

Case Study:

Sustainable Biocomposite Cabinet

Background

The furniture industry is increasingly facing challenges in the sustainability of its outputs. Fully sustainable furniture is currently expensive to manufacture and recycle, posing a problem for manufacturers and consumers who wish to be more environmentally-friendly.

Sheffield Institute of Art at Sheffield Hallam University wanted to solve this problem. It approached sustainable furniture in a new way that concentrated on building furniture from renewable sources, rather than attempting to recycle products at the end of their lifespan.

In partnership with NetComposites in the UK, the Institute began the BioFurniture Project to study plant-based materials and whether they could be used instead of petrochemical-based plastics to create sustainable furniture. The aim was to create a 100% sustainable cabinet.

NetComposites suggested Composites Evolution's Biotex products as a sustainable alternative to less environmentally-friendly man-made products, such as MDF or chipboard.

Testing

Roger Bateman, MA Design Program Leader at Sheffield Hallam University, and Matt Harding, a Sheffield Hallam University Design Student, designed the cabinet using Biotex Flax/PLA for the lightweight panel components, press moulding the panels into their desired shapes. The panels were then fitted to a timber framework, manufactured by Sheffield-based cabinet makers My Fathers Heart.

The resulting cabinet was both aesthetically pleasing and will eventually completely decompose.

Sheffield Hallam University



Material Selection

Biotex Flax/PLA contains Polylactic acid which is naturally derived. This fit with the University's brief of creating 100% recyclable furniture.

Why Biotex Flax?

Composites Evolution's sustainable materials are designed specifically for composite processes and therefore allowed Sheffield Hallam to mould the desired shapes for their applications, in-keeping with the aim of the project.