

# Construction Mobile Apps save time and money

## *How Mobile Apps empower the construction BIM*

Deloitte 2022 Construction Industry Outlook

The *Deloitte 2022 Construction Industry Outlook* reports that the recession impacted many construction companies who experienced workforce shortages; the rising cost of materials and equipment and supply chain disruptions put pressure on the industry's margins.

South African construction companies are experiencing many of the same challenges, but with the added burden of load shedding, and a weak rand.

In addition to these challenges top-of-mind for executives in construction companies are:

- The absorption of next-generation digital technologies;
- The integration of data and analytics into workstreams;
- and the implementation of end-to-end *connected construction* capabilities.

These technologies can help construction firms support modern initiatives such as *smart cities* and *urban air mobility*, but also can enhance internal operational efficiencies, reduce costs and **improve margins**.

*Deloitte* identified 5 themes to watch closely in construction in 2022, one of which is **Connected Construction**.



*Figure 1 Connected Construction*

What is Connected Construction?

**Connected Construction** consists of a set of technologies which include inter alia Building Information Management (BIM), digital supply networks, digital twins, predictive maintenance, asset tracking (IOT) and autonomous drones, **with the objective of bringing assets, people, processes and job sites onto one platform.**

---

*Connected Construction consists of a set of technologies which brings assets, people, processes, and job sites onto one platform.*

---

At the centre of these investments is the creation of command centres or control towers that will optimise efficiencies across projects, transforming **problem-solving approaches from being reactive to being predictive**, thereby relieving the pressure on profit margins.

Mobile Apps, can play a significant role in capturing and delivering information on construction projects, and place a wealth of knowledge right in construction workers' back pockets.

---

In a recent Deloitte survey, 43% of E&C executives indicated greater investments in new design processes, such as focusing on BIM, over the next year.

---

## Building Information Model

It might be important first to have a look at which information is used in the construction industry.

The BIM (Building Information Model) life-cycle of a construction project is a commonly used framework for collecting and organising information relating to the building project.

Building information modeling is an intelligent software modeling process that architects, engineers and contractors can use to collaborate on a building's design, construction and operation.

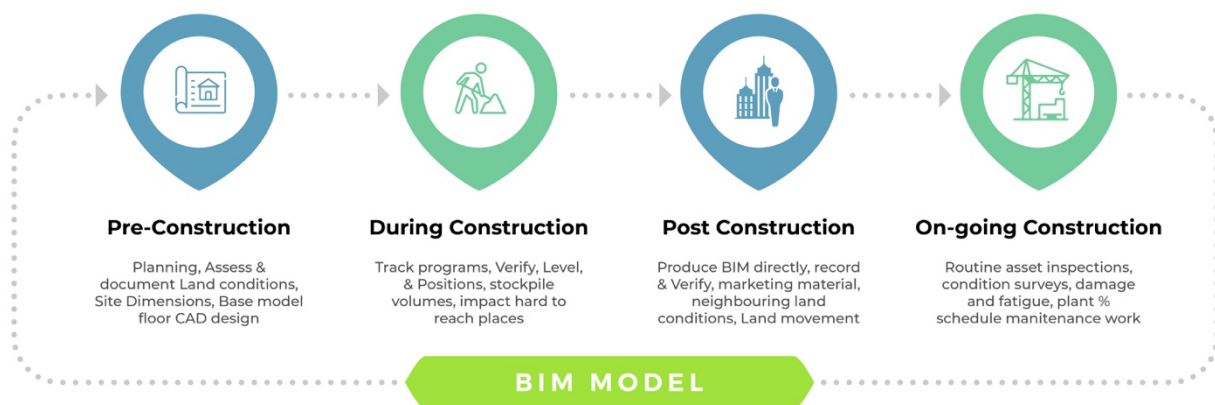


Figure 2 BIM Model

BIM is useful at every stage of a construction project, such as:

- **Design:** Using a model, architects and engineers can test out potential designs and identify problems immediately.

- **Planning:** Referencing the model, contractors can make estimates in cost and timeline and make improvements to the construction process.
- **Construction:** With the model always accessible, construction workers can clearly identify tasks and receive real-time updates about changes.
- **Operation:** After construction is complete, a facilities manager has access to the model, which is essentially an improvement over as-built drawings, showing all of the building's features and systems.

## Huge potential of Construction Mobile Apps

Construction management apps can save companies a lot of time and money, if companies use the appropriate app for their business.

While cheaper apps with limited functionality can be tempting, they come with a *lot of double entry* which can cause delays. Many of those apps are not built to help with more than *one aspect* of a job site.

And while the business might only want field notes now, being able to see drawings in the field quickly and track time can *reduce future stress*.

