



VisualMILL® at David Trubridge Design

From his design studio in the Whakatu region of Hastings, situated in Hawkes Bay in beautiful New Zealand, [David Trubridge](#) projects elegance in his signature collection of lighting and furniture designs.

Setting out in 1972 with a degree in Naval Architecture (i.e., Boat Design), from Newcastle University in England, David spent a period of time working part time as a forester in rural Northumberland while he taught himself how to make furniture. Even in these early days, David's hand crafted furniture designs were shown across the UK including the Victoria and Albert Museum and St Mary's Cathedral in Edinburgh.

Perhaps his most famous design, Body Raft 2000 (shown above), designed and launched in 2000, was further enhanced and then taken to the Milan Furniture Fair in 2001 where the design was picked up by the famous Italian Manufacturer Cappellini.

Constructed from a process involving steam bent timber, the piece was featured in the book Eco Design and is now held by Te Papa Tongarewa, the national museum and art gallery of New Zealand.

Today, [David Trubridge Design](#) employs 22 people from his design studio and production workshop. He is best known today for his elegant lighting design kits. Each



fashioned from the inspiration derived from various natural resources found in New Zealand. For example the [Nikau \(2005/2013\)](#) shown here is the only indigenous palm tree in New Zealand. The fronds from the palm were traditionally used for thatching and weaving. It has a large bulb at the top of its trunk and its leaves overlap in the criss-cross patterns which inspired this light design.



The Workshop at David Trubridge Design

Design & Manufacturing Technology

To fill the demand for their furniture and lighting products, [David Trubridge Design](#) embraced automation technology early on in both the design and production processes. While initially outsourcing their CNC machining needs, the company quickly realized that their unique lighting designs necessitated that the machining process be close to their design studio.

After considering their options carefully, in 2005 the company invested in a **Techno** CNC router for their production workshop coupled with the [VisualMILL](#) CAM software from MecSoft Corporation for their design studio as well as the [Rhinceros®](#) design modeling software from [Robert McNeel & Associates](#).

When production continued to expand, in 2013 the company also expanded to a second suite of **VisualMILL** for their workshop because of its ease of use and dependability.

Today the company uses [Rhino 5](#) coupled with [Grasshopper®](#) for the algorithmic modeling of their lighting designs. Those designs are then opened directly in **VisualMILL** for controlling their CNC production routers. **VisualMILL** is one of 5 modules in the MecSoft standalone **VisualCAD/CAM** product which can read in files from over 20 different CAD formats to create cutting tool paths for 2 ½, 3, 4 & 5 axis CNC machining functionality.

VisualMILL Meets CNC Challenges

Production CNC routing of the components needed for their lighting design kits posed some unique challenges. The first and foremost are the production materials themselves. These include bamboo plywood, polycarbonate and aluminum, each in variable sheet thicknesses.

Bamboo while strong and durable is subject to tearing due to the bamboo plant fibers and occasional high silica content. Other factors are environmental such as where individual plants are located in relation to the sun, the time of year harvested, etc. Aluminum on the other hand being a soft metal can easily warp under pressure.

To achieve production quantities, many sheets of material are machined at once on the CNC router. The **VisualMILL** CAM software is used to produce the Drill Cycles and the Offset Profiling Cycles for Coral 600 lighting design. For a complete list of the toolpath strategies available see our [VisualMILL Features List](#).

According to CNC Production Specialist **Ken Marshall**:

“We’re pushing the production limits with these materials. Our cutter specialist recommends that we only cut 2x the diameter of our 8mm cutters so we shouldn’t be cutting any more than 16mm. However, with VisualMILL and our specialized production techniques, we’re efficiently cutting 24mm of material per run. For the Coral 600, we can get up to 22 light sets out of the one run on the CNC machine.”

About the Coral (from **David Trubridge Design**):

“[Coral \(2002\)](#) is based on one of the geometric polyhedra that have interested David since he was a boy. The intricate form is made from just one single component repeated 60 times. Originally designed purely as an experiment, it only became a light later when David tried to find a use for it by putting a bulb inside. This was a pivotal moment. What followed was a whole new direction in exploring lighting structures made from minimal shell-like skins which also act as patterned shadow makers.”

Environmental Responsibility

Environmental responsibility is demonstrated in the company's dedication to sourcing sustainable materials. Wherever possible, all timber is from sustainably managed plantations. Wood is left natural where appropriate, or with natural non-toxic oils being used. From a design point of view, the products use only the minimal amount of materials with a focus on longevity. Environmental responsibility also extends to the day-to-day operations within the David Trubridge headquarters. This includes recycling all factory and studio waste, using a 100% renewable electricity provider, and taking full responsibility for the entire process from design conception to shipping and freighting of the final product. For more information about [David Trubridge Design](http://www.davidtrubridge.com/) and their furniture and lighting products, visit <http://www.davidtrubridge.com/>

More about VisualMILL

To read more about **VisualMILL** and other MecSoft Corporation products including screen images, available configurations, resources and features lists, please visit our [Product page](#). You can also download our products for a test drive by visiting our [Download Demo Products](#) page.