PROJECT DOCUMENTATION

Smart Selection

How an electrical contractor turned a spreadsheet chain into one offer design system, from the first equipment list to a released offer.

DURATION	WORKFLOW	ROLES	STATUS
5 months	8 steps	5	Live, v1.8
Discovery to support	Equipment to revisions	One approval flow	On the client server

CLIENT An electrical contractor	REFERENCE PD-Ektra_0001	DURATION 5 months
CATEGORY Custom Solutions	VERSION 1.0	PREPARED BY Ektra Tech

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01 OVERVIEW

The project at a glance

Smart Selection is the offer design and product selection workbench of an electrical contractor: it takes a building management enquiry from the first equipment schedule to a released, approved offer, in one system with one source of truth.

CLIENT	KIND OF PROJECT	PLATFORM	DURATION
An electrical contractor	In-house web system	Web app, on premise	5 months
DELIVERED BY	**STATUS**	**USERS**	**LIVE LINK**
Ektra Tech	Live, version 1.8	Presales, operations, sales	Private, client network

WORKFLOW
8 steps
Equipment to revisions

MODULES
12
One sidebar, one login

RELEASES
1.1 to 1.8
Eight review rounds

02 THE CONSTRAINT

What held the client back

Every offer started as an equipment list and ended as a Word document, with spreadsheets in between. Each handoff was a chance for quantities, prices and revisions to drift apart.

- **Scattered chain:** the selection, the panel structure, the controller sizing, the bill and the costing each lived in its own file.
- **Silent drift:** a price updated in one sheet never reached the offer already written from the old one.
- **No single status:** nobody could say which revision the client held, who was reviewing what, or how long a task had waited.
- **Approvals by email:** the technical review, the pricing and the margin decision travelled as messages, with nothing locked.

> **The risk in one line:** a document could disagree with the data that produced it, and nobody would know until the client did.

03 HOW WE FOUND IT

Discovery

We sat with the presales and sales teams and followed one real enquiry through every file it touched.

01 **Walked the chain.** One enquiry, from the equipment schedule to the signed offer, file by file and person by person.

02 **Read the workbooks.** The costing model and the sizing rules were reverse engineered from the source spreadsheets, figure by figure.

03 **Named the handoffs.** Five roles, two sides of a project (technical and commercial) and the moments where work changes hands.

04 **Agreed the rules.** Prices snapshot at selection time, zero spare capacity in sizing, an unpriced line blocks the offer, a reason for every manual price.

04 THE SOLUTION

What Ektra built

One system that owns the whole chain: the catalogue, the eight workflow steps, the approval flow and the generated documents, with live updates on every screen.

- A shared master catalogue: equipment types with point templates, a versioned parts price list, a controller catalogue with capacities and compatibility, and a datasheet library.
- The eight steps of a project: Equipment, Site, Panels, Controllers, BOQ, Costing, Documents, Revisions. Any upstream change rebuilds the bill and re-costs it, live.
- The approval flow across five roles: submission, the technical decision, the pricing, the margin approval below the benchmark, the revision sent, the client answer recorded.
- Generated deliverables: the Commercial Offer and the Technical Submittal, every generation a numbered, immutable revision with the product datasheets appended in bill order.
- Schematic drawings of every equipment type and a riser diagram of the site, generated from the design, edited on the web or in Visio, printed into the submittal.
- Governance: a role by module permission matrix, a requests queue for catalogue changes, due dates per task, and an audit trail with before and after values.

The rule that shaped everything: a document can never disagree with the data that produced it. Prices are snapshotted the moment equipment is tagged, revisions are immutable, and a stale offer is refused.

The stack

SERVER **Node.js 20, Express 4**	DATABASE **PostgreSQL 16**	WEB APP **React 18, Vite**	LIVE UPDATES **Socket.io across workers**
DOCUMENTS **Headless Chrome PDF**	EXPORTS **Excel workbooks**	HOSTING **On premise, Nginx, PM2**	ACCESS **Roles by module, audit log**

05 MODULES AND FEATURES

What the system holds

Twelve modules behind one login, each guarded by the permission matrix.

