Computational Design & Digital Fabrication Specialist – Additive Construction (3D Concrete Printing)

Requires travel to various project locations.
Supervised By: Director of Innovation & Technology
Position Type: Full-Time

About FMGI

FMGI is transforming the delivery of retail and commercial buildings through advanced construction automation. Our work brings together robotics, large-scale 3D-printed concrete, advanced cement chemistry, and high-efficiency building systems to redefine how structures are designed and built. In collaboration with leading industry partners, we develop cutting-edge robotic technologies and proprietary printable concrete materials engineered for consistent, high-performance results in real-world field conditions.

Position Overview

This role sits at the intersection of computational design, robotics, and advanced digital fabrication. The Computational Design & Digital Fabrication Specialist develops and maintains end-to-end design-to-production workflows—bridging geometry, data, and machine behavior to enable next-generation manufacturing. The ideal candidate combines strong parametric design expertise with hands-on experience in robotic additive manufacturing, especially KUKA-based systems.

Key Responsibilities

Design-to-Fabrication Pipelines

- *Build, maintain, and optimize integrated design-to-fabrication pipelines (Rhino/Grasshopper → code → digital manufacturing).*
- *Develop custom Grasshopper tools, scripts, and plugins to automate geometry processing, toolpath generation, and fabrication logic.*
- *Create workflows that link data → geometry → fabrication, ensuring traceability and repeatability across the pipeline.*
- *Support robotic additive manufacturing workflows, with emphasis on KUKA robotic arms and associated toolpath strategies.*
- *Collaborate with engineering and fabrication teams to translate computational models into reliable, real-world production outputs.*

Research & Development

- *Develop data-driven or generative design tools for manufacturing applications.*
- *Explore new computational methods, materials, and fabrication strategies to expand capabilities.*
- *Document workflows, maintain version control, and contribute to internal knowledge systems.*

Field Operations Support

- *Assist FMGI's 3D Concrete Printing team during active print operations.*

Safety & Compliance

- *Follow FMGI's safety protocols and participate in site safety audits.*
- *Ensure adherence to relevant standards, specifications, and internal procedures*

Qualifications

- *Bachelor's degree in Architecture, Computational Design, Engineering, or a related field.*
- *2+ years of professional experience in computational design, digital fabrication, or robotics-enabled making.*
- *Deep experience in Rhino + Grasshopper (expert user level).*
- *Strong grounding in parametric, procedural, and algorithmic design.*
- *Proven ability to build digital tools or workflows that connect data, geometry, and fabrication.*
- *Experience with 3D printing, digital fabrication, or robotic manufacturing processes.*
- *Familiarity with KUKA robotics and robotic toolpath development.*