CONSTRUCTION IN THE CLOUD:

Perspectives on a Connected Industry

RIB

running together

The future of construction is slowly materialising in front of our eyes. Technologies that were pipe dreams of the past are now widely implemented on major builds, breaking down old roadblocks that once hindered or halted progress.

We've seen the arrival of artificial intelligence, 5D Building Information Modelling, automation and more, but few technologies that improve workflows and outcomes for every party involved with a major project build.

To address this need in the era of digital transformation, forward-thinking construction strategists have looked closely at the systems that underpin their efforts. A common consensus is that cloud computing can unlock a variety of holistic benefits during all stages of a project lifecycle.

Cloud computing has had a noted impact on numerous industries in recent years, including finance, healthcare, manufacturing and many more. For businesses looking to innovate, reported benefits include real-time collaboration between team members, robust data security, flexibility/scalability, data insights and mobility, among others.

Early adopters of cloud in construction have found that the traditional benefits still apply for our industry, and cloud deployment can serve as an enabler for the adoption of other advanced technologies.

In the following pages, we have examined the potential of cloud workflows from a range of important construction perspectives, specifically project managers/consultants, project teams and clients or owners. Each of these groups can benefit from the improved flexibility, accessibility and reliability on offer with intelligent cloud workflows.

THE PROJECT MANAGEMENT PERSPECTIVE

As of 2021, project managers across numerous industries employ cloud-based solutions as a key component of their digital toolkit. Managers can rely upon cloud software to connect project participants, track deadlines, reschedule tasks, adjust budgets, peruse relevant metrics and a whole lot more.

Construction workflows are traditionally slow to evolve, but the manifold benefits of cloud are beginning to make an impact on our industry. Major projects typically have a huge number of involved parties, and it can be difficult for project managers to know exactly where they stand on the day-to-day minutiae of their build.

This is where cloud comes in. Vertical cloud solutions are a recent advent for construction, with major enterprises choosing to adopt bespoke web-based environments to fit their needs. For those who don't know, vertical cloud refers to a cloud computing solution that is optimised for a specific industry purpose. These platforms are designed to suit the industry and typically integrate dozens of modules and functionalities, based around a single source of project data that is updated in real-time.

Vertical cloud solutions can cover a wide scope of project tasks. Everything from RFIs and submittals to defects management, tendering and more can be progressed through a unified cloud platform.

Project managers can assign access levels to ensure that everyone involved with a specific workflow has all the real-time data they require to perform their role. Having a single data source mitigates the risk of outdated information slowing down progress and causing avoidable rework.

From a managerial perspective, cloud infrastructure can make day-to-day logistics and communication much easier to handle. Forum-style communication modules can reduce reliance on email and provide a helpful audit trail, freeing managers up to turn their attention to the most pressing project need. Advantages aren't limited to the actual project build duration, with modules often available to support design and planning through to asset operation.

Construction project management will always be a challenging and dynamic role, but the logistical support available with an intelligent vertical cloud cannot be overstated. By investing in underlying software that can reduce financial risk and project delays, decision-makers can significantly improve their productivity potential.

THE PARTICIPANT PERSPECTIVE

As stated, a huge number of participants are involved in a construction project. Contractors, subcontractors, designers, consultants, quantity surveyors and many other disciplines are expected to collaborate as effectively as possible. Disputes can crop up, threatening project timelines and profitability at many different stages.

It is during handover from one project team to another that disputes traditionally arise on projects. A lack of standardisation, differing quality expectations and communication breakdown are all common causes, and the repercussions can be significant.

With cloud software, traditional information silos are broken down and there is greater transparency for all involved parties. Unifying all team members within the same cloud data environment increases confidence and drives accountability for all participants regarding their specific role.

Many individual construction businesses have enacted cloud plans of their own in recent times. For the quantity surveying profession specifically, there has been a significant shift toward cloud software, largely precipitated by the need to work remotely amidst national lockdowns. With site visits not possible in many parts of the world, innovative QS businesses have looked to bolster their service offering in other ways.

