prototypeprojects

3D MADE. SIMPLE.®

POWERED BY matrix

OUR SERVICES

A guide to Prototype Projects

CONTENTS

WELCOME TO PROTOTYPE PROJECTS

Prototype Projects is a UK-based prototyping and low-volume production company. From concept models to functional parts, the focus is on helping design engineers and product development teams move projects forward with confidence.

A wide range of in-house services is available, including 3D printing, CNC machining, vacuum casting, model making and injection moulding. Whether you're developing a single prototype or producing a batch of parts, the aim is always the same – to deliver high-quality results, quickly and reliably.

Everything is managed from our facility in Royston, Hertfordshire. Projects are supported by a team of experienced engineers, technicians, and model makers who understand the pressures of product development and the need for a flexible, responsive service.

With fast lead times, instant quoting for 3D printing, and helpful advice when it's needed, we are your prototyping and low volume production partner.

STEREOLITHOGRAPHY (SLA)

SLA uses a laser to cure photopolymer resins layer by layer, resulting in highly accurate parts with smooth surfaces. This method is ideal for producing concept models, functional prototypes, and masters for casting. We use SLA machines from 3D Systems with various build volumes and material options. Post-production includes options like bead blasting, lacquering, and assembly. SLA is often chosen for its accuracy, good strength, and dimensional stability in the printed parts.

SLA Materials:

- Matrix Cream
- Matrix HT300
- Matrix Grey
- Matrix Clear

Max size:

- Matrix Cream: 250 x 250 x 250 mm
- Matrix HT300: 380 x 380 x 250 mm
- Matrix Grey: 450 x 450 x 400 mm
- Matrix Clear: 750 x 750 x 550 mm

Material	Material Type	Production Speed				
		Overnight	3 Days	7 Days	12 Days	Special*
Matrix Grey	UV Cured Resin	✓	✓	✓	✓	✓
Matrix Clear	UV Cured Resin	✓	✓	✓	✓	✓
Matrix Cream	UV Cured Resin	×	✓	✓	✓	✓
Matrix HT300	UV Cured Resin	×	×	×	✓	✓

Learn more on our website.

* Special lead time based on print time and/or post process requirements

matrix

Use **Matrix** for instant quotes for SLS, SLA and DLP 3D printed parts:
prototypeprojects.com/matrix

SELECTIVE LASER SINTERING (SLS)

SLS is used for creating complex parts, ideal for both visual models and functional prototypes. It uses a laser to fuse layers of fine plastic powder, producing high-strength, accurate components. SLS is suitable for simulating injection-moulded parts and can be used for end-use parts depending on finishing needs. We utilise advanced EOS machines, which print in a sustainable material, Matrix PA12 CR. Finishing options include colouring, lacquering, and assembly.

SLS Material:

- Matrix PA12 CR

Max size:

- 194 x 242 x 320 mm (Z axis)

Material	Material Type	Production Speed				
		Overnight	3 Days	7 Days	12 Days	Special*
Matrix PA12 CR	Sintered Powder	✓	✓	✓	✓	✓
PA12 GF**	Sintered Powder	×	×	×	✓	✓

Learn more on our website.

* Special lead time based on print time and/or post process requirements
**sub contracted

DIGITAL LIGHT PROJECTION (DLP)

DLP uses light to cure photopolymer resins, building parts layer by layer. It is known for its high resolution, making it ideal for producing small, detailed components and prototypes. The process is faster than some alternatives and produces accurate parts with smooth surfaces. We offer DLP with a focus on fine detail and short production times, suitable for industries like medical, jewellery, and engineering.