MODULE	WHAT IT DOES	STATUS
`M01` Home	What awaits the reader, every project with its stage and holder, catalogue notices, the in-app guide	Live
`M02` Projects	Every enquiry: code, client, consultant, phase, status, files and timeline	Live
`M03` Project workflow	The eight steps with a guide on each, the approval banner and the project thread	Live

MODULE	WHAT IT DOES	STATUS
M04 Master database	The catalogue, the parts and price lists, the controllers, the datasheets	Live
M05 Requests	Additions, point changes and datasheets raised from projects, waiting on a decision	Live
M06 Diagrams	Schematic drawings per equipment type and the riser diagram of the site, web or Visio editing	Live
M07 Documents	Commercial Offer and Technical Submittal as numbered revisions with notes and print settings	Live
M08 Training	The team training per role, chapters and the folder of videos and slides	Live
M09 Users and roles	Accounts, the role by module matrix with member lists	Live
M10 System log	The audit trail, live, with field level changes	Live
M11 Settings	Days per task kind and the margin benchmark; a change re-dates every open task	Live
M12 Profile	Own identity, the work waiting today, what the role can open, the password rules	Live

Features worth a line

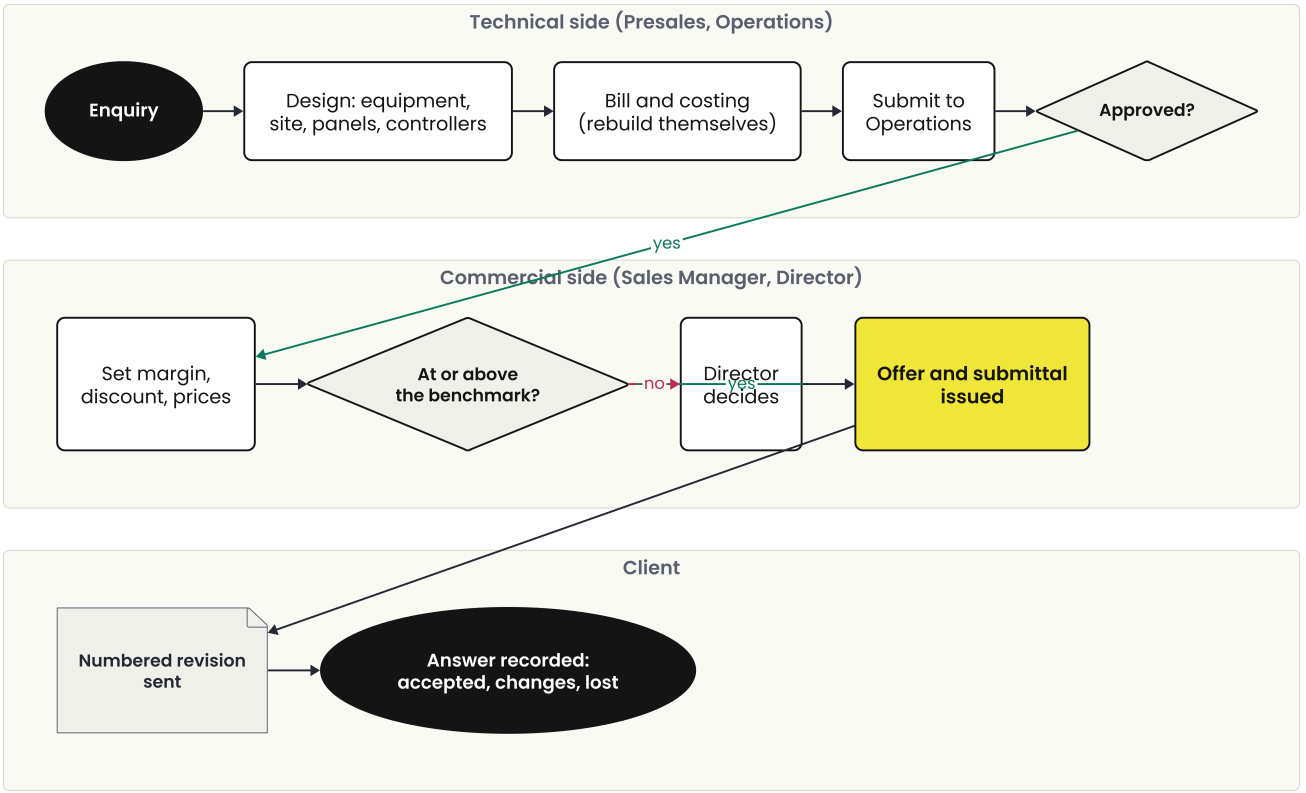
- Prices snapshot into the project the moment equipment is tagged
- An unpriced bill line blocks the Commercial Offer
- Selling prices are commercial, costs are technical: Sales never sees a cost
- Guide and photographed user manual on every workflow step
- The bill rebuilds itself from the selection and the fits
- Manual prices need a written reason that stays on record
- Every task carries a due date; overdue ones read red
- One command deployment with rollback snapshots

06 HOW IT WORKS

The flow, start to end

A project has a technical side and a commercial side. The flow below is the normal case: design, review, price, approve, send, record the answer.

