

COMPANY

Waskita Karya

LOCATION

Jakarta, Indonesia

SOFTWARE

Autodesk® BIM 360®**Autodesk® Revit®****Autodesk® Civil 3D®****Autodesk® Navisworks®****Autodesk® InfraWorks®****Autodesk® AutoCAD®**

BIM Collaboration Steers Waskita Karya to Greater Productivity

Autodesk solutions transformed Waskita Karya's work processes, putting it in good stead during the COVID-19 pandemic.

"Autodesk solutions have enabled us to be productive in many areas. In particular, the adoption of Building Information Modelling (BIM) has been the catalyst in our digital transformation journey."

— **Kharis Alfi**

BIM Manager
System, Technology and
Research Division
Waskita Karya



Image courtesy of Waskita Karya

Introduction

Waskita Karya is one of Indonesia's leading state-owned construction companies, playing a major role in the infrastructure development of the country.

Established in 1961, Waskita Karya originally focused on water-related developments. Over time, it expanded into the construction of highways, bridges, ports, airports, sewerage plants and industrial facilities.

In 1980, the company began taking on projects that involved advanced technology. Since 2015, it has been investing in segments of toll roads, steel fabrication, concrete precasting and property development in Indonesia.

"As one of the biggest construction companies in Indonesia, we are constantly adopting the latest technology. It gives us the capability to handle projects in different sectors," said Hadjar Seti Adji, Director of HCM & System Development.

With their vision set on being a sustainable and reliable Indonesian construction company, Waskita Karya adopted Autodesk and Building Information Modelling (BIM) solutions as the catalyst in their digital transformation journey.

"Our main objective was to introduce digitalisation into the construction sector, which historically uses a more traditional approach," said Kharis Alfi, BIM Manager of the System, Technology and Research Division.

Mindset Change

Waskita Karya started its digital transformation journey by first putting the right teams in place and shaping the team's mindset.

"The biggest challenge was in switching to digital platforms for communication and coordination," said Alfi.

In July 2018, a BIM department comprising of five BIM managers was set up in its corporate office.

"We started training BIM modellers and engineers, developing libraries of elements and templates, along with implementing BIM in selected building, dam, road and bridge projects," Alfi recalled.

Over time, five BIM divisions staffed with experienced BIM experts and engineers were set up.



Image courtesy of Waskita Karya

Two of these divisions focus on infrastructure, while the other three concentrate on buildings, Engineering, Procurement and Construction (EPC) and overseas projects.

Transformed Workflow

With the systems in place, Autodesk solutions now play a major role in Waskita's workflow.

"We use Civil 3D and Revit to produce 3D models, and generate the working drawings and quantity take-off. After the modelling is done, we integrate it with Navisworks so the team can navigate and review the model real time. Drone photos taken on site are also integrated to achieve reality modelling of the project," explained Fandy Dwi Hermawan, Site Engineering Officer.

The various teams also use InfraWorks to analyse design concepts for better decision making and project outcomes. BIM 360 is employed to connect project team members in managing projects proactively.

"In the early phase, our work was determined by how many models we built and updated, how many BIM coordination meetings we had, as well as how many issues were created and resolved in BIM 360," explained Alfi.

"But by the second year of our adoption of Autodesk solutions, we stopped tracking our progress by quantitative parameters. Instead, we adopted productivity measures in documenting and tracking the progress made in each project."

What helped the Waskita team's quick adoption of Autodesk solutions was the

ready availability of resources online.

"These resources provide most of what we need for our work processes, and they are easy for us to learn on our own," said Alfi. "They are built with a user-friendly interface, which makes it easy for us to train new staff."

Improved Efficiency with Digital Collaboration

With Autodesk and BIM solutions central to Waskita's work processes today, design and modelling are carried out with relative ease.

"We can generate multiple BIM models quickly and model specific elements for construction," explained Alfi. "This allows us to design elements more quickly and efficiently when preparing for tender submission and site planning."

Agreeing with Alfi, Fandy added, "By using Autodesk and BIM solutions, we can achieve up to fifty percent faster processing time, as compared with conventional methods. Autodesk solutions produce more detailed drawing so we can visualise and construct the project better."

To ensure seamless workflow, the Waskita team utilises BIM 360 from the start to finish of every project. Beginning from the project planning, BIM is employed in meetings with clients, project co-ordination, construction until the final handover of the project.

"BIM 360 facilitates faster resolution of issues and allows the team to be more productive in reviewing concerns with other stakeholders. In addition, BIM 360 allows for collaboration between managers in the office and those in the field. The teams have

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real time access to cloud-based documents, which allow them to work together more efficiently and this reduces errors due to miscommunication."

Effortless in a Pandemic

The benefits of Waskita's improved workflow are particularly visible in the current pandemic.

"Before the pandemic, the BIM department encouraged the company to utilise cloud storage and to go paperless with BIM 360," explained Alfi.

"As a result, the restrictions in movement imposed by the pandemic didn't bring about much inconvenience or adjustments to our work processes. We could still review documents easily and share comments without having face-to-face meetings."

This ease in collaboration has convinced Waskita Karya to fully digitalise the way it works to derive data-driven decisions in all planning, design and engineering matters, so as to achieve better productivity gains.

"In this new normal, we must adapt and digitalisation is the answer in moving forward," concluded Hadjar Seti Adji.

To learn more, visit: www.autodesk.com.sg/collections/architectureengineering-construction