CMA GROUP OF COMPANIES

Designing Tomorrow's Spaces, Systems & Structures

Company Overview

CMA GROUP brings together architecture, engineering, and design under one vision creating solutions that are functional, efficient, and built to last. Through a combination of innovation, technical excellence, and precision execution, we help clients turn ambitious ideas into successful projects and tangible results.

Our Positioning

Combining simulation, design, and technical expertise to deliver efficient, reliable and production ready engineering solutions.

Client Focus

A structured approach of Define, Model, Analyze, Optimize, and Deliver ensures every project achieves its technical and business objectives.

Leadership

Founded by Asadullah Anis, CMA GROUP is committed to innovation, engineering excellence, and delivering practical solutions with measurable results.

Mission, Vision & Values

Vision

To be a trusted engineering partner recognized for delivering innovative, simulation driven, and performance focused solutions worldwide.

Mission

To solve complex engineering challenges through advanced analysis, practical design, and professional execution that creates measurable value for our clients.

Values

Technical Excellence
Professional Integrity
Clear Communication
Innovation
Continuous Improvement

- Mechanical Design
- Product Development
- CAD Modeling
- CFD Analysis
- FEA Support
- Reverse Engineering
- Architecture Design
- Interior Design
- Technical Reports
- Manufacturing Drawings
- BIM Modeling
- Photorealistic Rendering

How We Work

01

Understand
Define project objectives, requirements, and performance targets.

02

Model
Develop CAD geometry, assemblies,and simulation-ready models.

03

Analyze
Perform CFD, engineering analysis, and design validation.

04

Optimize
Refine designs to improve performance, efficiency, and feasibility.

05

Deliver
Provide reports, drawings, models, and production-ready documentation.

Software & Technical Capabilities

ANSYS Fluent | ANSYS Meshing | CFD-Post | SolidWorks | AutoCAD | Revit | SpaceClaim | MATLAB | Microsoft Excel | Technical Reporting | Engineering Documentation

CFD & Simulation Division

Thermal, fluid flow, and aerodynamic analysis through advanced engineering simulation

Glider Aerodynamic Analysis

Challenge

Evaluate aerodynamic performance and identify opportunities to improve flight efficiency.

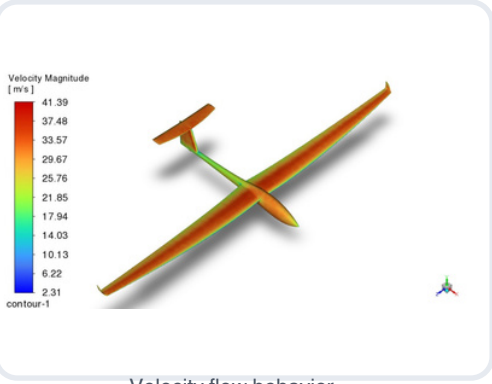
Key Outcomes

- Up to 15% improvement in aerodynamic efficiency achieved through design optimization
- Approximately 10% reduction in aerodynamic drag compared with the baseline configuration
- Flow separation effects reduced by up to 20% in critical operating conditions
- Improved pressure distribution contributing to enhanced flight stability and performance
- CFD-driven recommendations developed to support further aerodynamic refinement

