OYO AI

USE CASE

USE CASE · CONSTRUCTION MANAGEMENT

From first request to the end of warranty

One chain of documents for a residential general contractor on OYO AI: order intake, a schedule with critical path and hold points, daily reports, change orders, monthly acts, procurement with three-way match, one stock ledger, handover and warranty. Twenty-five document types run on one approval engine, in Armenian, Russian and English.

INDUSTRY	SCOPE	PUBLISHED
Construction · residential general contracting	18 use cases · 85 tables · 253 forms · 4 workflows	5 November 2026

oyoai.com/use-cases/construction-management

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1 How to read this document

Each use case follows one piece of work through the system: who starts it, what happens, what the system refuses, and how you can see it on screen.

> WHERE IT STANDS
>
> The system is built and running on a staging environment with a demo company and 11 demo projects. Pilot deployments with construction companies are the next stage. This document describes the build. It does not report customer results.

In the flow diagrams: ● A person acts ● The system acts by itself ● A rule that can refuse

The roles

Role	What they own
Director / owner	Go or no-go on large orders, closing construction, the owner cockpit.
Commercial manager	The order from intake to signed contract and advance.
Chief engineer	The start checklist, the baseline, acceptance of hidden works, the punch walk.
Project manager	The project during construction and warranty, reviews on the route.

Role	What they own
Site manager	Work packages, daily reports, material requests.
Estimator	Estimates and cost lines on change orders.
Supply and procurement	The supply board, quotes, purchase orders.
Warehouse keeper	Receipts, transfers, issues, stocktakes and write-offs.
Accountant	Invoices, advance, supplier invoices, payments.
Technical supervisor and client	Inspection acts and signatures as external parties on the route.

2 What the analysis found

Both contractors interviewed work in the same five stages, and underneath all five is the same document work: a file goes forward, comes back with remarks, is corrected and is sent again.

Stage	What happens	Owner
1 Order intake	Client files, estimate, schedule, contract and advance, each reviewed, returned with remarks and sent again.	Commercial manager
2 Ready to start	Start checklist complete, baseline frozen. Construction starts by itself on the planned date.	Chief engineer
3 Construction	Work packages, daily reports, hidden-works acts on Forms N1 to N3, change orders, monthly acts.	Project and site managers
4 Handover	Punch list, as-built package, final act and the handover-acceptance act.	Chief engineer, director
5 Warranty	Claims and repairs. Retention is released at the end of the warranty.	Project manager

Procurement runs beside every stage: material request, supply pool, quote comparison, purchase order, receipt, three-way match with the supplier invoice, payment.

Material request ▶ Supply pool ▶ Quote comparison ▶ Purchase order ▶ Receipt ▶ Three-way match ▶ Payment

What it was checked against

- Two in-depth interviews with residential general contractors: owners and directors, chief engineers, project managers and site foremen.
- 16 Armenian legal and regulatory acts: urban development, construction norms, technical supervision, the Civil Code on construction contracts, the Tax Code, personal data.
- 18 market and industry studies, 10 comparable products and 9 method references.

- The result: 20 requirement-level use cases, 123 functional requirements, 54 business rules, 17 calculations with worked examples, 57 entities and 45 acceptance criteria, in a 172-page requirements document.

3 Order intake and start

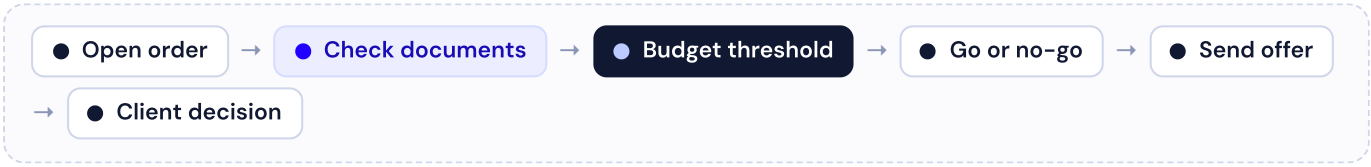
UC-01

Take an order from request to offer

Primary actor	Commercial manager
Trigger	A client request arrives

Main flow

1. The order is opened with the client's files and a project type.
2. The system checks the team, checklist and documents the order needs.
3. If the budget reaches the go or no-go threshold, the director decides.
4. The offer is assembled and sent.
5. The client's decision is recorded.



Alternative flows

Below threshold	The go or no-go step is skipped and the order proceeds to the offer.
Declined	A no-go or a client refusal closes the order, with the reason on record.

WHAT PROVES IT The workflow P-01 Order intake runs this on staging: 89 BPMN elements, 6 user tasks.

UC-02

Sign the contract and receive the advance

Primary actor	Commercial manager, accountant
Trigger	The client accepts the offer

Main flow

1. The contract is prepared with value, advance, retention, penalties and warranty, plus permit data and bank guarantees where they apply.
2. It runs its route and is signed.
3. The accountant records the advance received.



Postconditions

Contract signed | Advance received | Order ready for the start checklist

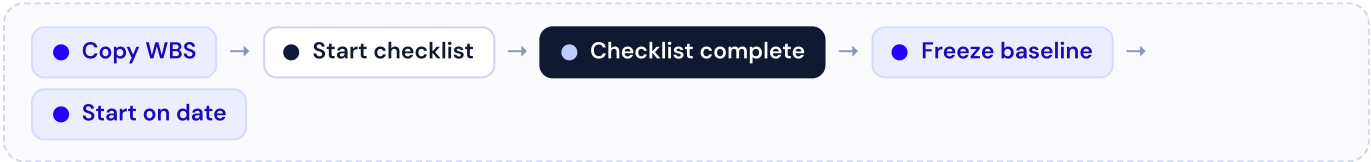
UC-03

Get ready to start and freeze the baseline

Primary actor	Chief engineer
Trigger	Contract signed and advance received

Main flow

1. A new project copies its type's WBS: durations, links, hold points, document checklist and routes.
2. The chief engineer completes the start checklist.
3. The baseline is frozen.
4. Construction starts by itself on the planned date.



WHAT PROVES IT The project passport shows Ready to start with its date, and the schedule map shows baseline v1 frozen.

