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PRACTICE BASED 3D BIOMIMETRY DESIGN RESEARCH

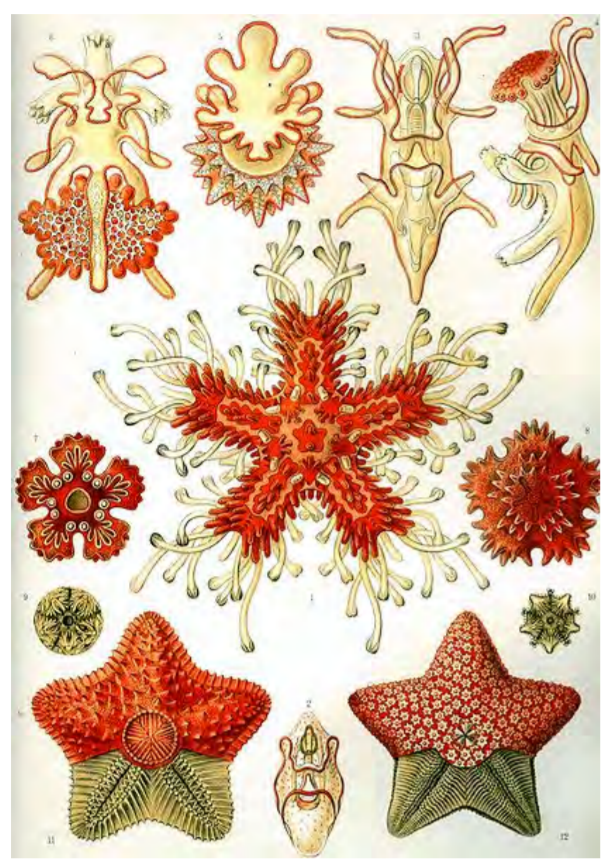
Andrew Taylor & Ertu Unver
Textiles Surface Design 3D Design

SEA STAR LAMP:

