

10^x DS

10xBuild.AI

Lean Construction Operating System

Database at the Core. Digital Workforce on Top.



1. Executive Overview

10xBuild.AI is a lean construction operating system designed to help construction companies manage projects with a much smaller administrative burden.

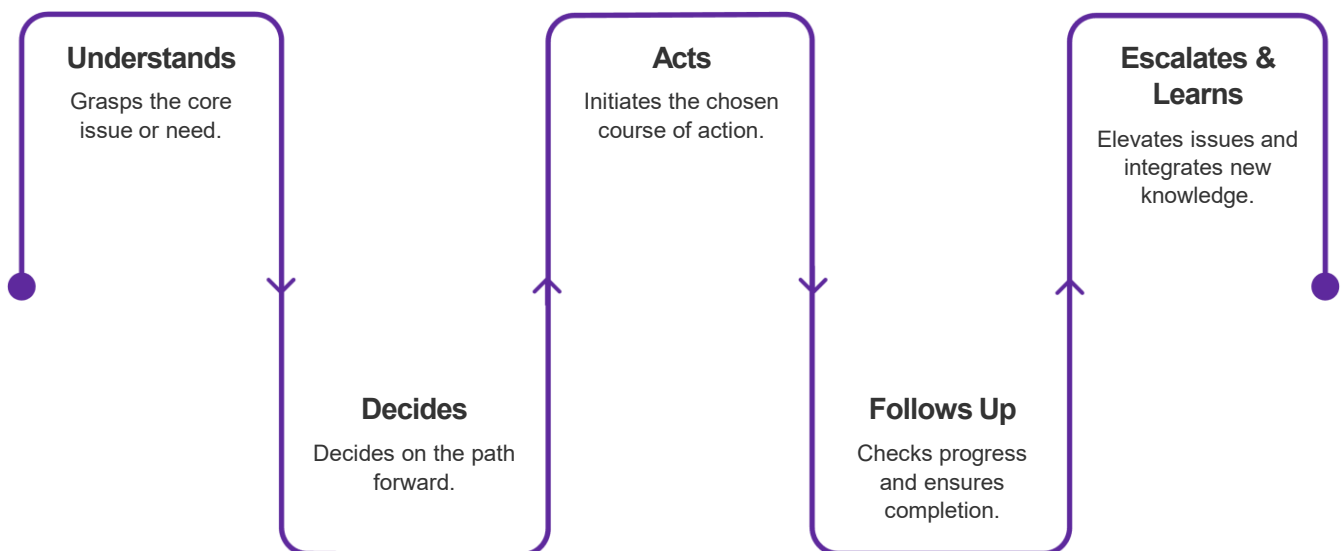
The core idea is simple:

Create one structured project database, place an AI Digital Workforce on top of it, and allow project teams to interact through familiar interfaces such as WhatsApp, web and mobile.

Instead of engineers, project managers, procurement teams and finance teams spending large amounts of time entering data, preparing reports, following up with vendors and consolidating information, AI Digital Workers perform much of this repetitive operational work.

The human team continues to make the important commercial, engineering and management decisions.

The AI workforce continuously:



10xBuild.AI is therefore not intended to become another heavy construction ERP. It sits much closer to day-to-day project execution.

The platform can work independently for smaller contractors, while larger organizations can connect it to their existing ERP, finance, BIM, document management and analytics platforms.



2. The Problem 10xBuild.AI Addresses

Construction projects generate large volumes of operational information every day:

- Site updates
- Manpower information
- Photographs
- Progress reports
- Purchase requests
- RFQs
- Quotations
- Purchase orders
- Delivery information
- Invoices
- GRNs
- BOQs
- Drawings
- Specifications
- Contracts
- Issues
- Approvals
- Schedules
- Budgets
- Payment information
- Communications
- Management reports

The problem is rarely the absence of information. The problem is that the information is fragmented. A typical project may have important information spread across:

WhatsApp + Excel + ERP + emails + PDFs + drawings + site photographs + accounting software + shared drives + people's memory.

This results in several recurring operational problems.



Administrative workload

Engineers and managers spend considerable time preparing reports, updating trackers and following up with people.



Delayed information

Management often learns about project delays or procurement issues after they have already affected the project.



Manual follow-up

Purchase orders, materials, approvals, invoices and contractor commitments frequently require repeated human follow-up.



Disconnected information

Commercial, procurement, engineering, finance and project teams may each maintain different versions of project information.



Weak management visibility

Management dashboards generally explain what has already happened.

They rarely tell management:

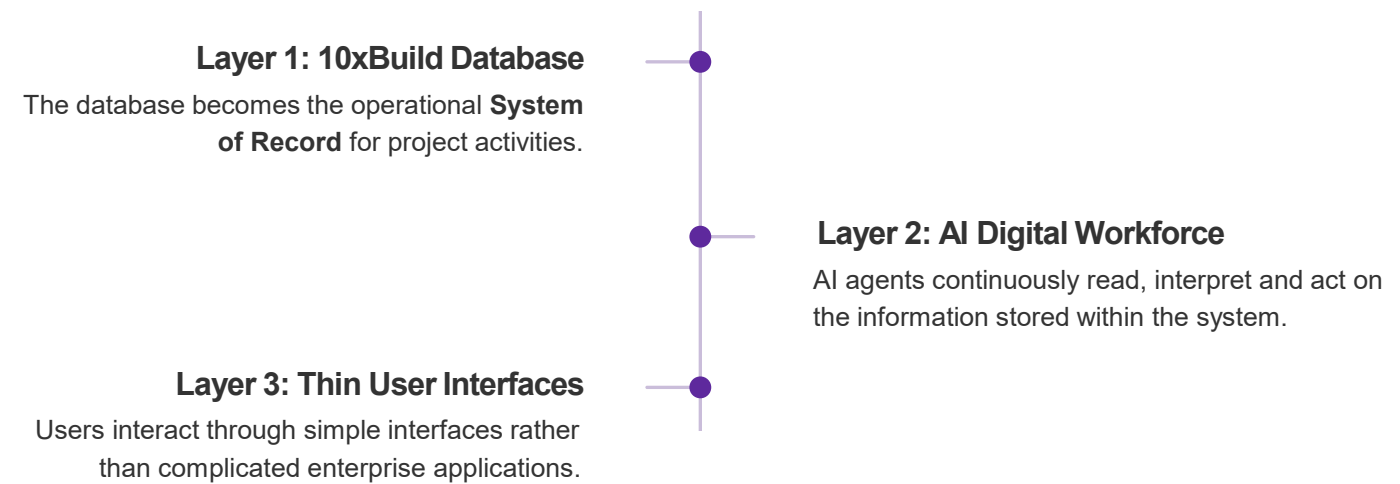
What requires attention now?

10xBuild.AI is designed to close this gap.



3. The Core Design Principle

The architecture follows three main layers:



These include:

**WhatsApp**
For natural conversations, photographs, site updates, voice notes and quick approvals.

**Web Application**
For dashboards, reports, approvals, configuration and detailed workflows.

**Mobile / Progressive Web App**
For site access, mobile workflows and potentially offline-first operations.

This creates a lightweight operating environment where users can continue working in familiar ways while AI structures the underlying information.



4. 10xBuild Database: The Foundation

At the centre of **10xBuild.AI** is a structured construction database.

Typical data domains include:



Projects & Members

Project structures, project teams, responsibilities and access rights.



BOQ & Activities

Bill of quantities, construction activities and work packages.



Tasks & Milestones

Activities, planned dates, dependencies and milestones.



Daily Progress & Manpower

Daily project progress, labour deployment and productivity information.



Issues & Photos

Site photographs, observations, problems and actions.



Vendors & Materials

Supplier information, materials, quotations and performance.



Purchase Requests

Site or project procurement requirements.



Purchase Orders

Confirmed procurement commitments.



GRN / Receipts

Goods received against purchase orders.



Invoices & Payments

Supplier invoices, approvals and payment status.