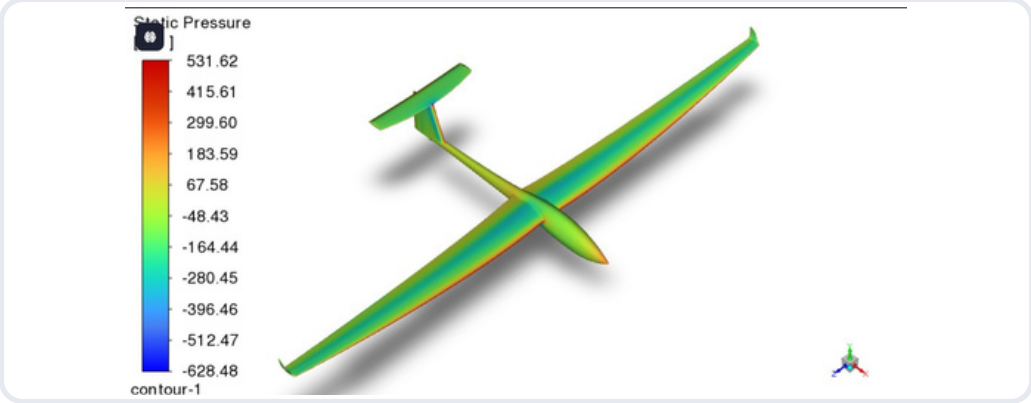
Tools

ANSYS Fluent | CFD-Post | SolidWorks

Geometry



Velocity flow behavior



Pressure contour

Finned Tube Heat Exchanger CFD

Challenge

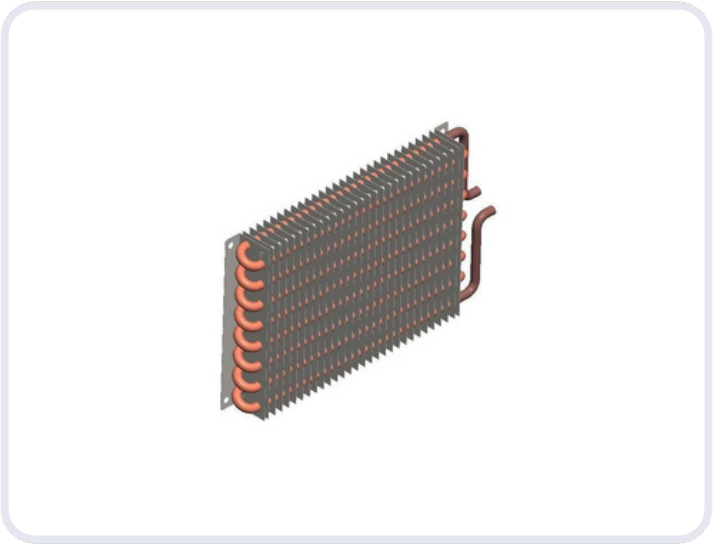
A manufacturing client required verification of heat exchanger performance to ensure reliable thermal management, maximize heat rejection efficiency, and reduce the risk of localized overheating that could impact system performance and operational reliability

Key Outcomes

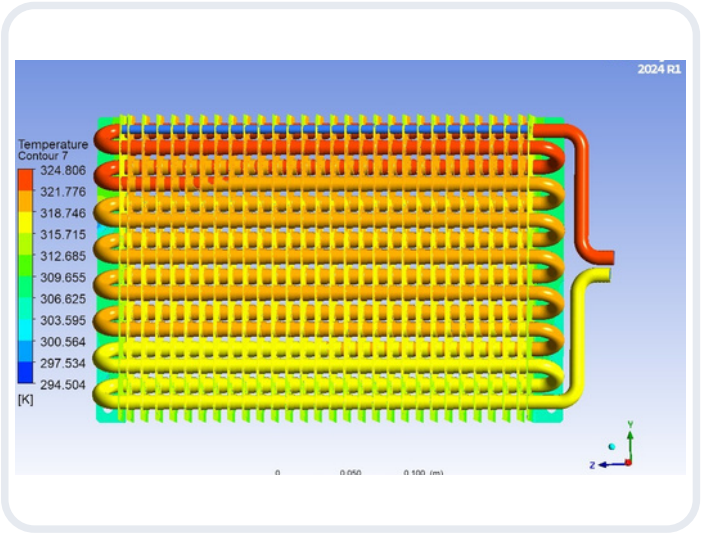
- Up to 25% improvement in effective heat dissipation through enhanced fin utilization
- Thermal performance validated across the complete heat exchanger assembly
- Critical hotspot regions identified and assessed for design optimization
- Temperature distribution and heat transfer behavior quantified to support engineering decisions
- Virtual testing accelerated design validation while reducing prototyping costs and development time

