BEE ACCESS

CANOPY BRANDS

BUILDING ENGINEERING AUTOMATION TOOLS WITH AI

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Innovation at Elevation®

Where We Started

- Engineering procedures built and adapted over years
- Verbal communications and tribal knowledge common
- Lower volume, smaller team made product release and changes easier to communicate/maintain

“…that’s how we have always done it.”

Company Growth, Need to Adapt

1. Limited user access

2. Inconsistent results

3. Outdate files





Limitations

- Hardware
  - Availability of PC to run automated tasks
- Software
  - Lower tier SolidWorks PDM, limited features and ability to set up automated tasks natively
- Licensing
  - Limit number of SolidWorks and PDM licenses required

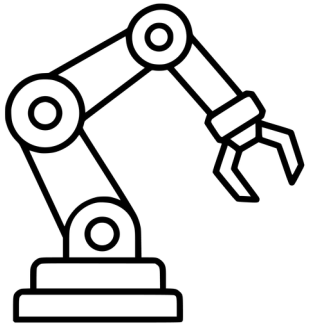
	Standard	Pro
Workflow and automation		
Workflows and transitions	Limited	✓
Notifications	Basic	✓
Conditional / parallel transitions	✗	✓
Tasks (convert to PDF/STEP, print)	✗	✓
Dispatch scripting	✗	✓
API and custom add-ins	✗	✓
Folder / file templates	✗	✓

Ideation

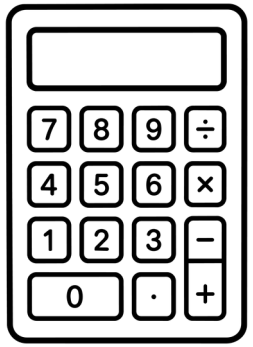
- Cross-team input early in development
- Who is going to use this?
- What features/functions are we really looking for?



Sales



Manufacturing & Operations



Accounting

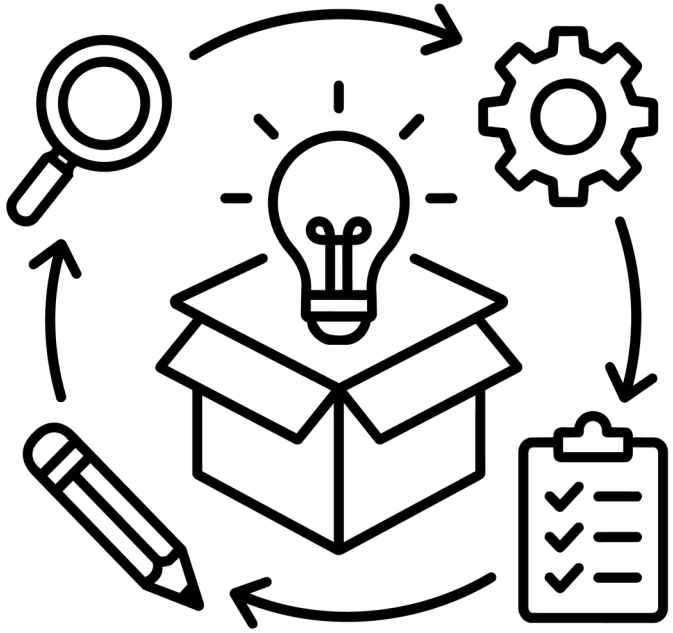
Goals

- Reliable, consistent results (documentation, formatting, etc)
- Relied on Claude AI heavily for development
- Require no reliance on AI after implementation
  - Built-in AI features allowed, but need non-AI fallbacks



Development

- Used Claude Code
- Iterative process – limited releases of utilities for testing and feedback
- Co-development converged on common solution (MFG Package Builder)



ECR Tool

- ECR = Engineering Change Request
- Heavily dependent on ECR administrator to create document and organize files.
- “Spreadsheet management” for progress of ECR’s and tracking.
- Commercial options require a different platform and usually require setting up every user in new software.

