

COMPANY

**SUNWAY CONSTRUCTION GROUP
BHD**

LOCATION

Malaysia

SOFTWARE

**Autodesk® AutoCAD®
Autodesk® BIM
Autodesk® Forge®
Autodesk® Navisworks®
Autodesk® Revit®**

Fostering Innovation and Success through Standardization

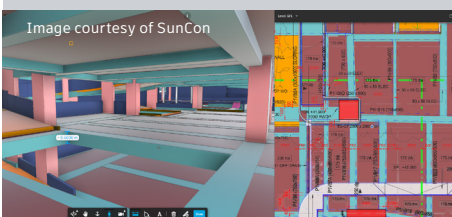
How BIM-enabled tools Help Keep Malaysia's Largest Pure-Play Construction Group at the Forefront of Innovation

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— **Tan In Tuan**

SUNWAY CONSTRUCTION
GROUP BHD
Director - Virtual Design
and Construction



Successful project delivery is at the heart of every agenda for Malaysia's largest pure-play construction group, Sunway Construction Group Bhd (SunCon). The organization has a 40-year track record of providing fully integrated cost-effective solutions, driven by its devotion to remaining nimble and ahead of the curve. Its dedicated Virtual Design & Construction (VDC) department specializes in BIM and Integrated Project Delivery, and within this department is a team that concentrates specifically on the digitization of the industry.

“We are continually innovating to achieve business excellence and sustainability, with digitalization as the key enabler,” says Tan In Tuan, Director of SunCon's VDC Department. “VDC is one of the tools that we have embraced as part of our digital transformation journey to enhance our competitive edge and provide more value-added services to our customers. Having embarked on VDC since 2010, it is now an integral part of our daily operations.”

The Digital Transformation Team (DTT) is responsible for developing automation tools and enhancing processes, and Autodesk products are central to its ability to deliver projects effectively. Autodesk is also used to further develop its BIM dimensions. This includes planning, cost extraction, facility management, and sustainability, as evidenced in projects like the eagerly anticipated Sunway Belfield Residence set to open its doors in 2024.

Industry-wide challenges drive the need for streamlined processes

SunCon's standardization policy leads to team efficiency when working on large-scale projects, but there's still a lack of standardization within the industry. This presents various challenges when stakeholder collaboration is necessary. The organization also faces the all-too-familiar dilemma of having early designs that weren't started with BIM modeling as a single information source. Non-modeled items can cause clashes

between services, and large model file sizes can result in model updates being time-consuming. Finally, not all partners or stakeholders are BIM-competent and there are frequently details missing from consultants.

“VDC’s objectives have grown from supporting project BIM requirements to integrating technology with project delivery,” says Daniel Chong, Manager at SunCon’s VDC Department. “The idea is to get more of our projects driven fully by BIM.”

Single-source data provides ease, flexibility and peace of mind

BIM significantly bolsters SunCon’s productivity throughout all stages of a project, and its workflows rely heavily on Autodesk products. Revit is used by the team to produce 3D models for different trades, while Navisworks is used for things like clash detection and model walkthroughs. 3D models provide visualization and other useful information to expedite the decision-making processes.

“Revit models also serve as data houses,” says Chan Wai Keat, another VDC Manager. “This data is used to answer the exchange of information requirements between projects for 3D-related functions such as geometrical data, space data, room data, unique element ID for 4D purposes, quantities for 5D, and FM data for 6D. Having an established standardized workflow ensures each clash is being addressed and analyzed systematically.”

Finally, Autodesk Forge capabilities have allowed the team to develop an in-house browser-based 3D visualization platform enabling BIM collaboration across various stakeholders. The team has also developed new functions on top of Forge that improves productivity.

