CODEFRONT LABS / TECHNICAL CASE STUDY

Bidwright

From project scope to a reviewed construction proposal.

The challenge

Contractors need to establish quantities, source current costs, review assumptions, and preserve what was approved when a proposal changes. An extracted scope and a plausible total are not enough.

The product

Bidwright connects project scope, document review, takeoff, cost library, estimate, proposal, and change orders in one persistent workspace. Uploaded documents are stored privately with source hashes. Suggestions retain citations and reviewer decisions before becoming editable takeoff. Verified measurements and sourced rates feed a deterministic estimate engine, and reviewed estimates produce versioned PDF proposals.

Key decisions

AI suggestions require source evidence and human review. Financial calculations remain deterministic, with currency-safe handling of waste, labor, tax, markup, margin, and cent reconciliation. Published proposals retain an approved snapshot; revisions and change orders preserve the original financial baseline.

Architecture

A Next.js and TypeScript frontend uses TanStack Query and a same-origin API proxy. FastAPI, SQLAlchemy, and PostgreSQL manage organization-scoped data and financial records. Redis-backed RQ workers handle document extraction, OCR, and optional AI analysis. Private MinIO storage holds source documents and PDFs; a Vercel frontend connects to an isolated Docker backend.

Boundaries

Demonstration quantities and rates are synthetic, not customer results or market prices. Contractors supply and verify their own costs. Client decisions are recorded manually; automatic email delivery, e-signatures, payments, accounting integrations, and automatic drawing measurements are outside the documented implementation. External AI processing requires a configured provider and explicit organization consent.

Explore

Visit bidwright.codefrontlabs.com to learn more about the product. This case study describes the documented implementation and does not claim customer savings, adoption figures, or commercial outcomes.