

# Cyril Malayil

# MECHANICAL ENGINEER

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3D Design

MEPFP Engineering

SolidWorks / Creo / Siemens  
NX / Revit

Design Analysis / Simulation

Sustainability

## About Me

Results-driven Mechanical Engineer with comprehensive expertise in advanced mechanical systems design, thermal-fluid analysis, and sustainable infrastructure development across commercial, industrial, and high-performance applications.

Currently with RTM Engineering Consultants, delivering complex engineering solutions through advanced mechanical design, 3D simulation modeling, and multi-disciplinary technical coordination using Revit, AutoCAD, and Trace 3D.

Prior to this, developed a robust technical foundation in custom product design, manufacturing, and hardware prototyping at Fractal Systems, alongside engineering precise fluid handling and instrumentation systems at Malema (A PSG Brand).

This foundation is backed by rigorous automotive systems testing and mechanical optimization through Formula SAE and graduate research. My goal is to apply this diverse R&D background to UAE smart city, sustainability, and large-scale engineering initiatives.

10+

Years of Engineering  
Experience

3+

MEPFP / HVAC Systems  
Designed

5+

Countries of  
Project Exposure

6+

Engineering Software  
Platforms

# CORE COMPETENCIES

## **HVAC & MEP System Design**

Full-scope MEP design for commercial, hospitality, high-rise, and mixed-use developments including HVAC, boilers, and booster pumps.

## **BIM Coordination & Revit MEP**

3D mechanical models, clash detection, and integrated BIM coordination using Revit MEP, AutoCAD MEP, and SolidWorks.

## **Sustainable & Energy-Efficient Solutions**

Energy compliance assessments, HVAC load calculations, and integration of smart building systems aligned with ASHRAE standards.

## **Fire Protection & Piping Systems**

Design and coordination of fire protection, piping systems per NFPA, IBC, and UAE building regulations.

## **HVAC Load Calculations & Equipment Sizing**

Accurate thermal load analysis, equipment sizing, and system optimization for peak performance and occupant comfort.

## **MEP Project Coordination**

Lifecycle engineering management from concept through construction documentation, collaborating across multidisciplinary teams.

## Mechanical Engineer

CURRENT

RTM Engineering Consultants · Nov 2024 – Present · Orlando, FL (On-site)

- Designed MEP systems (HVAC, boiler, booster pumps, and fire protection) for high-rise commercial, residential, and industrial projects totaling **450,000+ sq. ft.**, utilizing **Revit** to ensure seamless multi-disciplinary BIM integration.
- Conducted rigorous thermal load calculations and equipment sizing compliant with **ASHRAE, ASME, and NFPA** standards, improving overall system energy efficiency by **18%**.
- Collaborated across architecture and contracting teams to specify high-efficiency building systems, successfully reducing project change orders by **25%** through proactive, pre-construction clash detection.
- Generated precise 3D BIM models to simulate dynamic system loads, optimize spatial coordination, and accurately size major mechanical equipment.
- Integrated smart building solutions and sustainable HVAC design practices that reduced predicted building carbon footprints by **15%** and aligned with **LEED Gold** standards.
- Managed engineering deliverables for **4** concurrent multi-million-dollar projects, consistently meeting tight construction administration, submittal review, and project lifecycle deadlines.
- Performed thorough site assessments and punch-list walkthroughs during the construction administration phase to verify installations conformed strictly to engineering designs and local building codes.
- Utilized advanced load simulation software (such as Trane TRACE 3D or Carrier HAP) across various projects to optimize complex geometries and improve team design-cycle times by **10%**.
- Mentored junior engineers and drafters on Revit MEP best practices and national engineering codes, accelerating team workflow efficiency and project onboarding.

## Junior Mechanical Engineer

RGD Consulting Engineers

- Designed complex piping systems for multi-family developments and high-end residential estates, including a **45,000 sq. ft.** luxury residence, utilizing AutoCAD MEP and Revit per IBC and IPC standards.
- Developed detailed BIM models and construction documentation for over **150,000 sq. ft.** of mixed-use residential and restaurant spaces, drastically reducing spatial conflicts between grease ducts, structural elements, and plumbing lines.
- Utilized Newforma PM software to track engineering deliverables, manage submittals, and streamline RFI response times by **30%**, ensuring tight adherence to fast-tracked hospitality and residential construction deadlines.
- Spearheaded multi-disciplinary MEP coordination to ensure compliance with regional building regulations and specific tenant guidelines, resulting in a **98%** first-pass approval rate from local code authorities.