Documents

Drawings, BOQs, specifications, contracts and project documents.



Approvals

Commercial, engineering, procurement and management approvals.



Costs & Budgets

Project budgets, commitments, actual costs and variances.



Communications & Notes

Important project correspondence and operational notes.



Audit Trail & Logs

Actions taken by users and AI workers.

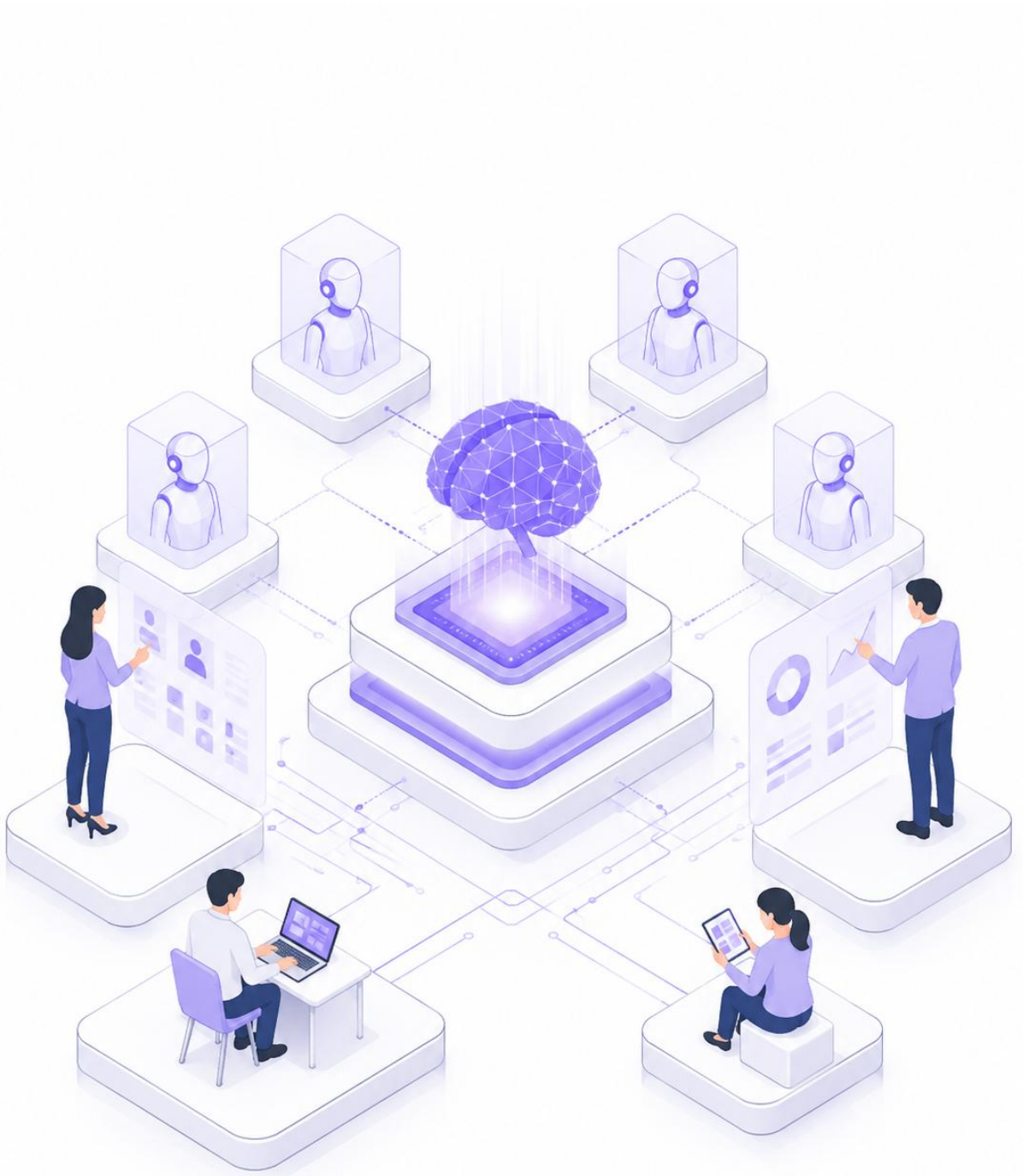
The objective is to gradually establish one reliable operational record for each project.



5. The 10xBuild.AI Digital Workforce

The biggest difference between a traditional construction application and 10xBuild.AI is the Digital Workforce.

Instead of waiting for users to perform every action, specialised **AI workers continuously perform defined operational responsibilities.**



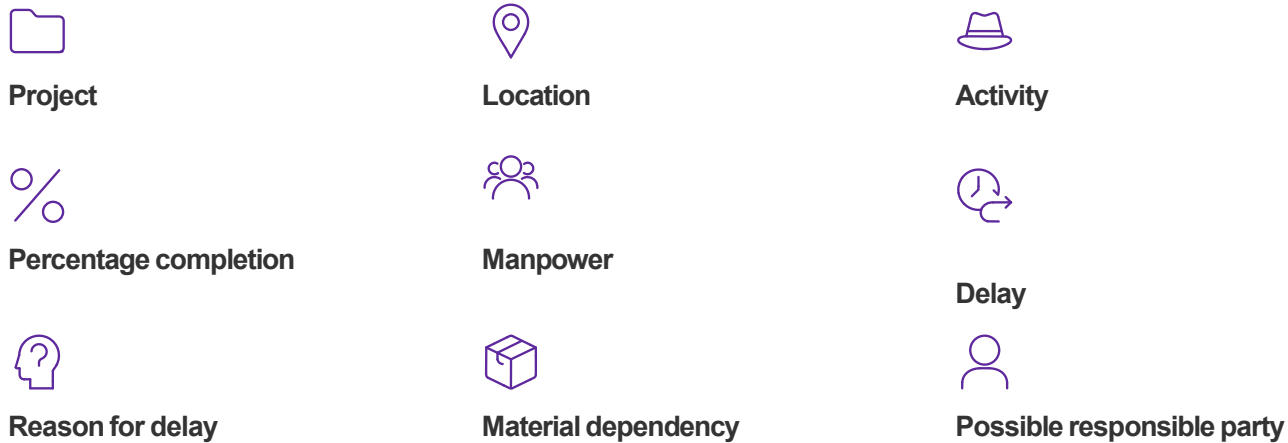
6. Site Agent

The **Site Agent** acts as an AI assistant for site engineers and supervisors. Site personnel can send updates using WhatsApp or mobile devices.

For example:

Block B plastering 80% complete. 14 workers today. Work stopped at 3 PM because cement did not arrive.

➤ The Site Agent can interpret this message and automatically identify:



The information is then written into the project database.

➤ The Site Agent can also capture:



This can substantially reduce site administration.



7. DPR Agent

The Daily Progress Report Agent automatically prepares daily progress reports.