4 Documents and routes

One approval engine carries all 25 document types, from the estimate to the warranty letter. There are 30 route templates with 98 steps: contribute 42, review 21, approve 21, sign 14.

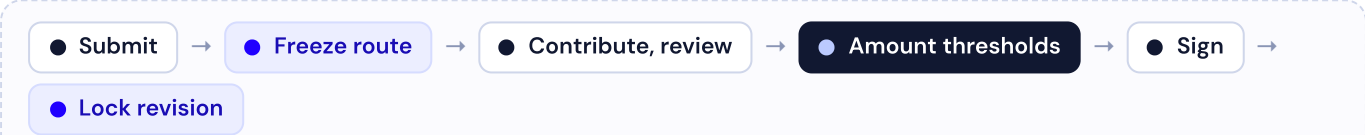
UC-04

Route any document

Primary actor	The document's author
Trigger	A document is submitted

Main flow

1. The author submits. The route is frozen at that moment.
2. Contributors and reviewers act in order, each step with a deadline.
3. Approvers decide by amount thresholds, under four-eyes control.
4. The client or other party signs where the type requires it.
5. The approved document is locked and its revision is frozen.



Alternative flows

Returned	Remarks are answered and the document is resubmitted. The route restarts from the step its template says.
Step skipped	A step not needed by policy or amount shows as skipped, with the reason, on the route tracker.
Overdue	The step shows overdue in red on the document and in the register.

WHAT PROVES IT The route tracker on a change order shows six steps, each with its owner and working-day deadline.

UC-05

Decide from one worklist

Primary actor	Anyone with a step on a route
Screen	My work

Main flow

1. The person opens My work.
2. Opens the document waiting on them.
3. Approves, returns with remarks, signs or delegates.

Open My work → Read document → Decide

There are 29 decision forms in My work, and each step of a route is decided from that one place.

UC-06

Change a route as data

Primary actor	Administrator
Screen	Route templates

Main flow

1. The administrator opens the route template for a document type.
2. Edits who reviews, in what order, when a step is skipped and how long it may take.
3. The change takes effect from the next submission.

Open template → Edit row → Effective next submission

RULES IT ENFORCES

- Routes already submitted keep the route they were frozen with.

5 Construction

UC-07

Run the schedule map

Primary actor	Project manager
Screen	Schedule map

Main flow

1. The map is built from the project's WBS: sections, work packages, and finish-to-start, start-to-start and finish-to-finish links.
2. The platform computes critical path and float with a forward and backward pass.
3. The forecast is drawn against the frozen baseline.

Build from WBS → Critical path → Forecast vs baseline → Re-plan

WHAT PROVES IT On demo project R-2026-019 the map shows planned 77%, actual 69%, the forecast finish and the variance in working days.

UC-08

Run a work package with a hold point

Primary actor	Site manager
Trigger	A work package reaches its planned date

Main flow

1. The package opens on its date, by itself.
2. The site manager confirms the start.
3. The work is executed and reported.
4. At a hold point, the hidden-works inspection act on Form N1, N2 or N3 is completed.
5. The chief engineer accepts.
6. The package closes and its successors are released.

Open on date → Confirm start → Execute, report → Hold point → Accept → Release successors

RULES IT ENFORCES

- A hold point waits for the hidden-works act before the next package may start.

WHAT PROVES IT The workflow P-03 Work package runs one case per package, with 6 user tasks.

UC-09

Keep the daily report

Primary actor	Site manager
Screen	Daily reports

Main flow

1. The site manager records works and volumes, crews, weather and input control.
2. The entry is a draft while being edited.
3. Once acknowledged, only dated corrections are added.

Record the day → Submit → Acknowledge → Dated corrections only

RULES IT ENFORCES

- An acknowledged entry is not overwritten. Corrections carry their own date.

UC-10

Raise a change order

Primary actor	Project manager, estimator
Trigger	A site condition or a client request changes the scope

Main flow

1. The change is described with its reason category.
2. Pricing adds cost lines and the price to the client.
3. Schedule impact is stated in working days.
4. It runs its route to the client's signature.
5. A signed change moves the contract value, the finish, the budget and the schedule.

Describe → Price → Schedule impact → Route → Client signs → New baseline

RULES IT ENFORCES

- Every change order that moves dates freezes a new baseline version.

WHAT PROVES IT The change order register shows cost, price to the client, schedule impact and status per change.

UC-11

Draft the monthly act of completed works

Primary actor	Project manager
Trigger	The month closes

Main flow

1. The act is drafted by line: previous, period, to date.
2. The system computes the amount, the advance offset, the retention and VAT.
3. The act runs its route to the client's signature.

Draft act → Compute money → Route → Client signs

WHAT PROVES IT The register of acts shows the period, the works amount, net and payable for each act.

6 Procurement and warehouse

UC-12

Request materials and work the supply board

Primary actor	Site manager requests, supply and procurement act
Screen	Supply board

Main flow

1. The site manager raises a material request against a work package.
2. Open lines join the supply pool with stock, last price and need-by date.
3. Supply filters by category, project or urgency and selects what to order.



WHAT PROVES IT The board counts open lines, lines waiting over two working days, lines late against the need-by date and deliveries past the confirmed date.

UC-13

Compare quotes and place the order

Primary actor	Supply and procurement
Trigger	Lines are selected from the pool

Main flow

1. Quotes are collected from counterparties with licences and ratings.
2. The comparison is recorded.
3. The purchase order runs its route, with a budget check, to approval.
4. The supplier's acknowledgement and confirmed date are recorded.



Postconditions

- Budget line shows the money committed
- Order visible on the supply board

UC-14

Receive and match the supplier invoice

Primary actor	Warehouse keeper, accountant
Trigger	A delivery arrives

Main flow

1. The goods receipt is recorded against the order.
2. Stock updates at moving-average cost.
3. The supplier invoice is matched three ways: order, receipt and invoice.
4. The matched invoice goes to payment.

● Receipt → ● Moving-average cost → ● Three-way match → ● Payment

WHAT PROVES IT Three-way match and moving-average cost are among the 17 calculations configured, each with a worked example in the requirements.