DLP Materials:

- Matrix HTA300
- Matrix 150C FR Black
- Matrix PB10
- Matrix RB65
- Matrix White 60
- Matrix FR VO Black
- Matrix FX-BLK 20

Max size:

- 124.8 x 70.2 x 196 mm (XYZ)

Material	Material Type	Production Speed				
		Overnight	3 Days	7 Days	12 Days	Special*
Matrix HTA300	UV Cured Resin	×	✓	✓	✓	✓
Matrix 150C FR	UV Cured Resin	×	✓	✓	✓	✓
Matrix PB10	UV Cured Resin	×	✓	✓	✓	✓
Matrix RB65	UV Cured Resin	×	✓	✓	✓	✓
Matrix White 60	UV Cured Resin	×	✓	✓	✓	✓
Matrix FR VO Black	UV Cured Resin	×	✓	✓	✓	✓
Matrix FX-BLK 20	UV Cured Resin	×	✓	✓	✓	✓

Learn more on our website.

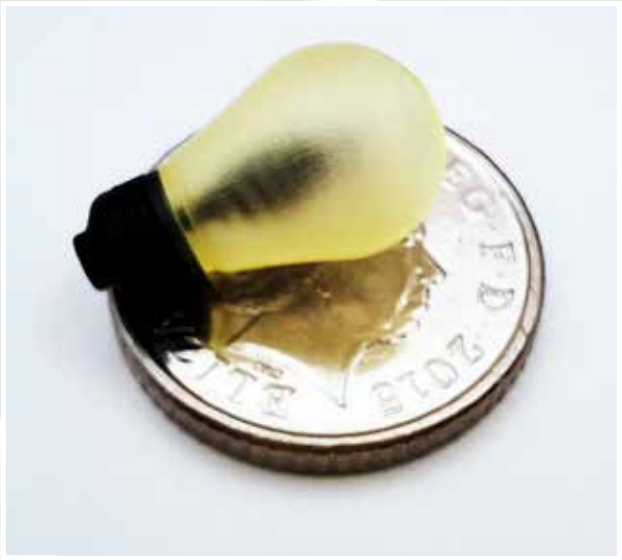
* Special lead time based on print time and/or post process requirements

matrix

Use **Matrix** for instant quotes for SLS, SLA and DLP 3D printed parts:
prototypeprojects.com/matrix

MICRO 3D PRINTING

Micro 3D Printing builds parts by curing photopolymer resins with light. While the technology shares similarities with stereolithography (SLA) and Digital Light Projection (DLP), it also offers distinct advantages.



Our microArch S240 printer, manufactured by Boston Micro Fabrication (BMF), provides:

- Resolution down to 10µm
- General tolerance of ±25µm
- X and Y optical resolution of ±10µm
- Print layer of 30-50µm

Micro 3D Printing Materials:

- Matrix HTA300
- Matrix HTL
- Matrix BIO

Max size:

- 100 x 100 x 75 mm (XYZ)

Material	Material Type	Production Speed				
		Overnight	3 Days	7 Days	12 Days	Special*
Matrix HTA300	UV Cured Resin	×	×	×	✓	✓
Matrix HTL	UV Cured Resin	×	×	×	✓	✓
Matrix BIO	UV Cured Resin	×	×	×	✓	✓

Learn more on our website.

* Special lead time based on print time and/or post process requirements

FILAMENT 3D PRINTING

Filament 3D Printing is a cost-effective, versatile method for producing robust prototypes and parts, making it ideal for a wide range of applications across industries.

Our Bambu Labs printer is highly versatile and commonly used for jigs, fixtures, functional prototypes, custom tools, low-volume production, educational models, and product enclosures.

Filament 3D Printing Materials:

- Matrix ABS
- Matrix PLA

In addition, we are able to offer PLA, ABS, PETG, ASA/ABS, PC/TPU, PA/PET, PPS and Fibre Reinforced, all of which can be sourced quickly from our supplier

Max size:

- 256 x 256 x 256 mm (XYZ)

Material	Material Type	Production Speed				
		Overnight	3 Days	7 Days	12 Days	Special*
Matrix ABS	Polymer	×	✓	✓	✓	✓
Matrix PLA	Polymer	×	✓	✓	✓	✓

Learn more on our website.

* Special lead time based on print time and/or post process requirements

matrix

Use **Matrix** for instant quotes for SLS, SLA and DLP 3D printed parts:
prototypeprojects.com/matrix

VACUUM CASTING

Vacuum Casting uses silicone moulds to replicate master models, typically created via 3D printing, with exceptional detail. It is suitable for producing accurate prototypes or short production runs in a variety of materials.

