 3D modeling.

Deliverables are then reviewed and confirmed internally for functionality, safety, performance, operability, available space for maintenance, and any factors that might reduce construction costs.

In the detailed design phase, data for piping and support is input into EYECAD.

As the schedule is decided, JEC checks for errors, clash items, vendor drawings, and so on. Some projects require thermal pressure and seismic analysis.

Once customer approval has been received, JEC processes piping, spool, and support drawings, as well as BoM and a calculation of material quantities required for construction.

The importance of centralized data

For large-scale projects JEC divides up the work areas and processes the design tasks collaboratively between its various offices. EYECAD has been implemented in all branches, maximizing the benefits of the system across the business.

The 3D master data from EYECAD is stored and managed centrally in the head office.

For the jobs requiring customization, rules are defined and shared in advance. As data is prepared for piping modeling, it is transferred to each offices and staff can commence modeling with EYECAD.

3D data is then consolidated in the head office, which ensures a single copy of the latest version.

REALIZING RESULTS

With the definition of master model data from EYECAD, JEC is able to use the auto-update feature to execute design changes. This considerably reduces the work hours that would have been spent checking and modifying the drawings manually. Additionally, EYECAD can output BoM instantly, which drastically reduces the work hours that would have been spent outputting this information using a 2D design system.

MOVING FORWARD

JEC is currently using a 2D CAD system in conjunction with the EYECAD 3D plant design system, but would like to focus on EYECAD moving forward.

Akira Yamamoto, a member of the design department at JEC, said: "EYECAD is helping us to realize consistent production and management from front-end engineering design through to construction. Additionally, the ability to review the model in 3D gives us easy and accurate way to view the facility."

KEY CONTACT

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ABOUT INTERGRAPH

Intergraph Process, Power & Marine is the leading global provider of engineering software for the design, construction and operation of plants, ships and offshore facilities.

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