UC-15

Move stock through one ledger

Primary actor	Warehouse keeper
Screen	Receipts and stock

Main flow

1. Transfers move stock between locations.
2. Issues send material to site and to a work package.
3. Stocktakes and write-offs correct the position through a document.

● Transfer → ● Issue to site → ● Stocktake → ● One ledger

RULES IT ENFORCES

◆ There is one stock ledger, at moving-average cost, across all locations.

7 Handover and warranty

UC-16

Hand over the building

Primary actor	Chief engineer, director
Trigger	Construction work is complete

Main flow

1. The chief engineer walks the punch list.
2. The as-built package is compiled to 100%.
3. The handover act runs its route: engineer, director, client.
4. The director closes construction.
5. The warranty starts by itself.

Punch walk → As-built 100% → Route handover act → Close construction → Warranty starts

WHAT PROVES IT The workflow P-04 Handover runs this on staging: 43 BPMN elements, 4 user tasks.

UC-17

Handle warranty and release retention

Primary actor	Project manager
Trigger	A claim arrives, or the warranty period ends

Main flow

1. A warranty claim is recorded and its repair tracked.
2. At the end of the warranty, the retention release is prepared.
3. The warranty close-out runs its route.

Record claim → Repair → End of warranty → Release retention

Postconditions

Project closes only after warranty close-out

8 Management

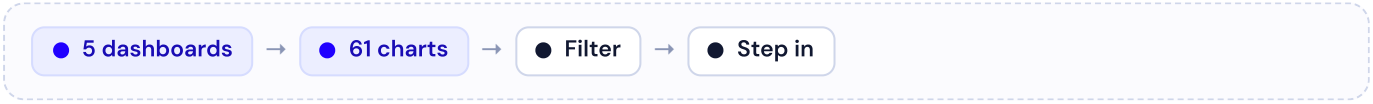
UC-18

Read the business from the dashboards

Primary actor	Director / owner
Screen	Owner cockpit, Supply and cost, Cash and receivables

Main flow

1. The owner opens the cockpit: is the portfolio making money, keeping its dates, and where to step in this week.
2. Supply and cost shows on-time deliveries and money committed against budget.
3. Cash and receivables shows who must pay and what is due next month.



Three languages run across the interface: 3,804 interface texts in each of Armenian, Russian and English, plus 2,861 configuration texts and 2,484 reference values.

9 What was built

85 tables, 1,578 fields and 213 relations, counted from the configuration export.

Module	Tables	What it holds
Projects and schedule	9	Project card, team, status log, start checklist, work packages with links, baselines
Contracts and guarantees	4	Value, advance, retention, penalties, warranty, permit data, bank guarantees, retention release
Acts and inspections	5	Interim and final acts by line, hidden-works acts on Forms N1 to N3
Warehouse and stock	13	Locations, one stock ledger, receipts, transfers, issues, stocktakes, write-offs
Suppliers and procurement	10	Counterparties with licences and ratings, requests, quotes, comparisons, orders, supplier invoices
Documents and routes	4	One routed record for 25 document types, revisions, route steps, remarks
Estimates and budget	4	Estimate lines, cost codes, budget lines: committed, actual, forecast
Changes and issues	6	Change orders, RFIs, defects, punch items, stop orders
Site journal	5	Daily reports: works and volumes, crews, input control, dated corrections
Subcontracting	4	Subcontracts with scope lines, subcontractor acts
Invoices and payments	3	Client invoices, incoming and outgoing payments
Organisation and setup	14	Company, people, calendars, numbering, project types and WBS templates, document and route types
System records	4	Deadline warnings, scheduler runs, change log, success measures

Everything else in the build

Item	Count
Forms, with 1,992 controls	253 (38 core business forms)
Business pages in 9 menu sections	72
BPMN workflows	4
Approval route templates, with 98 steps	30
Business rules, including the analysis's 54	1,658
Calculations: CPM, act amounts, advance and retention, VAT, three-way match, moving-average cost	17

Item	Count
PDF templates in English and Russian	22
Mail templates in three languages	15
Dashboards with 61 charts, and report pages	5 and 9
Scheduled jobs, switched off until the pilots	14
Data services	104
Demo records across 11 demo projects	6,317

