

Emmanuel McClain

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SUMMARY

Manufacturing mechanical engineer with 13 years of experience delivering facilities and process infrastructure for automotive **powertrain**, electrification, machining, and casting operations. Leads programs from **scope definition** and investment assessment through RFQ, sourcing, design, installation, qualification, and production launch. Coordinates safety, quality, delivery, cost, scope, and timing across new model, **non new model**, and adaptation programs. Experience includes site preparation, machine installation, air, mist, and coolant collection, filtration, plant utilities, equipment standards, and systematic **root cause problem solving**. Builds practical alignment among product engineering, procurement, suppliers, plant teams, contractors, and global technical groups. Supports multi plant programs while mentoring engineers and strengthening standard work that improves launch readiness, reliability, and investment decisions.

EXPERIENCE

Senior Manufacturing Facilities Engineer

May 2022 - Present

Vertex Powertrain Engineering

Auburn Hills, MI

Leads **facilities engineering** for engine and electrification programs across multiple manufacturing sites, guiding infrastructure scope, sourcing, installation, qualification, launch readiness, and team development.

- Integrated infrastructure scope with equipment layouts, installation plans, and launch milestones across multiple sites.
- Directed RFQ evaluations for mist, coolant, air handling, and filtration systems supporting production needs.
- Built process change investment assessments covering facility modifications, utility demand, and installation sequencing.
- Governed **site preparation** and **machine installation** through scope, timing, and cost reviews before construction.
- Applied **root cause problem solving** to recurring facilities issues, converting findings into **equipment standards**.
- Mentored engineers through sourcing, design reviews, **qualification**, and launch readiness with cross functional stakeholders.

Manufacturing Mechanical Engineer

February 2019 - April 2022

Motor City Manufacturing Solutions

Detroit, MI

Delivered mechanical facilities packages for powertrain machining and assembly operations, managing approved requests, utility connections, design standards, and production focused installation planning.

- Delivered facilities packages from concept and **scope definition** through **installation** and production acceptance.
- Prioritized approved **non new model** requests by urgency, production impact, funding, and installation windows.
- Coordinated machine utilities, foundations, **coolant** services, collection systems, and site preparation with plant teams.
- Used scope, **timing**, and cost tracking to surface tradeoffs before field conditions affected execution.
- Partnered with product and manufacturing engineers during **Design for Manufacturing** reviews before equipment finalization.
- Standardized mechanical infrastructure specifications and design practices across repeat installations at multiple facilities.

Facilities Project Engineer

June 2016 - January 2019

Lakeshore Automotive Systems

Dearborn, MI

Executed facilities projects for engine, transmission, and component manufacturing, translating process requirements into mechanical scopes, **sourcing** packages, installation plans, and launch support.

- Translated process requirements into mechanical scopes for **engine**, **transmission**, and component manufacturing projects.
- Prepared **RFQs** comparing supplier responses for **filtration**, mist collection, ventilation, piping, and infrastructure.
- Planned shutdown and installation activities around production schedules with contractors and plant engineering.
- Resolved conflicts between manufacturing equipment and existing utilities through field verification and design reviews.
- Closed facility punch list items, confirmed service capacity, and documented operating requirements for **launch**.
- Investigated recurring support problems and incorporated findings into revised engineering standards.

Mechanical Project Engineer

July 2013 - May 2016

Great Lakes Industrial Engineering

Warren, MI

Supported automotive manufacturing clients through site surveys, mechanical design inputs, **cost studies**, vendor reviews, construction observations, and facility readiness tracking.

- Developed layouts, utility requirements, equipment schedules, and installation scopes for automotive clients.
- Completed site surveys documenting piping, ventilation, coolant, and equipment interfaces for design.
- Prepared **cost** study inputs by quantifying facility modifications, equipment requirements, and installation assumptions.
- Reviewed vendor drawings and submittals against specifications before fabrication or field installation.
- Coordinated construction observations and punch lists during planned plant work with technical records.
- Tracked facility readiness, installation dependencies, and corrective actions through equipment start up.

PROJECTS

Regional Facilities Standardization Program 2024

Created repeatable mechanical infrastructure standards for collection, filtration, utilities, and installation reviews across multiple manufacturing sites. Lessons from field issues informed clearer specifications and stronger launch readiness.

Electrification Site Preparation Initiative 2023

Coordinated site preparation, equipment interfaces, utility planning, and installation sequencing for electrification manufacturing work. Early scope reviews helped resolve plant constraints before equipment set.

LEADERSHIP & AWARDS

- Lean Six Sigma Green Belt recognition, 2021
- Senior Mentor, Manufacturing Engineering Mentorship Circle
- Technical Contributor, Regional Facilities Standards Working Group

EDUCATION

Bachelor of Science in Mechanical Engineering

2013

Oakland University GPA: 0

Rochester, MI

Coursework: Mechanical design, manufacturing systems, thermodynamics, fluid mechanics

CERTIFICATIONS

- Engineer in Training, Michigan 2014
- Lean Six Sigma Green Belt 2021

TECHNICAL SKILLS

- **Manufacturing Systems:** Industrial manufacturing systems, powertrain manufacturing, production launch
- **Facilities Engineering:** Site preparation, machine installation, plant infrastructure
- **Air And Filtration:** Air collection, mist collection, coolant collection
- **Mechanical Utilities:** Piping, ventilation, coolant services
- **Program Controls:** Scope, timing, cost
- **Sourcing And RFQs:** RFQs, supplier evaluation, technical sourcing
- **Design Methods:** Design for Manufacturing, mechanical design, equipment layouts
- **Quality Methods:** Root cause problem solving, equipment qualification, punch lists
- **Manufacturing Programs:** New model programs, non new model programs, adaptation programs
- **Production Technologies:** Engines, transmissions, casting
- **Electrification Systems:** Electrification, battery tray and frame, powertrain components
- **Standards Development:** Equipment standards, infrastructure standards, multi plant standardization

SKILLS

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|-----------------------------|----------------------|------------------------|------------------------------|
| • Manufacturing Engineering | • Electrification | • Sourcing | • Equipment Qualification |
| • Mechanical Engineering | • Casting | • Cost Studies | • Design for Manufacturing |
| • Facilities Engineering | • New Model Programs | • Machine Installation | • Root Cause Problem Solving |
| • Powertrain Manufacturing | • RFQs | • Filtration | |

PROFESSIONAL AFFILIATIONS

- Manufacturing Engineering Mentorship Circle, Senior Mentor
- Regional Facilities Standards Working Group, Technical Contributor

LANGUAGES

- English (Native)
- Spanish (Intermediate)

ADDITIONAL INFORMATION

Work Status : Authorized to work in United States. No sponsorship required.

REFERENCES

AVAILABLE ON REQUEST