FROM EQUIPMENT LIST TO RELEASED OFFER



Every move is written on the project thread, in the audit log and to everyone concerned as a live notification.

01 **Design.** Presales tags the equipment, maps the site, builds the panels, fits the controllers; the bill and the costing follow by themselves.

02 **Submit.** The design locks and goes to one Operations reviewer, with both documents rendered as drafts on the thread.

03 **Review.** Operations approves, asks for changes or rejects, with a reason and files. On approval the Technical Submittal is issued the same day.

04 **Price.** The Sales Manager sets the target margin, the discount and any hand-set line prices, without seeing a cost.

05 **Approve the margin.** At or above the benchmark the pricing clears itself; below it the Director decides. Clearing issues the Commercial Offer.

06 **Send and record.** The offer and the submittal go to the client as one numbered revision; the answer (accepted, changes requested, lost) sends the project on or back.

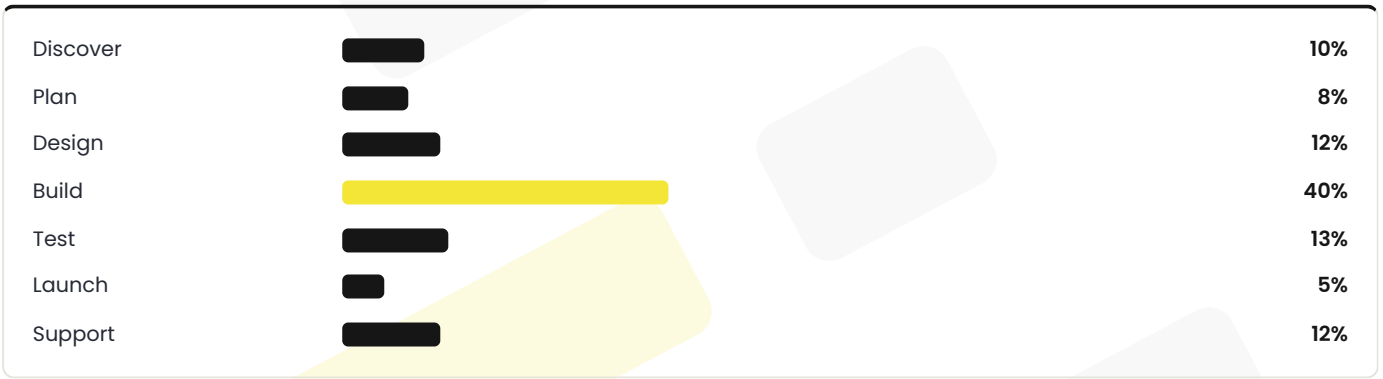
07 PROJECT STEPS

5 months, seven phases

Every Ektra project runs the same seven phases; here is what each one did for Smart Selection and the share of the 5 months it took.

PHASE	WHAT WAS DONE	SHARE	TIME
01 Discover	Followed one enquiry through every file Reverse engineered the costing and sizing workbooks	10%	2 weeks
02 Plan	Eight workflow steps and the approval flow agreed Data model: catalogue, projects, snapshots, revisions	8%	2 weeks
03 Design	The workflow screens with a guide on every step The two documents designed to the client brand	12%	3 weeks
04 Build	Catalogue, workflow, sizing and costing engines Approval flow, documents, diagrams, live updates	40%	9 weeks
05 Test	Engines verified against the source workbook to the cent Four roles on four projects at once, every branch of the approval cycle	13%	3 weeks
06 Launch	One command deployment with rollback snapshots Team training per role, the in-app user manual	5%	1 week
07 Support	Eight review rounds, versions 1.1 to 1.8 Each round a modification report with every request and its fix	12%	2 weeks