How a change is tested

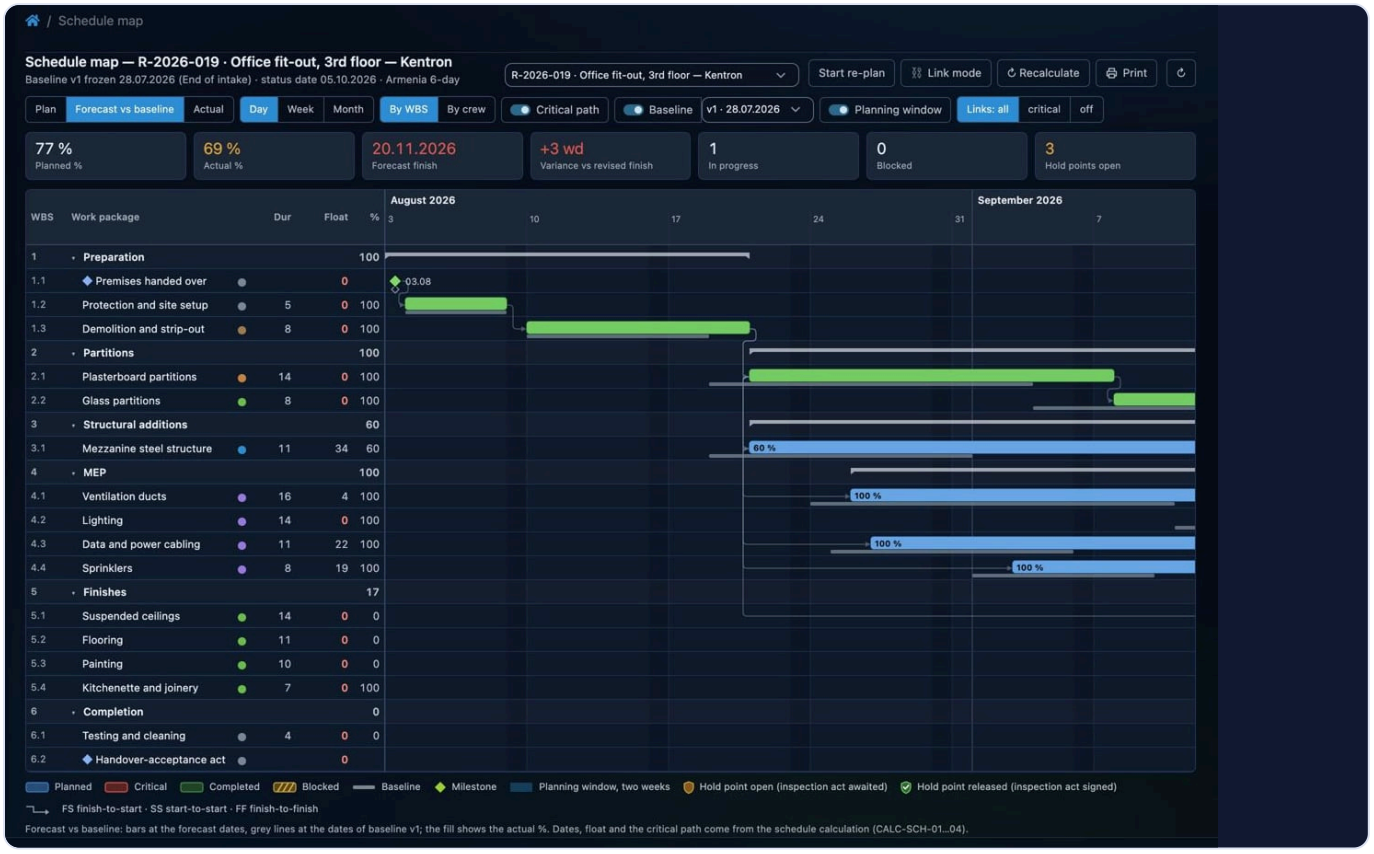
- A generator rebuilds the whole configuration from the model, and the same input always gives the same export.
- Every build runs a chain of gates, and a red gate stops the release.
- 1,762 rule bodies compile with 0 failing, and every data service runs against PostgreSQL 16.
- An emulator passes 37 of 37 scenarios, and plan coverage is 421 of 424 items, with 3 deferred by decision.
- 197 test scenarios in 13 suites, 186 of them automated, run against staging.

Known limits today

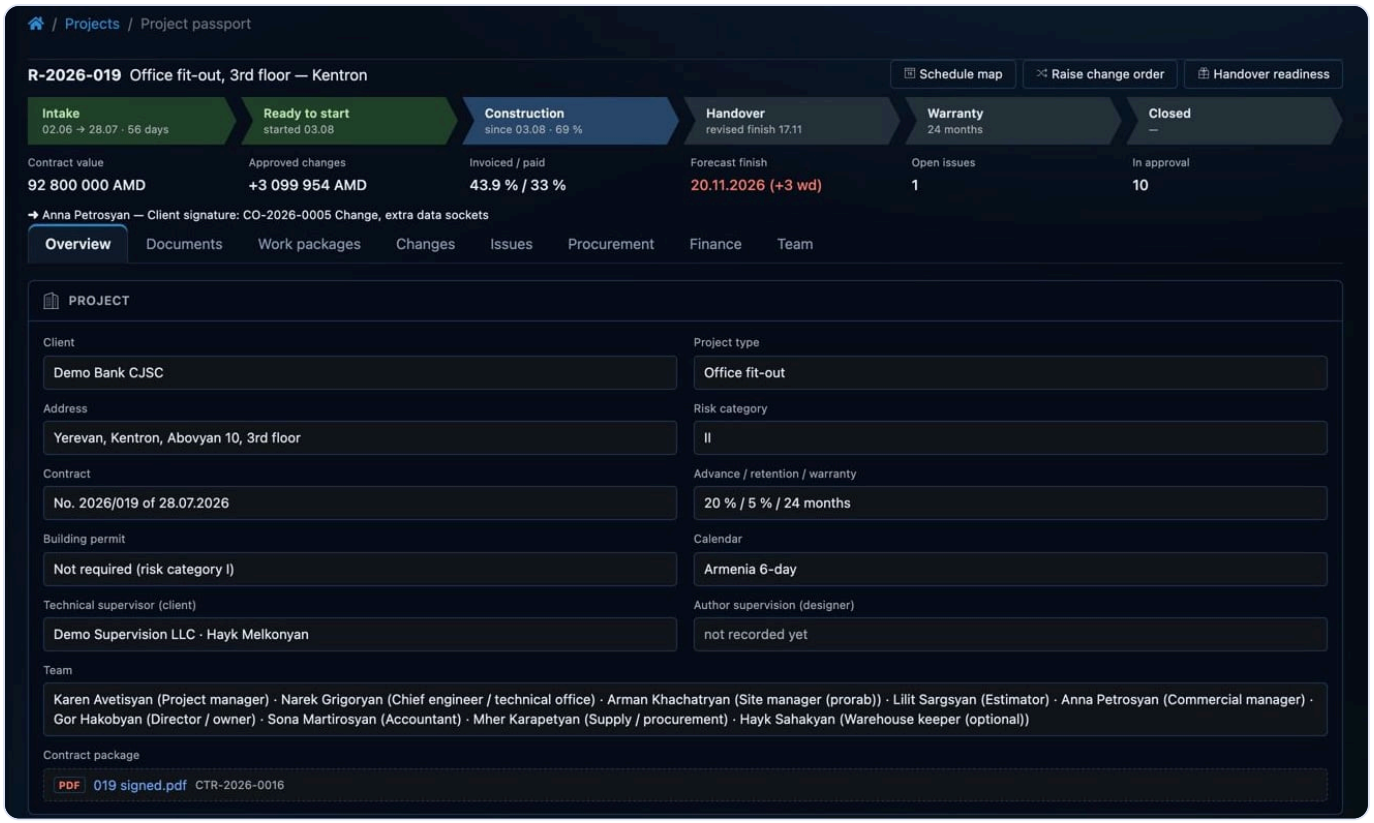
- Server PDFs are in English and Russian. Armenian documents print through the browser print view until localisation of the PDF engine is done.
- Hidden-works acts follow Forms N1 to N3, and must be confirmed by a practising technical supervisor before the first pilot.
- Pilots run on their own installation, in the cloud or on premises.

