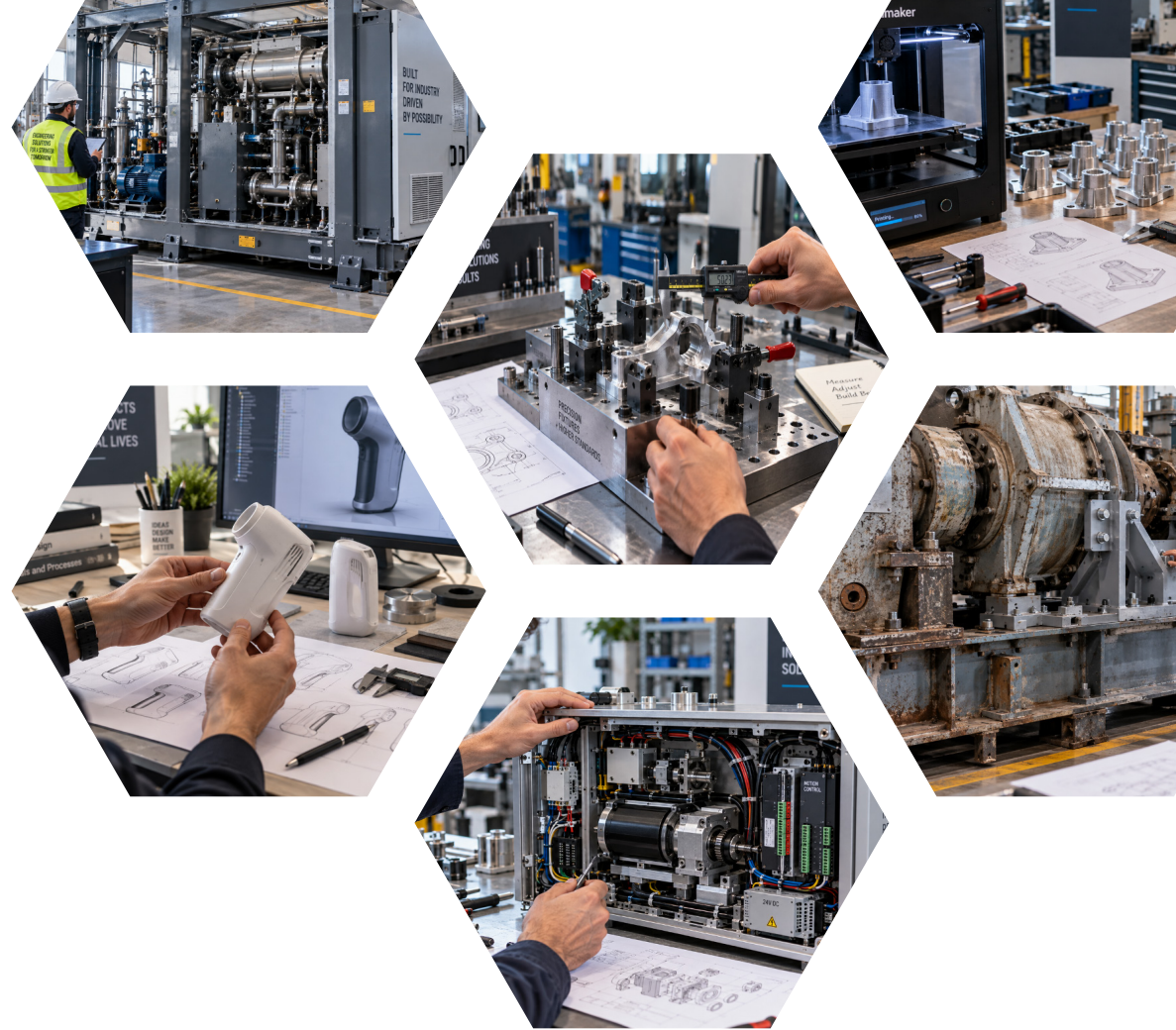


FAÇADE CREATIONS



Engineering Services

Computer-Aided Design (CAD) Services

Computer-Aided Design (CAD) Services

Introduction

Façade Creations provides mechanical CAD services for teams turning an idea into a product that can actually be manufactured. This niche sits between concept and production: it is the discipline of engineering design, taking a functional requirement and working out exactly how it will be built, what it will be made from, how the parts will fit and move together, and how it will be produced at the volumes and cost your project needs.

