



PHOTOGRAPHS MARC FISH AND GINCANTHONY BAILEY

# Making maquettes

## Marc Fish talks to F&C about the benefits of making maquettes

The word maquette comes from the French word for model. It's more often than not smaller than the finished piece although we do produce full sized models on occasion. It's most commonly used by architects or sculptors, to visualise, test shapes and ideas without wasting the valuable materials and time a full scale product would take up. For commissioned work, a maquette may be used to show the client how the finished work will fit in the proposed site.

The usefulness of these little miniatures is often overlooked, or even mocked. No self respecting design studio, architect or car manufacturer would be without scale models.

No new car model gets anywhere near the production line until dozens of models are made even in this age of computers. You can gain so much from seeing a 3D solid object, from holding and rotating it. Proportions,

lines, curves and shapes slowly reveal themselves.

Vitra, who it appears now owns the rights to every furniture design classic, produces maquettes for the majority of them. These have become collectables in their own right with many of them fetching £500 +. Their use and how it benefits us as makers is of great importance. It's easy for us to get carried away - thinking the idea we've been carrying around in our minds is going to be The One.

As makers we can all be accused of impatience - wanting to get on with the making. I think, if we're honest, most would say that we've produced work and upon completion looked back and felt a certain detail could have looked better, a curve on a leg should have been steeper or a rail thinner. All these details could have been ironed out at the maquette stage along with many others such as stability, structural integrity and ergonomics. Can you afford not to make a maquette? I don't do one for everything I make but for anything unusual or challenging it helps me sleep better. A maquette can be as well crafted as is needed, it can be

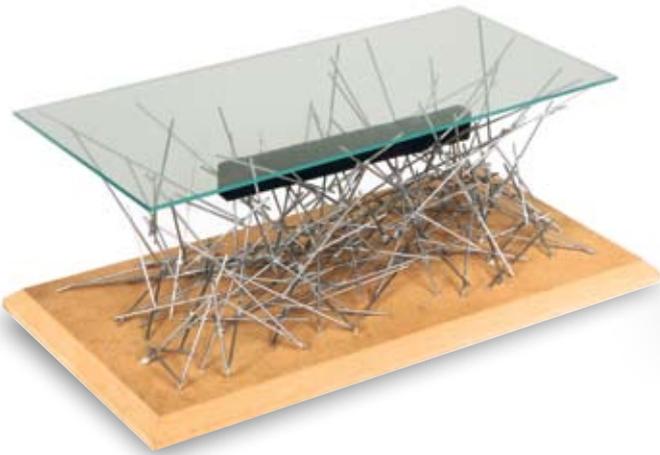
very rough just to see proportions and shape, often made of cardboard or just sheets of paper, taped up. If required, these little models can be mini works of art, making a history of pieces you've created. They can be displayed for future clients to see the quality of your work - it's not always possible to have finished items ready for viewing by potential clients and a 3D model is better than a photo.

I use the technique as an invaluable tool for pitching a concept to clients as I feel the majority of clients respond better to a model than a drawing. By charging the clients a retainer or design fee it covers the cost of making the maquette.

## Materials

You can use whatever materials and glues you have in your arsenal to make your maquette. Blu-Tack and Post-it notes have, in the past, found their way into my models. I used to produce maquettes in 1/10 scale but they're a little small and details are often lost on them. I changed to 1/6 scale, which I like better although working out dimensions is a little harder on the brain cells.

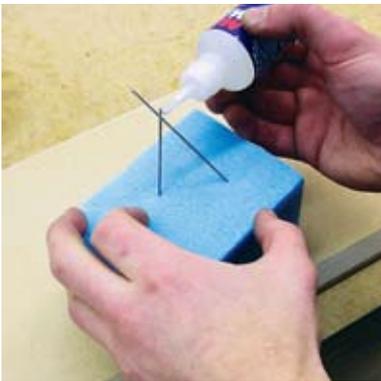
## Nest of table maquettes



**Nest of Table is made using TIG welding rods in exact scale to the 10mm stainless steel rods used in the finished article**