The rise of techniques such as BIM have made QS and estimators more likely to collaborate in real-time with their peers, and cloud estimating software improves the efficiency of this process. Surveyors can work together remotely on the same BIM project for example, communicating in real-time and identifying issues as they present themselves. This kind of flexibility can allow a QS business to win more work and establish an advantage over competitors.

Construction cloud platforms are streamlined to make standard processes as simple as possible for all teams on a major project. For example, a subcontractor who has rectified a defect should be able to log all information online via an app as soon as they finish the job. In an age of compressed project schedules, this can support tighter scheduling and improved financial outcomes as a result.

THE CLIENT PERSPECTIVE

Forewarned is forearmed. The project owner or client role on major builds centres around trust and transparency. Owners want to confidently establish where they stand on deadlines, budget allocations and logistics, so they can communicate effectively on what needs to be done.

Cloud infrastructure allows for auditable and visible progress on all relevant metrics, updated in real-time. This transparency keeps everyone on the same page, leading to better relationships with project teams and empowering owners to set achievable goals supported by the data at hand.

Construction is a data-heavy industry, with new information constantly generated across the lifecycle of a project. In the past, this data might lay dormant in an information silo (such as a desktop computer or mobile phone) until it was required for the next project stage. Oftentimes, such data would be inaccessible to other participants who could have used it to solve a pressing issue. In short, we don't always make the most of the data at our disposal.

Data analysis is a key consideration for clients and owners on modern projects. The right cloud platform can produce AI-driven predictive analytics that provide actionable insights for future builds, with the output well worth the investment.

From a cost perspective, cloud infrastructure can be viewed as a prudent financial investment given short-term industry uncertainty. The upfront costs may be lesser, deployment options are scalable to suit business needs, robust security is included and there will be no unforeseen costs associated with IT issues. As mentioned earlier, vertical construction cloud software is not one-size-fits-all. Clients can work with the software provider to establish a digital roadmap and implementation plan, with many platforms offering a wide variety of helpful cloud modules to choose from.

For owners, the benefits of cloud infrastructure can be felt from initial designs and planning through to long-term facility management. Those willing to truly make the most of their platform can eliminate inefficient manual processes and establish new standards for project delivery.

Even prior to the COVID-19 pandemic, construction was facing a productivity problem. This pressing need to innovate has only been exacerbated by the new challenges we have faced in recent months. Construction decision-makers recognise this imperative, but may struggle to know exactly which path to take given widespread uncertainty and shifting projections. In the face of this challenge, many will simply opt to persevere with their tried-and-true methods.

Now is not the time to keep calm and carry on. Our industry must scale new heights in terms of efficiency and productivity, given the immense economic and social significance of a thriving construction sector. There are many moving parts involved in making this goal a reality, and investing in a suitable underlying software platform may be the simplest aspect to get right.

The benefits of cloud deployment are manifold for construction professionals across numerous sectors. Project participants can collaborate more efficiently with their peers and other teams, managers can better track ongoing actions and apply their expertise where it's needed, while clients can unify stakeholders and increase accountability as required.

Cloud workflows can promote efficiencies no matter the scale of deployment, whether you're a major project owner looking to unify all participants on a complete cloud platform, or a quantity surveyor purchasing a cloud estimating platform so you can collaborate with peers from home.

Digital cloud infrastructure may not be a panacea for construction, but it shapes as a vital foundation for forward-thinking enterprises who are ready to unlock the latent potential of our industry. Our willingness to embrace the next generation now will set a positive course for generations to come.

For more information on how RIB is helping companies with their cloud deployment,
visit **www.itwocostx.com** and **www.itwocx.com**

Australia
BRISBANE / SYDNEY
+61 (0) 7 3300 6222

Hong Kong

+852 5804 4622

Malaysia
KUALA LUMPUR
+60 3 4065 7060

New Zealand
AUCKLAND
+64 (0) 9 309 2026

Singapore

+65 3159 0466

United Arab Emirates
DUBAI
+971 4 550 9358

United Kingdom
LONDON
+44 203 597 7566

United States
AUSTIN
+1 (512) 768 8111

RIB
running together