10 Screens from the system

Screens from the staging system, with a demo company and 11 demo projects. Every company, person and amount is demo data.

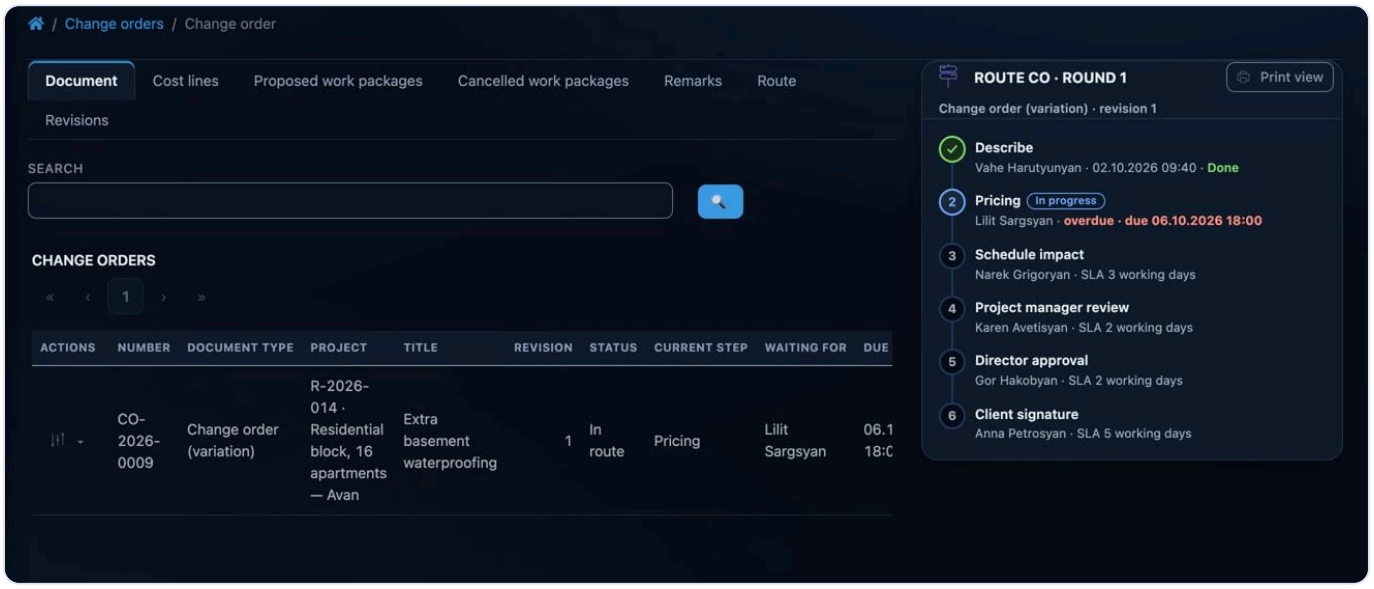


Schedule map
Work packages, links, critical path and float computed by the platform, with the forecast drawn against the frozen baseline.