A CAD model that only looks right is not the same as a CAD model that is right. Every design decision, wall thickness, fastener choice, tolerance stack, draft angle, has consequences downstream in manufacturing, assembly, and cost. Our approach is to bring that manufacturing and assembly awareness into the design process from the very first concept sketch, rather than discovering the problems after tooling has already been ordered.

We think of mechanical design as a series of trade-offs, and our job is to make those trade-offs visible and deliberate rather than accidental. A part that is cheaper to machine might be harder to assemble. A lighter design might be more expensive to produce. There is rarely a single correct answer, but there is almost always a better-informed one, and that is what we aim to give every client we work with.

Our engineers come from backgrounds across product design, industrial equipment, and manufacturing engineering, which means we design with an understanding of how a part will actually be produced, not just how it will look in a rendered model. That perspective tends to save clients real time and cost once a design moves toward production.



Industries We Serve



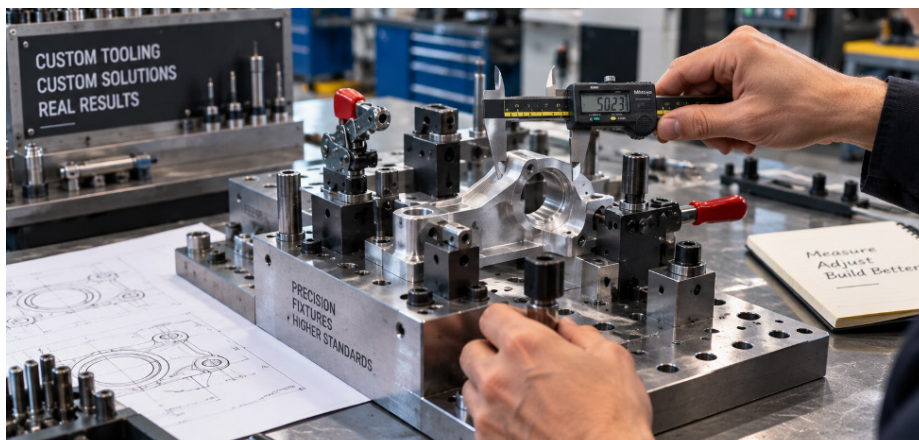
Industrial and capital equipment

Machine frames, enclosures, and mechanical assemblies built for long service life and serviceability



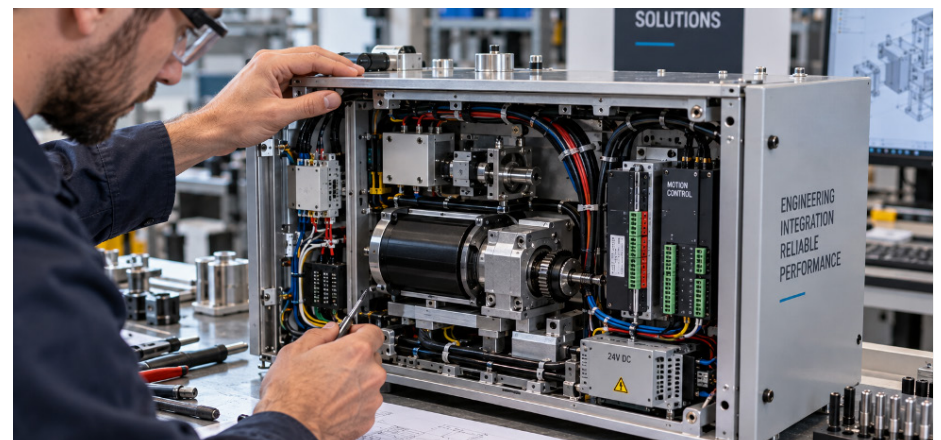
Consumer and commercial products

From concept development through to production-ready detail, balancing cost, manufacturability, and design intent.