Vacuum Casting Materials:
Our polyurethane resins meet most requirements, whether the need is for rubber-like parts with Shore A hardnesses from 25 to 95, through to rigid parts simulating injection moulded engineering plastics such as ABS, acetal, polypropylene, and unfilled and glass-filled Nylon. We cast polyurethane in a range of colours and tints including water clear.

Max size:

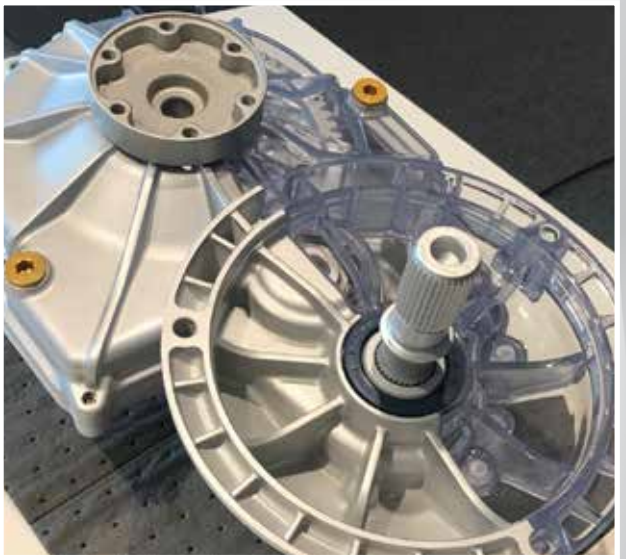
- Max casting capacity is 1KG and the max mould size is 480 mm × 440 mm × 420 mm

Material (various - see website)	Material Type	Production Speed			
		3 Days	7 Days	12 Days	Special*
Matrix PU Rigid	Polyurethane	×	✓	✓	✓
Matrix PU Flexible	Polyurethane	×	✓	✓	✓
Matrix Silicone	RTV Silicone	×	✓	✓	✓

Learn more on our website.

* Special lead time based on print time and/or post process requirements

MODEL MAKING



Professional model making combines traditional craftsmanship with advanced technologies to create high-quality, three-dimensional representations. These models are typically used for design verification, functional testing, presentations or architectural display.

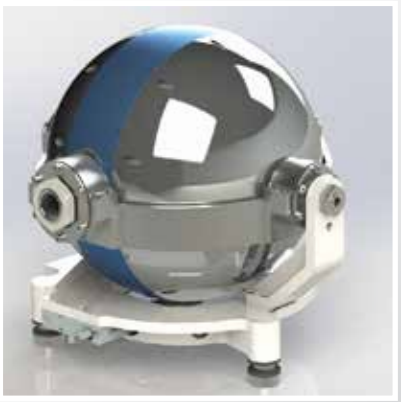
Our skilled model makers are trained in the latest methods and bring years of experience across a wide range of sectors, from automotive seating and interior mouldings to complex, functional prototypes of medical devices.

A key part of the process is selecting the most suitable technologies for each component. This is where the team's expertise makes a real difference. Most model making projects require a combination of techniques and, in many cases, some parts are still fabricated by hand.

We often draw on our in-house capabilities in 3D printing, CNC machining and vacuum casting to produce the components used in model making projects.

Every model making project is different, with its own requirements and challenges, so timescales will vary accordingly.

Learn more on our website.



LASER ETCHING & CUTTING

Our in-house laser cutting and etching service is ideal for producing precise, clean-cut parts in a variety of sheet materials. Often used for architectural models, control panels, enclosures and detailed presentation pieces, it's also a useful supporting process in model making and prototyping projects. We can work from your CAD files or help prepare them if needed.