## Eliminate paper processes with Construction Mobile Apps

Make missing data sheets a thing of the past. Mobile applications can play a large role in construction industries, eliminating *error-prone, time-consuming paper processes* and improve workflow and efficiency.

## Improve Construction Project Efficiency

A key reason for construction companies looking for *technology solutions* is when they find themselves running into *operational problems* and realizing that existing practices are *insufficient*.

Some of the challenges experienced by Mobile App adopters included *timeous access to site reports* and geo-located timesheets. Being able to share *daily reports* and *completion reports* with customers were other challenges.

Using mobile delivery applications, construction managers can *improve the efficiency and transparency of the entire construction project*, from authorization and accountability to scheduling and monitoring.

Construction projects consist of *multiple authorization controls* in order to progress. Every building project phase requires approval and there is also a need to flag any complications that arise during the project.

Mobile delivery apps also help with *supplier scheduling and management*. For example, a ready-mix concrete company can use a mobile app in which the supplier can share a map interface with the customers and offer active management of service-level agreements.

Mobile applications *replace manual, paper-based data entries*. Paperwork takes days to process and can get lost in the shuffle. For even more measurable results, mobile apps provide transparency of activities for improved management of deadlines.

---

*Integrating mobile apps into every process improves the accuracy of project sequences, enhances workforce accountability and provides hard metrics upon completion of each service, which helps to improve the relationship between all parties involved in the construction project.*

---

### Ensure Construction Site Safety Compliance

Construction is a *high-hazard industry* with a high injury rate. This calls for the prioritization of Health and Safety requirements such as *health reports* and tracking completion of regular *job-training* sessions to improve worker safety and ensure regulatory compliance.

Mobile platforms facilitate the *immediate reporting of all safety concerns and injuries*. This ensures timely and proper management of such issues, further strengthening regulatory compliance.

### Minimize Costly Project Delays

Construction project managers face multiple challenges from *loss of on-site equipment*, stock losses, producing material reports, ordering material (such as concrete) and producing MSDSs (Material Safety Data Sheets) documents.

*Delays and rework* are common in commercial construction projects and can cost millions in lost revenue and negatively affect a construction company's reputation.

While uncontrollable events include weather conditions or permit, and licensing red tape applications, managers **CAN** organize and sync their operational activities via mobile delivery apps to optimize the schedule.

Mobile Apps can help manage *the distribution and delivery of inventory and materials* in real time, allowing managers to see projects through to completion, reducing delays and providing greater awareness of project goals.

### Implement Cost-Effective Mobile Options

The high adoption rate of smartphones and cloud technology has made the process of incorporating a mobile application model seamless.

Construction projects have *many moving parts* and *many role-players*. Mobile Apps can help create a unified operational view.

### Effective Communication

With project managers, owners (customers) and site supervisors, *communication can be a challenge*, as can be seen from this graphic.

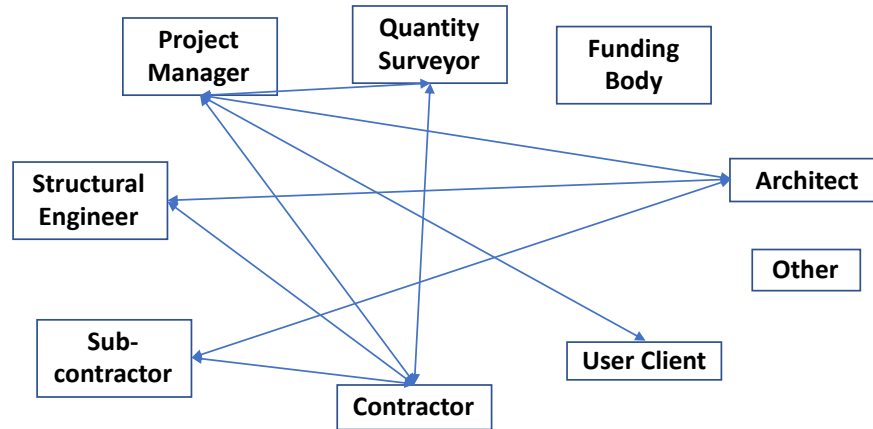


Figure 3 Complex communication channels on construction project

**Owners** might not know what the project managers are doing while **project managers** might not know what happened in the field.

Communication among the three role-players can further a deeper mutual understanding of the project's status and need for resources.

Construction management apps give all three groups oversight into the project and improve communication.

Project managers can respond to situations by *instantly pushing communications to field staff*.

## Conclusion

The lesson in such an information-heavy industry, such as construction, is clear - *digitise upfront*, not after the event or later in the project. And Mobile Apps can help with this and place a wealth of information in construction workers' back pocket.

*Early adopters* of construction Mobile Apps are reporting *ROI* figures of between 250% and 1000% with *Payback* periods of less than a year.