

SITEORDER

Material ordering app for construction site foremen —
idea validation, scope, architecture and estimate before
any code is written.

Sample report based on a real engagement. Client name and identifying details
have been changed.

CLIENT

Northbridge Builders

Mid-size construction contractor

PREPARED BY

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DATE

2025

01 EXECUTIVE SUMMARY

Verdict, scope decision and the numbers that support them – two delivery approaches costed against one MVP.

VERDICT

BUILD – with a reduced MVP

Recommended approach: **Spec-Driven Development (SDD)**.
AI recognition of handwritten lists moves to post-MVP.

THE PROBLEM

Foremen write material requests by hand on paper. Handwriting is often unreadable, so the office orders the wrong items or quantities. Foremen are rarely in the office, so requests reach procurement late.

Result: wasted materials, re-orders and site delays.

THE SOLUTION

A mobile-first web app where foremen pick materials from the company catalog and set quantities in a few taps; the office reviews, approves and tracks each order; foremen are notified at every status change.

Dev with AI

Developers write the code,
AI assists

Hours 380–460

Timeline ~10–12 weeks

Team 2 developers + QA

● Exceeds budget

Spec-Driven Development

Detailed specs, code generated by
AI agents, senior engineer reviews
and tests

Hours 210–260

Timeline ~6 weeks

Team 1 senior engineer + part-time QA

● Fits budget

~6

weeks to MVP
with SDD

240

engineering hours
(210–260)

€15k

budget – the MVP
fits it

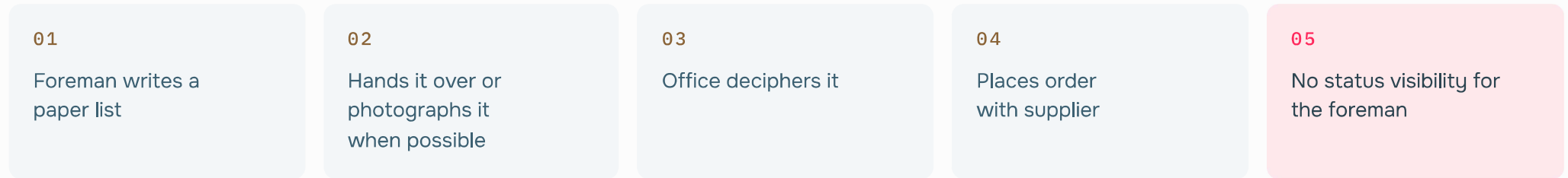
BUDGET LINE

€15,000 ≈ 330 hours at a typical €45/h rate

02 PROBLEM & VALIDATION

How ordering works today, where it breaks, and why a focused custom tool beats an off-the-shelf platform.

CURRENT PROCESS



WHERE IT BREAKS

- Unreadable handwriting
- Missing units – boxes vs pieces vs m²
- Delays when the foreman isn't in the office
- No confirmation loop

BUILD VS BUY

Off-the-shelf procurement tools were considered; they are built for larger companies, priced per seat, and too complex for foremen on site. A focused custom tool is cheaper and matches the actual workflow.

VALIDATION CONCLUSION

Technically straightforward to build; the real risk is adoption, not technology.

03 **USERS & KEY FLOWS**

Two roles, one order lifecycle. Everything else in the product exists to serve these two paths.

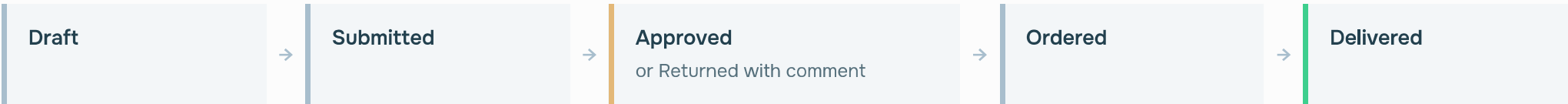
FOREMAN

Creates material orders from site, tracks their status.

OFFICE / PROCUREMENT

Reviews, edits, approves orders, updates statuses, manages users, sites and catalog.

ORDER LIFECYCLE



FOREMAN FLOW

- 01 Select site
- 02 Search or pick from recent / favourite items
- 03 Set quantity – unit fixed by catalog
- 04 Add note or photo
- 05 Submit

OFFICE FLOW

- 01 Notification of new order
- 02 Review, adjust quantities or substitute with a comment
- 03 Approve or return
- 04 Mark as ordered
- 05 Mark as delivered

04 SCOPE – MVP & DEFERRED

The MVP line is fixed. Anything outside it goes to the post-MVP backlog rather than into the €15k build.

MVPForeman
Login
Select site
Browse and search catalog
Recent and favourite items
Quantity with fixed units
Note and plain photo attachment
Save draft offline
Submit
Order status tracking
Notifications

MVPOffice
Dashboard of incoming orders
Filter by site and status
Edit quantities / substitute items with comment
Approve or return
Mark ordered and delivered
Manage users and sites
Catalog import
Units are locked per catalog item – the single change that removes most ordering errors.