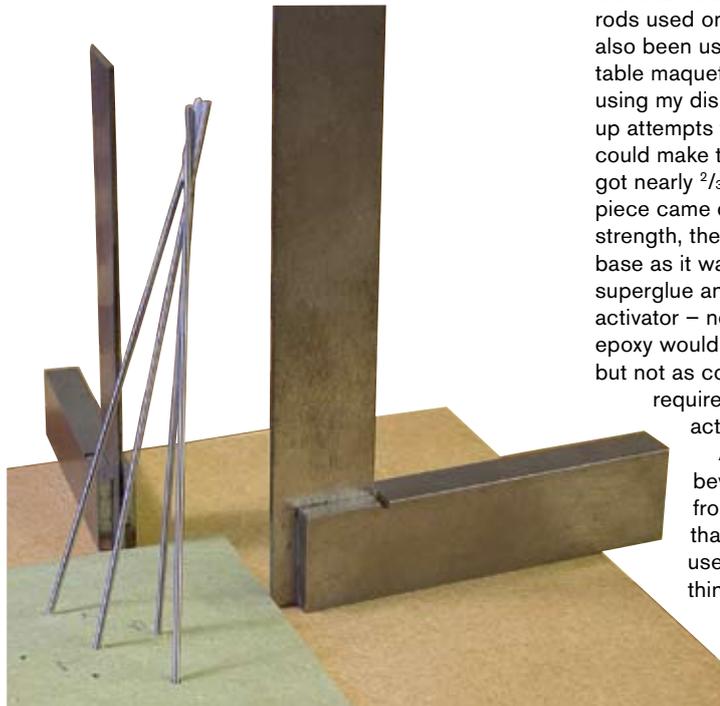
**This macassa table is a work in progress making use of a tried and tested technique**



**A foam block makes a very good second pair of hands at the outset**



**This delicate design is glued to the base to make construction easier**



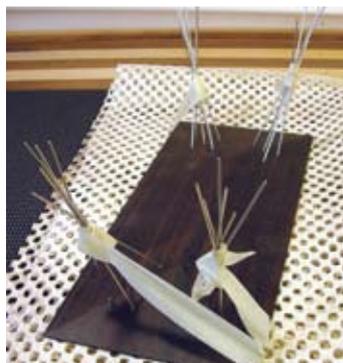
**To make the most of the modelling process, accuracy is paramount even at this early stage**

The stainless steel 'Nest of Table' was constructed using TIG welding rods these are exactly  $\frac{1}{6}$  scale of the 10mm rods used on the full size version. They've also been used on the macassar ebony table maquette. They've been abraded using my disk sander – after a few glue-up attempts this was the only way we could make the glue stick. The first try got nearly  $\frac{2}{3}$  finished when the whole piece came crashing down. To improve strength, the piece was also glued to its base as it was being constructed. I used superglue and the appropriate spray activator – not the strongest of glues, epoxy would have been much stronger but not as convenient because superglue requires no mixing and with the activator it sets instantly.

A piece of 3mm glass with beveled edges was obtained from our local glaziers for less than five pounds. I could have used acrylic of course but I think it looks better in glass.



**Even a model can benefit from making test pieces. MDF was used to establish the sweeping chamfers and then used to shape the final piece of macassar**



**Any method of construction is acceptable however basic**



**Koniq wax dries hard as it cools so works as an adhesive for model making. It can be mixed to reproduce almost any colour helping to emphasise design details**

## ► Macassar ebony table maquette

The macassar ebony table has never been made into a full size piece – after making the maquette I decided it needed more work and as it was only a speculative piece it's been

put on the back burner. The finish used on the top is a clear lacquer spray this gives a very quick shiny surface that can be flattened to a glassy finish. Melted Koniq wax was used

to fake the stainless steel legs protruding through the top. Koniq wax can be mixed with other colours when melted, so it was easy to mix a grey colour to replicate the stainless steel.

## Bench maquette



The bench maquette was made using real timber, MDF, iron-on real wood edging and a little aluminum. The components are all cut using the bandsaw and then hand planed or sanded. Most of the gluing up was done using Titebond original – chosen for its strength and short setting time.

The top was made using a piece of 6mm MDF and strips of Iron edging used to replicate the solid top version proposed. The top was glued to the base using 5-minute epoxy. The vices were turned on the engineering lathe to give the maquette a sense of purpose, although not exactly representative of the vices we used in the end, it does help to visualise the finished bench.

The timber used on the maquette and full size version was American black walnut (*Juglans nigra*) and maple (*Acer campestre*). This piece has also been finished with spray lacquer, although I didn't want a shiny surface, it's easier to apply on intricate items than an oil or wax finish and with fewer coats we can avoid it becoming too shiny.