Instead of engineers manually consolidating information every evening, the agent can collect data from:


Site updates


Photographs


Manpower records


Activities


Material receipts


Issues


**Weather information
where available**


Planned schedules

It can prepare a structured DPR covering:


Work completed


Percentage progress


Manpower deployed


Equipment usage


Materials received


Major issues

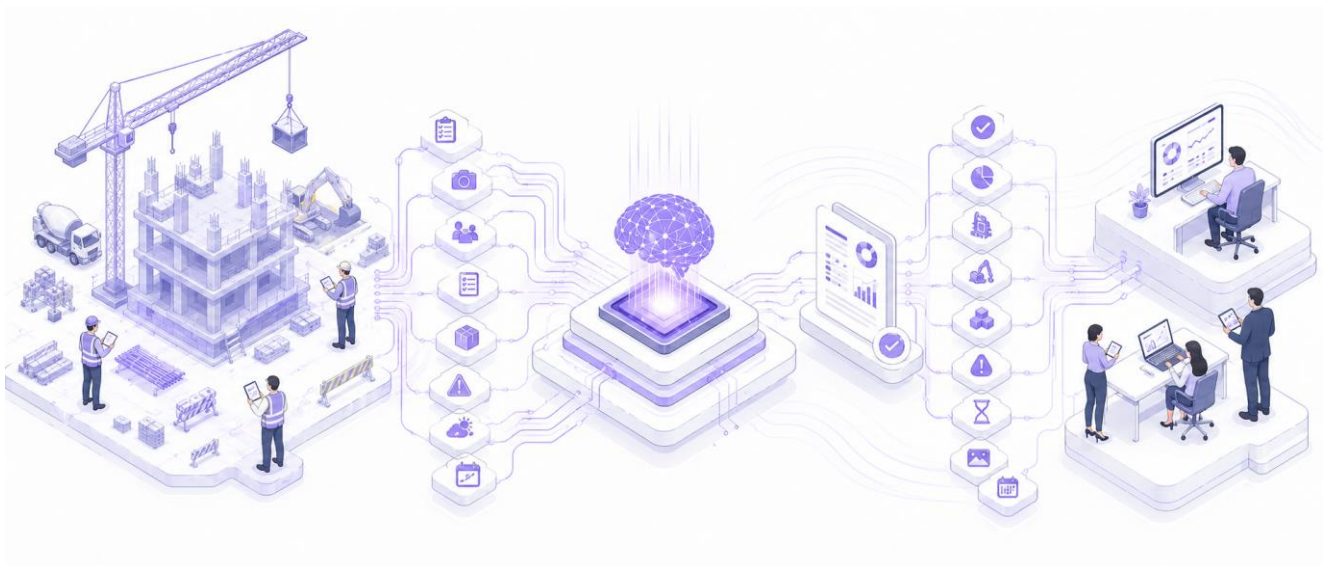

Delays


Pending decisions


Photographs


**Planned activities for the
following day**

Reports can then be distributed automatically to project managers and other authorised stakeholders.



8. Planning Agent

The Planning Agent continuously compares:

Planned progress vs Actual progress

The agent can identify:



activities falling behind schedule



milestones at risk



delayed predecessor activities



procurement dependencies



manpower shortages



contractor delays



potential critical-path impact

Instead of simply displaying a Gantt chart, the Planning Agent can explain the issue.

For example:

Block B plastering is approximately four days behind plan. The principal cause appears to be delayed cement deliveries on three working days. Interior painting scheduled next week may therefore be affected.

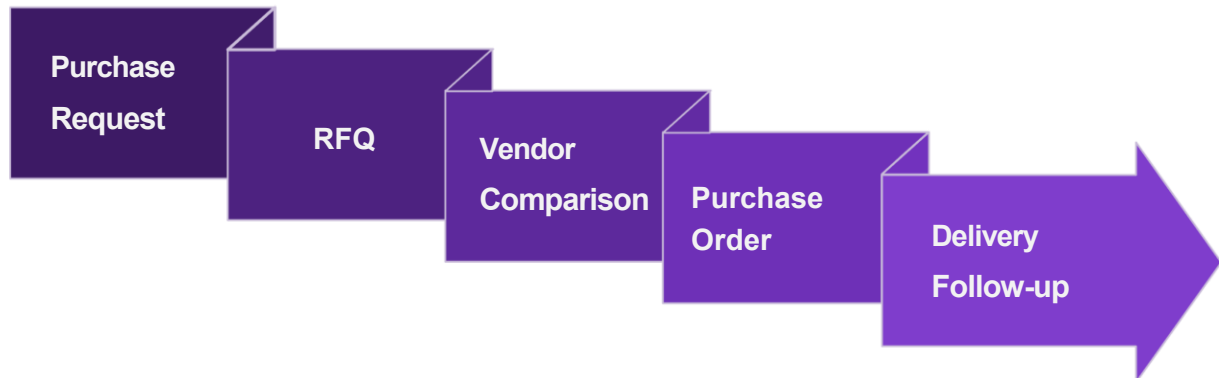
This moves planning from passive reporting toward proactive project management.



9. Procurement Agent

The Procurement Agent manages much of the routine procurement cycle.

Typical workflow:



The agent can:

- Identify approved purchase requests
- Prepare RFQs
- Send RFQs to authorized vendors
- Collect quotations
- Structure quotation information
- Prepare commercial comparisons
- Highlight deviations
- Draft purchase orders
- Obtain approvals
- Follow up on deliveries
- Escalate delayed materials

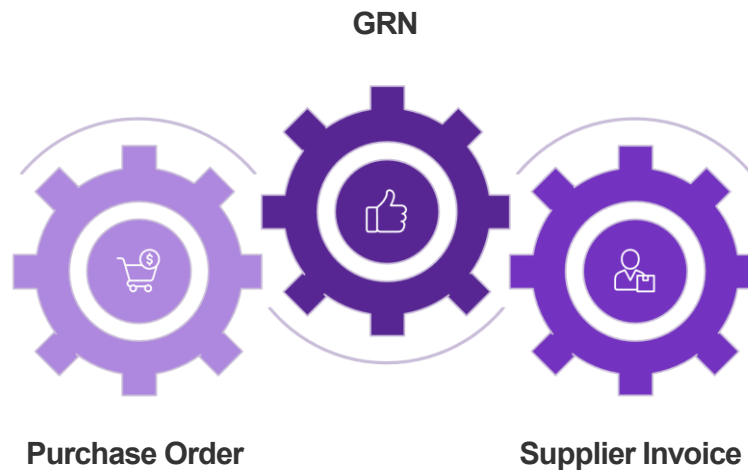
This is particularly valuable because procurement delays frequently become project delays.



10. Invoice Agent

The Invoice Agent manages the invoice verification process.

The agent performs three-way matching



It can identify:



quantity differences



price differences



missing GRNs



missing POs



duplicate invoices



tax inconsistencies



unapproved purchases



payment terms



overdue payments

Invoices that match can move through the normal approval workflow. Exceptions are routed to the relevant human.

The principle is:

AI handles normal transactions. Humans handle exceptions.



11. Document Agent

Construction projects contain large volumes of documents.

The Document Agent can understand and retrieve information from:



BOQs



Drawings



Technical specifications



Contracts



Purchase orders



Method statements



Project correspondence



Variation documents



Manuals

Users could ask natural-language questions such as:

- What specification applies to the waterproofing?
- What does the contract say about delay penalties?
- Show the BOQ quantity for Block C tiling.
- Which drawing contains the latest electrical layout?

The agent can locate the relevant information without users manually searching through folders.



12. Follow-up Agent

One of the most common hidden costs in construction is follow-up.

Managers constantly chase:



Vendors



Subcontractors



Internal departments



Consultants



Clients



Finance teams



Procurement teams

The Follow-up Agent maintains a structured list of commitments.

For example:

Vendor promised delivery: 14 August

If the delivery is not confirmed, the agent can:



send a reminder;



request confirmation;



update the project record;



follow up again;



escalate when required.

This creates what can be thought of as a **Commitment Management Layer** across the project.



13. Risk Agent

The Risk Agent looks across project information to identify emerging risks.

Typical risks include:



**Schedule
slippage**



**Material
delays**



**Procurement
bottlenecks**



**Cost
overruns**



**Invoice
anomalies**



**Contractor
performance issues**



**Pending
approvals**



**Repeated quality
issues**



**Dependencies
approaching
deadlines**

Rather than waiting for monthly management reports, potential risks can be surfaced continuously.



14. Management Copilot

The Management Copilot provides a conversational interface to the entire project portfolio.