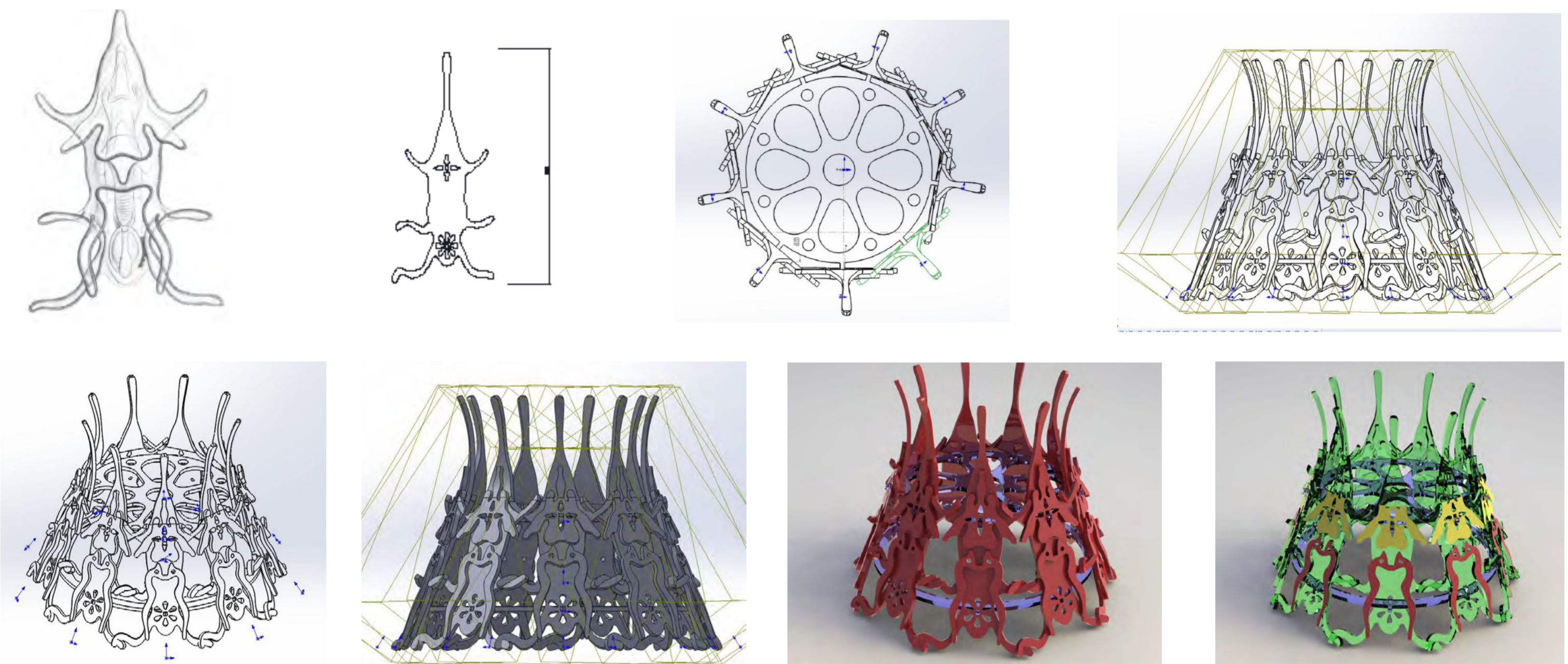
RESEARCH

The research explores biomimetic for surface, textiles and product design. The Sea Star lamp is one of a series of practice based collaborations; nature design experiments, product development and exhibition installations created between textile surface design researchers and 3D digital design practitioners.

The strategic search for role models in nature is what discerns biomimetic from the ever existing inspiration from nature. While bio-inspiration may be limited to a morphological analogy, biomimetic makes use of functional analogies, processes, mechanisms, strategies or information derived from living organisms. The term 'biomimetics' used in this research focuses on bio-inspired based design rather than direct copying of natural biological functions and implies the use of the natural world as a model to base an engineering development or innovative concept.



