

HOW CAN WE REDUCE WASTE IN THE FURNITURE INDUSTRY?

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OVERVIEW

My research scrutinises the life-cycle of hand-crafted wooden furniture to find areas for improvement, ranging from raw material processing, manufacturing, use, and the end-of-life scenario. This research was undertaken whilst studying for a BA (Hons) in furniture design and making, working primarily with wood. Although the points raised can be applied to other areas of the design and product industry.

WHY?

As we continue to face issues like climate change, mass pollution of eco-systems, and a reducing capacity to produce and supply materials, we are putting our future in doubt. Waste is a man-made problem.

HOW?

I analysed several examples of modern-day furniture, produced on various scales, and examined the works of a selection of leading designers and educators. This, coupled with my work experience and education in the industry has given me a good sense of understanding of the waste related issues in the furniture design and manufacturing world.



I chose to research this topic to make positive social and environmental change. I believe that we have to respect our planet otherwise there will be nothing left for future generations. As a furniture designer and maker, my way of contributing to this is to create low-impact, functional objects that are simple, versatile and well considered.

LOW-IMPACT MATERIALS

The materiality of furniture has become increasingly wasteful, we should use local, low-impact materials where possible, and not follow trends in timber, as this can reduce biodiversity and increase pollution. "Our ancestors used a limited palette of biodegradable and renewable materials creatively, to make objects that were functional, simple, understandable and as a result beautiful" ⁽¹⁾.

'A' Chair, designed by David Colwell, which encompasses this principal ⁽⁷⁾



WASTE = FOOD

'Waste' materials are an untapped resource, which could not only reduce pollution but make a strong statement to educate people into thinking about their waste management. This would reduce reliance on virgin material and in turn avoid the loss of valuable resources.



Pallets, which can be used as a resource for manufacturing ⁽¹⁰⁾



Desk and stool made from recycled wood by Elliot Hamer ⁽¹¹⁾

VERSATILITY

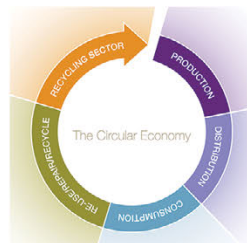
A large amount of furniture gets discarded because it cannot be modified easily, waste would be reduced if furniture was more versatile, multi-functional and could be easily modified ⁽⁴⁾.



A versatile Swiss army-knife ⁽¹³⁾

CIRCULAR ECONOMY

In a circular economy, products are designed in so that materials can be easily put back into the manufacturing cycle, which would improve resource efficiency ⁽⁹⁾. Small manufacturing offcuts should be passed on to people in different industries who could utilise them, instead of being lost to landfill or burnt for energy



Circular Economy Diagram ⁽¹⁵⁾

DESIGN FOR DISASSEMBLY

We should ensure that products are designed to be disassembled, to facilitate re-use, recycling, remanufacturing and repairing. Screws, glues and welding all work against this ⁽²⁾. A large amount of furniture can not be easily repurposed or refurbished as it is not made in this way.



Wooden joint – Assembled ⁽⁸⁾

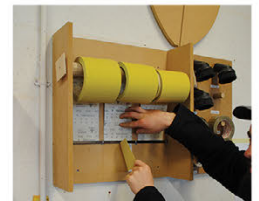


Wooden joint – Disassembled ⁽⁹⁾

DISPOSABILITY

Advances in technology have made furniture making more convenient, at the cost of waste and pollution in the environment. Disposable consumables like sandpaper, are used extensively, but could be avoided with consideration at the design stage and the use of traditional methods ⁽³⁾.

Rolls of disposable sand paper in a workshop. ⁽¹²⁾



ADHESIVES

Modern adhesives can be harmful to the environment and reduce end-of-life options. Most adhesives are petro-chemical based and are not biodegradable. Glue is easily avoided if considered during the design process, to keep timber in its natural, eco-friendly form. Veneered plywood and chipboard should be avoided as they contain large amounts.

A pot of PVA glue ⁽¹⁴⁾



HARMFUL SURFACE FINISH

The majority of surface finishes used on furniture (varnish and paint etc...) are largely reliant on petro-chemicals which reduce end-of-life options for furniture. Eco-friendly finishes like oils and waxes have always been available and are much more environmentally friendly.

Tins of finish and the necessary safety equipment in a furniture workshop ⁽¹⁶⁾



CONCLUSION

There are many aspects of using timber for furniture that can be harmful to the environment. Creating durable, versatile products made from local, low-impact, raw, and abundant waste materials is not difficult, but sometimes it is not economically viable to work in an environmentally sustainable way due to current socio-economic frameworks. A combination of all the points raised above will all help. Simpler, low-tech, low-energy processes can be re-learned from traditional furniture practices and adapted for waste minimisation in the modern-day. My research has demonstrated how simple principles and a new mind-set can inspire everyone to think twice about waste, through the furniture they use every day.

References

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Images

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