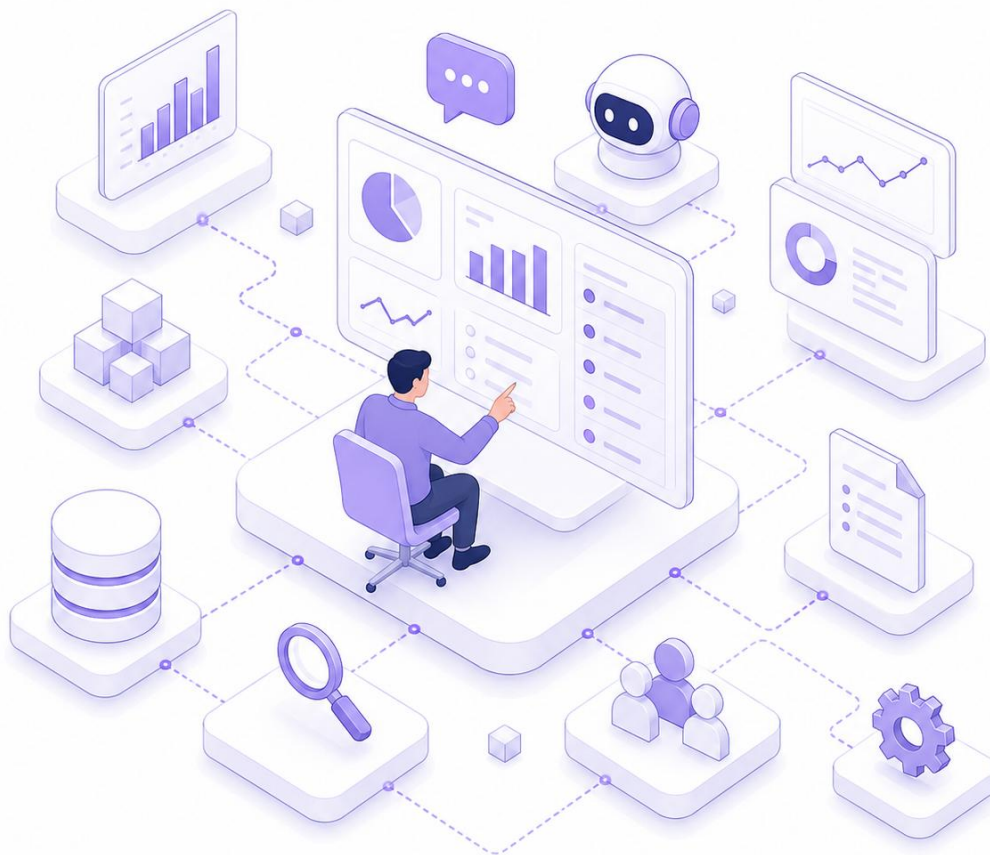
Senior management can ask:

- Which projects are currently behind schedule?
- What are the top five project risks?
- Which vendors are causing the most delays?
- What payments are likely this month?
- Which projects have the largest cost variance?
- Why is Block B behind schedule?
- What management decisions are pending?

The Copilot can combine information from multiple Digital Workers and project databases.

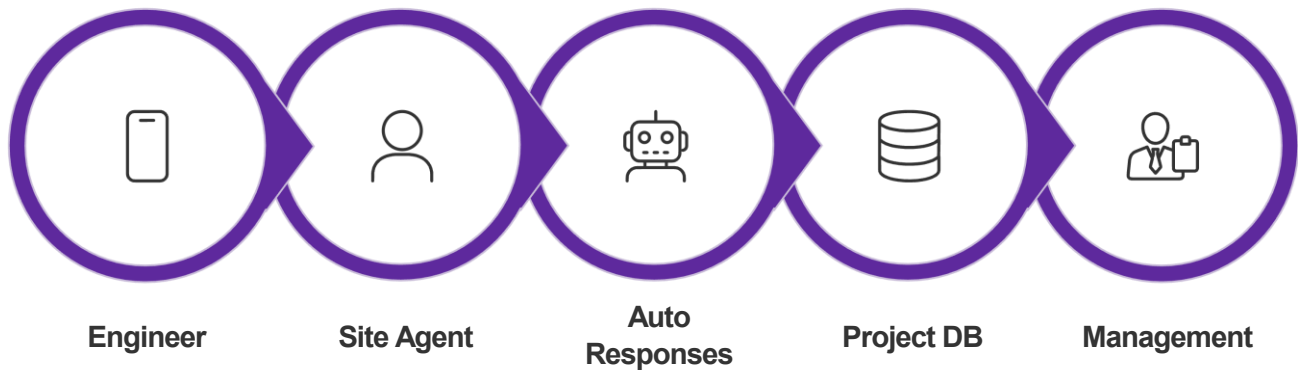
The result is a different style of management dashboard. Instead of management searching dashboards for answers:

Management asks questions and AI finds the answer.



15. Example: How the System Works

Consider a simple site update.



Engineer sends WhatsApp message

Block B plastering 80% complete. 14 workers today. Work stopped at 3 PM because cement did not arrive.

Site Agent interprets the message

The AI identifies: Activity, Location, Progress, Manpower, Issue, Cause of delay.

Other agents respond

The system can automatically: update project progress; update the Daily Progress Report; compare progress with schedule; check the cement purchase order; check expected delivery; contact the supplier; create a delay issue.

Data is stored

The information becomes part of the permanent 10xBuild project database.

Management can ask questions

Later, management can simply ask: *Why is Block B behind schedule?* The system can connect the schedule, site updates, procurement information and vendor commitments to explain the reason.

One simple WhatsApp message can therefore trigger multiple operational processes.



16. Integrations

10xBuild.AI does not need to replace every system already being used.

It can connect to:



ERP

For finance, procurement, project accounting and master data.



Finance / Accounting

For invoices, payments, vendor balances and cost information.



BIM

For building information and project models.



Document Management Systems

For drawings, contracts, specifications and project documents.



BI / Analytics

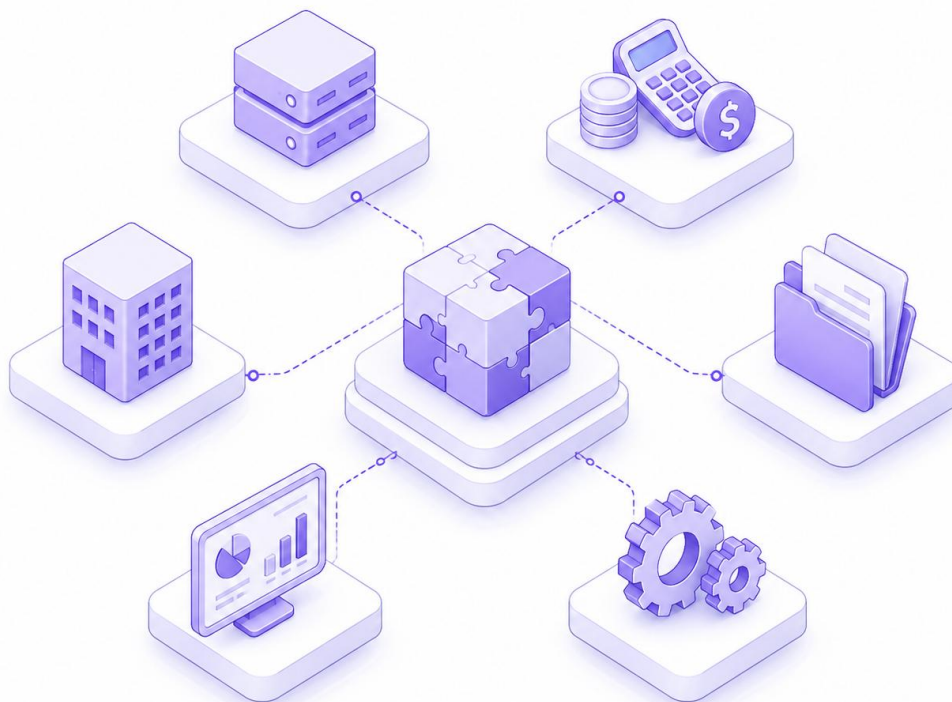
For management dashboards and reporting.



Other Construction Systems

Through APIs, database connections and automation.

This makes the product suitable both for smaller contractors without sophisticated systems and larger organisations that already operate enterprise applications.



