Chase Kramer

Mechanical Engineering Student | Manufacturing & Process Design | Founder, AEGIS

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Summary

Manufacturing and mechanical engineering student at Grand Rapids Community College, transferring to Michigan Technological University to complete a BSME. Focused on manufacturing flow, automation, process optimization, fixture design, and PLC logic. Experience spans plant layout, CAD/fixture design, lean process improvement, and thermal/fluid system modeling, developed through internships at Knape & Vogt Manufacturing and Challenge Manufacturing, contract engineering work for Waste2Nano, and hands-on personal projects.

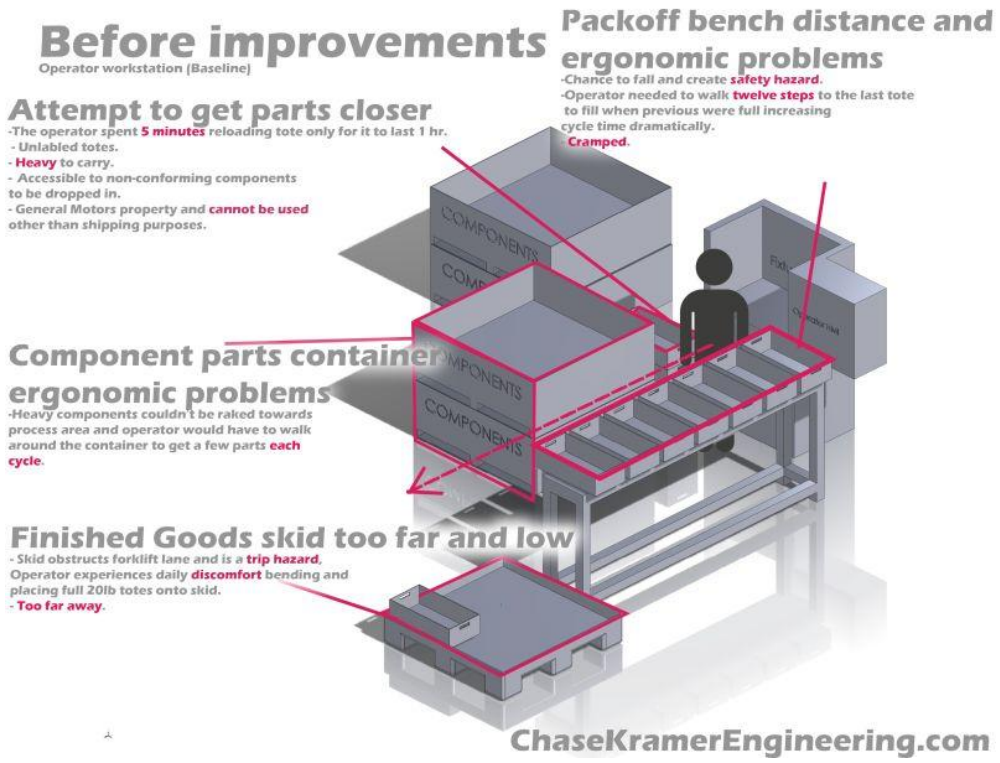
Project Highlights

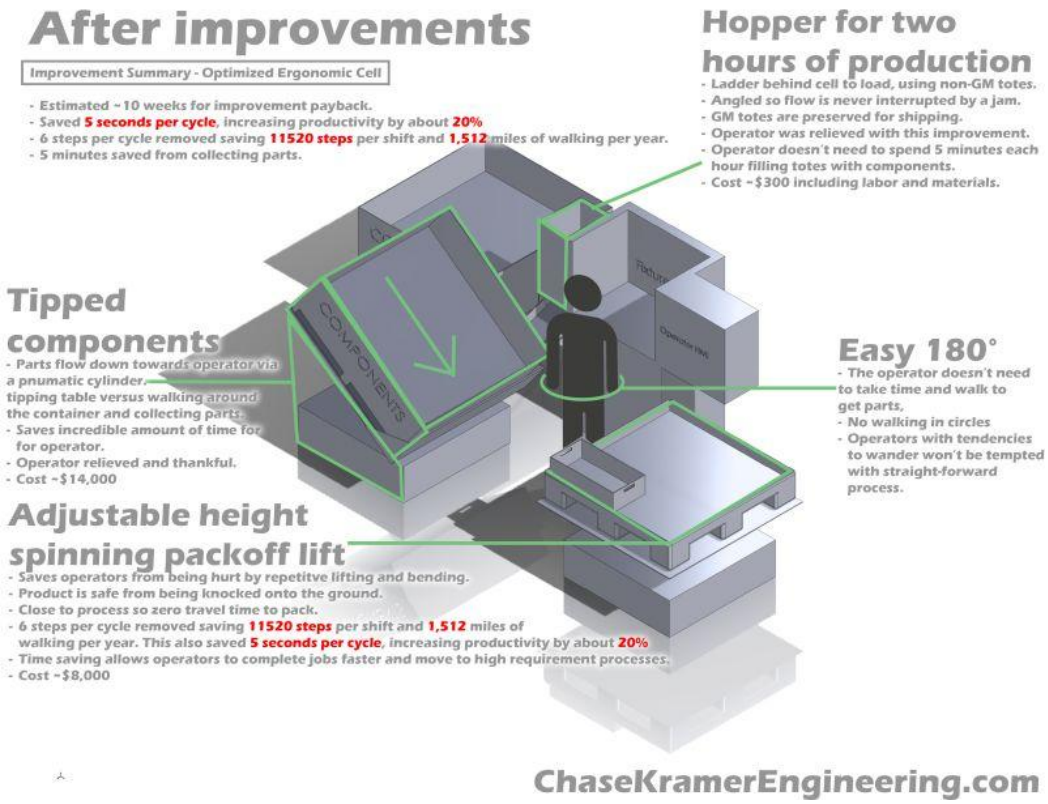
Workstation Ergonomics & Assembly Optimization

