

AI-Driven Submittal Extraction from Construction Specbooks

How a leading construction company reduced document review effort by up to 85% and cut turnaround time from days to hours with an intelligent multi-agent AI workflow.

CLIENT OVERVIEW

A leading construction company in North America managing multiple large-scale projects, requiring efficient handling of project documentation and compliance processes. With hundreds of pages of specification books per project and a growing portfolio, the organization needed a modern approach to keep pace with operational demands.

THE CHALLENGE

Manual Processes Were Holding Back Growth

- ⚠ Manual review of large specbook PDFs — hundreds of pages per project
- ⚠ Time-consuming and resource-intensive submittal identification process
- ⚠ High risk of human errors and missed critical details
- ⚠ Lack of scalability across multiple ongoing projects
- ⚠ No automated system to extract and structure submittal data



OUR SOLUTION

An Intelligent Multi-Agent AI Workflow

We designed and implemented an end-to-end AI-driven document processing pipeline, orchestrated through a multi-agent architecture with human-in-the-loop validation.



Trigger-Based Workflow

Automated initiation of specbook analysis upon document upload, eliminating manual kickoffs.



Fileset Organizer Agent

Structures and prepares PDF documents for downstream processing, ensuring consistency.



Section Identification Agent

Accurately classifies specification sections using AI-powered document understanding.



Submittal Extraction Agent

Captures relevant submittal data fields and stores them in a centralized database for access.



Validation & Re-Analysis

Built-in approval/rejection workflow with a Re-analysis Agent that reprocesses rejected items for improved accuracy.



Structured Data Export

Final approved data exported as structured CSV, ready for downstream systems and reporting.

BUSINESS IMPACT

Measurable Results, Immediate ROI

75–85%

REDUCTION IN MANUAL REVIEW EFFORT

~80%

FASTER TURNAROUND TIME

30–40%

IMPROVEMENT IN DATA ACCURACY

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SCALABILITY ACROSS PROJECTS

Processing time dropped from **days to hours**, freeing teams to focus on high-value project management activities instead of repetitive document review.

The multi-agent architecture enables the organization to handle multiple projects simultaneously without proportional increases in headcount or overhead.

TECHNOLOGY STACK

Built on a Modern Data Platform

Domo Platform

Fileset & Workflow

APP_DB

App Studio

AI Agents

PDF Processing

VALUE DELIVERED

From Manual Bottlenecks to Intelligent Automation

By deploying an AI-driven, multi-agent document processing workflow, we transformed a labor-intensive, error-prone process into a scalable, intelligent system. The solution not only delivers immediate efficiency gains and cost savings but positions the organization for sustained growth enabling them to take on more projects without scaling manual effort.