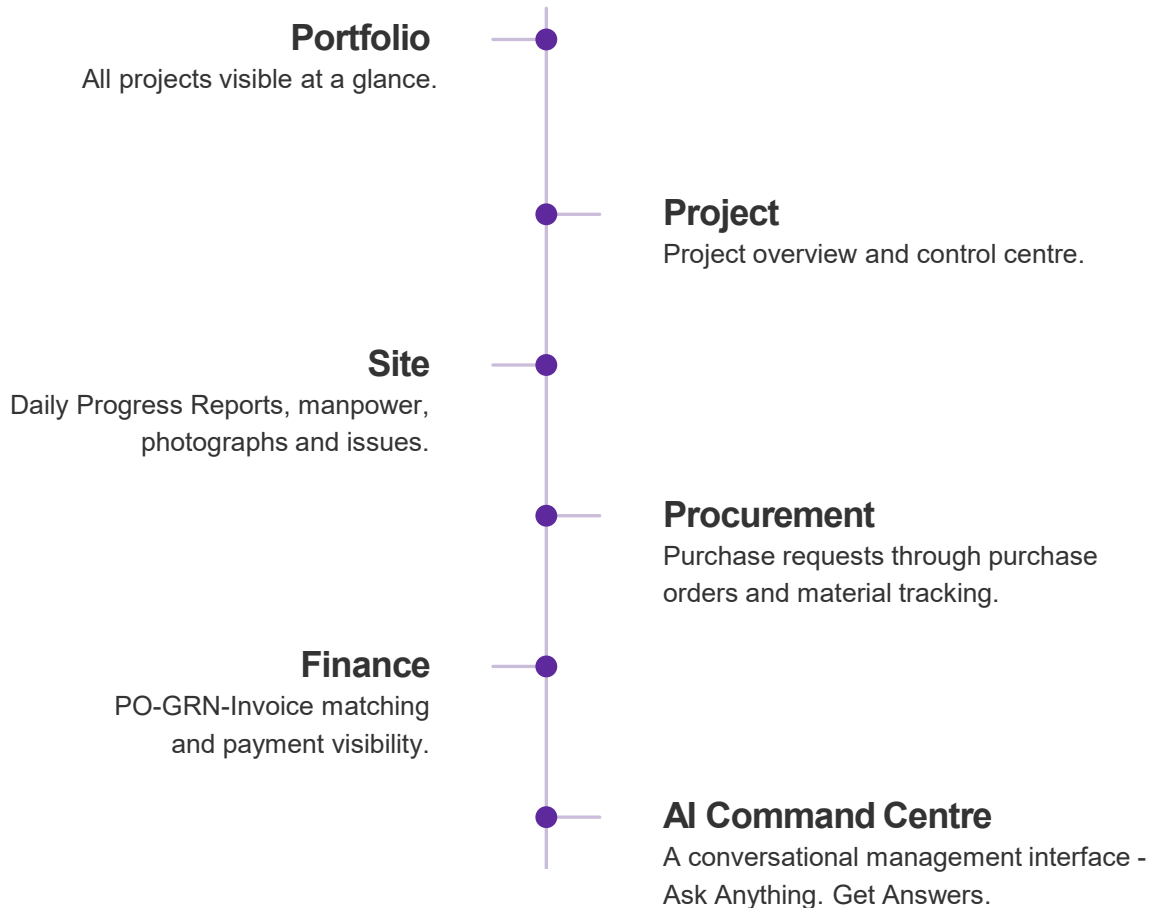
17. Deployment Philosophy: Start Small

A key principle behind 10xBuild.AI is:

Start small. Deliver value quickly. Expand progressively.

The first release does not need to recreate a full construction ERP.

A practical MVP could contain six modules.



This creates the foundation from which additional Digital Workers can gradually be deployed.



18. Suggested Technology Architecture

10xBuild.AI can be developed using a relatively lightweight modern application stack.



Front End

Next.js / React



Back End

Node.js and/or Python



Database

PostgreSQL / Supabase



AI Layer

OpenAI and/or Azure OpenAI



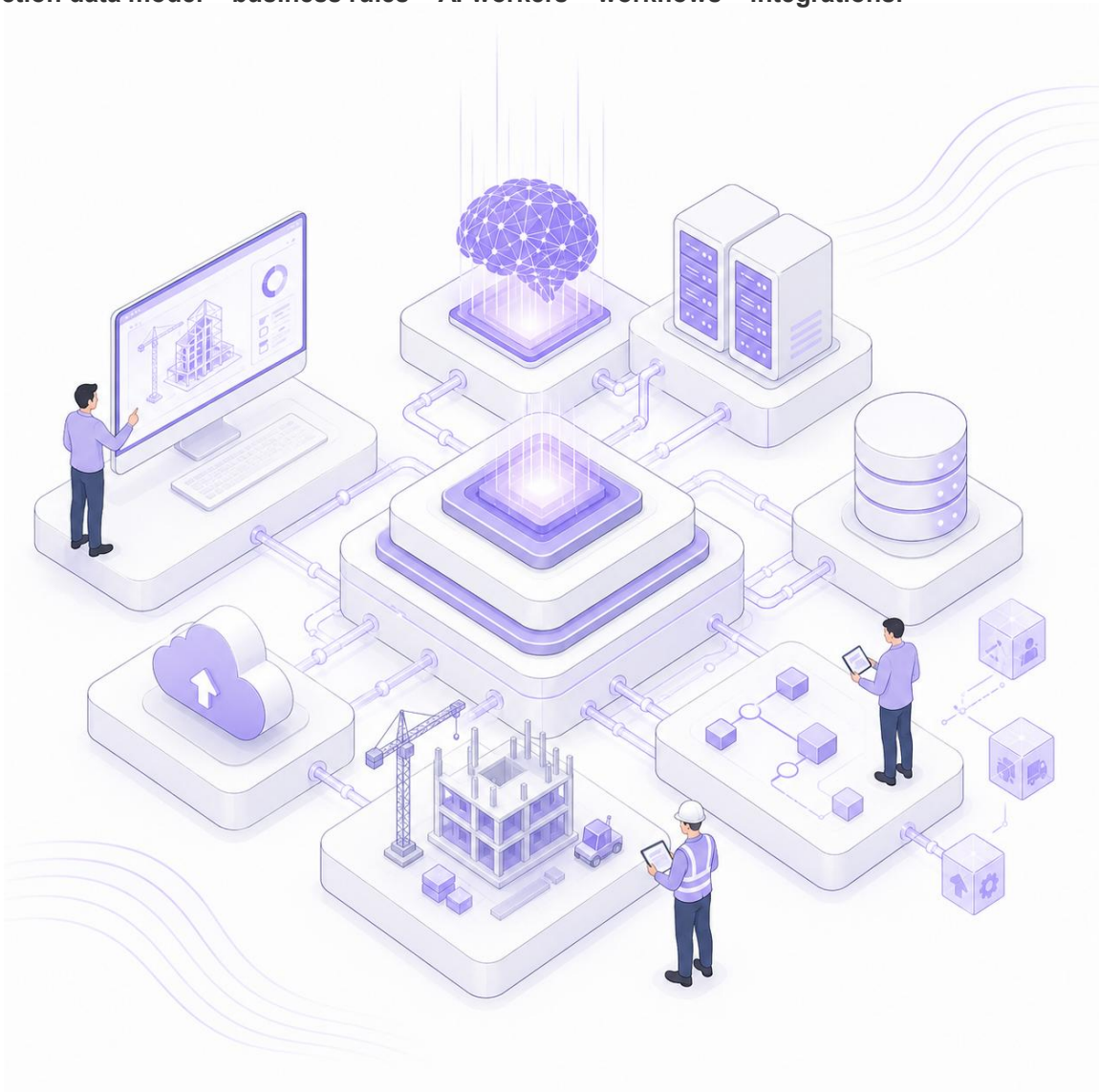
Hosting

AWS and/or Microsoft Azure

This architecture is also suitable for AI-assisted development and vibe-coding approaches. The important component is not simply the application code.

The real asset is the combination of:

construction data model + business rules + AI workers + workflows + integrations.