Tools

ANSYS Fluent | CFD-Post | SolidWorks



Heat exchanger geometry



Temperature contour

Formula 1 Front Wing CFD

Challenge

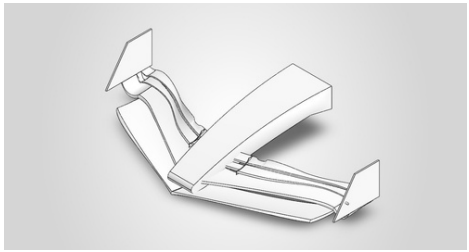
A motorsport engineering client sought to improve front wing aerodynamic performance to increase vehicle grip, enhance cornering capability, and support overall lap-time performance.

Key Outcomes

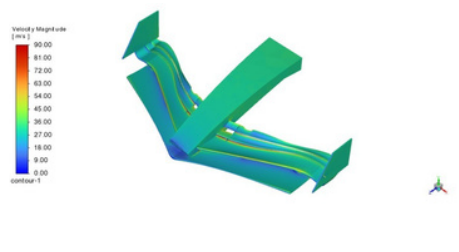
- Approximately 9.4% increase in downforce achieved through aerodynamic optimization
- Multiple design configurations evaluated to identify the highest-performing solution
- Airflow behavior and pressure distribution analyzed across critical aerodynamic surfaces
- Aerodynamic trade-offs quantified to support performance-driven design decisions
- Virtual validation reduced development time and minimized physical testing requirements

Tools

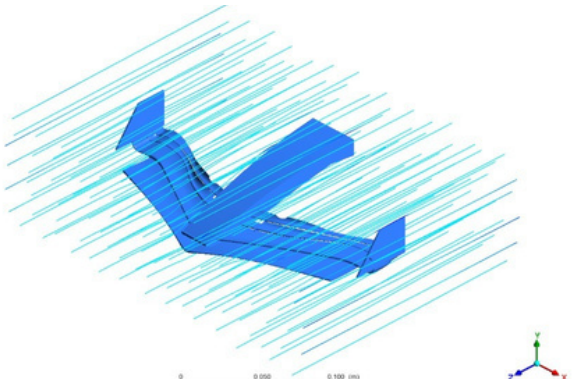
ANSYS Fluent | CFD-Post | SolidWorks



Front wing geometry



Velocity contour



Streamline visualization

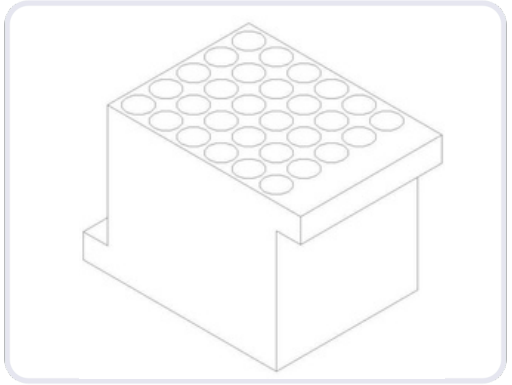
CFD Study of Battery Spacing and Airflow for Efficient Cooling of Lithium-Ion Battery Packs

Challenge

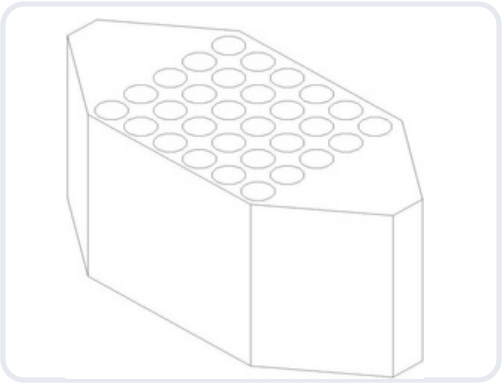
Lithium-ion battery packs are highly sensitive to temperature variations, making effective thermal management essential for safety, performance, and cycle life. The objective was to evaluate the influence of airflow configuration and cell spacing on cooling effectiveness and temperature uniformity