## Engineering Intern

Malema (a PSG brand) · Flow Measurement Technologies

- Executed firmware upgrades, circuit modifications, and functional validation testing for ultrasonic flow meter sensor pulse modules, ensuring high-precision acoustic matching across variable flow rate ranges.
- Conducted R&D design improvement research on **piezoelectric transducer elements**, analyzing signal-to-noise ratios and frequency response behaviors to optimize sensor sensitivity and reduce signal drift.
- Generated production-ready 3D mechanical models and technical drawings via SolidWorks for high-purity flow switches and pressure transducers, improving design-to-manufacturing transition efficiency by **15%**.
- Performed rigorous calibration, acoustic coupling optimization, and precision testing on industrial control instrumentation, meeting strict quality standards for ultra-clean semiconductor fabrication and biopharma sectors.
- Leveraged the Made2Manage (M2M) ERP system to track production workflows and maintain engineering documentation, reducing processing delays for Engineering Change Notices (ECNs) by **20%**.
- Assembled and tested chemical/slurry valves and critical fluid-handling components, validating pressure integrity, sealing, and zero-dead-leg geometry for harsh industrial environments.

# FEATURED PROJECTS

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MEP / Revit

## Desert Surf Resort, California

Complete 3D MEP design – HVAC, piping & fire protection using Revit and engineering calculations.

Commercial

## Goodwill Industries HQ, Florida

MEP Engineer for commercial & institutional project – HVAC, piping, fire protection, 3D design & system coordination.

High-Rise MEP

## Summit Brickell

MEP design for interior and exterior systems integrated with architectural design requirements.

Hospitality

## Drury Hotels

MEP systems engineered for quiet, consistent performance. Fire detection synchronized with smoke control and HVAC overrides.

Smart/Exhibition

## Expo 2020 Dubai

Entertainment technology & display systems designer for Microsoft Interaction Kiosk at Fractal Systems.

# TECHNICAL SKILLS & TOOLS

## Engineering Design Software

Revit



AutoCAD



SolidWorks / Creo / Siemens NX



ANSYS



## Engineering Standards & Codes

ASHRAE Standards



NFPA (Fire Protection)



ASME Codes



Building Regulations



### Additional Expertise:

BIM Coordination

HVAC Load Calc

Newforma PM

M2M ERP

## Board Member

AB Consultants & Technologies LTD

### Africa

- Strategic leadership in Cybersecurity Intelligence, Digital Transformation, Smart Infrastructure & IT Consulting.
- Guided corporate strategy for government entities and enterprise clients across MEA.
- Directed smart city initiatives and infrastructure digitization projects for public and private sectors.
- Oversaw governance, risk management, regulatory compliance, and cybersecurity policies.

## Board Member

AB BlueSky LLC

### Middle East

- Championed innovation in cloud technologies, AI-driven solutions, IoT ecosystems, and smart infrastructure.
- Supported digital transformation through technology adoption strategies and digital capability enhancement.
- Reviewed business operations alignment with regional digital economy and emerging tech opportunities.
- Mentored senior leadership on strategic planning and organizational development.

# INTERSHIP EXPERIENCE

## **Mechatronics Intern**

**Fractal Systems · Dubai, UAE · May – Aug 2021**

Assembled exhibition solutions for GISEC 2021 and EXPO 2020 Dubai. Focused on mechatronics, fabrication, and automation for interactive displays. Contributed to smart infrastructure and visitor experience technology.

## **Construction Intern**

**Baulnzu Designs · Kigali, Rwanda · Jul – Aug 2018**

Supported architectural and interior design renovations. Assisted in on-site coordination, site supervision, material application, safety procedures, and structural modifications in commercial and residential projects.

## **Management Intern**

**Tecziium Solutions Ltd. · Kigali, Rwanda · May – Jun 2018**

Supported automation, telecommunications, and enterprise communication projects for Marriott Kigali and Airtel Rwanda. Learned PABX systems, automation integration, and proposal development for large organizations.

# LET'S BUILD SOMETHING EXCEPTIONAL

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Mechanical Engineer | R&D Development | 3D Design & Simulation | Sustainable Infrastructure | UAE & Global Projects

 UAE | Orlando, FL

 RTM Engineering Consultants

 [Cyril Malayil Tom Thariyan | LinkedIn](#)

**AVAILABLE FOR  
UAE & GLOBAL  
OPPORTUNITIES**

English · Malayalam · French · German