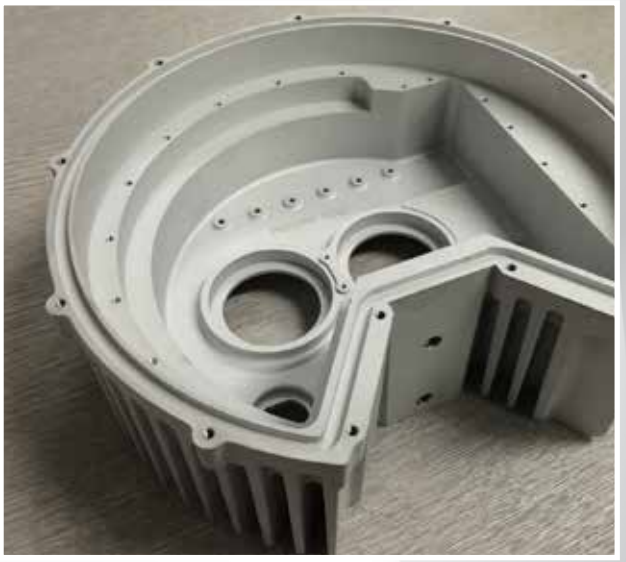
Learn more on our website.

PAINTING

We offer a professional painting service for 3D printed parts — whether produced by us or supplied by you. From single-colour finishes to high-detail paintwork for models and prototypes, our skilled team can enhance the appearance and presentation of your parts. Finishing options include primers, colour-matching and clear coats, depending on your project's needs.

Learn more on our website.

CNC MACHINING



CNC machining is a subtractive manufacturing process used to create accurate, high-quality parts from a variety of materials, such as metals and plastics. We offer in-house CNC machining (CNC Milling and CNC Turning) services for both prototypes and low-volume production. Our 3-axis and 5-axis CNC machines ensure intricate detailing and complex geometries with high accuracy.

CNC Materials:
Almost any metal, alloy or engineering plastic can be CNC machined. As standard, we stock:

- Aluminium alloy 6082
- Stainless Steel, AISI grade 304
- Stainless Steel, AISI 316

Max size:

- CNC Milling: 450 x 350 mm
- CNC Turning: 100 mm diameter (or up to 60mm for our 3 Day production speed)

Material	Material Type	Production Speed			
		3 Days	7 Days	12 Days	Special*
Plastic - various	Polymers	✓	✓	✓	✓
Aluminium	Non Ferrous	✓	✓	✓	✓
Stainless Steel	Ferrous	×	✓	✓	✓

📣 **Learn more on our website.**

SUB CONTRACTED

There are occasions when we need to sub-contract work out to trusted suppliers. We are always transparent if we need to do this.

Material	Material Type	Production Speed			
		3 Days	7 Days	12 Days	Special*
Fabrication	Plastic	×	×	×	✓
Fabrication	Metals	×	×	×	✓
Laser Cutting	Metals	×	×	×	✓

*** Special lead time based on print time and/or post process requirements**

LOW VOLUME PRODUCTION

CNC Low Volume Production is ideal when projects move beyond one-off prototypes but don't require full-scale manufacturing. It provides a practical route to producing low volume batches of consistent, production-quality parts without the cost or commitment of tooling.

Machined on our robot-assisted 5-axis VMCs, we work primarily with aluminium and engineering plastics. Other materials are available - see our website for details.

Our machines are configured to handle two main billet sizes: 150mm x 100mm x 90mm and 150mm x 50mm x 40mm. We can accommodate smaller parts with a range of billet sizes available.

Parts are machined to a standard tolerance of ±0.1mm, unless otherwise specified. If provided with drawings, we strictly adhere to the specified tolerances. We can achieve dimensional tolerances of ±0.05mm, with the exception of holes, which can be machined down to ±0.02mm.

Learn more on our website.

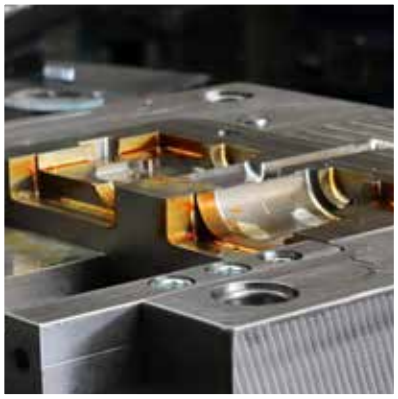
INJECTION MOULDING

Injection Moulding is the go-to process for producing repeatable, high-quality plastic parts in large volumes. It's ideal for low to medium-volume production and pre-production prototyping, giving you access to consistent, durable parts without the long lead times or costs of full-scale manufacturing.