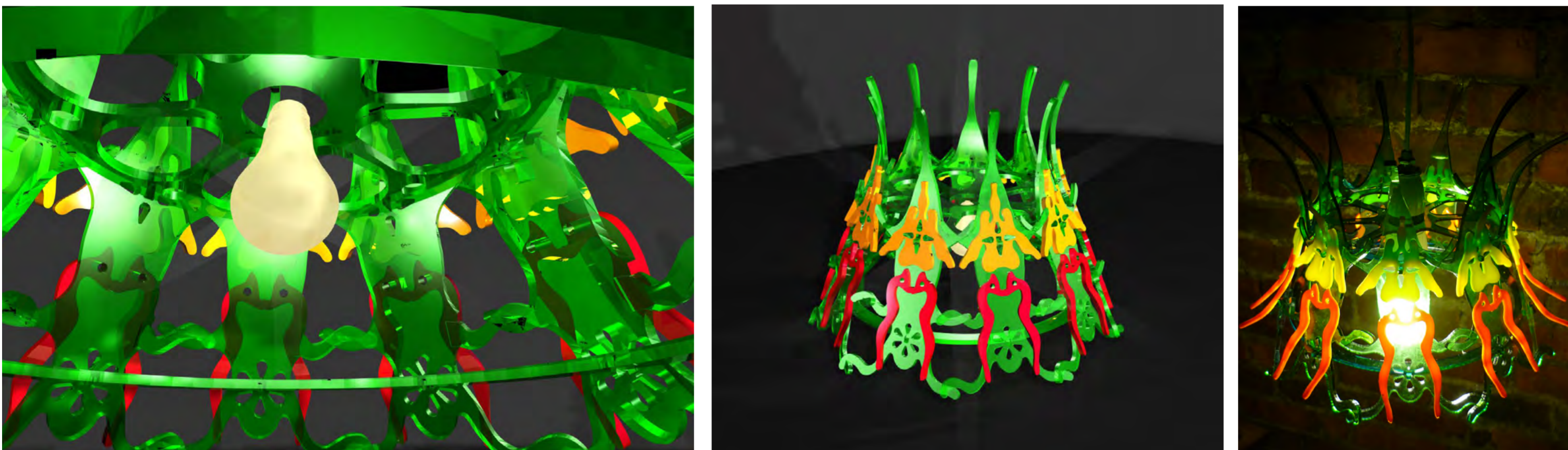
PARAMETRIC 3D MODELLING



LASER CUTTING, DYEING & HEAT FORMING OF ACRYLIC PARTS

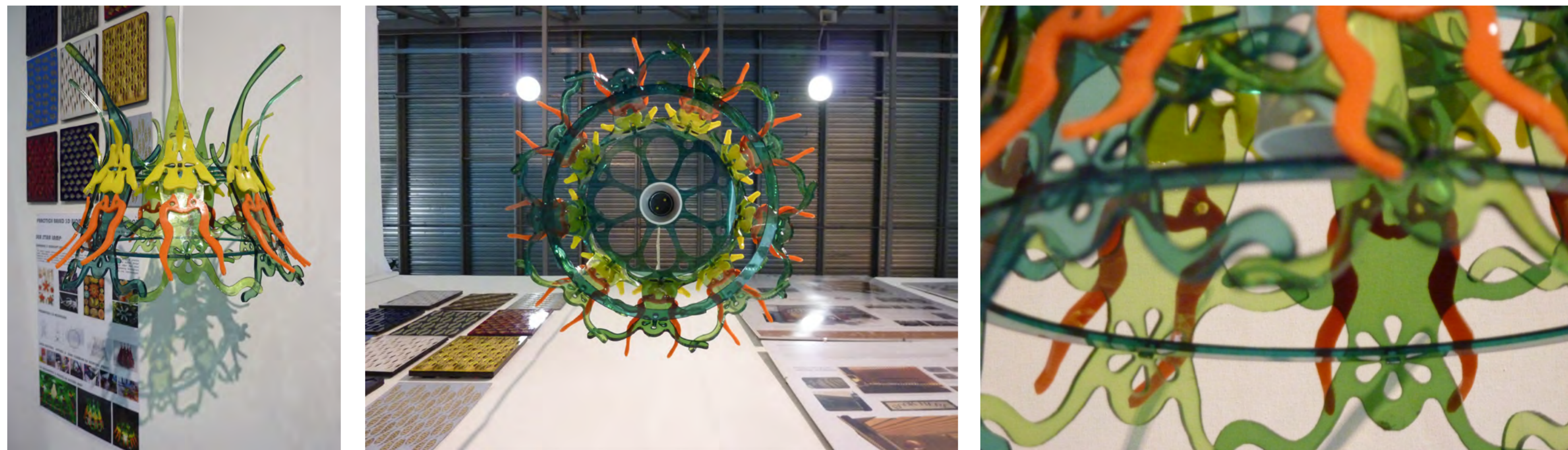


3D RENDERINGS & PHOTO OF ACTUAL LAMP



CONCEPT DESIGN AND PROCESS

Parametric solid modelling package Solidworks is extensively used by product designer and engineers. In this research Solidworks' features were used to create technical sketches to generate extruded organic shapes which were morphed into each part. These parts are then assembled in a circular pattern to construct the Sea Star lamp. 2D vector based drawing files are created from Solid data to laser cut individual pieces in acrylic. Each acrylic piece was disperse dyed and then the parts are shaped by hand using a vacuum forming machine as shown in image above. Each part is designed to easily clip fit together and the lamp is assembled manually. Renderings were also created in 3D to visualise colour variations and to evaluate lighting effects.



REFERENCES

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Exhibited at ECOBUILD, 2012, LONDON, UK