Key Outcomes

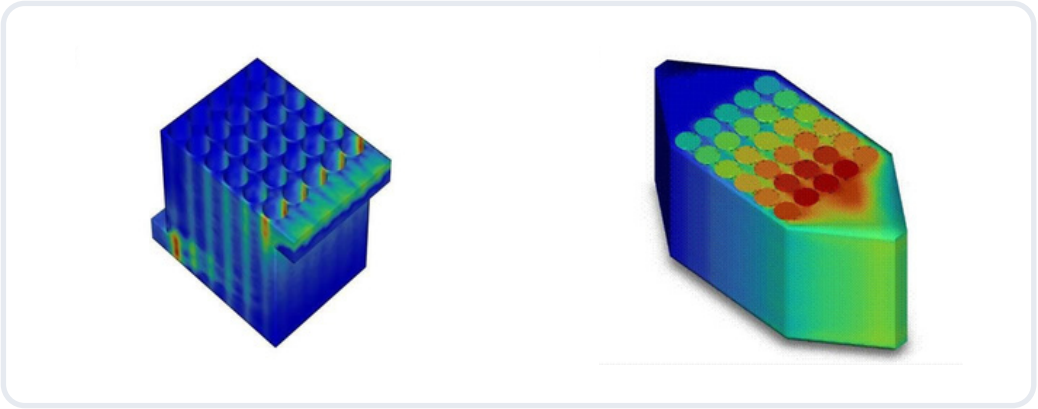
- Up to 60% improvement in temperature uniformity achieved through optimized cell spacing and airflow configuration
- Pressure drop reduced by approximately 63%, enabling significantly lower cooling power requirements
- Peak battery temperature reduced by approximately 6% compared to the baseline configuration
- Straight-Flow and Z-Flow cooling strategies evaluated across multiple spacing arrangements
- Engineering recommendations developed to enhance cooling performance, operational safety, and battery lifespan



Z Type battery



Straight type battery



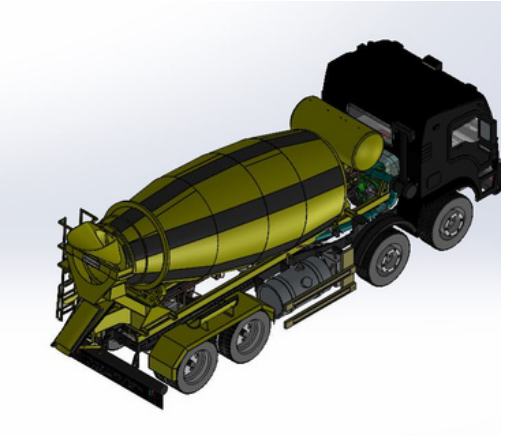
Thermal contour

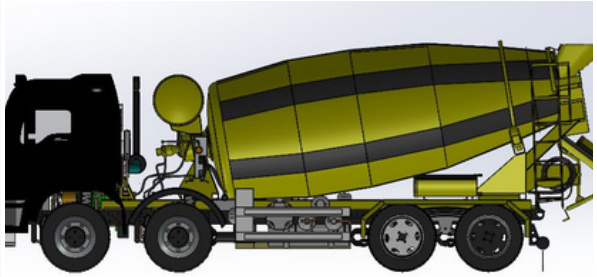
Engineering Design Division

3D modeling, mechanical design, assemblies, and manufacturing-oriented CAD solutions