Our injection moulding service is ideal when:

- You're ready to move from prototype to short-run production
- You need functional, end-use parts for product trials or testing
- You're bridging the gap before full-scale tooling investment
- You want a faster, more flexible manufacturing option

Prototype tooling is a practical way to test multiple design iterations, validate ideas and get batches of parts made quickly. If the design needs to change, the tooling can be modified to suit.



Tool design and manufacture

We offer a tool design service if needed. Tools are machined in-house, which keeps quality high and turnaround times short. Whether you need a simple open-and-close tool or something more complex with side actions, the right approach is used for the part and project.

Reliable, repeatable and production-ready

Injection Moulding offers a reliable way to produce strong, consistent parts in production-grade materials. It's a practical solution whether the goal is to validate a design, carry out functional testing or supply end-use components.

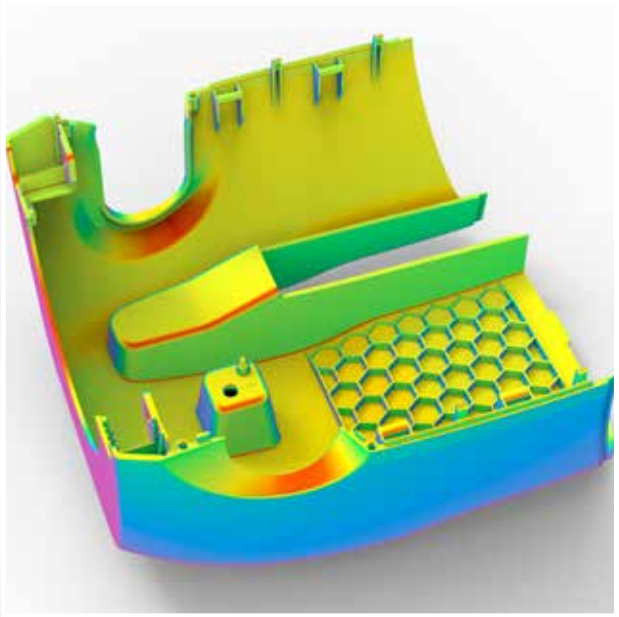
Materials

We primarily mould components in Polypropylene (PP), a popular choice in the life sciences sector due to its excellent chemical resistance and flexibility. However, we also work with a wide range of thermoplastics to suit different applications, including:

- **ABS (Acrylonitrile Butadiene Styrene):** Strong, impact-resistant and ideal for durable, rigid parts.
- **PA6 (Nylon 6):** Tough, wear-resistant and suitable for mechanical components.
- **PC (Polycarbonate):** High strength and clarity, often used for enclosures and covers.
- **Glass-Filled (GF) and Flame-Retardant (FR) variants:** For enhanced strength, stiffness or fire safety performance.

If you're unsure which material is best for your application, we'll help you identify the right option. Contact us to discuss the full range of thermoplastics we can source and mould.

Learn more on our website.