19. Product Roadmap

The platform can evolve through three stages.

Phase 1: Core Workflows

Approximately Months 0-4

Initial focus:



Projects



DPR



Procurement



Invoices



WhatsApp interface



Web application



Core AI agents



Reports

The objective is to establish the database and prove the Digital Workforce model.

Phase 2: Intelligence & Automation

Approximately Months 4-8

Add:



advanced AI agents



risk intelligence



cost intelligence



mobile application



offline capabilities



deeper integrations

At this stage the platform begins moving from workflow automation toward proactive project operations.

Phase 3: Scale & Ecosystem

Month 8 onward

Potential additions include:



partner marketplace



external extensions



advanced analytics



voice interfaces



multilingual operations

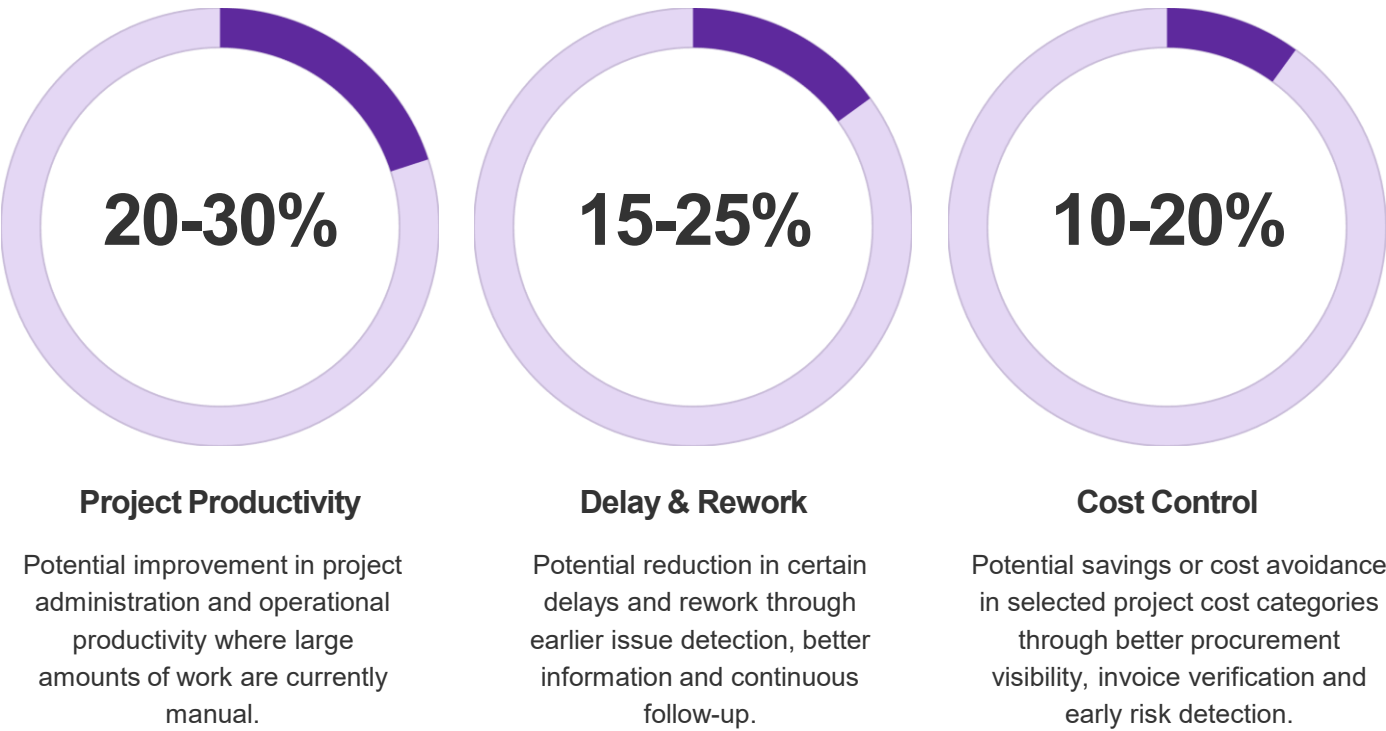


**broader subcontractor and
supplier participation**

The platform can progressively become the operational collaboration layer across the construction value chain.

20. Business Impact

The concept identifies several potential areas of business impact.



These numbers should ultimately be validated through pilot implementations rather than treated as guaranteed results.
The larger benefit may be harder to quantify:
management gains real-time visibility and much faster intervention capability.



21. 24x7 Digital Workforce

Unlike traditional project administration, Digital Workers do not have to wait for someone to open a spreadsheet or prepare a report.

They can continuously:



read updates



monitor commitments



check deadlines



compare data



send reminders



detect exceptions



escalate issues



prepare reports

This does not remove the construction team. It changes what the team spends time doing.

Less time: entering + consolidating + checking + following up

More time: engineering + planning + problem solving + negotiation + decision making



22. Suitable Customer Segments

10xBuild.AI can potentially support multiple types of organisations.



Small Contractors

Can use the platform as their main construction operations system.



Mid-sized Contractors

Can use it to standardise project management across multiple projects.



Large Contractors

Can place the Digital Workforce layer above existing ERP, BIM and document systems.



MEP Contractors

Can use specialised project, procurement, material and billing workflows.



Interior Fit-out Companies

Can manage multiple fast-moving projects, suppliers and subcontractors.



Developers

Can obtain portfolio-wide visibility across contractors and projects.



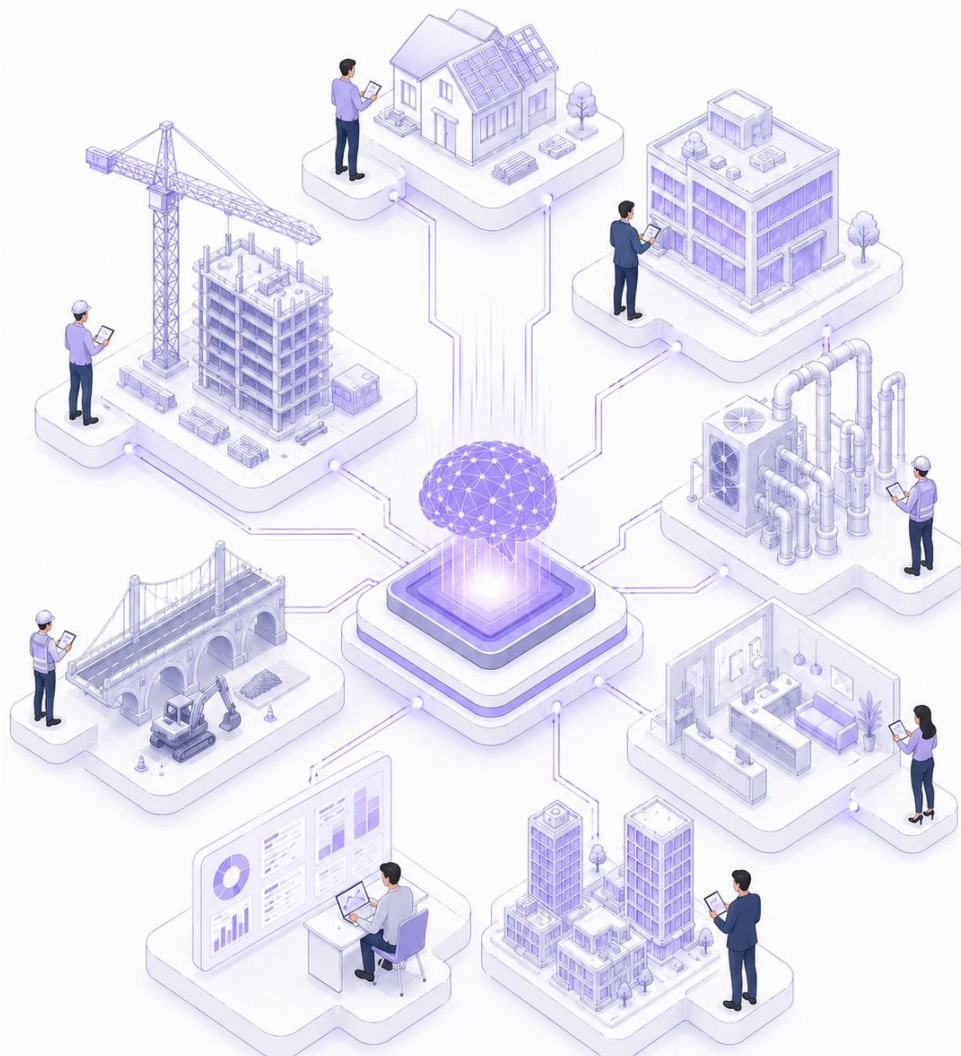
Project Management Consultants

Can monitor schedules, progress, risks and contractor commitments.