Our students regularly use cardboard to rough out shapes. It enables us to quickly change dimensions and proportions without wasting material or having to use 3D CAD programs. A black marker pen can be used to change curves etc, acting as a shadow, this technique is great on legs. By making a cardboard template and viewing from a distance, we can shave off a little with the black pen and you can instantaneously see changes.

No timber was hurt in the process.

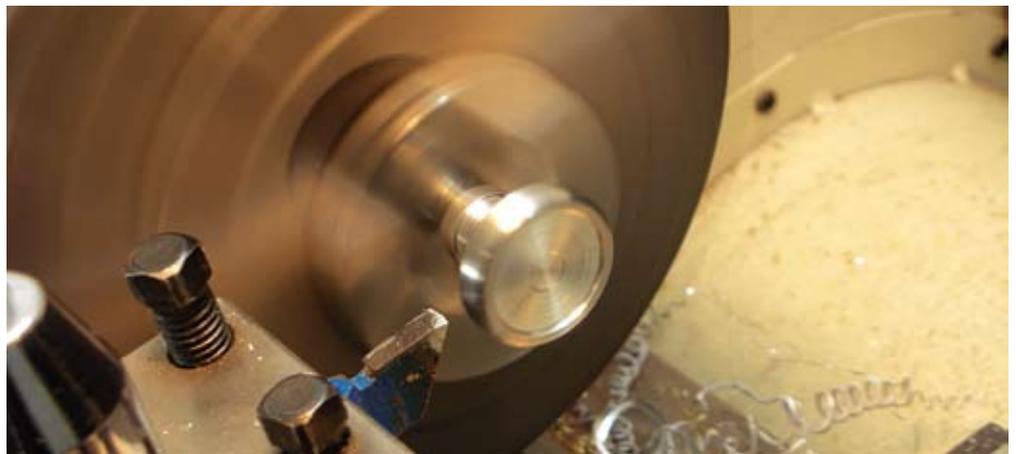
**This work bench maquette was made long before the finished article. Without it I may not have got round to making the life size version quite so soon**



**Materials that we wouldn't generally use in the finished article still have a place when it comes to making models. Iron-on edging is quick to use and very realistic**



**Rapid cure epoxy resin will set within five minutes so is perfect for model making**



**Our metal working lathe is used to produce some of the smaller metal components. It hones our student's skills on this very useful machine which has many benefits further down the line**

## The rocking chair

The rocking chair is one of the hardest items to design and make. They have more challenges than most other items of furniture – aesthetic, construction, comfort and motion. It can be easy to miss one of these attributes and then the piece fails to meet expectations. If the centre of balance is incorrect it can throw people forward or tip them back when seated and a simple maquette can help eliminate these problems. I've used an MDF male and female former, which has been pinned together with a tack-gun, this will be used to laminate 0.6mm veneer for the maquette. An MDF pattern was made first that enabled me to tweak the design even before making the MDF formers. Epoxy glue was used to replicate the actual piece – epoxy is very strong and gives the least amount of spring-

back from the formers when removed. When the chair was removed from the former it was obvious that the sides were too square and the chair was lacking any detail. A couple of trial chamfers were all that was needed to soften the design and the result is quite a slick look.



Even the decorative elements can be experimented with

Our 1:6 scale laminated chair sits perfectly well. Much of the guesswork having been bypassed at the maquette stage



Crude but effective. An MDF template was the starting point for producing the formers. A small band saw with a narrow blade is perfect for working little shapes from what are really no more than off-cuts



Components for the formers are produced using a router just as they would be for the finished article. At this scale a pin gun provides a quick and cheap solution to assembly



As with any glue-up, preparation is the key to success. Establishing now that our former would have to be in three components to work, will have great influence on how we construct the life size one



Working to scale develops a sensitivity to proportion. A delicate touch with hand tools is not a bad habit to encourage



As with full scale versions a well made former can have uses beyond the initial gluing up



A few minutes at the bench and off-cuts that could have ended up in the bin are well on their way to becoming a design worthy of development

## In use

Our workshop has been using maquettes for many years, but in writing this article it's made us understand their benefits better, I see an increase in maquette making and as a result I have introduced a section in our courses on the very subject.



Some models are easier to make than others. Some require you to develop complete new ways of working. That has to be a good thing