Custom tooling and fixtures

Jigs, fixtures, and specialised equipment for manufacturing lines, designed for accuracy and repeatable use.



Electromechanical assemblies

Enclosures and structural housings for electronic products, including thermal and access considerations.



Prototyping and short-run manufacturing

Design suited to 3D printing, CNC machining, and low-volume production methods.



Structural and mechanical retrofits

Redesigning or adapting existing equipment and assemblies to new requirements or components.



Medical and precision equipment

Mechanical design work requiring tight tolerances and thorough documentation.



Renewable energy and infrastructure hardware

Mounting systems, brackets, and mechanical components engineered for outdoor and long-term service.

Our CAD Services

Concept Development

We take an early idea, a sketch, a functional brief, or a rough requirement, and develop it into workable concept geometry, exploring different mechanical approaches before committing to one direction.

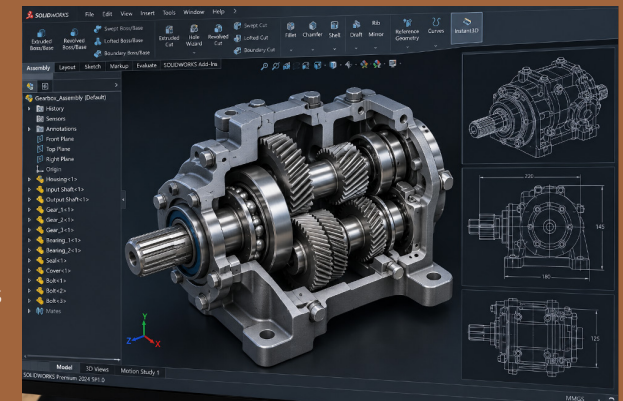
At this stage we deliberately keep options open, presenting alternatives with their respective trade-offs rather than jumping straight to a single design.



Detailed 3D Modelling

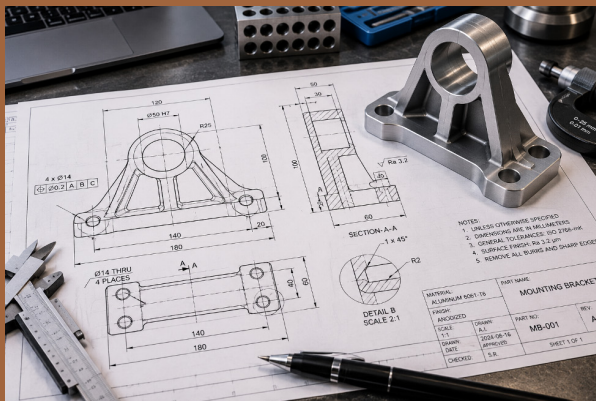
Full parametric 3D modelling of components and assemblies, built with manufacturing method, material, and tolerance requirements considered from the start rather than added on afterward.

Models are structured so that later design changes can be made efficiently, without rebuilding geometry from scratch.



Engineering Drawings and Documentation

Production-ready 2D drawings with complete dimensioning, tolerancing (including GD&T where required), material callouts, and finish specifications, ready to hand to a manufacturer. We aim for drawings that a machinist or fabricator can work from without needing to call and ask what was intended.



Design for Manufacture and Assembly (DFMA) Review

We review designs specifically for manufacturability and assembly efficiency, identifying features that will be expensive, difficult, or unreliable to produce, and proposing practical alternatives.

This review can be applied to a new design in progress or to an existing design that has run into production issues.