Challenge Manufacturing — Manufacturing Supervisor

Led a redesign of a high-volume automotive assembly workstation to eliminate unnecessary operator movement. Removed a problematic inventory system and installed component hoppers with tilt decks to streamline material delivery, rethinking ergonomics, part flow, and component access from the ground up.

- Eliminated 6 operator steps per cycle, saving over 11,500 steps per shift — the equivalent of 1.5 miles of walking eliminated every day (1,500+ miles/operator/year).
- Boosted station productivity by approximately 20%, with a 10-week payback period on the redesign.
- Freed personnel capacity for other production requirements without adding headcount.



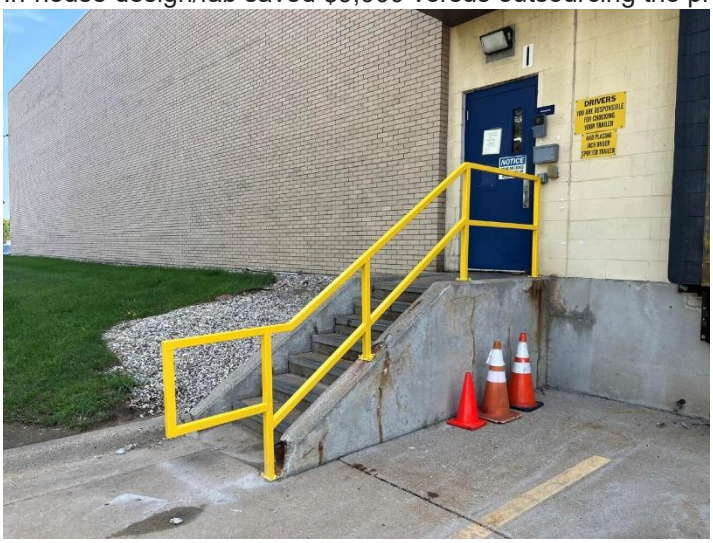


SolidWorks Handrail Replacement — Shipping Dock

Knape & Vogt Manufacturing Company — Manufacturing Engineering Intern

Designed a replacement shipping-dock handrail in SolidWorks to bring the structure into compliance with OSHA 1910.29 fall-protection requirements. Optimized ASTM A500 Grade B stock lengths to minimize material waste, then coordinated in-house design and fabrication rather than outsourcing the job.

- Brought guarding into OSHA 1910.29 compliance with a fully in-house design and fabrication effort.
- Optimized structural steel (ASTM A500 Grade B) stock lengths to reduce drop and material cost.
- In-house design/fab saved $9,000 versus outsourcing the project.