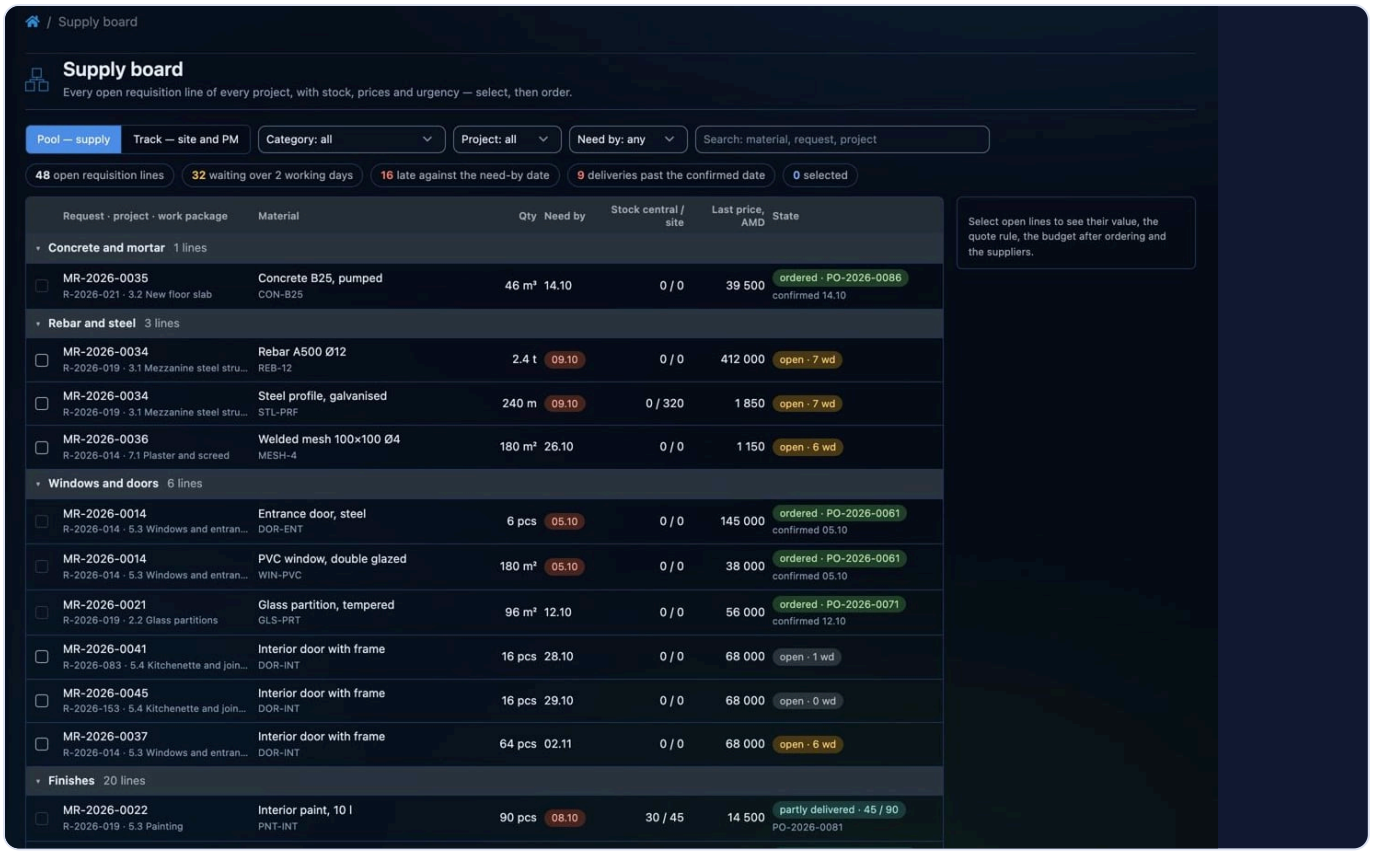
Project passport

One ribbon from intake to warranty, with contract value, approved changes, invoiced and paid, and who the project is waiting on.