POST-MVPDeferred scope
01 AI recognition of handwritten lists – a photo becomes a structured order matched to the catalog, the foreman confirms before submit
02 Delivery confirmation with photo
03 Material spend reporting per site
04 Live catalog API sync replacing CSV import

MVP IS DONE WHEN	A foreman places a correct order from site, unaided, in under a minute	The office approves, orders and marks delivery without paper or phone calls	Every status change reaches the foreman automatically
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05 ARCHITECTURE

One PWA, one API, one database on AWS – with the AI layer isolated so it can arrive after the MVP.

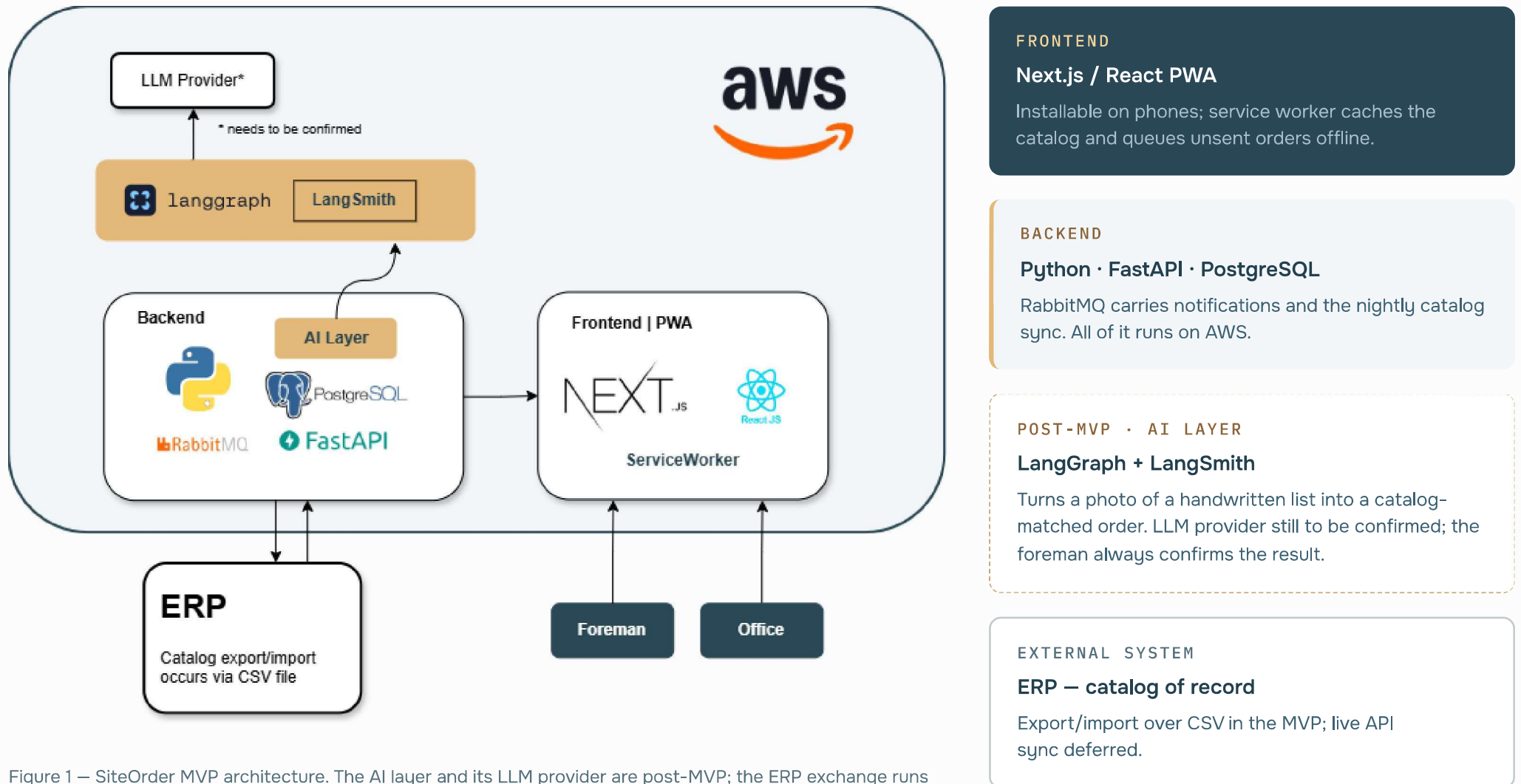


Figure 1 – SiteOrder MVP architecture. The AI layer and its LLM provider are post-MVP; the ERP exchange runs on scheduled CSV export/import until a live API replaces it.