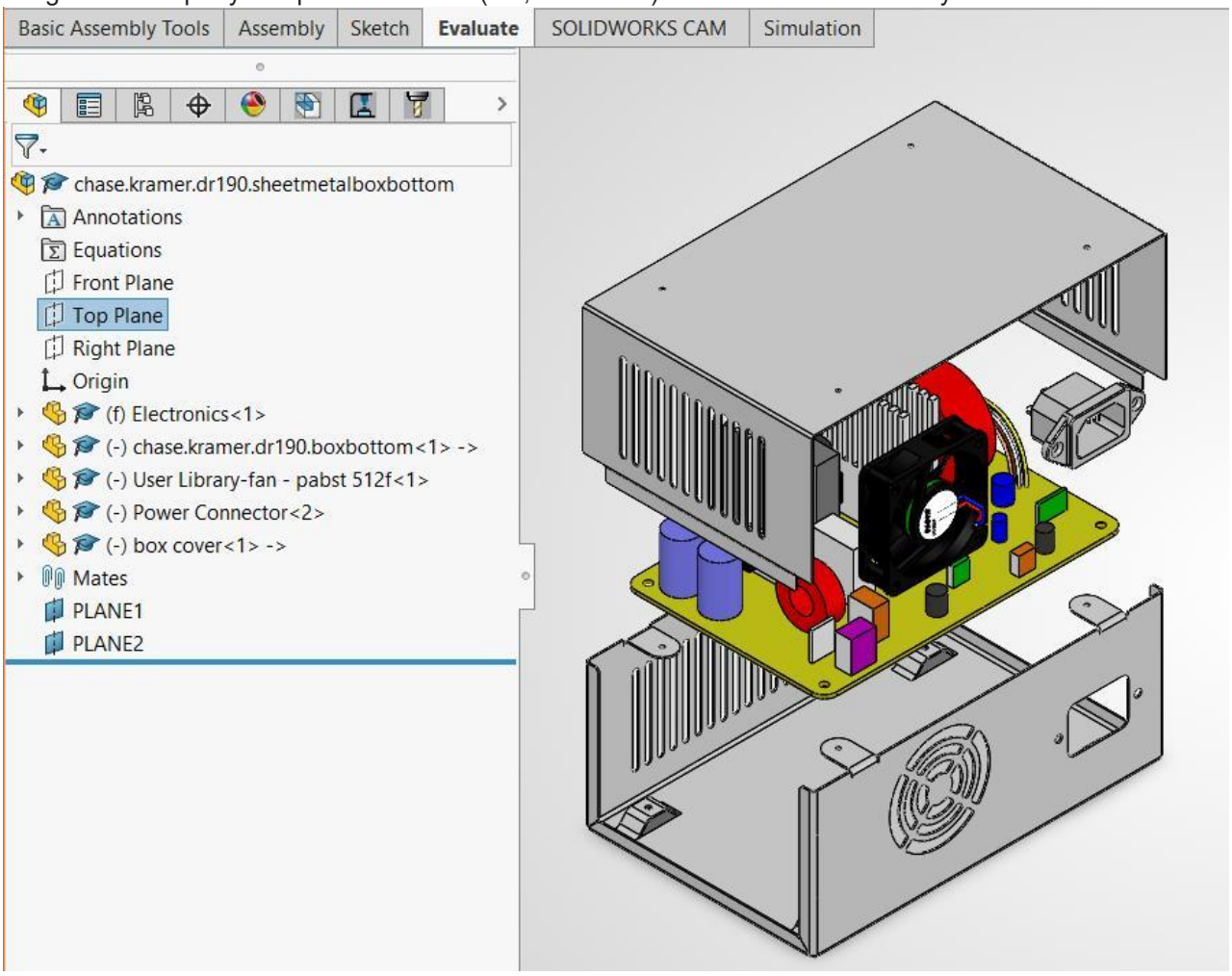


SolidWorks Power Supply Case & Components

Personal Project — Grand Rapids Community College

Designed a practical sheet-metal enclosure for a power supply, integrating library electrical components including a PABST 512F cooling fan and a power connector. The design prioritized airflow and real-world manufacturability over a purely conceptual layout.

- Applied SolidWorks sheet metal design tools to produce a manufacturable enclosure.
- Sized and placed ventilation for realistic thermal airflow around the cooling fan.
- Integrated third-party component libraries (fan, connector) into a cohesive assembly.

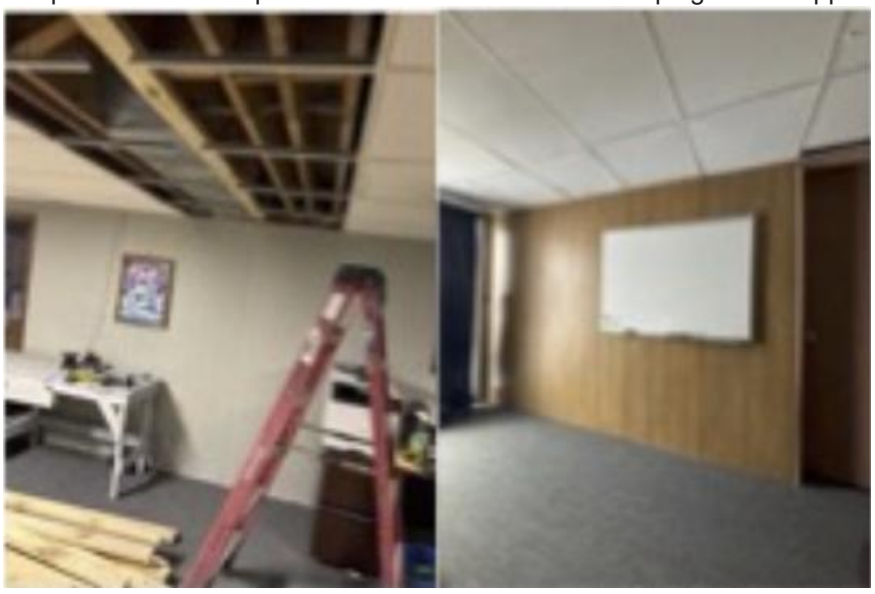


Residential Construction — Basement Bedroom Wall

Personal Project

Built a 14' x 7' non-load-bearing basement wall using stick-frame construction methods to create a code-compliant bedroom. Worked through real-world build issues rather than a clean textbook install.

- Framed and finished the wall to meet code requirements for a legal bedroom.
- Resolved an electrical circuit issue that required licensed inspection before sign-off.
- Adapted the build sequence to account for material warping in the supplied lumber.



Full resume, engineering guides, and additional detail available at chasekramerengineering.com