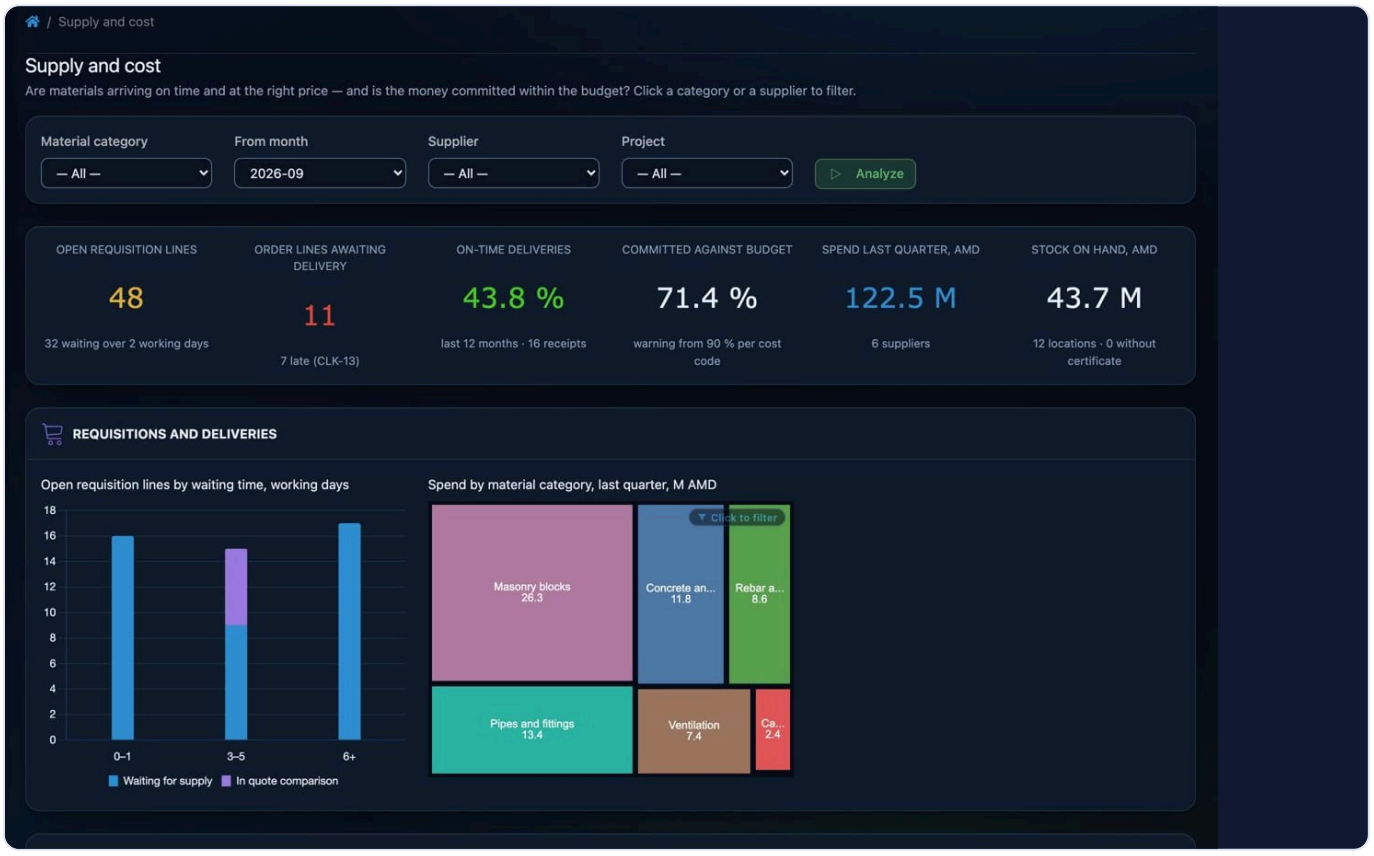


A change order on its route

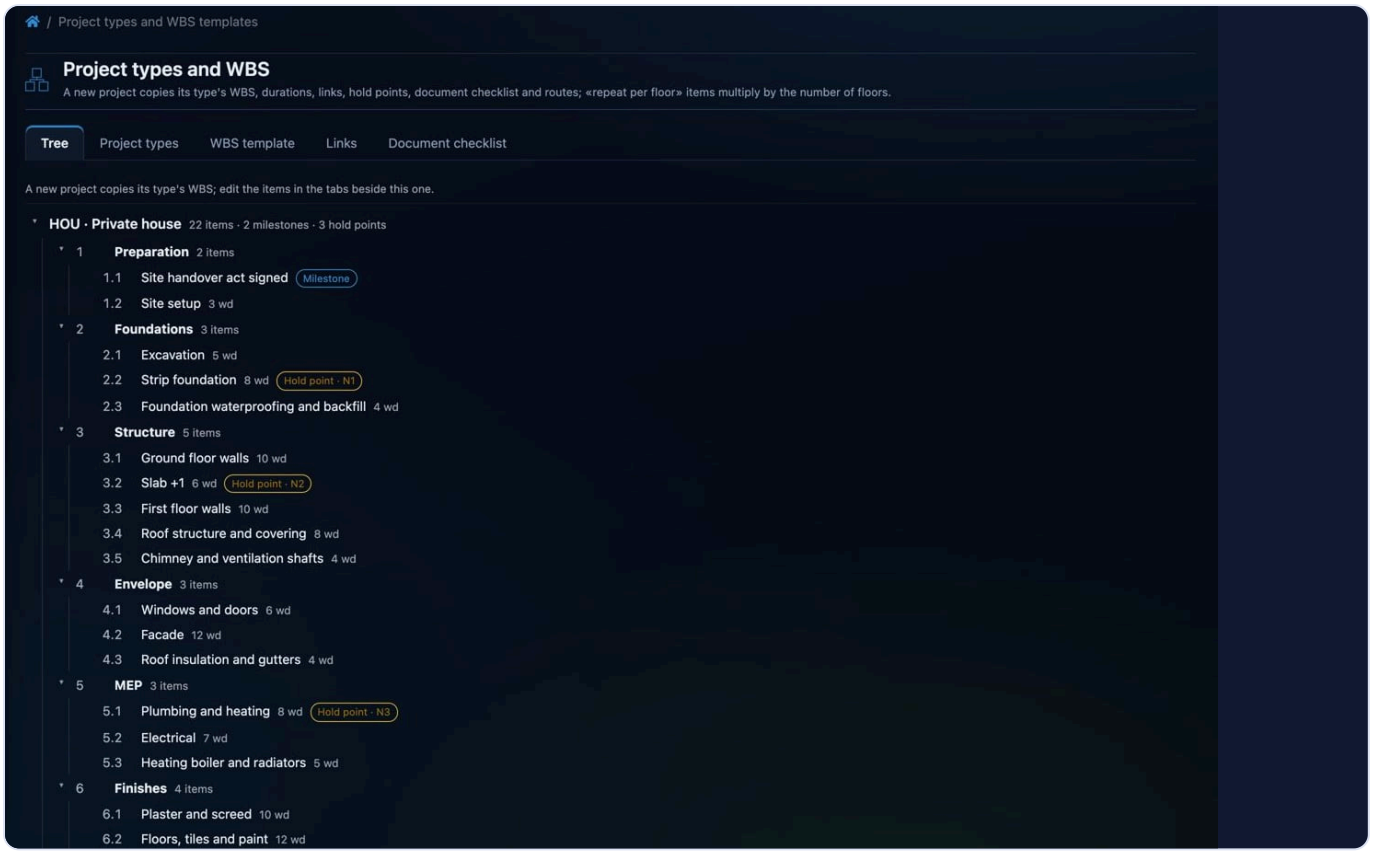
Six steps, each with its owner and a deadline in working days. The overdue step is red on the document itself.



Supply board
Every open requisition line across projects, with stock, last price and urgency against the need-by date.

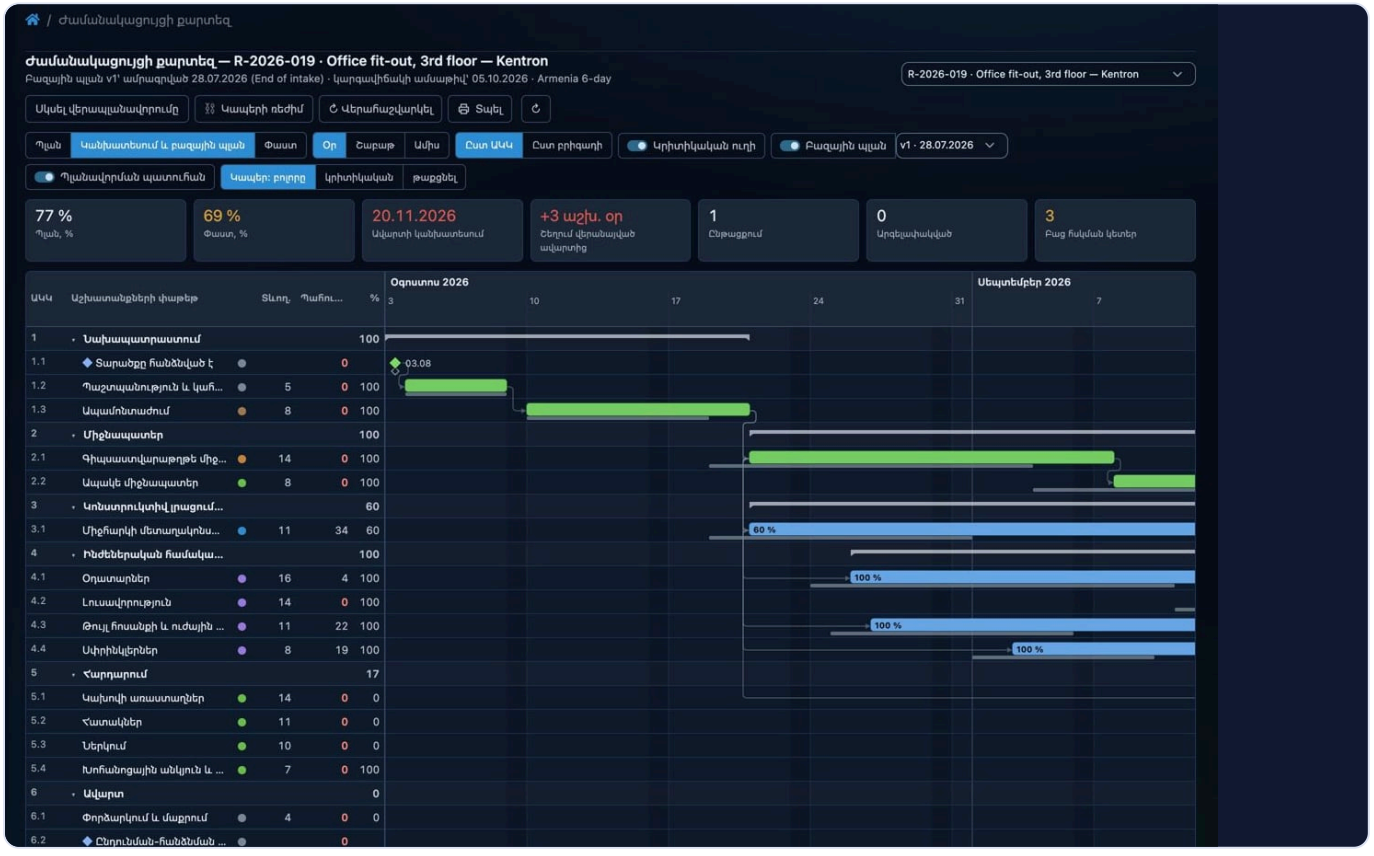


Supply and cost
On-time deliveries, money committed against budget, waiting time and spend by material category.