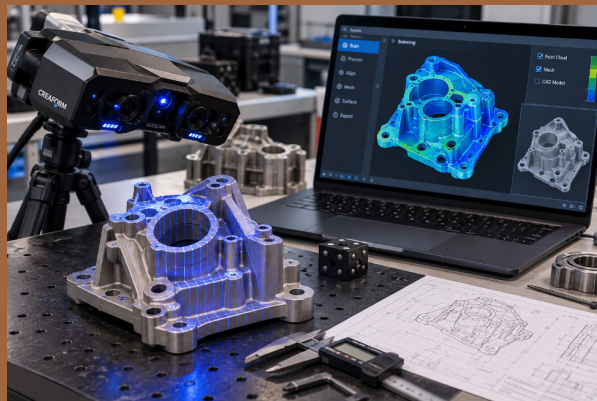


Our FEA Services

Reverse Engineering

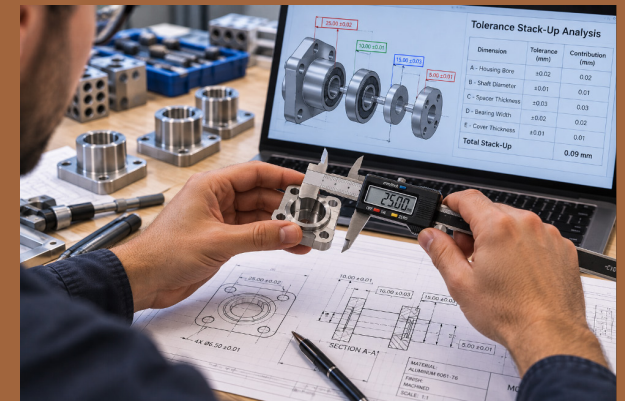
Where a physical part exists but no usable CAD model does, we rebuild accurate, editable 3D models from measurement or scan data, suitable for redesign, replacement part manufacture, or documentation.

This is common for legacy equipment, obsolete parts, or components originally designed by a third party.



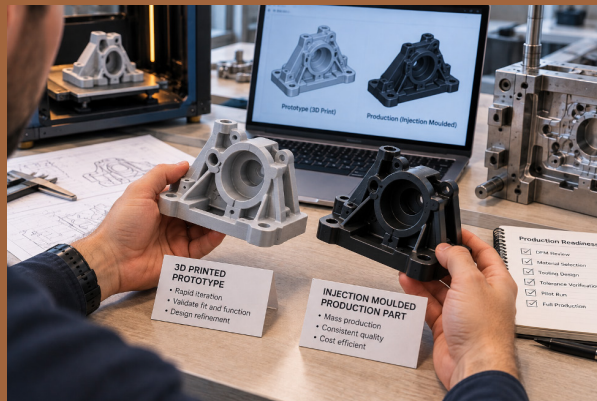
Tolerance Stack-Up Analysis

For assemblies where fit and function depend on multiple toleranced parts coming together correctly, we run stack-up analysis to confirm the design will assemble and function reliably across the full range of manufacturing variation, rather than only under ideal, nominal conditions.



Prototype and Production Transition Support

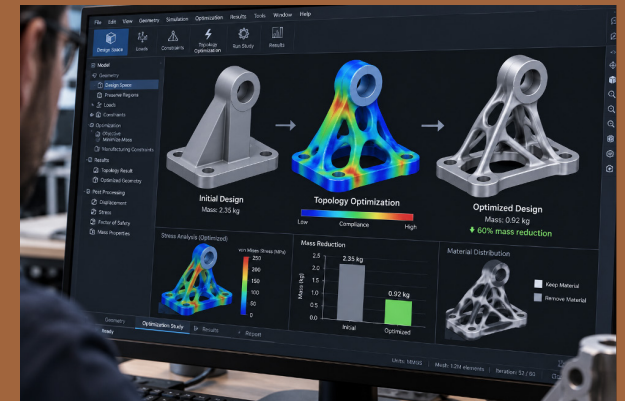
We support the transition from prototype to production, adjusting designs as needed for the realities of higher-volume manufacturing processes, and working directly with your chosen manufacturers where useful. This often includes revisiting decisions made for a one-off prototype that do not scale sensibly to volume production.



Design Optimisation

Working alongside our simulation capability, we refine geometry to reduce weight, material cost, or part count while maintaining or improving structural performance.