Sunway Belfield

Sunway Belfield, located on Jalan Belfield in the heart of Kuala Lumpur, is a RM1 billion mixed-development project consisting of Towers A, B, and C, and spans across 4.53 acres. The property will house 1,330 serviced residents and retail units with facilities like a coworking space, a karaoke room, an infinity pool, and a gymnasium, among

other amenities. The project commenced in October of 2020 and is scheduled to be completed in 2024. It’s one of the many Sunway projects to be awarded the Gold rating by GreenRE.

BIM has been a daily driver for the vast majority of SunCon’s construction projects, and it plays a big role in Sunway Belfield’s workflows. The three primary Autodesk products used on this project are Revit, AutoCAD, and Navisworks, all serving to simplify and streamline the construction processes while minimizing rework and wastage.

“Autodesk Revit has helped the team visualize the building digitally at the very early stages of the project,” says Samuel Kong, Assistant Manager of Digital Transformation. “Meanwhile, AutoCAD allows us to view and edit the design in a more conventional way. Navisworks, on the other hand, provides an excellent view of the services running inside the building while identifying clashes between them.”

Project Challenges

While the Sunway Belfield project has been managed with relative ease overall, the lack of BIM skills among all stakeholders reinforced the need for standardization early on. Those who didn’t possess BIM experience at the outset were asked to attend conferences and trainings.

Lack of competencies in 3D coordination, on the other hand, was solved by forming a design management team consisting of members with different backgrounds. This enabled everyone to learn from one another while diversifying their skill sets.

All-in-one solution

“We believe that Autodesk products provide the best experience in terms of user-friendliness and features,” says Samuel Kong. “We are also currently integrating the various dimensions such as 3D, 4D, 5D, and 6D into our BIM processes. Unsurprisingly, Autodesk is able to provide an all-in-one solution that satisfies our requirements.” Having integrated and interoperable products means that SunCon’s workflows are seamless from one tool to the next. Products like Autodesk Forge allow all stakeholders to access 3D models using

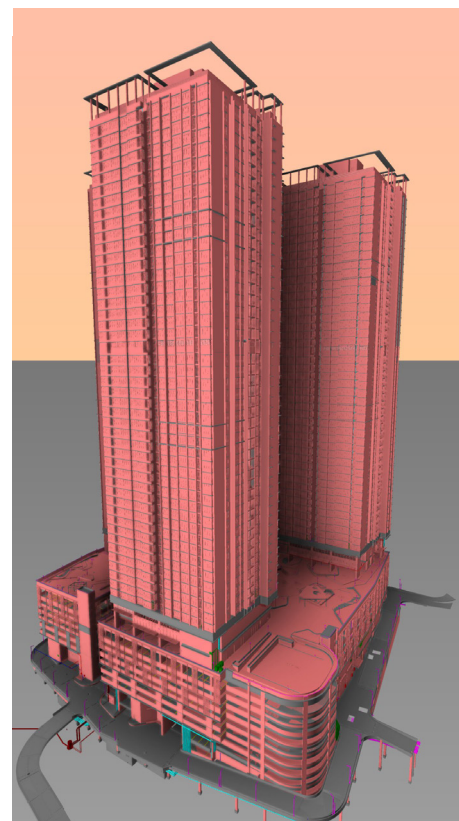


Image courtesy of SunCon

simply a PC or mobile browser. Having barriers to collaboration removed in such a way is one of the SunCon team’s primary drivers of success when it comes to BIM implementation in projects. “To date, we have resolved up to 300 clashes through clash analysis in Navisworks,” says Samuel. “We have also reduced paper printing by approximately 90% by implementing Autodesk solutions. Finally, we’ve found that BIM implementation on a project helps us to stay ahead of the physical site construction by 15%, as we are able to save up to 28% of the time spent on shop drawing production.”

Collaboration creates boundary-free workflows

Undergoing a digital transformation while implementing standardized processes and cloud-based solutions has become the operational norm in the twenty-first century. Nevertheless, there’s a way to do it gracefully, and SunCon proves that there are no boundaries when it comes to working collaboratively. Working with Autodesk enables the standardization necessary for the organization to continue flourishing.