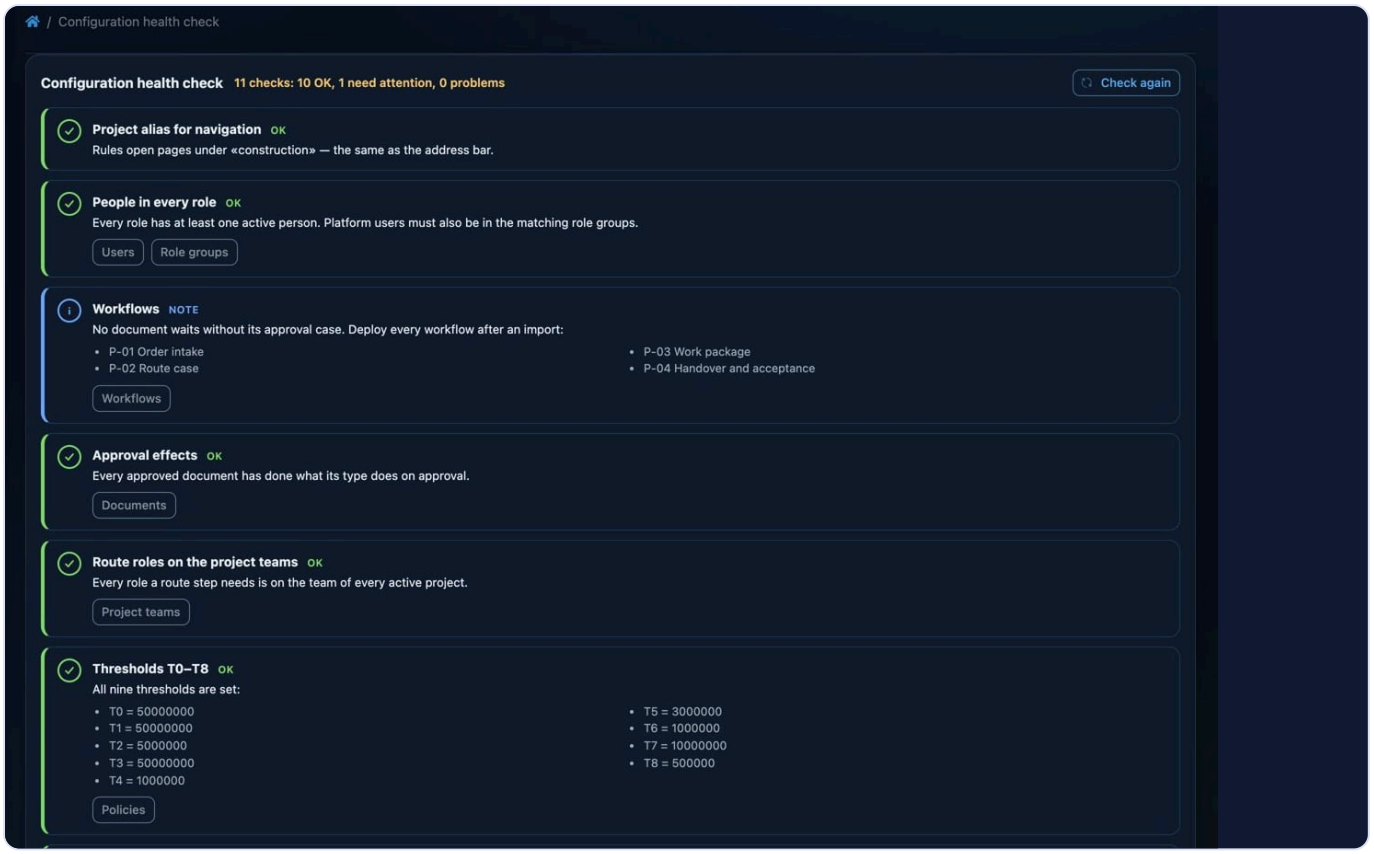
Project types and WBS

A new project copies its type's structure, durations, links and hold points, including the hidden-works forms.



The same map in Armenian

Armenian, Russian and English across the interface, with the language switch on the page.



Configuration health check

Roles, routes, thresholds and workflows checked on the live configuration, so a gap shows up before a document gets stuck.

About this document

Compiled in November 2026 from the phase report of the construction build: in-depth interviews with two residential general contractors, 55 desk sources including 16 Armenian legal and regulatory acts, and the configuration running on staging. The system runs with a demo company and 11 demo projects, and pilot deployments with construction companies are the next stage. Counts are taken from the configuration export. The two outcome figures are sourced benchmarks, not results of this system. Hidden-works acts follow Forms N1 to N3 and are to be confirmed by a practising technical supervisor before the first pilot.

OYO AI

Own your operations.

OYO AI is the AI business and process intelligence platform: no-code apps, business process automation and real-time process intelligence on one governed data model. The use cases in this document are built on it as configuration, not as customised code. What the system refuses, it refuses for every customer.

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OYO AI INC.

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No-Code / Low-Code Platform
Build internal tools, workflows and portals visually, governed by IT.

Business Process Automation
Automate multi-step processes, approvals and exceptions end to end.

Business and Process Intelligence
Turn operational data into confident decisions and surface bottlenecks in real time.

ERP
A modular ERP keeping finance, operations, inventory and production in sync.

AI Virtual Consultant
Round-the-clock intelligence that watches the business and recommends the next best move.