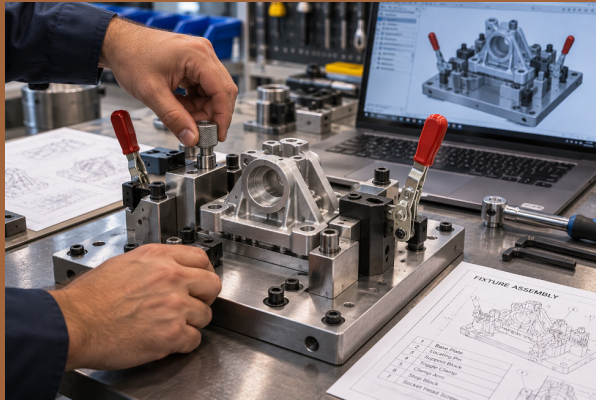
Small geometric changes, informed by real analysis, can add up to meaningful cost savings at production scale.



Our FEA Services

Fixture and Jig Design

Purpose-built tooling to hold, locate, or guide parts during manufacture, inspection, or assembly, designed for the accuracy and repeatability your production process actually requires.



Assembly Modelling and Motion Studies

For mechanisms and assemblies with moving parts, we build full assembly models and check for interference, range of motion, and clearance issues before anything is manufactured, avoiding costly late-stage discoveries.



Bill of Materials and Documentation Management

Structured BOMs and design documentation that stay consistent with the CAD model as a design evolves, reducing the risk of manufacturing from an outdated revision.



Our Process

Projects typically begin with a discovery conversation, where we understand the functional requirement, constraints, target manufacturing method, and any existing design work already in place.

From there we move into concept development, presenting design directions for review before committing to detailed modelling. Detailed design follows, including full 3D modelling and drawing production, with DFMA review built into the process rather than left until the end.

Once a design is finalised, we support the handover to manufacturing, remaining available to answer supplier questions or make adjustments as production tooling or processes are finalised.



Frequently Asked Questions

What CAD software do you work in?

We work across all major mechanical CAD platforms and can typically match your existing design environment, or advise on the best fit if you are starting a new project without an established workflow.

Do you only do 3D modelling, or do you handle manufacturing drawings as well?

Both.

A 3D model on its own is rarely enough to manufacture from reliably.

We produce full drawing packages with the dimensioning and tolerancing information a manufacturer actually needs.

Can you take over a design that was started by someone else?

Yes, this is a common starting point for us.

We review the existing model and drawings, identify any gaps or issues, and continue development from there, or rebuild sections where necessary.

How do you handle confidentiality for new product designs?

We work under NDA as standard practice for product development work and treat all client design data as confidential by default, regardless of whether a formal agreement has been signed at the point work begins.



Frequently Asked Questions

Can you design for a specific manufacturing process we already use?

Yes.

Tell us the manufacturing route (injection moulding, sheet metal, CNC machining, casting, additive manufacturing, or fabrication) and we design with that process's specific constraints and cost drivers in mind from the outset.

Do you get involved in choosing materials, or only in modelling geometry?

Material selection is part of the design process, not separate from it, so yes, we advise on material choice based on function, cost, manufacturing method, and environment, and factor that into the geometry from the start.

What if our project only needs a small design change, not a full new design?

That is a normal scope for us.

We regularly take on smaller, focused design tasks: a single component redesign, a fix to an existing assembly, or an update to accommodate a new part or supplier.

Can you support supplier selection or manufacturing sourcing?

We are primarily a design service, but we regularly work alongside a client's chosen suppliers and manufacturers, and can advise on design implications of different sourcing routes if that is useful during the process.

Frequently Asked Questions

How do you handle design changes after a drawing package has already been issued?

Revisions are tracked clearly through formal drawing revision control, so it is always obvious which version is current and what changed between revisions, avoiding confusion on the shop floor.

Do you provide 3D printed or physical prototypes yourselves?

Our core service is design, not fabrication, but we regularly prepare models specifically for 3D printing or CNC prototyping and can coordinate with prototyping partners as part of a project if needed.

Every building presents
unique façade challenges.



Early conversation identifies risks and opportunities
before they become constraints.

Let's discuss how independent expertise can add value to your project.

Contact Façade Creations today.



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