Share of the duration

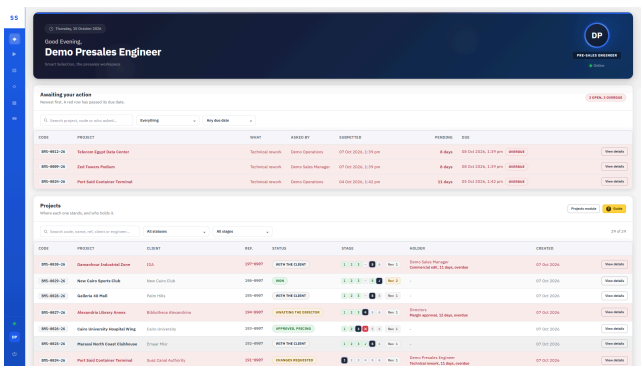


08 SCREENS

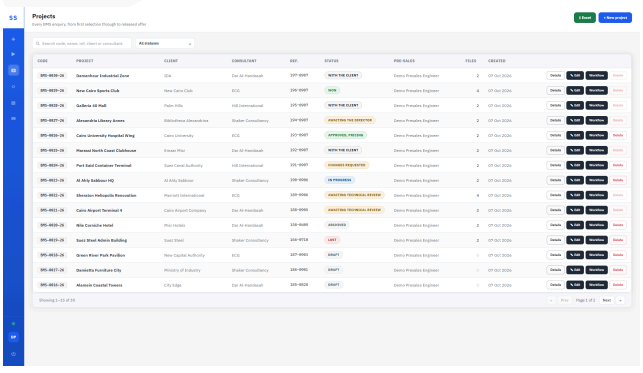
Real screens

Real screens of the delivered system, under the project's new name and accent, with demo data.

SMART SELECTION, AS DELIVERED

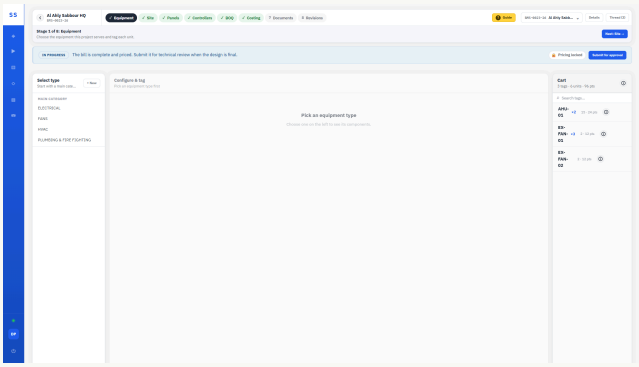


Home: what awaits the reader, every project with its stage

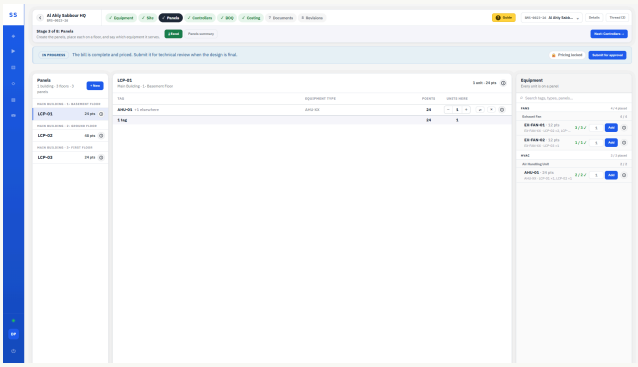


Projects: every enquiry with its phase and status

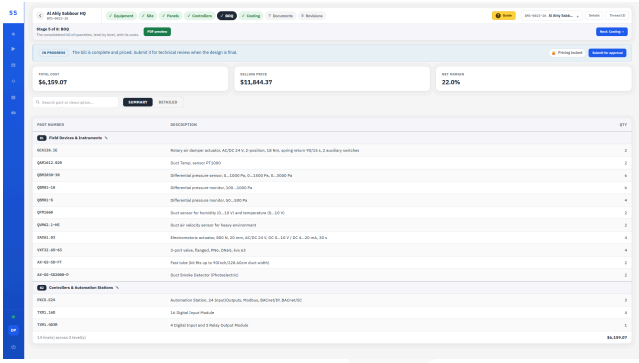
SMART SELECTION, AS DELIVERED



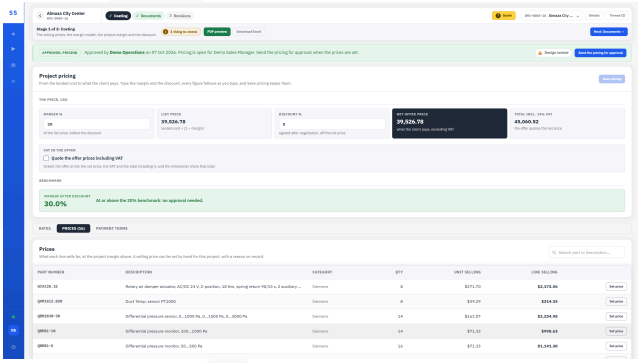
Step 1, Equipment: tag the units against the catalogue