ECR Tool Prompt

- Prompt to Claude (Code) AI

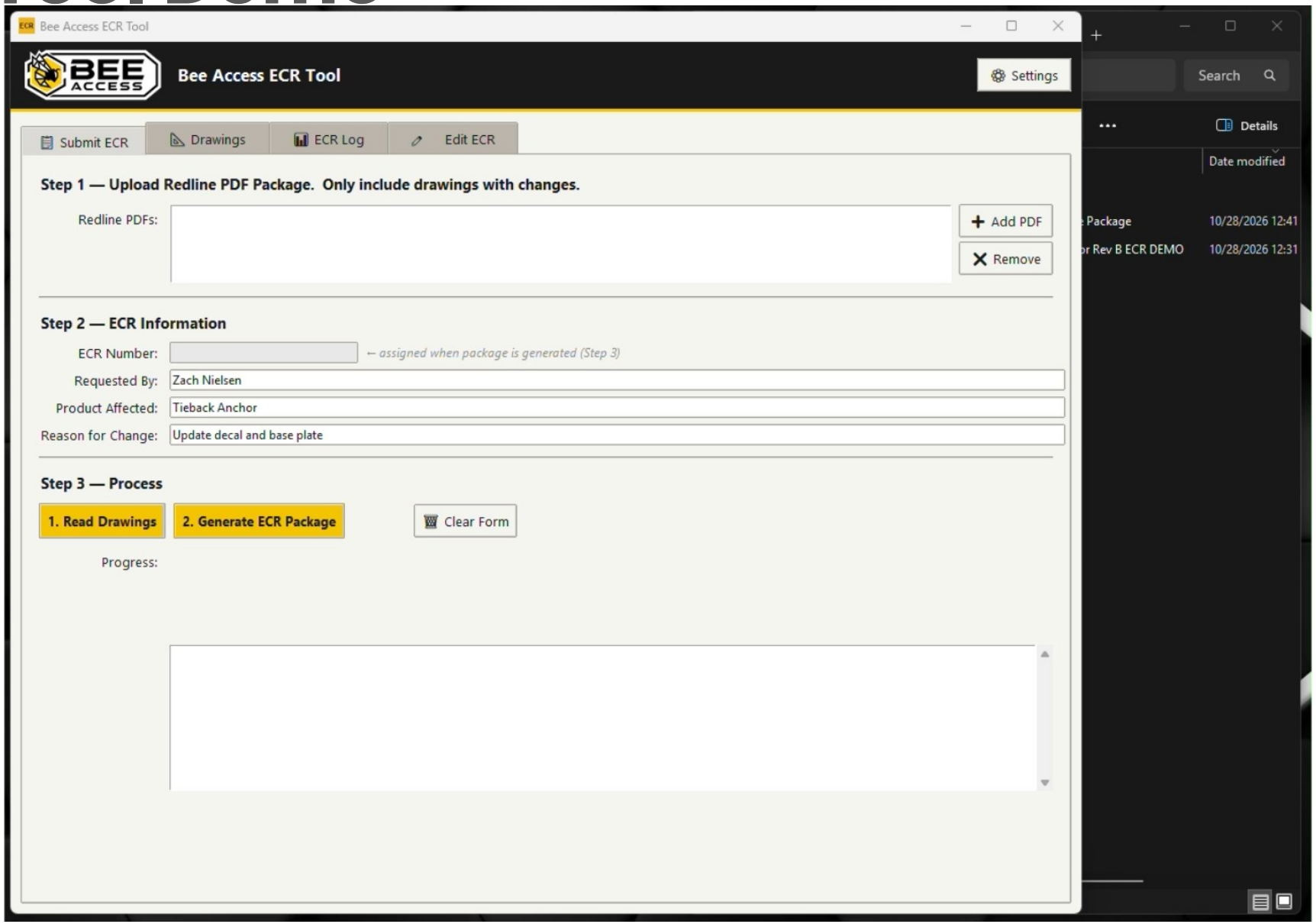
I want to build a Submit/Edit ECR package app to automate time consuming creation and administration of ECR's

User to provide redline PDFs → AI reads drawing #, rev, description → window to review/correct → generate fills PDF cover sheet, merges into {ecr_num} Complete Package.pdf → logs to Excel.

Edit tab updates existing ECRs with new redlines.

Output example: BA-26-1001 Complete Package.pdf.

ECR Tool Demo



Manufacturing Package Builder

- Complete set of prints needed to manufacture a product.
- Previously compiled by hand. Simple parts 10-15 minutes, complex designs could take multiple hours.
- Cut List summary didn’t exist before this utility. Purchasing and Operations had to gather that information for each job.