Engineering Design Gallery

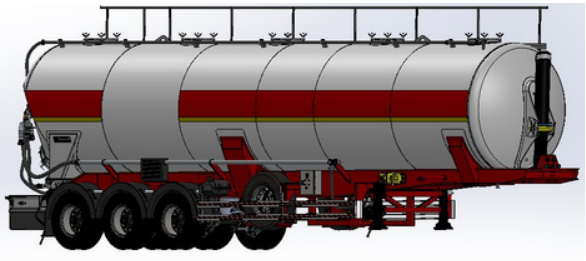
CAD Models & Mechanical Design Views





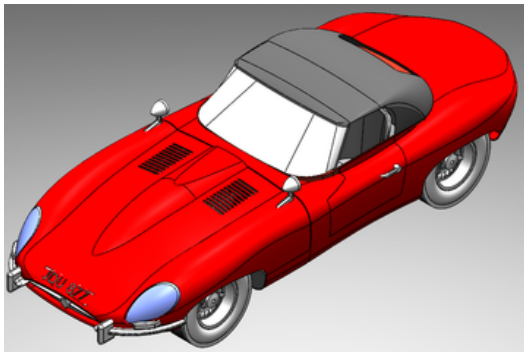
Engineering Design Gallery

CAD Models & Mechanical Design Views



Engineering Design Gallery

CAD Models & Mechanical Design Views



Architecture & Interior Division

2D drafting, BIM modeling, exterior concepts, and photorealistic visualization

Architecture & Interior Design Services

Challenge

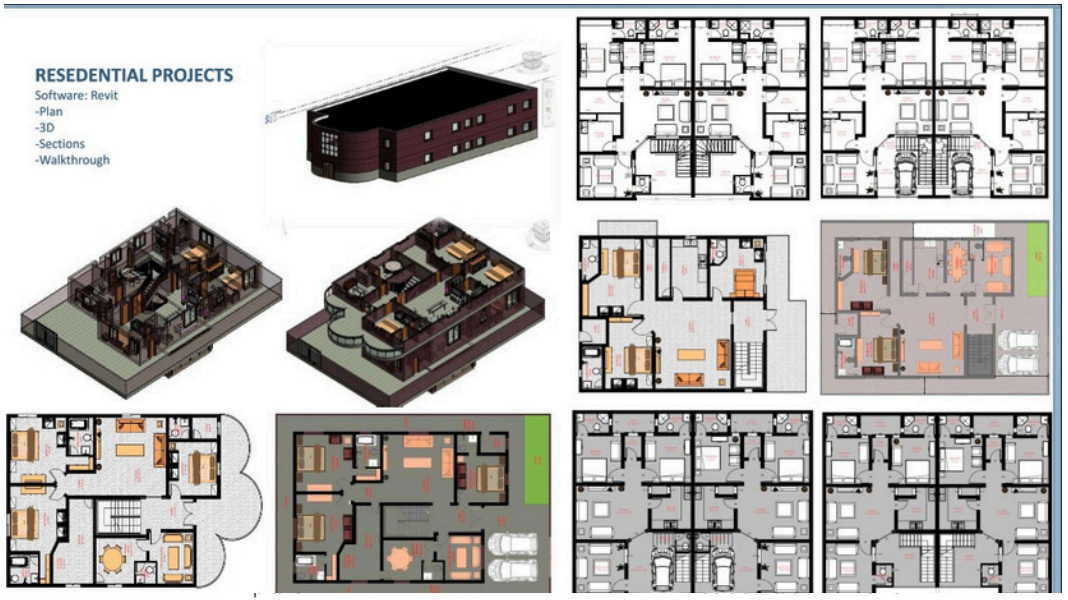
Clients require clear spatial planning, realistic visualization, and professional presentation materials prior to construction or execution.

Solution

CMA GROUP delivers 2D drafting, BIM modeling, exterior and interior design, and photorealistic rendering for residential and commercial projects.