Infrastructure Contractors

Can adapt the architecture for distributed sites and large project programmes.



23. Why WhatsApp Matters

One of the strongest elements of the design is the WhatsApp interface. Construction sites already use WhatsApp extensively.

Trying to force every supervisor, engineer and subcontractor to constantly update another enterprise application can create resistance.

10xBuild.AI can instead meet users where they already work.

A user can send:



text



voice



photos

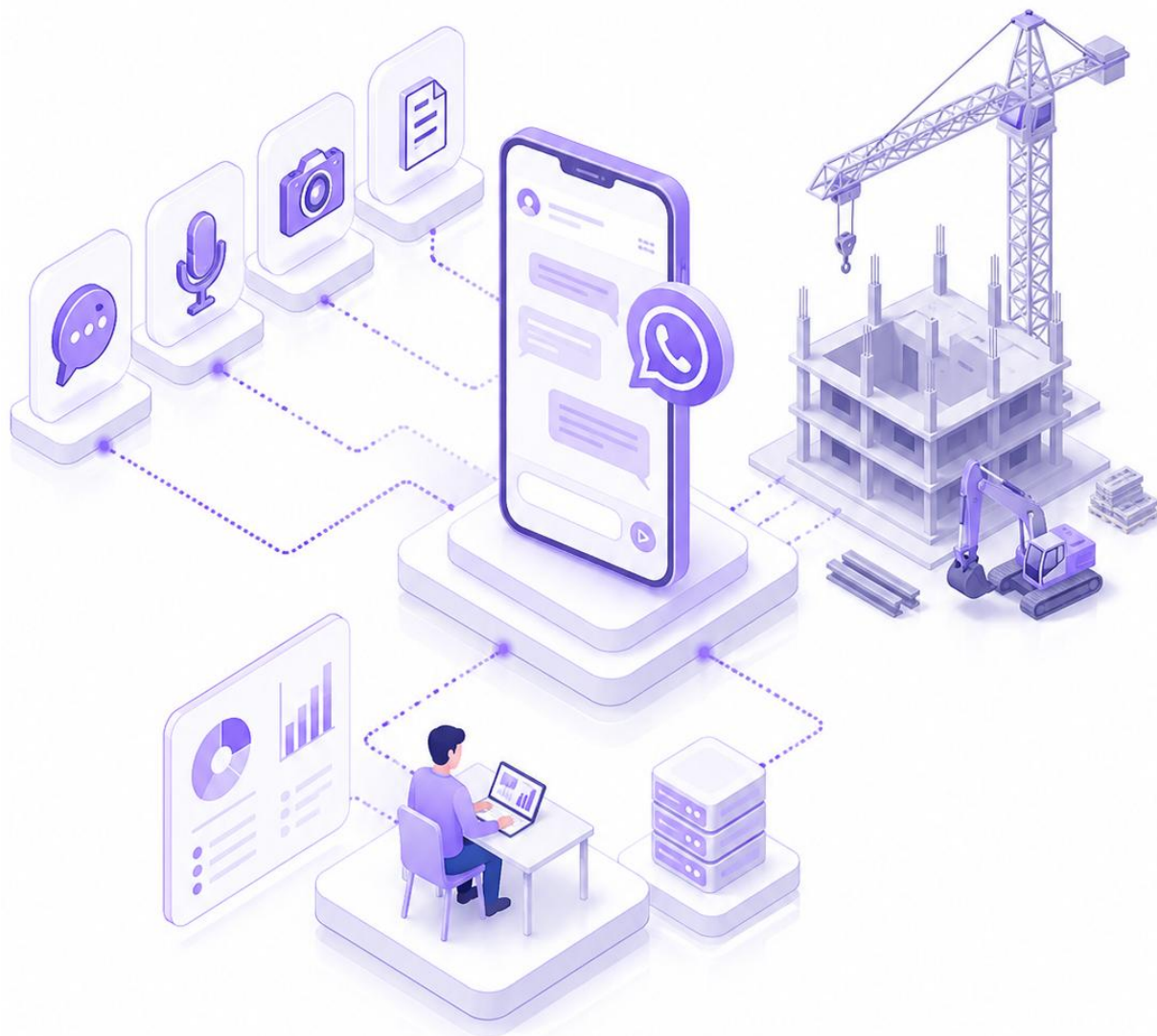


documents

AI then converts the unstructured information into structured project data.

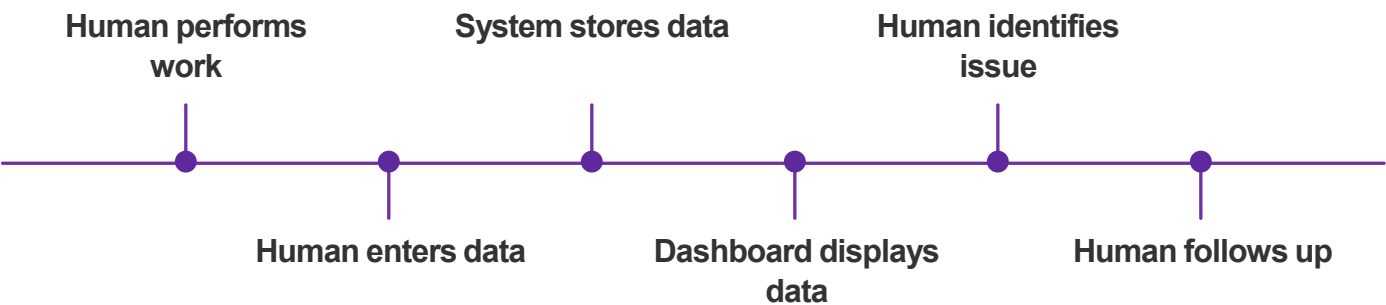
This reduces the gap between:

what happens on site and what management systems know about the site.

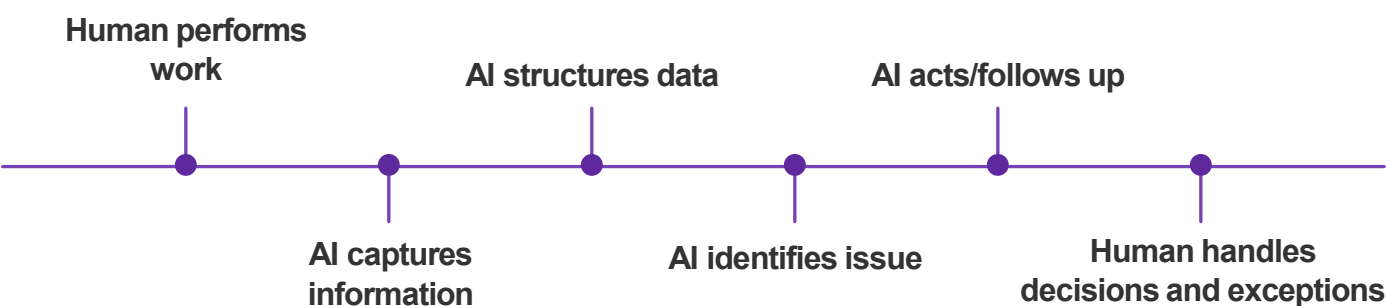


24. From Dashboard to Digital Workforce

➤ Traditional construction software largely follows this sequence:



➤ 10xBuild.AI proposes a different sequence:



That shift is the central proposition of 10xBuild.AI.