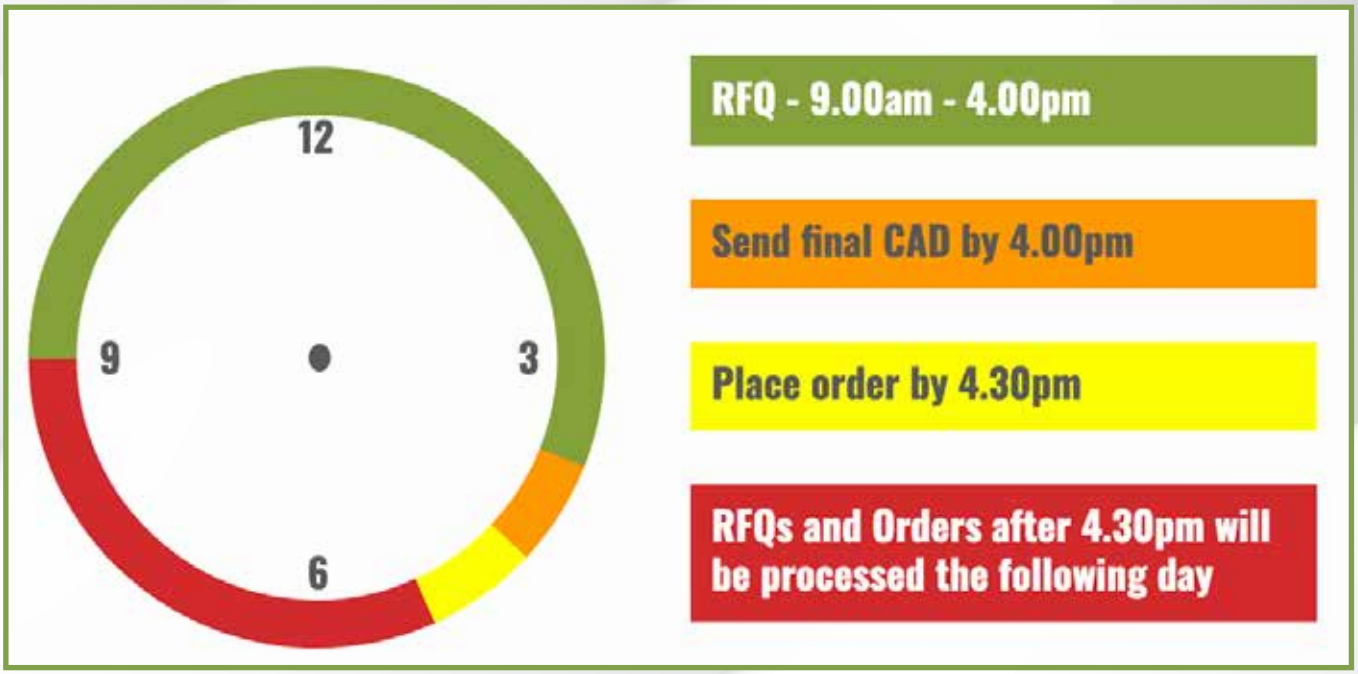
DATA VERIFICATION AND FORMAT

Please note, we will need to verify all CAD data and confirm lead times for every quote request and order.

All data should be supplied in .step/.stp file format.

If you have any questions, please call us on 01763 249760 or check our website.

OVERNIGHT PRINTING: SLS & SLA



INSTANT QUOTING

Use our online platform, Matrix, for instant quotes and ordering for SLS, SLA, and DLP 3D Printed parts. We'll be adding CNC Machining during 2025, so check our website for updates. For all other quotes, simply request a quote on our website.

01763 249760
office@prototypeprojects.com

WE'RE HERE TO HELP

We are always happy to discuss projects to ensure you get the best results at the prototyping and production stage. We also invite you to take the tour of our facilities in Royston. Simply get in touch with our Business Development Team.

01763 249760
office@prototypeprojects.com

QUICK LINKS

We have a wealth of information on our website. Here are links to some of the most useful content you may need.

- Process datasheets
- Material datasheets
- Policies, forms and certificates

We also have a Learning Hub where we answer frequently asked questions, as well as our blog. Both are regularly updated.

Matrix - instant quotes and ordering
Request a quote

CASE STUDIES

The majority of our work is, understandably, confidential. However, if and when you are able to talk about a project we have worked on together, we would welcome the opportunity to write up a case study. It's great promotion for us both! Please get in touch with our marketing team if you're interested.

Not quite up to a full case study? We also love to be able to share photos and videos of parts we've worked on. Again, as and when the time comes, please email our marketing team!

prototypeprojects

3D MADE. SIMPLE.®

POWERED BY matrix

Unit 2 Greenfield, Royston, Hertfordshire SG8 5HN
01763 249760
office@prototypeprojects.com
prototypeprojects.com

What3Words: ///shows.formed.dispensed