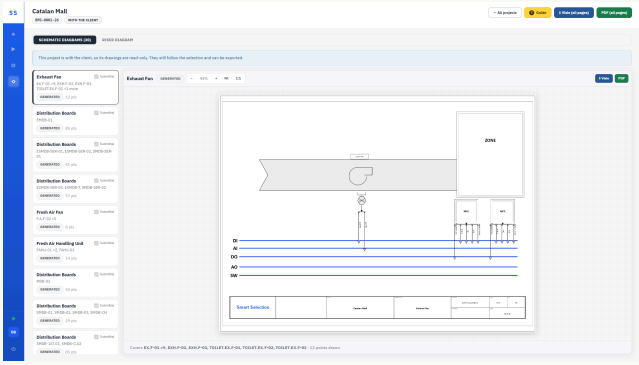
Step 3, Panels: equipment assigned, points accumulating



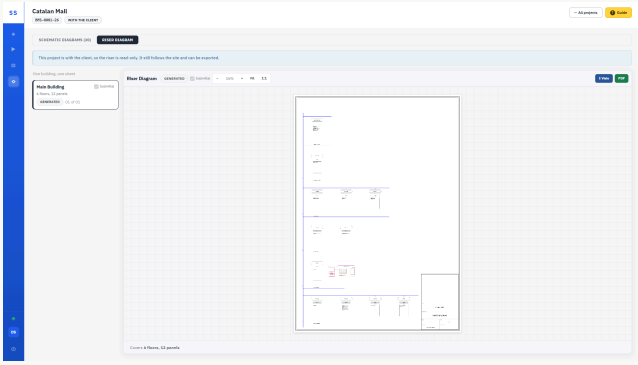
Step 5, BOQ: the bill built from the selection and the fits



Step 6, Costing: landed cost to selling price, margin against the benchmark



Diagrams: a schematic drawing generated from the design



The riser diagram of the site

09 DELIVERY TIMELINE

22 weeks end to end

The 5 months, phase by phase, from the first conversation to the first weeks in use.

WEEKS 1 TO 2 **Discover**
The chain mapped, the rules written down, the five roles named.

WEEKS 3 TO 4 **Plan**
The scope, the data model and the release plan.

WEEKS 5 TO 7 **Design**
Screens and document layouts approved on real data.

WEEKS 8 TO 16 **Build**
The system, module by module, on the client server.

WEEKS 17 TO 19 **Test**
Every figure recomputed end to end; every change seen live on the other screens.

WEEK 20 **Launch: go-live**
The team at work in the system, the spreadsheets retired.

WEEKS 21 TO 22 **Support**
Diagrams, VAT choice, riser, pricing refinements, all from the team's reviews.

10 RESULTS

What changed

The chain that lived in files now lives in one system. What changed is confirmed by the team that uses it; no figure is claimed that was not measured.

- A document can never disagree with the data that produced it: prices are snapshotted, revisions are immutable, a stale offer is refused.
- Every change is visible to everyone the moment it happens, on every open screen, with no page reload.
- Each task has a due date and an owner; the dashboard counts the days and marks the overdue ones.
- The Technical Submittal is issued on approval and the Commercial Offer the moment its price clears, without anyone pressing a button.
- Eight release rounds since go-live, each one answering the team's review notes.

> Time saved and error rates are not published because they were not measured in a controlled way.

11 SUPPORT AND NEXT STEPS

After launch

The system is in version 1.8 and keeps growing from the team's reviews.

- **Release procedure:** one command builds, snapshots, uploads, migrates and reloads behind a health check; the last five releases can be rolled back.
- **Review rounds:** every round is answered with a modification report: the request, the solution and how to check it.
- **Documentation:** project documentation, technical documentation, analysis and design, and a photographed user manual, kept in step with the code.
- **Training:** a training deck and narrated videos per role, linked from inside the system.

Next steps

- Email codes at sign-in once the client's mail relay is connected
- Integrations with the client's other systems when they are ready

End of document
Version 1.0. A workbench like this for your own offers: info@ektra-eg.com.

REFERENCE
PD-EKTRA_0001