Key Results / Impact

- 2D plans and technical layouts prepared to specification
- BIM and 3D modeling delivered through Revit workflows
- Exterior and interior concepts visualized professionally
- High-quality renders produced for client presentations



Exterior rendering

Residential & Commercial Visualization

Challenge

Architectural projects require visual clarity so clients can evaluate layout, mood, materials, and final aesthetic intent.

Solution

Photorealistic renders and presentation sheets were prepared to communicate exterior form, interior styling, and architectural vision.

Key Results / Impact

- Residential, tower, and commercial concepts presented
- Interior layouts and material palettes visualized
- Exterior scenes created for client-facing presentations
- Portfolio-ready rendering sheets included

Interior visual sheet

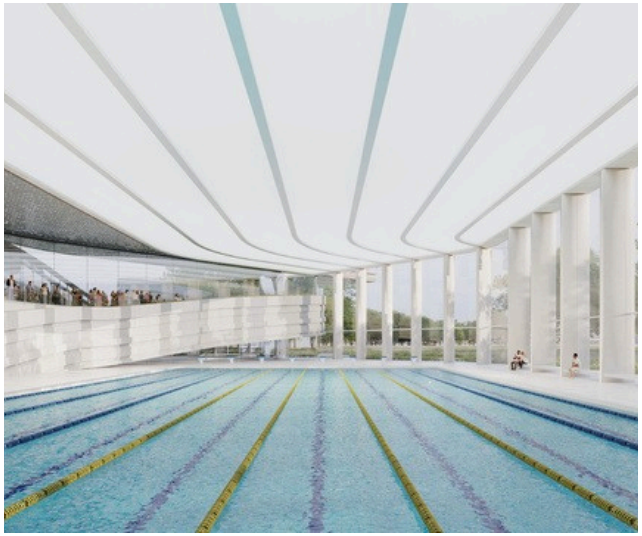
Photorealistic rendering

Exterior concepts

Architecture & Interior Gallery

Selected Planning, Exterior & Interior Renders

Architecture Visual 7



Architecture Visual 8

Architecture Visual 9

Architecture & Interior Gallery

Selected Planning, Exterior & Interior Renders

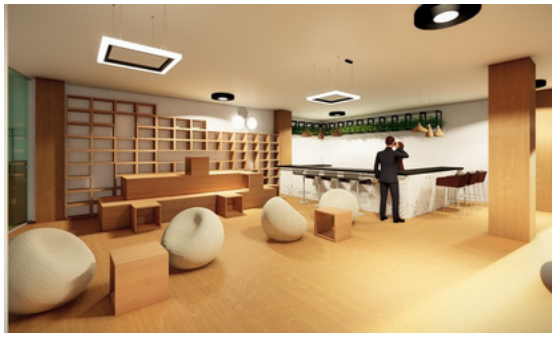
Architecture Visual 10

Architecture Visual 11

Architecture Visual 12

Architecture & Interior Gallery

Selected Planning, Exterior & Interior Renders



Architecture Visual 1

Architecture Visual 2

Architecture Visual 3

Architecture & Interior Gallery

Selected Planning, Exterior & Interior Renders

Architecture Visual 4

Architecture Visual 5

Architecture Visual 6

Why Choose CMA GROUP

Multidisciplinary Team

A Multidisciplinary Engineering Consultancy Delivering Design, Analysis, Simulation, and Architectural Solutions Under One Roof.

Professional Documentation

Professional documentation and client ready deliverables.

Simulation-Based Decisions

Engineering solutions strengthened through simulation-driven analysis and validation.

Manufacturing-Oriented CAD

Designs prepared with practical constraints, assemblies and deliverables in mind.

Visual Communication

High-quality visuals, renders, and contours make technical work accessible to clients.

Reliable Support

Clear scope, structured workflow, and consistent communication throughout the project.

Let’s Build Better Solutions Together

Engineering • Design • Analysis • Innovation

PROJECT INQUIRIES & BUSINESS ENGAGEMENT

Asadullah Anis — Founder & CEO, CMA GROUP

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