



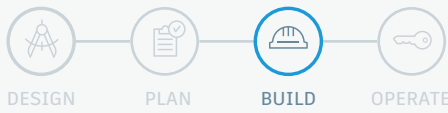
For the Yas Bay Arena project, the construction team looked to its vision, “We make it before we make it,” to build the project virtually prior to construction so they could integrate all design, construction and facility management information into one centralised platform. Recognising the need for simpler workflows and effective cloud-based construction data management, BAM adopted BIM 360 within Autodesk Construction Cloud™.



Customer Snapshot

FIRM SIZE: >5,000
FIRM TYPE: GENERAL CONTRACTOR
REVENUE: 65 MILLION
FOCUS AREA: COMMERCIAL
HQ: ABU DHABI, UAE

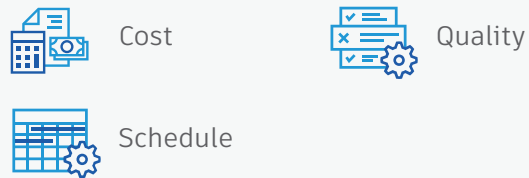
PHASE:



PRODUCTS:



VALUE DRIVERS:



A Complex Multidisciplinary Construction Project Calls for Streamlined Data Management

Few projects are as complex as the Yas Viceroy Hotel in Abu Dhabi. Only effective cloud-based construction management could make something this difficult possible - let alone simple.

The project site sits on a marine waterfront, close to pre-existing developments and infrastructure. The project was complicated by the site's exposure to fierce gusts of wind off the sea, a lack of shielding from surrounding buildings, an extremely tight schedule, and the demands of an extraordinarily complex design concept.

The iconic envelope design of the arena creates an immersive lantern envelope with a double skin façade consisting of glazing, decorative screens, and roofing associated with façade lighting integrated with the primary skin.

BAM International began construction on the Yas Viceroy Hotel Project in December 2017. Knowing this iconic design required ambitious construction planning and seamless construction productivity, the group turned to BIM 360 for cloud-based construction data management. This enabled them to implement solution-driven workflows that could highlight and manage field quality issues while quickly identifying their root causes.



How to Implement Construction Data Management Quickly and Effectively

BIM 360's cloud-based management platform makes it easy for all stakeholders to access information across the project lifecycle and supply chain. But to take advantage of its construction productivity benefits, BAM had to implement it quickly in advance of project inception.

To assist, Autodesk Consulting set up a series of collaborative workshops with BAM International to plan the implementation of BIM 360, conscious of the tight project schedule. The initial step was identifying and onboarding key stakeholders and process owners. BAM recognised that success required more than great technology and empowered its entire workforce to adopt the software and fully engage with the new workflow. The teams worked towards optimising the flow of communication, ensuring instant access to information using the BIM 360 platform.

The BAM project team led the process to improve BIM 360 in the field through a planned, detailed project data breakdown structure with locations, zones, inspection checklists, specifications, drawings, and equipment. One essential improvement was digitalising the paper-based work inspection request (WIR) and proactive site observation report (SOR) processes and optimising the workflow with BIM 360. Following the success of using checklists for construction quality inspections, BAM International added checklists for environmental inspections and on-site plant and machinery tracking.

Improving Collaboration with Construction Document Management

BAM understood the importance of having several teams working simultaneously.

"Our main target is to implement digital and dynamic processes to leverage the power of collaboration between project stakeholders and extending the use of BIM to support high-quality construction," says Ahmed Kassib, BIM Manager for BAM International, United Arab Emirates (UAE).

All teams needed full awareness of the interface between the trades on a weekly basis.

BIM 360 allows the team to create a federated model of the project. This enables stakeholders to have a proper overview and gain awareness of all project challenges to mitigate them in an early stage. It allows

construction site teams to review the latest models onsite without searching for or printing updated drawings.

Autodesk Consulting worked closely with BAM to train internal and subcontractor teams on the use of BIM 360, ensuring everyone could use the platform with minimum effort or downtime.

How Construction Data Management Provided Proof of Business Case

"We must be able to measure and communicate the benefits, proving the business case," says Eoghan O'Neill, Project Manager for BAM International, UAE. "When the new workflow was first implemented, direct costs were incurred to replace traditional paper workflows with that of tablet-based. Since seeing the incredible benefits from the digital workflows, the return on investment can be calculated by determining the benefits."

Through the successful implementation of BIM 360, the team realised planned improvements such as eliminating the need to print all related project documentation.

BIM 360 transitioned quality assurance (QA) and quality control (QC) inspectors to a digital platform for filling checklists and documentation, saving employees valuable time. These inspectors previously had to enter items from paper checklists into worksheets when they returned to the site office to document them again.

Traditionally, it took the BAM construction team on average 45 minutes per work inspection. With BIM 360, work inspections now take on average 23.5 minutes per inspection, resulting in a 48 percent time savings.

The BAM QA/QC team previously spent on average 80 minutes conducting a single inspection. Each WIR had four key components – checking documents, capturing issues, completing checklists, and issuing reports. With BIM 360, the team saves time in all four segments of the workflow. One WIR now takes an average of 36 minutes – a 44-minute savings and a 55 percent overall improvement on a single inspection. Another benefit realised is how quickly dashboards from BIM 360 can highlight the root causes of issues across the whole project.

As WIRs are conducted throughout the construction process, BAM is looking to save an incredible amount of time on the overall project. "BIM 360 is making it

easier for BAM to manage project information and enhance organisational knowledge,” says Daniel Steyn, Project Quality Manager for BAM International, UAE.

Cloud-based Construction Management is Simpler - And Easier

As anyone in the business knows, simple isn't always easy. But in the case of implementing cloud-based construction management, BAM achieved both.

“After implementing BIM 360 on our project we are impressed by how easily everyone got accustomed to the process,” says Steyn. “The aid of predetermined drop-down menus not only saves time, but also creates consistent description entries. It offers increased visibility on quality issues in terms of status, root causes and assigned responsibility. Reporting can be customised to suit your specific KPIs.”

Improving Construction Productivity and Sustainability At the Same Time

The efficiencies gained during construction align with BAM International's commitment to sustainability, according to the 2-Pearl Estidama rating the Yas Bay Arena has been designed to fulfill. The Estidama Pearl Rating System requirements are a set of guidelines put forth by the Abu Dhabi Urban Planning Council to promote sustainable development design and construction according to innovative green standards. Estidama, the Arabic word for sustainability, has become an integral part of the project on all levels.

“

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-Daniel Steyn

Project Quality Manager,
BAM International, UAE

By using BIM 360 for construction and quality inspections, BAM International has managed to reduce unnecessary printing of drawings, photographs, and specifications.

BAM initially deployed four mobile devices to run newly implemented workflows, rising to ten devices when benefits of the BIM 360 workflow were being proved. BAM's environmental team has started to use the platform to highlight environmental non-conformance issues to the construction team.

The Future of Complex Construction is Bright with BIM 360

Using BIM 360 on the Yas Bay Arena project yielded major benefits for BAM International, and they are carrying that success forward into future projects.

With construction productivity and collaboration tools like BIM 360, there are almost no limits on what it's possible to create.