06 NON-FUNCTIONAL REQUIREMENTS

Set by the site, not by the stack.

AREA	REQUIREMENT	HOW IT IS VERIFIED
USABILITY	Mobile-first, an order in under 60 seconds, large touch targets – gloves and sunlight.	Timed in the pilot: a foreman places a correct order in under a minute, gloves on, outdoors.
OFFLINE	Drafts saved on device and sent automatically when connection returns – site connectivity is poor.	Airplane-mode draft during a real site visit, then confirmed delivery once signal returns.
PERFORMANCE	Screens load in under 2 seconds on 4G, with a catalog of several thousand items.	Throttled 4G run on the pilot handsets against the full imported catalog.
SECURITY	Role-based access, HTTPS, secure authentication; foremen see only their own sites.	Role matrix reviewed at handover; a foreman account is tested against another site's orders.
DATA	Daily backups; minimal personal data held (GDPR).	One restore rehearsed before rollout; the data held per user is listed in the spec.
AVAILABILITY	Business hours are critical; no 24/7 requirement.	Uptime monitoring with alerts on business-hours failures only.
MAINTAINABILITY	Specifications and documentation delivered as part of the handover.	Another engineer can pick the project up from the specs alone – tested at handover.

Every line here is testable. The 60-second order, the 2-second screen load and offline recovery are all measured during the week-6 pilot, on real site connectivity rather than office Wi-Fi.

07 RISKS & MITIGATION

Adoption and catalog quality are the two that can sink this; both are handled before a line of production code ships.

RISK	IMPACT	MITIGATION
Foreman adoption – low tech comfort, busy on site	● High	Ordering in ≤3 taps, recent / favourite items, pilot with 2–3 foremen before full rollout
Catalog data quality from the third-party system – duplicates, unclear names, inconsistent units	● High	One-time cleanup before launch, units locked per item
Push notifications on iPhone work only after the app is added to the home screen	● Medium	Onboarding step for installation, email fallback
Poor connectivity on sites	● Medium	Offline drafts and send queue
Scope creep beyond budget	● Medium	Fixed MVP scope, everything else goes to a post-MVP backlog
Handwriting recognition accuracy	● Medium · deferred	Validate after MVP; foreman confirmation step is mandatory
Single engineer dependency in SDD	● Medium	Specifications and documentation are the handover artifact

The pilot in week 6 is the gate: if two foremen cannot place an order unaided, rollout waits and the flow is reworked before more scope is added.

08 ESTIMATE & ROADMAP

WORKSTREAM	DEV WITH AI	SDD
Specification & project management	40	48
Project setup, CI/CD, environments	24	12
Authentication, roles, user management	32	16
Materials catalog + CSV import	40	20
Foreman order flow (PWA)	64	32
Offline drafts & sync queue	40	20
Office dashboard – review, edit, approve	56	28
Notifications – web push + email fallback	32	16
Order history & basic reporting	24	12
QA & user acceptance testing	48	24
Deployment, monitoring, handover	24	12
TOTAL	424	240
Range	380–460	210–260

In SDD most effort moves into specification and review; implementation is generated from specs and verified by the engineer.

MVP hours per workstream against both approaches, and the six weeks they sit in.

PHASE 1	Specification
Week 1	Final requirements, catalog cleanup, specs.
PHASE 2	MVP build
Weeks 2–5	Core ordering, office dashboard, notifications, offline.
PHASE 3	Pilot
Week 6	2–3 foremen, feedback, fixes.
PHASE 4	Rollout
After pilot	All foremen, onboarding.

POST-MVP SDD hours

~48h

AI handwritten list recognition

~24h

Delivery confirmation with photo

~32h

Spend reporting per site

~24h

Catalog API sync

09 NEXT STEPS

Four steps, about two weeks of elapsed time, before week 1 of the roadmap can start.

01

Schedule the scoping call

60 minutes with you, one foreman and whoever owns procurement – we walk the catalog, confirm units and agree the pilot site.

Ihor sends three slots this week

02

Sign off the MVP scope

Page 05 as written, or with named cuts. Anything added after sign-off goes to the post-MVP backlog, not into the €15k.

Northbridge Builders · after the call

03

Decide the delivery setup

SDD with one senior engineer and part-time QA, or your own team on the same specs. This is the €15k decision.

Northbridge Builders · within two weeks

04

Specification week starts

Week 1 of the roadmap: requirements frozen, catalog cleaned, specs written. The build starts the week after.

On scope sign-off

OPEN BEFORE WE START

- Who owns the ERP catalog export, and in what format
- Two or three foremen named for the week-6 pilot
- AWS account: yours or newly provisioned

WHAT YOU GET IN WEEK 1

- Frozen functional specification for the MVP
- Cleaned catalog with units locked per item
- Week-by-week delivery plan with the pilot date fixed

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I write the specs, review what gets built and stay on the project through the pilot.

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