25. Human-in-the-Loop Controls

Not every action should be autonomous. The system should operate within clearly defined authority levels.
For example:

➤ AI can execute automatically



reminders



DPR preparation



data extraction



status updates



document classification



issue creation



routine follow-ups

➤ AI can prepare but require approval



purchase orders



payment approvals



contract communications



supplier selections



variation decisions

➤ Humans retain control



Major commercial decisions



Contractual commitments



Engineering approvals



Project strategy



Safety-critical decisions



Significant financial commitments

Every AI action should be logged in the audit trail.

26. Exception-Driven Operations

A major design goal should be moving construction teams toward **exception-driven management**.

Instead of managers checking hundreds of transactions, the system identifies the handful requiring attention.

For example:

248 invoices processed

Instead of finance reviewing all 248 manually:

221

Match automatically

18

Minor exceptions

7

Require commercial review

2

Appear potentially duplicated

Management attention is therefore concentrated where judgement is actually required.

The same principle can apply to procurement, project planning, vendor management and site operations.



27. Future Digital Workers

Once the underlying database and agent architecture are established, additional Digital Workers can be introduced. Examples include:



Quality Agent

Analyse defects, inspections & recurring quality problems.



Safety Agent

Analyse observations, photographs, incidents & safety compliance.



Contract Agent

Monitor contractual obligations, notices & milestones.



Variation Agent

Identify potential variation events & supporting documentation.



Subcontractor Agent

Track subcontractor progress, commitments, certification & performance.



Equipment Agent

Track equipment utilisation, breakdowns & maintenance.



Cash-flow Agent

Forecast project cash inflows & outflows.



Tender Agent

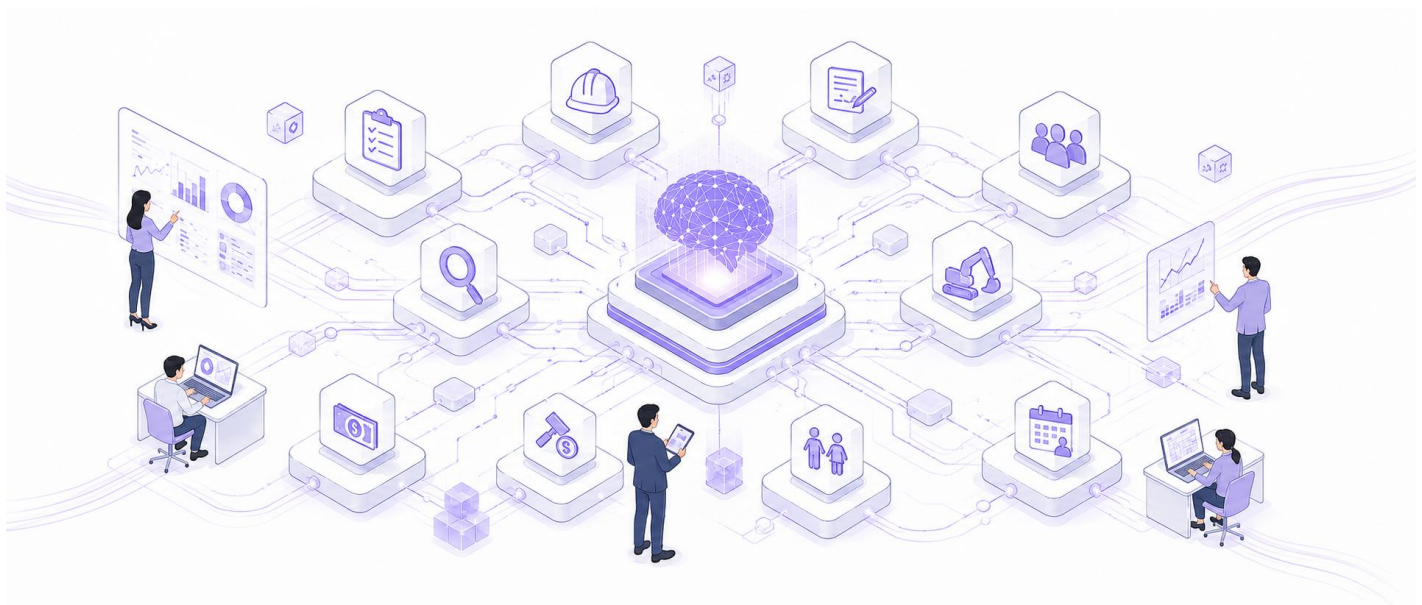
Support estimation, tender preparation & supplier quotations.



Resource Agent

Analyse manpower & equipment requirements across projects.

These agents can gradually expand the capabilities of the platform without turning the initial implementation into a multi-year IT project.



28. Potential Commercial Model

10xBuild.AI can eventually be offered through several commercial approaches.



SaaS Subscription

Monthly or annual subscription based on projects, users or Digital Workers.



Digital Worker Subscription

Customers subscribe to specific agents such as site agent, procurement agent, invoice agent, planning agent, etc.



Implementation Fee

Configuration, integration, migration and deployment services.



AI Usage

Certain high-volume AI or communication consumption could be charged based on usage.



Enterprise Deployment

Private cloud or dedicated deployment for larger contractors and developers.

This allows the commercial model to support both small construction companies and enterprise customers.



29. A Practical Pilot

Rather than attempting to deploy the entire vision immediately, the recommended first implementation would focus on one live construction project.

A pilot could include:

WhatsApp Site Agent + DPR Agent + Procurement Agent + Management Copilot



The pilot should measure:



time spent preparing DPRs



number of manual follow-ups



procurement turnaround



delayed purchase orders



management reporting time



project issues identified early



user adoption



administrative hours saved

Within a relatively short period, this would provide evidence of where AI creates genuine operational value.

30. The Long-Term Vision

10xBuild.AI has the potential to become more than a construction project management application.

The long-term idea is: **An AI Operating Layer for Construction**

The long-term idea is: **An AI Operating Layer for Construction**

At the bottom: **ERP + Finance + BIM + DMS + Existing Systems**

At the centre: **10xBuild Construction Database**

Above it: **AI Digital Workforce**

At the top: **WhatsApp + Web + Mobile + Voice**

The resulting environment would allow construction businesses to operate through a combination of humans and AI Digital Workers. Humans would continue to manage relationships, engineering, contracts, negotiations and judgement.

AI would increasingly manage:

capture + administration + analysis + reporting + follow-up + monitoring + coordination



31. The 10xBuild.AI Proposition

The proposition can be summarised in four statements.



Database at the Core

Create a structured, reliable operating record for every project.



AI Digital Workforce on Top

Allow specialised AI workers to continuously operate against that data.



Works with Your Existing Environment

Connect existing ERP, accounting, BIM, DMS and analytics platforms rather than demanding their replacement.



Built for Different Sizes of Construction Company

Start with a lightweight implementation and grow as the organisation requires.



32. Closing Perspective

The opportunity behind 10xBuild.AI is not simply to build another construction application. There are already many project management, ERP, BIM and document platforms. The bigger opportunity is to create the **Digital Workforce layer that operates across them.**

- A site engineer should not need to spend the evening preparing a report from information the organization already possesses.
- A procurement manager should not need to manually chase twenty vendors.
- Finance should not manually compare every PO, GRN and invoice.
- Project managers should not discover a delay only during the weekly review.
- Senior management should not have to search through multiple dashboards to understand what is happening.

With 10xBuild.AI, the objective is that AI performs this operational work continuously and brings people in when judgement, approval or intervention is required.

That is the core idea behind:

10xBuild.AI

Your Projects. Your Data. Your Digital Workforce.

Smarter Operations. Better Decisions. Delivered.





Let's build what's next.

Partner with us to accelerate
transformation and deliver
measurable impact.



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