Mfg. Package Builder Prompt

- Prompt to Claude (Code) AI

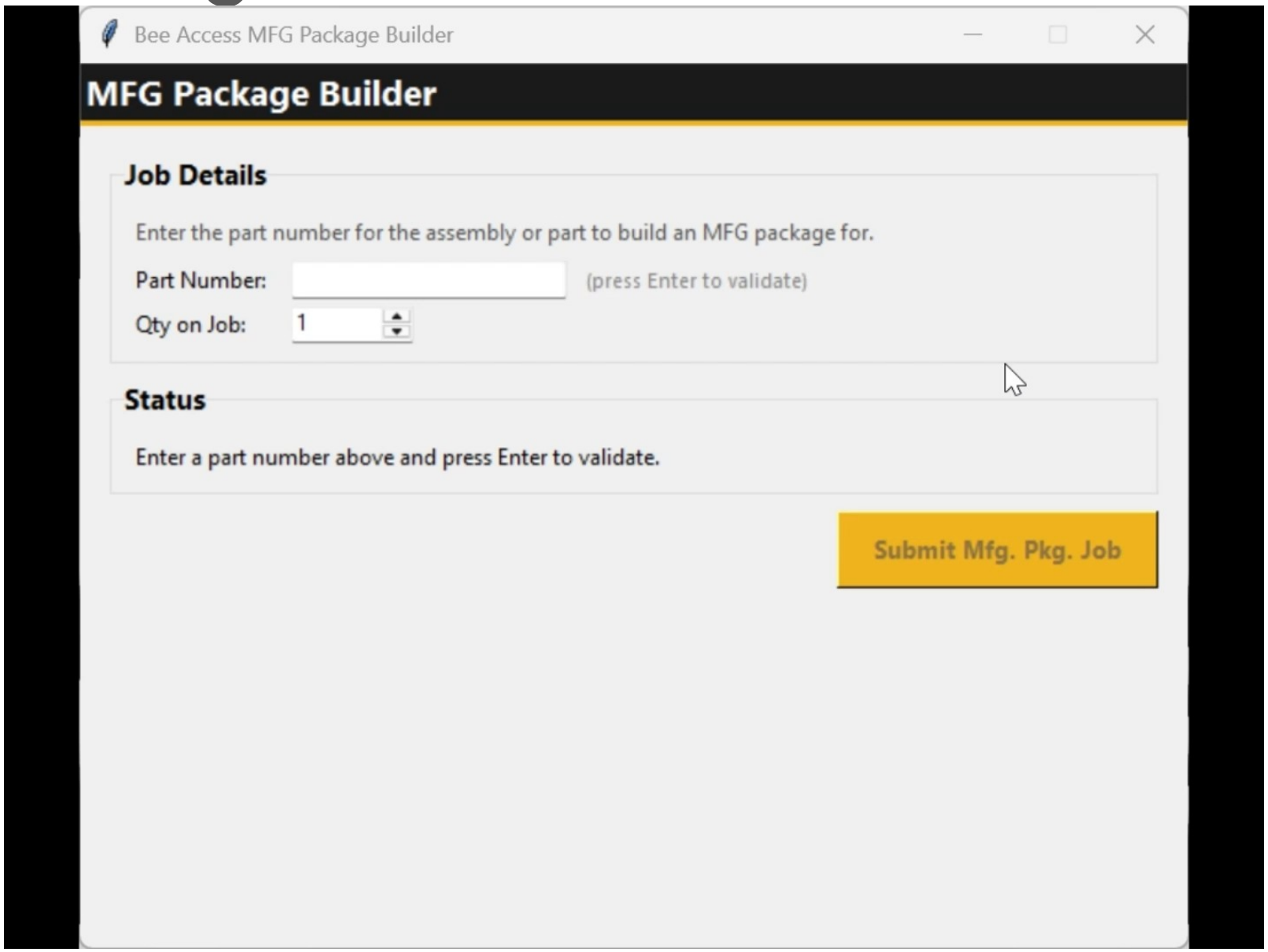
I want to build a manufacturing drawing package system.

SolidWorks + PDM Standard, SQL Server backend (BEE-PDM on SERVER-PDM01).

Python app: user enters assembly part number → validate BOM against PDM workflow states → submit job to a watch folder. PowerShell watcher on host launches SolidWorks headless → VBA macro walks BOM, exports PDFs (reuses vault PDFs where nothing changed), merges into one file, signals done.

App polls for result and shows a preview with print. Output: 320148 Rev C Mfg Dwgs.pdf.

Mfg. Package Builder Demo



What we gained/saved

- ECR Tool
  - Easy access for all users.
  - No new software or subscription cost.
  - Time savings: 20-30 minutes, or more, per ECR.
  - Easily referenced history within our existing environment.

- Manufacturing Package Builder
  - Cost for PDM Pro: Approx. $25k annually.
  - Time savings: 10-15 minutes for simple designs, multiple hours for complex designs.
  - Cut list summary: huge time savings for Purchasing & Operations.



Thank You!!

Questions?

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